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**Department of Defense
Fiscal Year (FY) 2026 Budget Estimates**

June 2025



Army

Justification Book Volume 1b of 1

Research, Development, Test & Evaluation, Army
Budget Activity 2

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Army • Budget Estimates FY 2026 • 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, \$15,395,757,000.00 to remain available for obligation until September 30, 2027.

The FY 2026 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 \$3,201,000.00.

COST STATEMENT

The following Justification Books were prepared at a cost of \$301,924.00: Aircraft (ACFT), Missile (MSLS), Weapons & Tracked Combat Vehicles (WTCV), Ammunition (AMMO), Other Procurement Army (OPA) 1 - Tactical & Support Vehicles, Other Procurement Army (OPA) 2 - Communications & Electronics, Other Procurement Army (OPA) 3 & 4 - Other Support Equipment & Spares, Other Procurement Army (OPA) 6 - Agile Portfolio Management, Research, Development, Test and Evaluation (RDTE) for: Budget Activity 1, Budget Activity 2, Budget Activity 3, Budget Activity 4, Budget Activity 5A, Budget Activity 5B, Budget Activity 6, Budget Activity 7, Budget Activity 8, and Budget Activity 9.

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FY 2026 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 2026.
2. **Relationship of the FY 2026 Budget Submitted to Congress to the FY 2025 Budget Submitted to Congress.** This paragraph provides a list of program elements/projects that are major new starts and terminated programs. Explanations for these changes can be found in the narrative sections of the Program Element R-2A Exhibits.

New Start Programs:

<u><i>Budget Activity</i></u>	<u><i>OSDPE / Project</i></u>	<u><i>Project Title</i></u>
02	0602141A / DN6	Science of Massed Responsive Fires
02	0602147A / DM6	Cannon Fires Automation Research
02	0602150A / HP1	High Power Microwave Technology
02	0602180A / DM7	Counter AI App Rsch
02	0602180A / DM8	AI Enabled Contested Logistics Spt Tools App Tech
02	0602182A / DM9	Distributed Multi-Agent Reasoning and Data Fusion
02	0602184A / DN1	Directed Energy Biological Effects
02	0602184A / DN2	Joint Service Small Arms Enabling Tech
02	0602184A / DO1	Modernized Composites & Manufacturing
03	0603040A / DN3	AI Enabled Contested Logistics Spt Tools Adv Tech
03	0603044A / DN4	Joint Service Small Arms Adv Tech
03	0603044A / DO2	Modernized Composites & Manufacturing Adv Dev
03	0603464A / DM5	Affordable High Speed Strike
04	0603639A / DK7	155mm Artillery Propulsion Mod - Adv Component Dev
04	0603639A / DN7	Mobile Long Range Precision Strike Pgm (M-LRPSM)
05	0604270A / DN9	Modular Electro-Magnetic Spectrum Sys (MEMSS)
05	0604804A / H01	Combat Engineer Eq Ed

05	0604818A / DL8	Predictive Logistics
05	0604854A / DH7	Next Generation Howitzer
05	0605037A / DM1	Detainee Management, Accountability, and Reporting
09	0609277A / A83	Electronic Warfare Technology Maturation
09	0609277A / A85	EW-SIGINT Technology-Innovation Pipeline
09	0609278A / A92	Counter Surveillance Reconnaissance (CSR)

Program Terminations (including transfers to Procurement and Sustainment):

<u>Budget Activity</u>	<u>OSDPE / Project</u>	<u>Project Title</u>
02	0602141A / AH8	Lethality Materials and Processes Technology
02	0602181A / CM7	Collaborative Convergence Applied Research
02	0602182A / CX5	Sensing in Contested Environments Technologies
02	0602182A / DE6	Understanding Environment as a Threat Tech
02	0602183A / CL5	Air Platform Enabling University Applied Research
03	0603042A / CX9	Sensing in Contested Environments Adv Technologies
04	0604020A / DC8	Army Experimentation and Prototyping
05	0604641A / CF5	Robotic Combat Vehicle (BA5) NGCV-CFT
07	0205412A / EE6	Environmental Information Tech Modernization

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 2026 President's Budget
Exhibit R-1 FY 2026 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Jun 2025

<u>Appropriation</u>	FY 2024 Actuals	FY 2025 Enacted	FY 2025 Supplemental	FY 2025 Total	FY 2026 Disc Request	FY 2026 Reconciliation Request	FY 2026 Total
Research, Development, Test and Evaluation, Army	17,119,530	14,322,031	41,400	14,363,431	14,549,223	846,534	15,395,757
Total Research, Development, Test, & Evaluation	17,119,530	14,322,031	41,400	14,363,431	14,549,223	846,534	15,395,757

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	FY 2024 Actuals	FY 2025 Enacted	FY 2025 Supplemental	FY 2025 Total	FY 2026 Disc Request	FY 2026 Reconciliation Request	FY 2026 Total
<u>Summary Recap of Budget Activities</u>							
Basic Research	528,659	505,156		505,156	486,544		486,544
Applied Research	1,690,089	1,162,089		1,162,089	860,545		860,545
Advanced Technology Development	2,333,689	1,696,216		1,696,216	1,240,191		1,240,191
Advanced Component Development & Prototypes	4,227,715	2,170,345		2,170,345	2,420,915	417,120	2,838,035
System Development & Demonstration	4,890,110	5,758,500		5,758,500	5,378,817	304,614	5,683,431
Management Support	2,109,102	1,741,185	41,400	1,782,585	1,956,082	103,000	2,059,082
Operational Systems Development	1,236,118	1,213,992		1,213,992	1,426,619	21,800	1,448,419
Software And Digital Technology Pilot Programs	104,048	74,548		74,548	89,238		89,238
Agile RDT&E Portfolio Management					690,272		690,272
Total Research, Development, Test, & Evaluation	17,119,530	14,322,031	41,400	14,363,431	14,549,223	846,534	15,395,757
<u>Summary Recap of FYDP Programs</u>							
General Purpose Forces	370,362	452,813		452,813	896,230		896,230
Intelligence and Communications	244,739	144,756		144,756	70,382		70,382
Research and Development	16,356,977	13,053,148	41,400	13,094,548	13,040,127	846,534	13,886,661
Central Supply and Maintenance	118,797	87,187		87,187	67,002		67,002
Administration and Associated Activities	669						
Classified Programs	27,986	584,127		584,127	475,482		475,482
Total Research, Development, Test, & Evaluation	17,119,530	14,322,031	41,400	14,363,431	14,549,223	846,534	15,395,757

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

Line No	Program Element Number	Item	Act	Sec	FY 2024 Actuals	FY 2025 Enacted	FY 2025 Supplemental	FY 2025 Total	FY 2026 Disc Request	FY 2026 Reconciliation Request	FY 2026 Total
1	0601102A	Defense Research Sciences	01	U	322,341	297,680		297,680	237,678		237,678
2	0601103A	University Research Initiatives	01	U	72,781	78,166		78,166	78,947		78,947
3	0601104A	University and Industry Research Centers	01	U	117,872	113,476		113,476	69,391		69,391
4	0601121A	Cyber Collaborative Research Alliance	01	U	5,459	5,525		5,525	5,463		5,463
5	0601275A	Electronic Warfare Basic Research	01	U					88,053		88,053
6	0601601A	Artificial Intelligence and Machine Learning Basic Research	01	U	10,206	10,309		10,309	7,012		7,012
Basic Research					528,659	505,156		505,156	486,544		486,544
7	0602002A	Army Agile Innovation and Development-Applied Research	02	U	964	1,000		1,000	9,455		9,455
8	0602134A	Counter Improvised-Threat Advanced Studies	02	U	6,014	6,163		6,163	6,174		6,174
9	0602135A	Counter Small Unmanned Aerial Systems (C-SUAS) Applied Research	02	U					12,618		12,618
10	0602141A	Lethality Technology	02	U	145,375	128,659		128,659	97,157		97,157
11	0602142A	Army Applied Research	02	U	38,072						
12	0602143A	Soldier Lethality Technology	02	U	209,084	137,771		137,771	72,670		72,670
13	0602144A	Ground Technology	02	U	266,663	155,829		155,829	56,342		56,342
14	0602145A	Next Generation Combat Vehicle Technology	02	U	248,335	167,233		167,233	71,547		71,547
15	0602146A	Network C3I Technology	02	U	135,543	110,417		110,417	56,529		56,529
16	0602147A	Long Range Precision Fires Technology	02	U	96,154	67,589		67,589	25,744		25,744
17	0602148A	Future Verticle Lift Technology	02	U	104,850	52,350		52,350	20,420		20,420
18	0602150A	Air and Missile Defense Technology	02	U	102,784	49,188		49,188	25,992		25,992
19	0602180A	Artificial Intelligence and Machine Learning Technologies	02	U	23,702	20,319		20,319	13,745		13,745

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20	0602181A	All Domain Convergence Applied Research	02	U	13,775	12,269		12,269			
21	0602182A	C3I Applied Research	02	U	31,635	25,839		25,839	22,317		22,317
22	0602183A	Air Platform Applied Research	02	U	53,611	48,854		43,854	53,305		53,305
23	0602184A	Soldier Applied Research	02	U	17,622	14,131		14,131	27,597		27,597
24	0602213A	C3I Applied Cyber	02	U	20,664	28,656		23,656	4,716		4,716
25	0602275A	Electronic Warfare Applied Research	02	U					45,415		45,415
26	0602276A	Electronic Warfare Cyber Applied Research	02	U					17,102		17,102
27	0602345A	Unmanned Aerial Systems Launched Effects Applied Research	02	U					18,408		18,408
28	0602386A	Biotechnology for Materials - Applied Research	02	U	16,060	11,780		11,780	8,209		8,209
30	0602785A	Manpower/Personnel/Training Technology	02	U	19,667	19,795		19,795	17,191		17,191
31	0602787A	Medical Technology	02	U	139,515	68,481		68,481	143,293		143,293
999	999999999	Classified Programs	02	U		35,766		35,766	34,599		34,599
		Applied Research			1,690,089	1,162,089		1,162,089	860,545		860,545
32	0603002A	Medical Advanced Technology	03	U	18,730	8,112		8,112	1,860		1,860
33	0603007A	Manpower, Personnel and Training Advanced Technology	03	U	15,845	16,716		16,716	13,559		13,559
34	0603025A	Army Agile Innovation and Demonstration	03	U	25,513	14,608		14,608	19,679		19,679
35	0603040A	Artificial Intelligence and Machine Learning Advanced Technologies	03	U	23,909	30,263		30,263	20,487		20,487
36	0603041A	All Domain Convergence Advanced Technology	03	U	26,721	23,722		23,722	10,560		10,560
37	0603042A	C3I Advanced Technology	03	U	18,590	21,889		21,889	15,028		15,028

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38	0603043A	Air Platform Advanced Technology	03	U	13,648	17,076		17,076	41,266		41,266
39	0603044A	Soldier Advanced Technology	03	U	1,170	14,094		14,094	18,143		18,143
40	0603116A	Lethality Advanced Technology	03	U	70,529	49,629		49,629	13,232		13,232
41	0603117A	Army Advanced Technology Development	03	U	140,980						
42	0603118A	Soldier Lethality Advanced Technology	03	U	125,951	98,032		98,032	95,186		95,186
43	0603119A	Ground Advanced Technology	03	U	276,299	87,775		87,775	30,507		30,507
44	0603134A	Counter Improvised-Threat Simulation	03	U	20,965	21,398		21,398	15,692		15,692
45	0603135A	Counter Small Unmanned Aerial Systems (C-SUAS) Advanced Technology	03	U					7,773		7,773
46	0603275A	Electronic Warfare Advanced Technology	03	U					83,922		83,922
47	0603276A	Electronic Warfare Cyber Advanced Technology	03	U					15,254		15,254
48	0603345A	Unmanned Aerial Systems Launched Effects Advanced Technology Development	03	U					13,898		13,898
49	0603386A	Biotechnology for Materials - Advanced Research	03	U	57,686	36,360		36,360	24,683		24,683
50	0603457A	C3I Cyber Advanced Development	03	U	28,275	39,616		39,616	3,329		3,329
51	0603461A	High Performance Computing Modernization Program	03	U	246,739	239,597		239,597	241,855		241,855
52	0603462A	Next Generation Combat Vehicle Advanced Technology	03	U	433,324	254,662		254,662	141,301		141,301
53	0603463A	Network C3I Advanced Technology	03	U	214,351	142,224		142,224	78,539		78,539
54	0603464A	Long Range Precision Fires Advanced Technology	03	U	233,806	164,943		164,943	162,236		162,236

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55	0603465A	Future Vertical Lift Advanced Technology	03	U	219,137	175,369		175,369	66,686		66,686
56	0603466A	Air and Missile Defense Advanced Technology	03	U	98,784	61,333		61,333	23,330		23,330
58	0603920A	Humanitarian Demining	03	U	22,737	23,272		23,272	9,349		9,349
999	999999999	Classified Programs	03	U		155,526		155,526	72,837		72,837
	Advanced Technology Development				2,333,689	1,696,216		1,696,216	1,240,191		1,240,191
60	0603305A	Army Missile Defense Systems Integration	04	U	48,763	20,031		20,031	8,141		8,141
61	0603308A	Army Space Systems Integration	04	U	28,813	29,659		29,659	83,080		83,080
62	0603327A	Air and Missile Defense Systems Engineering	04	U	13,000	30,000		30,000			
63	0603619A	Landmine Warfare and Barrier - Adv Dev	04	U	60,202	60,617		60,617	41,516		41,516
64	0603639A	Tank and Medium Caliber Ammunition	04	U	90,139	102,027		102,027	85,472	100,000	185,472
65	0603645A	Armored System Modernization - Adv Dev	04	U	54,456	23,235		23,235	22,645		22,645
66	0603747A	Soldier Support and Survivability	04	U	3,420	4,059		4,059	4,033		4,033
67	0603766A	Tactical Electronic Surveillance System - Adv Dev	04	U	72,259	87,765		87,765	107,525		107,525
68	0603774A	Night Vision Systems Advanced Development	04	U	41,941	20,714		20,714	5,153		5,153
69	0603779A	Environmental Quality Technology - Dem/Val	04	U	19,369	23,299		23,299	11,343		11,343
70	0603790A	NATO Research and Development	04	U	3,987	4,184		4,184	5,031		5,031
71	0603801A	Aviation - Adv Dev	04	U	1,452,331	4,943		4,943			
72	0603804A	Logistics and Engineer Equipment - Adv Dev	04	U	22,846	19,995		19,995	15,435		15,435
73	0603807A	Medical Systems - Adv Dev	04	U	7,999	582		582	1,000		1,000

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74	0603827A	Soldier Systems - Advanced Development	04	U	41,551	24,284		24,284	41,856		41,856
75	0604017A	Robotics Development	04	U	2,912	13,039		13,039	35,082		35,082
76	0604019A	Expanded Mission Area Missile (EMAM)	04	U	109,752	83,516		83,516	178,137	99,000	277,137
77	0604020A	Cross Functional Team (CFT) Advanced Development & Prototyping	04	U	61,779	40,409		40,409			
78	0604035A	Low Earth Orbit (LEO) Satellite Capability	04	U	37,433	21,935		21,935	17,063		17,063
79	0604036A	Multi-Domain Sensing System (MDSS) Adv Dev	04	U	185,831	188,228		188,228	239,813		239,813
80	0604037A	Tactical Intel Targeting Access Node (TITAN) Adv Dev	04	U	10,626	4,317		4,317	3,092		3,092
81	0604100A	Analysis Of Alternatives	04	U	10,690	11,234		11,234	9,865		9,865
82	0604101A	Small Unmanned Aerial Vehicle (SUAV) (6.4)	04	U	4,956	1,800		1,800			
83	0604103A	Electronic Warfare Planning and Management Tool (EWPMT)	04	U	2,260	2,004		2,004			
84	0604113A	Future Tactical Unmanned Aircraft System (FTUAS)	04	U	67,143	127,870		127,870			
85	0604114A	Lower Tier Air Missile Defense (LTAMD) Sensor	04	U	511,014	127,428		127,428	196,448	14,000	210,448
86	0604115A	Technology Maturation Initiatives	04	U	244,710	252,000		252,000	267,619		267,619
87	0604117A	Maneuver - Short Range Air Defense (M-SHORAD)	04	U	290,256	274,542		274,542	238,247	60,120	298,367
88	0604119A	Army Advanced Component Development & Prototyping	04	U	204,914						
89	0604120A	Assured Positioning, Navigation and Timing (PNT)	04	U	39,223	24,168		24,168	8,686		8,686
90	0604121A	Synthetic Training Environment Refinement & Prototyping	04	U	115,519	115,140		115,140	240,899		240,899

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91	0604134A	Counter Improvised-Threat Demonstration, Prototype Development, and Testing	04	U	15,826	17,341		17,341	5,491		5,491
92	0604135A	Strategic Mid-Range Fires	04	U	25,342				231,401		231,401
93	0604182A	Hypersonics	04	U	201,193				25,000		25,000
94	0604386A	Biotechnology for Materials - Dem/Val	04	U		10,651		10,651			
95	0604403A	Future Interceptor	04	U	3,899	8,058		8,058	8,019	144,000	152,019
97	0604531A	Counter - Small Unmanned Aircraft Systems Advanced Development	04	U	54,854	79,983		79,983	45,281		45,281
99	0604541A	Unified Network Transport	04	U	47,233	31,837		31,837	29,191		29,191
100	0305251A	Cyberspace Operations Forces and Force Support	04	U	74	2,270		2,270	5,605		5,605
999	999999999	Classified Programs	04	U	19,200	277,181		277,181	203,746		203,746
	Advanced Component Development & Prototypes				4,227,715	2,170,345		2,170,345	2,420,915	417,120	2,838,035
101	0604201A	Aircraft Avionics	05	U	21,173	7,171		7,171	2,696		2,696
102	0604270A	Electronic Warfare Development	05	U	12,310	33,247		33,247	9,153		9,153
103	0604601A	Infantry Support Weapons	05	U	80,777	57,686		57,686	56,553		56,553
104	0604604A	Medium Tactical Vehicles	05	U	17,561	3,565		3,565	18,503		18,503
105	0604611A	JAVELIN	05	U	7,541	10,405		10,405	9,810		9,810
106	0604622A	Family of Heavy Tactical Vehicles	05	U	40,175	34,690		34,690	47,064		47,064
107	0604633A	Air Traffic Control	05	U	11,093	982		982			
108	0604641A	Tactical Unmanned Ground Vehicle (TUGV)	05	U	136,937	92,540		92,540			
109	0604642A	Light Tactical Wheeled Vehicles	05	U	3,394	3,000		3,000			
110	0604645A	Armored Systems Modernization (ASM) - Eng Dev	05	U	95,580	48,097		48,097	16,593		16,593
111	0604710A	Night Vision Systems - Eng Dev	05	U	145,135	139,309		139,309	351,274		351,274

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112	0604713A	Combat Feeding, Clothing, and Equipment	05	U	2,170	3,286		3,286	5,654		5,654
113	0604715A	Non-System Training Devices - Eng Dev	05	U	20,585	28,427		28,427	19,063		19,063
114	0604741A	Air Defense Command, Control and Intelligence - Eng Dev	05	U	86,990	73,653		73,653	13,892		13,892
115	0604742A	Constructive Simulation Systems Development	05	U	29,854	30,097		30,097	7,790		7,790
116	0604746A	Automatic Test Equipment Development	05	U	13,129	12,927		12,927	9,512		9,512
117	0604760A	Distributive Interactive Simulations (DIS) - Eng Dev	05	U	8,481	8,914		8,914	7,724		7,724
118	0604798A	Brigade Analysis, Integration and Evaluation	05	U	21,750	26,352		26,352	24,318		24,318
119	0604802A	Weapons and Munitions - Eng Dev	05	U	270,231	251,949		251,949	150,344		150,344
120	0604804A	Logistics and Engineer Equipment - Eng Dev	05	U	58,554	46,829		46,829	50,194		50,194
121	0604805A	Command, Control, Communications Systems - Eng Dev	05	U	47,965	92,300		92,300	63,725		63,725
122	0604807A	Medical Materiel/Medical Biological Defense Equipment - Eng Dev	05	U	10,984	7,143		7,143	6,252		6,252
123	0604808A	Landmine Warfare/Barrier - Eng Dev	05	U	33,085	54,134		54,134	9,862		9,862
124	0604818A	Army Tactical Command & Control Hardware & Software	05	U	154,317	134,162		134,162	430,895	2,430	433,325
125	0604820A	Radar Development	05	U	78,363	41,584		41,584	53,226	18,000	71,226
126	0604822A	General Fund Enterprise Business System (GFEBS)	05	U	16,011	1,995		1,995			
127	0604827A	Soldier Systems - Warrior Dem/Val	05	U	18,892	29,132		29,132	4,137		4,137
128	0604852A	Suite of Survivability Enhancement Systems - EMD	05	U	70,384	77,864		77,864	76,903		76,903

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129	0604854A	Artillery Systems - EMD	05	U	45,939	42,479		42,479	80,862		80,862
130	0605013A	Information Technology Development	05	U	96,090	102,704		102,704	125,701		125,701
131	0605018A	Integrated Personnel and Pay System-Army (IPPS-A)	05	U	86,914	121,354		121,354	164,600		164,600
132	0605030A	Joint Tactical Network Center (JTNC)	05	U	17,981	20,191		20,191	20,954		20,954
133	0605031A	Joint Tactical Network (JTN)	05	U	29,221	31,214		31,214	41,696		41,696
134	0605035A	Common Infrared Countermeasures (CIRCM)	05	U	10,959	11,691		11,691	10,789		10,789
135	0605036A	Combating Weapons of Mass Destruction (CWMD)	05	U	1,012	7,846		7,846	13,322		13,322
136	0605037A	Evidence Collection and Detainee Processing	05	U					4,619		4,619
137	0605038A	Nuclear Biological Chemical Reconnaissance Vehicle (NBCRV) Sensor Suite	05	U		7,886		7,886	13,459		13,459
138	0605041A	Defensive CYBER Tool Development	05	U	13,386	4,176		4,176	3,611		3,611
139	0605042A	Tactical Network Radio Systems (Low-Tier)	05	U	4,160	4,288		4,288	3,222		3,222
140	0605047A	Contract Writing System	05	U	12,390	9,276		9,276	8,101		8,101
141	0605049A	Missile Warning System Modernization (MWSM)	05	U	19,508						
142	0605051A	Aircraft Survivability Development	05	U	23,991	38,225		38,225	44,182		44,182
143	0605052A	Indirect Fire Protection Capability Inc 2 - Block 1	05	U	172,705	140,912		140,912	248,659		248,659
144	0605053A	Ground Robotics	05	U	26,704	28,378		28,378	227,038		227,038
145	0605054A	Emerging Technology Initiatives	05	U	115,356	126,658		126,658	57,546	87,000	144,546
146	0605144A	Next Generation Load Device - Medium	05	U	36,970	2,931		2,931	24,492		24,492

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147	0605148A	Tactical Intel Targeting Access Node (TITAN) EMD	05	U	128,784	149,112		149,112	44,273		44,273
148	0605203A	Army System Development & Demonstration	05	U	81,657						
149	0605205A	Small Unmanned Aerial Vehicle (SUAV) (6.5)	05	U	20,865	24,474		24,474			
150	0605206A	CI and HUMINT Equipment Program-Army (CIHEP-A)	05	U	2,170	1,296		1,296			
151	0605216A	Joint Targeting Integrated Command and Coordination Suite (JTIC2S)	05	U	8,951	21,415		21,415			
152	0605224A	Multi-Domain Intelligence	05	U	23,605	18,913		18,913	34,844		34,844
153	0605231A	Precision Strike Missile (PrSM)	05	U	262,829	184,046		184,046		197,184	197,184
154	0605232A	Hypersonics EMD	05	U	772,174	469,775		469,775	513,027		513,027
155	0605233A	Accessions Information Environment (AIE)	05	U	26,362	32,265		32,265	32,710		32,710
156	0605235A	Strategic Mid-Range Capability	05	U	255,121	182,823		182,823	186,304		186,304
157	0605236A	Integrated Tactical Communications	05	U	18,065	12,224		12,224	22,732		22,732
158	0605241A	Future Long Range Assault Aircraft Development	05	U		1,253,637		1,253,637	1,248,544		1,248,544
159	0605242A	Theater SIGINT System (TSIGS)	05	U		3,660		3,660			
160	0605244A	Joint Reduced Range Rocket (JR3)	05	U		13,565		13,565	28,893		28,893
161	0605247A	Spectrum Situational Awareness System (S2AS)	05	U		4,665		4,665			
162	0605450A	Joint Air-to-Ground Missile (JAGM)	05	U	2,904	3,030		3,030			
163	0605457A	Army Integrated Air and Missile Defense (AIAMD)	05	U	285,411	587,068		587,068	146,056		146,056
164	0605531A	Counter - Small Unmanned Aircraft Systems Sys Dev & Demonstration	05	U	34,701	59,563		59,563	55,196		55,196
166	0605625A	Manned Ground Vehicle	05	U	565,047	499,478		499,478	386,393		386,393

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167	0605766A	National Capabilities Integration (MIP)	05	U	15,129	16,565		16,565	16,913		16,913
168	0605812A	Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Development Phase (EMD)	05	U					2,664		2,664
169	0605830A	Aviation Ground Support Equipment	05	U	1,124	979		979	930		930
170	0303032A	TROJAN - RH12	05	U	3,879	3,930		3,930	3,920		3,920
171	0303767A	AMBIT - Pre-Auctioned SRF	05	U	20,791						
172	0304270A	Electronic Warfare Development	05	U	133,834	81,232		81,232			
999	999999999	Classified Programs	05	U		83,136		83,136	117,428		117,428
	System Development & Demonstration				4,890,110	5,758,500		5,758,500	5,378,817	304,614	5,683,431
173	0604256A	Threat Simulator Development	06	U	71,587	75,298		75,298	74,767		74,767
174	0604258A	Target Systems Development	06	U	33,940	27,788		27,788	16,004		16,004
175	0604759A	Major T&E Investment	06	U	87,687	98,613		98,613	101,027		101,027
176	0605103A	Rand Arroyo Center	06	U	35,312	38,122		38,122	10,892		10,892
177	0605301A	Army Kwajalein Atoll	06	U	341,771	321,755	41,400	363,155	379,283		379,283
178	0605326A	Concepts Experimentation Program	06	U	86,765	80,845		80,845	58,606		58,606
179	0605502A	Small Business Innovative Research	06	U	409,981						
180	0605601A	Army Test Ranges and Facilities	06	U	441,173	466,085		466,085	425,108		425,108
181	0605602A	Army Technical Test Instrumentation and Targets	06	U	45,679	74,004		74,004	69,328		69,328
182	0605604A	Survivability/Lethality Analysis	06	U	37,005	36,815		36,815	31,306		31,306
183	0605606A	Aircraft Certification	06	U	2,718	2,201		2,201	1,887		1,887
184	0605706A	Materiel Systems Analysis	06	U	23,402	23,338		23,338	19,100		19,100
185	0605709A	Exploitation of Foreign Items	06	U	7,805	6,245		6,245	6,277		6,277

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186	0605712A	Support of Operational Testing	06	U	74,128	76,088		76,088	63,637		63,637
187	0605716A	Army Evaluation Center	06	U	71,118	73,220		73,220	62,343		62,343
188	0605718A	Army Modeling & Sim X-Cmd Collaboration & Integ	06	U	6,136	11,257		11,257	11,825		11,825
189	0605801A	Programwide Activities	06	U	86,384	91,895		91,895	54,172		54,172
190	0605803A	Technical Information Activities	06	U	30,422	32,385		32,385	26,592		26,592
191	0605805A	Munitions Standardization, Effectiveness and Safety	06	U	56,069	50,766		50,766	44,465		44,465
192	0605857A	Environmental Quality Technology Mgmt Support	06	U	1,570	1,659		1,659	2,857		2,857
193	0605898A	Army Direct Report Headquarters - R&D - MHA	06	U	55,497	59,727		59,727	53,436		53,436
194	0606002A	Ronald Reagan Ballistic Missile Defense Test Site	06	U	89,911	73,400		73,400	72,302		72,302
195	0606003A	CounterIntel and Human Intel Modernization	06	U	6,348	9,574		9,574	5,660		5,660
196	0606118A	AIAMD Software Development & Integration	06	U					358,854	103,000	461,854
197	0606942A	Assessments and Evaluations Cyber Vulnerabilities	06	U	6,025	10,105		10,105	6,354		6,354
198	0909999A	Financing for Cancelled Account Adjustments	06	U	669						
Management Support					2,109,102	1,741,185	41,400	1,782,585	1,956,082	103,000	2,059,082
199	0603778A	MLRS Product Improvement Program	07	U	13,937	14,188		14,188	14,639		14,639
200	0605024A	Anti-Tamper Technology Support	07	U	7,274	7,489		7,489	6,449		6,449
201	0607101A	Combating Weapons of Mass Destruction (CWMD) Product Improvement	07	U		271		271	115		115
202	0607131A	Weapons and Munitions Product Improvement Programs	07	U	61,735	31,563		31,563	13,687		13,687

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203	0607136A	Blackhawk Product Improvement Program	07	U	40,923	125,000		125,000	23,998		23,998
204	0607137A	Chinook Product Improvement Program	07	U	20,386	4,816		4,816	10,859		10,859
205	0607139A	Improved Turbine Engine Program	07	U	182,204	130,029		130,029			
206	0607142A	Aviation Rocket System Product Improvement and Development	07	U	2,904						
207	0607143A	Unmanned Aircraft System Universal Products	07	U	24,466	24,539		24,539			
208	0607145A	Apache Future Development	07	U	44,762	8,243		8,243	44,371		44,371
209	0607148A	AN/TPQ-53 Counterfire Target Acquisition Radar System	07	U	52,190	53,652		53,652	43,054		43,054
210	0607150A	Intel Cyber Development	07	U	4,345	9,753		9,753	13,129		13,129
211	0607212A	TENCAP Enhancements	07	U						6,800	6,800
212	0607312A	Army Operational Systems Development	07	U	19,000						
213	0607313A	Electronic Warfare Development	07	U	6,389	5,559		5,559			
215	0607665A	Family of Biometrics	07	U	768	590		590	1,594		1,594
216	0607865A	Patriot Product Improvement	07	U	170,729	168,458		168,458	183,763	15,000	198,763
217	0203728A	Joint Automated Deep Operation Coordination System (JADOCS)	07	U	37,535	27,582		27,582	8,424		8,424
218	0203735A	Combat Vehicle Improvement Programs	07	U	223,719	326,579		326,579	744,085		744,085
219	0203743A	155mm Self-Propelled Howitzer Improvements	07	U	22,066	47,870		47,870	107,826		107,826
220	0203752A	Aircraft Engine Component Improvement Program	07	U	146	142		142	237		237
221	0203758A	Digitization	07	U	1,460	1,562		1,562	1,013		1,013
222	0203801A	Missile/Air Defense Product Improvement Program	07	U	4,203	1,511		1,511	1,338		1,338

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223	0203802A	Other Missile Product Improvement Programs	07	U	9,677	26,708		26,708			
224	0205412A	Environmental Quality Technology - Operational System Dev	07	U	271	269		269			
225	0205778A	Guided Multiple-Launch Rocket System (GMLRS)	07	U	70,808	20,590		20,590	33,307		33,307
226	0208053A	Joint Tactical Ground System	07	U	477						
229	0303028A	Security and Intelligence Activities	07	U	16,290						
230	0303140A	Information Systems Security Program	07	U	15,323	15,733		15,733	15,040		15,040
231	0303141A	Global Combat Support System	07	U	12,605	2,566		2,566			
232	0303142A	SATCOM Ground Environment (SPACE)	07	U	25,858	26,643		26,643	35,720		35,720
235	0305179A	Integrated Broadcast Service (IBS)	07	U	9,456	5,701		5,701	6,653		6,653
236	0305219A	MQ-1 Gray Eagle UAV	07	U	6,629	6,681		6,681	3,444		3,444
237	0708045A	End Item Industrial Preparedness Activities	07	U	118,797	87,187		87,187	67,002		67,002
999	999999999	Classified Programs	07	U	8,786	32,518		32,518	46,872		46,872
	Operational Systems Development				1,236,118	1,213,992		1,213,992	1,426,619	21,800	1,448,419
238	0608041A	Defensive CYBER - Software Prototype Development	08	U	104,048	74,548		74,548	89,238		89,238
	Software And Digital Technology Pilot Programs				104,048	74,548		74,548	89,238		89,238
239	0609135A	Counter Unmanned Aerial Systems (UAS) Agile Development	09	U					143,618		143,618
240	0609277A	Electronic Warfare Agile Development	09	U					127,081		127,081
241	0609278A	Electronic Warfare Agile Systems Development	09	U					59,202		59,202
242	0609345A	Unmanned Aerial Systems Launched Effects Agile Systems Development	09	U					187,473		187,473

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Line	Program Element				FY 2024	FY 2025	FY 2025	FY 2025	FY 2026	FY 2026	FY 2026
No	Number	Item	Act	Sec	Actuals	Enacted	Supplemental	Total	Disc Request	Reconciliation Request	Total
243	0609346A	UAS Launched Effects Agile Development	09	U					172,898		172,898
		Agile RDT&E Portfolion Management							690,272		690,272
Total Research, Development, Test and Evaluation, Army					17,119,530	14,322,031	41,400	14,363,431	14,549,223	846,534	15,395,757

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27	02	0602345A	Unmanned Aerial Systems Launched Effects Applied Research.....	Volume 1b - 459
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*All figures in this exhibit are for the FY 2026 discretionary appropriations
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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army **Date:** June 2025

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army I BA 2: Applied Research</i>					R-1 Program Element (Number/Name) PE 0602002A / <i>Army Agile Innovation and Development-Applied Research</i>							
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
Total Program Element	-	0.964	1.000	9.455	-	9.455	-	-	-	-	-	-
DC4: <i>Army Applied Innovation</i>	-	-	0.750	4.251	-	4.251	-	-	-	-	-	-
DC6: <i>Sci & Analysis for Autonomous Sys & Counter-Auton</i>	-	0.964	0.250	5.204	-	5.204	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Program Element (PE) funds the Army's goal of assessing and seeding innovative research solutions to achieve future force modernization. Critical technologies that allow for technological superiority are increasingly dual-use or developed in academia-led partnerships that leverage cutting edge innovation. Cross-cutting modernization initiatives leverage strategic partnerships and foster an environment to bring knowledge and expertise to demonstrate breakthrough and innovative technologies that will benefit the warfighter. These collaborations bring new ways of doing business to assess and evaluate emerging technologies with high payoff potential to address current technology shortfalls. Leveraging other innovative mechanisms, to include accelerators, incubators, and other technology accelerants, to enhance innovation is part of the overall innovation strategy. Innovation includes not only hardware and physical products but also software, software development, artificial intelligence (AI) and machine learning; all are stand-alone initiatives that are part of broader innovation to programs and technology development. Through the Army's Innovation Oversight Board, Army senior leadership approves innovation projects in the budget year and year of execution based on priority and opportunity, ensuring that innovations have a high potential for filling capability gaps and transitioning to Army Science and Technology (S&T) projects to inform an optimal technology investment strategy and rapidly deliver capabilities to the soldier.

Work is performed by the United States Army Combat Capabilities Development Command (DEVCOM), Army Artificial Intelligence Integration Center (AI2C), the Engineering Research and Development Center, Space and Missile Defense Technical Center, and the United States Army Research Institute for the Behavioral and Social Sciences.

The FY 2026 request was reduced by \$0.078 million for Advisory and Assistance Services to promote efficiencies and advance the policies of the Administration in alignment with Executive Order 14222, "Implementing the President's Department of Government Efficiency Cost Efficiency Initiative."

The FY 2026 request was reduced by \$0.029 million for civilian personnel to optimize the workforce in compliance with Executive Order 14210, "Implementing the President's Department of Government Efficiency Workforce Optimization Initiative."

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army				Date: June 2025	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
2040: Research, Development, Test & Evaluation, Army I BA 2: Applied Research		PE 0602002A I Army Agile Innovation and Development-Applied Research			
B. Program Change Summary (\$ in Millions)	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Previous President's Budget	5.613	8.032	7.639	-	7.639
Current President's Budget	0.964	1.000	9.455	-	9.455
Total Adjustments	-4.649	-7.032	1.816	-	1.816
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-4.613	-6.032			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.036	-			
• Adjustments to Budget Years	-	-1.000	1.816	-	1.816
Change Summary Explanation					
Funding increase to leverage the academic innovation ecosystem to capture and mature disruptive and cross-cutting technology solutions.					

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602002A / Army Agile Innovation and Development-Applied Research				Project (Number/Name) DC4 / Army Applied Innovation			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
DC4: Army Applied Innovation	-	-	0.750	4.251	-	4.251	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This project funds the Applied Research portion of the Army Innovation Plan, the Army's investment strategy to rapidly accelerate innovative solutions to challenging Warfighter problems. This project will provide the Army with the most advanced and cutting-edge solutions and the ability to adapt and integrate multi-disciplinary innovative technologies. This project accelerates breakthrough and disruptive innovations based on assessing and seeding a solution with multi-disciplinary knowledge. It addresses ideation and system-level integration applied research and development leading to potential emerging technologies in areas of strategic importance to the Army. Through the Army's Innovation Oversight Board, the Army senior leadership approves the innovation projects in the budget year and year of execution based on priority and opportunity, ensuring that innovations have a high potential for filling capability gaps and transitioning to Army Science and Technology (S&T) projects to inform an optimal technology investment strategy and rapidly deliver capabilities to the soldier.

This project is coordinated with Program Element (PE) 0603025A (Army Agile Innovation and Demonstration) / Project DA3 (Army Advanced Innovation).

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

Work is performed by the Assistant Secretary of the Army for Acquisition Logistics and Technology, the Army S&T Executing Commands, and the Army Research Laboratory (ARL).

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

	FY 2024	FY 2025	FY 2026
Title: Army Applied Innovation	-	0.750	2.045
Description: The Army seeks to research, evaluate, and validate cross-domain technology that display unique and innovative potential to rapidly produce disruptive and groundbreaking capabilities that fall outside of the normal acquisition pipeline.			
FY 2025 Plans: Innovation projects from the Army S&T Executing Commands will be approved by the Army Innovation Oversight Board in the budget year and year of execution based on priority and opportunity. Proposal topics will focus on mid-far term transformational technologies with a shift in focus to the design of the Army of 2040. Proposal will be informed by the Critical Technology Areas, Future Capabilities/Activities, and Army Senior Leader Priorities.			
FY 2026 Plans: Will identify breakthrough and disruptive technologies, engage novel ideation & system-level integration at the initial phase of the scientific concepts and technology development; merge synergistic cross-cutting innovations that will lead to advance disruptive technological solutions to Army priorities that require an accelerated solution; identify and initiate development of			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602002A / Army Agile Innovation and Development-Applied Research	Project (Number/Name) DC4 / Army Applied Innovation	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
emergent technologies, for integration in the science and technology program, to address challenges in future operating concepts, operational needs and Army identified priorities.			
FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects additional investments in innovative technology, with an emphasis shifting towards the design of the Army of 2040.			
Title: University Innovation Hub			
Description: The Army seeks to leverage the academic innovation ecosystem to capture and mature disruptive technologies through their existing body of research and their capacity to further develop and deliver cross-cutting technology solutions for Army Transformation. Sources and partners include academic institutions, university entrepreneur/spin-out programs, international academic partners, Historically Black Colleges and Universities/Minority Institutions (HBCU/MI) underrepresented institutions, designated Army research centers, University Affiliated Research Centers (UARCs), and similar organizations. Outputs are planned for transition to advance, integrate into, or complement other Army science and technology programs or directly into acquisition programs.			
FY 2026 Plans: Will mature research originating from university-led research efforts that have the potential for breakthrough or dual-use capability to enable significant improvements to advance military applications for weapon systems, materials, human-machine interface, ground and air vehicles, communications, logistics, or Soldier lethality; mature existing bases of research with cross cutting technologies and high potential for operational relevance to support Army Transformation; university technologies will be assessed in an Army ecosystem connecting efforts with appropriate stakeholders for further maturation.			
FY 2025 to FY 2026 Increase/Decrease Statement: Funding increased due to being realigned from Program Element (PE) 0602184A (Soldier Applied Research) / Project CN9 (Soldier Enabling University Applied Research) and PE 0602183A (Air Platform Applied Research) / Project CL5 (Air Platform Enabling University Applied Research) to leverage the academic innovation ecosystem to capture and mature disruptive and cross-cutting technology solutions.			
Accomplishments/Planned Programs Subtotals		-	2.206
		-	0.750
			4.251
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602002A / Army Agile Innovation and Development-Applied Research	Project (Number/Name) DC4 / Army Applied Innovation
D. Acquisition Strategy N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602002A / Army Agile Innovation and Development-Applied Research				Project (Number/Name) DC6 / Sci & Analysis for Autonomous Sys & Counter-Auton			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
DC6: Sci & Analysis for Autonomous Sys & Counter-Auton	-	0.964	0.250	5.204	-	5.204	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
<p>This project investigates and develops capabilities to understand and characterize emerging Science and Technology (S&T) technical pursuits and impacts through collaborative analytics that enable the assessment of autonomous systems-of-systems, their implications to the future threat environment, and analyzes their contributions to the Multi-Domain Operations (MDO) concept in relevant operational scenarios. This is a cross-cutting effort that supports S&T, analysis, and modeling and simulation (M&S) efforts associated with the development of autonomous systems and their application in military operations.</p> <p>Work in this project also funds research to investigate, develop, and validate tools, methodologies, and analytical techniques to extend experimental results, assure early consideration of technology and system vulnerabilities, reduce developmental risk, provide mission context, and improve the robustness of technology readiness assessments.</p> <p>The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.</p> <p>Work in this project is performed by the Army Research Laboratory (ARL) and Data and Analysis Center (DAC).</p>												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Threat and Operations Based Intelligent Autonomy Science (TOBIAS)									0.566	0.250	2.169	
Description: This effort develops and implements models that will be used to assess the vulnerability and lethality (kinetic and non-kinetic) of U.S. and threat autonomous systems. This work will also incorporate the software-based behavioral capabilities of these systems including interfacing with humans. Technology forecasting will be used to enable the development of optimal investment strategies for autonomy science on the basis of operational merit.												
FY 2025 Plans: Develop digital models that have the ability to represent the vulnerability and lethality characteristics of future science and technology options for autonomous combat systems with respect to mobility.												
FY 2026 Plans: Will investigate digital models of unmanned ground and aerial vehicle concepts suitable for use in combat simulations with the ability to represent future options (mobility, target recognition) for autonomous combat systems; design and develop representations of teams of unmanned ground and aerial systems for use in combat simulations; investigate representations of												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602002A / Army Agile Innovation and Development-Applied Research	Project (Number/Name) DC6 / Sci & Analysis for Autonomous Sys & Counter-Auton		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
teams of unmanned systems within the framework for simulating their vulnerability/lethality characteristics and develop simulations of the degradation in each of the ballistic, electronic warfare (EW), and cyber threat vectors; investigate the vulnerability/lethality characteristics of the team of unmanned systems links within a combat simulation for a relevant vignette; validate resiliency and performance metrics of teams of unmanned systems for a baseline mission; investigate incorporating an advanced science capability technologies within the team of unmanned systems to contrast combat outcomes with a baseline case.				
FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects additional research in designing and developing representations of teams of unmanned ground and aerial systems for use in combat simulations; investigating representations of teams of unmanned systems within the framework for simulating their vulnerability/lethality characteristics and develop simulations of the degradation in each of the ballistic, electronic warfare (EW), and cyber threat vectors.				
Title: Vulnerability and Lethality Analysis Tools for Early Science and Technology		0.398	-	3.035
Description: Investigates, develops, and validates analytical tools, techniques, and methodologies to extend experimental and research results, ensuring early investigation of technology, system vulnerabilities, human systems integration, system performance, and mission effectiveness. Task objectives reduce developmental risk, provide validation of methodologies and tools in realistic mission contexts, and improve the robustness of technology readiness assessments.				
FY 2026 Plans: Will validate researched novel techniques and initial methodologies into a constructive combat simulation and determine overall analytic approach; validate initial analysis of a single autonomous system in the constructive combat simulation using the developed methodologies for vulnerability and lethality performance characteristics and synergistic effects in the kinetic, electromagnetic, and cyber domains; continue investigating novel autonomous systems and designing and developing vulnerability and lethality performance characteristics; investigate additional autonomous algorithms beyond mobility and determine feasibility of integration into constructive combat simulation				
FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects additional research in validating and integrating researched novel techniques and initial methodologies into a constructive combat simulation and determine overall analytic approach; validating and performing initial analysis of a single autonomous system in the constructive combat simulation using the developed methodologies for vulnerability and lethality performance characteristics and synergistic effects in the kinetic, electromagnetic, and cyber domains.				
Accomplishments/Planned Programs Subtotals		0.964	0.250	5.204
C. Other Program Funding Summary (\$ in Millions)				
N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602002A / Army Agile Innovation and Development-Applied Research	Project (Number/Name) DC6 / Sci & Analysis for Autonomous Sys & Counter-Auton
C. Other Program Funding Summary (\$ in Millions)		
Remarks		
D. Acquisition Strategy		
N/A		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army **Date:** June 2025

Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 2: Applied Research					R-1 Program Element (Number/Name) PE 0602134A / Counter Improvised-Threat Advanced Studies							
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
Total Program Element	-	6.014	6.163	6.174	-	6.174	-	-	-	-	-	-
CD2: Counter Improvised-Threat Advanced Studies	-	6.014	6.163	6.174	-	6.174	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Program Element (PE) executes applied research into novel methods for detecting and defeating Improvised Explosive Devices (IED) through the application of emerging technologies as well as research into emerging IED threats to evaluate potential methods of defeat. Efforts are selected in the budget year and current year of execution to address program requirements.

This PE is executed in coordination with the Under Secretary of Defense for Research and Engineering (USD/R&E) and the Defense Threat Reduction Agency (DTRA).

Work in this Project is fully coordinated with Program Element (PE) 0603134A (Counter Improvised Threat Simulation), Project CD3 (Counter Improvised Threat Simulation).

The cited work is consistent with the USD/R&E priority focus areas.

Work in this Project is managed by Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance, and Reconnaissance (C5ISR) Center. Work is performed by the United States Army Combat Capabilities Development Command (DEVCOM), Army Artificial Intelligence Integration Center (AI2C), the Engineering Research and Development Center, Space and Missile Defense Technical Center, and the United States Army Research Institute for the Behavioral and Social Sciences with oversight from Assistant Secretary of the Army for Acquisition, Logistics and Technology for Research and Technology (DASA R&T).

B. Program Change Summary (\$ in Millions)	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Previous President's Budget	6.242	6.163	6.191	-	6.191
Current President's Budget	6.014	6.163	6.174	-	6.174
Total Adjustments	-0.228	0.000	-0.017	-	-0.017
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.001	-			
• SBIR/STTR Transfer	-0.227	-			
• Adjustments to Budget Years	-	-	-0.017	-	-0.017

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602134A / Counter Improvised-Threat Advanced Studies				Project (Number/Name) CD2 / Counter Improvised-Threat Advanced Studies			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CD2: Counter Improvised-Threat Advanced Studies	-	6.014	6.163	6.174	-	6.174	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project investigates novel methods for detecting and defeating existing and emerging improvised explosive devices (IED) and their potential application against other explosive hazard threats.												
This Project is executed by the Army Futures Command (AFC) in coordination with the Under Secretary of Defense for Research and Engineering (USD(R&E)) and the Defense Threat Reduction Agency (DTRA).												
Work in this Project is fully coordinated with Program Element (PE) 0603134A (Counter Improvised Threat Simulation) / Project CD3 (Counter Improvised Threat Simulation).												
The cited work is consistent with the USD/R&E priority focus areas and the Army Modernization Strategy.												
Work in this Project is executed by the U.S. Army Combat Capabilities Development Command (DEVCOM) in coordination with the Under Secretary of Defense for Research and Engineering (USD(R&E)).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Counter IED Emerging Technologies									6.014	6.163	6.174	
Description: This effort investigates emerging technologies in physics, chemistry, biology and computer science to identify applications to detect and defeat current and emerging IED and other threat explosive critical components. This effort investigates the combination of methods and maturation of technological solutions to detect and defeat IEDs threats. The goals include increasing the standoff detection distance, increasing the probability of positive identification, and reducing the rate of false indications. This effort is informed by technology trends across the Department of Defense and by analysis of IED threats encountered in operational scenarios.												
FY 2025 Plans: Will continue to investigate and develop Electro-Optical, Infrared, and Radio Frequency (RF) techniques to detect buried Improvised Explosive Devices (IEDs) and their components. Develop data processing and data fusing techniques to detect												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602134A / Counter Improvised-Threat Advanced Studies	Project (Number/Name) CD2 / Counter Improvised-Threat Advanced Studies		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
partially hidden IEDs. Investigate and develop wide bandwidth electronics to counter radio controlled IEDs. Investigate electromagnetic and bulk detection technologies to detect personnel and vehicle borne IEDs. FY 2026 Plans: Will mature electro-optical (EO), infrared (IR), and radio frequency (RF) techniques to detect buried and hidden Improvised Explosive Devices (IEDs) and other explosive threats; optimize data processing and data fusion techniques to improve detection of hidden IEDs and broaden applications to detect IEDs in various environmental conditions; validate performance of electromagnetic and bulk explosive detection technologies to detect personnel and vehicle borne IEDs. Will investigate emerging techniques to counter future radio controlled IED threats in complex electromagnetic environments. FY 2025 to FY 2026 Increase/Decrease Statement: Increase in funding due to economic assumptions.				
Accomplishments/Planned Programs Subtotals		6.014	6.163	6.174
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army	Date: June 2025
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Appropriation/Budget Activity					R-1 Program Element (Number/Name)							
2040: Research, Development, Test & Evaluation, Army / BA 2: Applied Research					PE 0602135A / Counter Small Unmanned Aerial Systems (C-SUAS) Applied Research							
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
Total Program Element	-	-	-	12.618	-	12.618	-	-	-	-	-	-
A31: Counter Small Unmanned Aircraft Sys (C-sUAS) Tech	-	-	-	12.618	-	12.618	-	-	-	-	-	-

Note

This is not a new start.

A. Mission Description and Budget Item Justification

This Program Element (PE) investigates, designs, and develops novel capabilities that aid in the detection, tracking, identification, mitigation, and/or defeat of small unmanned aerial systems (sUAS) groups 1-3. Provides counter-small UAS (C-SUAS) detection capabilities in radar, radio frequency (RF), electro-optical and infrared (EO/IR), and acoustic signature regimes. Provides capabilities to track and predict UAS flight paths, airspace situational awareness, and/or location of UAS operators to increase defeat and force protection capabilities. Develops identification methods to discern aerial systems and payloads. Develops algorithms to enable threat prioritization, airspace control, coordinated response, and resource management of C-SUAS capabilities. Designs and develops interceptor capabilities to deliver physical effects that enable faster intercept, greater standoff ranges, increased magazine depth, survivability, affordability, and/or decrease in size, weight, and/or power requirements.

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.

B. Program Change Summary (\$ in Millions)	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	12.618	-	12.618
Total Adjustments	0.000	0.000	12.618	-	12.618
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	12.618	-	12.618

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 2: Applied Research	R-1 Program Element (Number/Name) PE 0602135A / Counter Small Unmanned Aerial Systems (C-SUAS) Applied Research	
<p>Change Summary Explanation</p> <p>This is not a new start. Counter Small Unmanned Aerial Systems (C-SUAS) Applied Research is a part of the Department of Defense Capability Based (Agile) Funding pilot, which provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology. Funding increase in Fiscal Year (FY) 2026 from the previous PB to the current PB reflects realignment from Program Element (PE) 0602150A (Air and Missile Defense Technology) / Project SU1 (Counter Small Unmanned Aircraft Sys (C-sUAS) Tech).</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602135A / Counter Small Unmanned Aerial Systems (C-SUAS) Applied Research				Project (Number/Name) A31 / Counter Small Unmanned Aircraft Sys (C-sUAS) Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
A31: Counter Small Unmanned Aircraft Sys (C-sUAS) Tech	-	-	-	12.618	-	12.618	-	-	-	-	-	-
Note This is not a new start.												
A. Mission Description and Budget Item Justification This Project investigates, designs, and develops novel capabilities that aid in the detection, tracking, identification, mitigation, and/or defeat of small unmanned aerial systems (sUAS) groups 1-3. Designs and develops interceptor capabilities to deliver physical effects that enable faster intercept, greater standoff ranges, increased magazine depth, survivability, affordability, and/or decrease in size, weight, and power requirements. Provides capabilities to track and predict UAS flight paths, airspace situational awareness, and/or location of UAS operators to increase defeat and force protection capabilities. Develops algorithms to enable threat prioritization, airspace control, coordinated response, and resource management of C-SUAS capabilities. Develops technical solutions to defeat sUAS capabilities, including target acquisition, navigation, and control, in addition to identifying and exploiting weaknesses in sUAS system design and operation The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy. Work in this Project is performed by the Aviation & Missile Center (AvMC).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Extended Range C-sUAS (XRC) Tech									-	-	12.618	
Description: This effort investigates concepts, performs trade studies, and provides component technology development to increase range, reduce reaction time, increase lethality, improve reliability, and reduce reload time for C-sUAS kinetic interceptor capabilities for the maneuver forces fixed site and mobile C-sUAS configurations.												
FY 2026 Plans: Will investigate critical component technology designs to address small form factor C-sUAS missile systems and continue risk reduction efforts; continue to develop novel propulsion concepts through component evaluation and test data analysis; design and develop seeker technology to meet long range missile intercept requirements and small form factor constraints; mature small form factor critical missile components for extended range UAS threats; design and develop modeling and simulation technology for independent performance prediction and evaluation capabilities.												
FY 2025 to FY 2026 Increase/Decrease Statement:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602135A / Counter Small Unmanned Aerial Systems (C-SUAS) Applied Research	Project (Number/Name) A31 / Counter Small Unmanned Aircraft Sys (C-sUAS) Tech		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
This is not a new start. Extended Range C-sUAS (XRC) Tech is a part of the Department of Defense Capability Based (Agile) Funding pilot, which provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology. Funding increase reflects realignment from Program Element (PE) 0602150A (Air and Missile Defense Technology) / Project SU1 (Counter Small Unmanned Aircraft Sys (C-sUAS) Tech).				
Accomplishments/Planned Programs Subtotals		-	-	12.618
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 2: Applied Research					R-1 Program Element (Number/Name) PE 0602141A / Lethality Technology							
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
Total Program Element	-	145.375	128.659	97.157	-	97.157	-	-	-	-	-	-
AH6: Disruptive Energetics and Propulsion Technologies	-	8.656	8.823	5.019	-	5.019	-	-	-	-	-	-
AH7: Lethal and Scalable Effects Technologies	-	1.517	1.577	-	-	-	-	-	-	-	-	-
AH8: Lethality Materials and Processes Technology	-	1.899	1.910	-	-	-	-	-	-	-	-	-
AH9: Advanced Warheads Technology	-	23.501	27.292	27.597	-	27.597	-	-	-	-	-	-
BS6: Lethality Technology (CA)	-	68.000	34.000	-	-	-	-	-	-	-	-	-
CF7: Solid-state Laser Concepts and Architectures	-	8.986	8.977	7.841	-	7.841	-	-	-	-	-	-
CF8: Terminal Effects Against Critical Targets Tech	-	2.138	1.034	5.138	-	5.138	-	-	-	-	-	-
CG4: Advanced Radar Concepts and Technologies	-	5.471	6.544	10.588	-	10.588	-	-	-	-	-	-
CI1: Advanced Armaments Lethality Technology	-	1.636	4.352	-	-	-	-	-	-	-	-	-
CIA: Applied Armaments Tech for Distributed Lethality	-	2.442	-	0.008	-	0.008	-	-	-	-	-	-
CIB: Sensor to Shooter (STS) Applied Research	-	4.022	7.909	-	-	-	-	-	-	-	-	-
CIC: Fire Control Lethality Technology	-	1.409	2.958	1.472	-	1.472	-	-	-	-	-	-
CJ1: Lethality Enabling University Applied Research	-	5.384	7.874	3.566	-	3.566	-	-	-	-	-	-
CJ7: Future Air Defense Missile Enabling Tech	-	2.259	4.608	4.289	-	4.289	-	-	-	-	-	-

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army	Date: June 2025
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Appropriation/Budget Activity					R-1 Program Element (Number/Name)							
2040: <i>Research, Development, Test & Evaluation, Army / BA 2: Applied Research</i>					PE 0602141A / <i>Lethality Technology</i>							
CZ9: <i>Foundational Hypersonic Weapons Research</i>	-	8.055	10.801	11.205	-	11.205	-	-	-	-	-	-
DN6: <i>Science of Massed Responsive Fires</i>	-	-	-	20.434	-	20.434	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

Work done in this Program Element (PE) supports research technologies, methodologies, and models required to enable next generation lethality. The effort focuses on: lethal mechanism technologies for projectiles and warheads that provide revolutionary capability to defeat Tier 1 adversary vehicle and body armors; selection of propulsion and energetic materials and technology to validate novel energetic materials concepts to exploit controllable energy release for future gun/missile systems; scalable effects for mixed target defeat while simultaneously decreasing warhead mass; development of materials solutions for improvement of weight and volume efficiency, lethal effects and sustainability for the warfighter in the Army of today and beyond; and multiple pathways to enhance lethal effects by investigating synergistic effects of novel micro warheads using advanced materials. Funding in this PE is a continuation of work done in PEs 0602105A (Materials Technology), 0602618A (Ballistics Technology), and 0602624A (Weapons and Munitions Technology).

Work in this PE complements PEs 0602147A (Long Range Precision Fires Technology), 0602150A (Air and Missile Defense Technology), 0602143A (Soldier Lethality Technology), 0602144A (Ground Technology), 0602145A (Next Generation Combat Vehicle Technology), and 0603116A (Lethality Advanced Technology).

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

The FY 2026 request was reduced by \$0.302 million for Advisory and Assistance Services to promote efficiencies and advance the policies of the Administration in alignment with Executive Order 14222, "Implementing the President's Department of Government Efficiency Cost Efficiency Initiative."

The FY 2026 request was reduced by \$0.437 million for civilian personnel to optimize the workforce in compliance with Executive Order 14210, "Implementing the President's Department of Government Efficiency Workforce Optimization Initiative."

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army				Date: June 2025		
Appropriation/Budget Activity		R-1 Program Element (Number/Name)				
2040: Research, Development, Test & Evaluation, Army / BA 2: Applied Research		PE 0602141A / Lethality Technology				
B. Program Change Summary (\$ in Millions)		FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Previous President's Budget		85.578	96.094	107.415	-	107.415
Current President's Budget		145.375	128.659	97.157	-	97.157
Total Adjustments		59.797	32.565	-10.258	-	-10.258
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		68.000	34.000			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-6.033	-			
• SBIR/STTR Transfer		-2.170	-			
• Adjustments to Budget Years		-	-1.435	-10.258	-	-10.258
<u>Congressional Add Details (\$ in Millions, and Includes General Reductions)</u>						
Project: BS6: Lethality Technology (CA)						
Congressional Add: Convergent manufacturing for microfactories						
Congressional Add: Quantum Technologies For Armament Systems						
Congressional Add: Carbon composites for hypersonic weapons						
Congressional Add: Advanced semiconductor power devices						
Congressional Add: Ceramic protection materials						
Congressional Add: Advanced materials and manufacturing for modernization						
Congressional Add: Digital technologies for armament systems						
Congressional Add: Tactical organic fire support						
Congressional Add: Advanced materials research and development						
Congressional Add: Additive manufacturing for missile application						
Congressional Add: Advanced materials and manufacturing for hypersonic systems						
Congressional Add: Assured AI-based autonomous rescue missions						
Congressional Add Subtotals for Project: BS6						
Congressional Add Totals for all Projects						

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 2: Applied Research	R-1 Program Element (Number/Name) PE 0602141A / Lethality Technology	
<p>Change Summary Explanation</p> <p>Funding decrease in FY 2026 from the previous PB to the current PB reflects the net effect of realignments for new efforts to support research in distributed, dense munitions architectures, threat-responsive dynamic munition sciences, gun wear and erosion models, and novel energetic materials.</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602141A / <i>Lethality Technology</i>				Project (Number/Name) <i>AH6 / Disruptive Energetics and Propulsion Technologies</i>			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
<i>AH6: Disruptive Energetics and Propulsion Technologies</i>	-	8.656	8.823	5.019	-	5.019	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This project investigates, models, and assesses energetic material and propulsion technologies to validate novel concepts such as maximizing total energy density and power delivered on target. This Project also optimizes propellant grains for increased range and altering gun configurations to increase energy on target in order to exploit the controllable/scalable energy release required for improving effectiveness and reducing vulnerability of future gun/missile systems.

Work in this project complements Program Element (PE) 0601102A (Defense Research Sciences) / Project AA7 (Mechanics and Ballistics), PE 0602141A (Lethality Technology) / Project AH7 (Lethality and Scalable Effects Technologies), PE 0602141A (Lethality Technology) / Project AH8 (Lethality Materials and Processes Technology), and PE 0602144A (Ground Technology) / Project BL1 (Materials and Manufacturing Research Technology)

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.

Work in this project is performed by the Army Research Laboratory (ARL).

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

	FY 2024	FY 2025	FY 2026
Title: Synthesis, Formulation, Modeling, and Diagnostics of Energetic Materials for Explosive and Propellant Applications	8.656	8.823	5.019
Description: This effort pursues novel approaches for synthesize and scale up disruptive and traditional energetic materials with increased performance as well as design new formulation to include synthetic biology avenues in order to discover new materials and formulations to extend range and increase effect on target. This effort develops codes, and subsequently employs advanced models to predict multiscale response of energetic materials for both propellant and explosive purposes. This effort develops new processes, simulation and small scale experimental methods and techniques for understanding and design of advanced concepts and energetic formulations to rapidly iterate and optimize parameters for alternate energetic material sourcing and development strategies towards increased range and enhanced lethality. This effort also investigates new energetic precursor materials and processes, propellants and grain designs, burn rate/combustion modifier ingredients, as well as new gun and munition designs for extended range.			
FY 2025 Plans: Will assess novel energetic materials and synthetically biomanufacturer precursor materials, and fuels previously discovered for scale up and formulation; conduct experiments and validate the in-house integrated materials engine and mesoscale model framework to assess precursor cellulose strain processing, and scale up of nitrocellulose synthesis, strength models that incorporate higher-fidelity physics such as crystal plasticity, crystallographic slip, and/or shear banding; determine final candidate			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602141A / <i>Lethality Technology</i>	Project (Number/Name) AH6 / <i>Disruptive Energetics and Propulsion Technologies</i>		
B. Accomplishments/Planned Programs (\$ in Millions) reactive materials for further validation and transition. Assess quantum mechanical and/or machine learning models of reaction kinetics for computational fluid dynamic simulations of propellant initiation; design and develop advanced grains for increased muzzle velocity and range for gun propellants; develop and validate novel models of erosion for large caliber systems; develop novel gun tube designs for performance and thermal management to provide design paths for autocannon firepower from reduced weapon form factor; investigate optimized synthetic biology processes for development of nitrocellulose materials. FY 2026 Plans: Will design a optimized process to evaluate synthetic biology cellulose precursor materials and follow on nitrocellulose synthesis; develop scaled up formulations of novel energetic materials, plasticizers, polymers, and fuels for characterization and performance assessment; complete assessment of candidate reactive materials for munition applications and transition; refine coarse-grain mesoscale models and couple to continuum level modeling capability for non-homogeneous systems; develop advanced processing techniques for manufacturing of propellant and explosive munition formulations; develop machine learning models for rapid prediction of performance and survivability of novel materials. FY 2025 to FY 2026 Increase/Decrease Statement: Funding realigned to Program Element (PE) 0602147A (Long Range Precision Fires Technology) / Project AH4 (Precision and Coop Weapons in a Denied Env Tech) in support of the creation of tasks, Dense Energetic Materials Science and Mechanisms, Materials, and Processing for Lethality		FY 2024	FY 2025	FY 2026
Accomplishments/Planned Programs Subtotals		8.656	8.823	5.019
C. Other Program Funding Summary (\$ in Millions) N/A Remarks D. Acquisition Strategy N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602141A / Lethality Technology				Project (Number/Name) AH7 / Lethal and Scalable Effects Technologies			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
AH7: Lethal and Scalable Effects Technologies	-	1.517	1.577	-	-	-	-	-	-	-	-	-
Note Funding restructured to Program Element (PE) 0602141A (Lethality Technology) / Project DN6 (Science of Massed Responsive Fires).												
A. Mission Description and Budget Item Justification Work in this project designs, determines, and assesses technology options for scaling warhead lethality and providing extreme efficiency for highly effective, simultaneous mixed/multi target defeat and collateral damage. This Project will also design and assess scalable structure defeat to mitigate collateral damage for disruptive urban Warfighting. Work in this project complements project AH6 (Disruptive Energetics and Propulsion Technologies) within this PE and builds upon disruptive energetic and ballistic sciences research in PE 0601102A (Defense Research Sciences) / project AA7 (Mechanics and Ballistics). The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy. Work in this project is performed by the Army Research Laboratory (ARL).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Munition Efficiency and Scalability									1.517	1.577	-	
Description: This effort investigates, designs, determines, and assesses technologies to produce blast-fragment warheads with tailored fragment geometries to optimize target defeat. This effort identifies and develops warhead impact patterns to optimize target defeat with reduced collateral damage. This effort also designs, models, and assesses technologies for the cost effective, preprogrammed delivery of multiple scalable warheads capable of simultaneously engaging multiple targets. This effort leverages guidance technologies from PE 0602147A (Long Range Precision Fires) / Project AH4 (Precision and Coop Weapons in a Denied Env Tech), and metal additive manufacturing from PE 0602144A (Ground Technology) / Project BL1 (Materials and Manufacturing Research Technology).												
FY 2025 Plans: Will investigate promising mechanisms which maximize lethality across a broad range of targets through the study and modeling of multipurpose warhead technologies and multi-warhead collaborative engagement techniques. Develop lethality models and												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602141A / <i>Lethality Technology</i>	Project (Number/Name) AH7 / <i>Lethal and Scalable Effects Technologies</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
conduct experiments for validating terminal ballistic outcomes. Fund research and investigate compact and efficient warheads with more complex case designs by incorporating novel energetics and new materials.			
FY 2025 to FY 2026 Increase/Decrease Statement: Funding and effort restructured to Program Element (PE) 0602141A (Lethality Technology) / Project DN6 (Science of Massed Responsive Fires) to design and develop distributed, dense, multifunctional architectures for munitions.			
Accomplishments/Planned Programs Subtotals		1.517	1.577
C. Other Program Funding Summary (\$ in Millions) N/A			
Remarks			
D. Acquisition Strategy N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602141A / Lethality Technology				Project (Number/Name) AH8 / Lethality Materials and Processes Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
AH8: Lethality Materials and Processes Technology	-	1.899	1.910	-	-	-	-	-	-	-	-	-
Note Project completed earlier than planned because of the accelerated transition of novel topology toolsets for gun charges in small-scale experiments.												
A. Mission Description and Budget Item Justification Work in this project designs, determines, and assesses innovative materials solutions aimed at achieving leap ahead increases in lethality and weapons effectiveness through improvements in weight and volume efficiency, lethal effects, and sustainability of military systems. This research complements Program Element (PE) 0602141A (Lethality Technology) / Project AH6 (Disruptive Energetics and Propulsion Technology) and Project AH7 (Lethal and Scalable Effects Technologies), and PE 0602147A (Long Range Precision Fires Technology) / AH4 (Precision and Cooperative Weapons in a Denied Environment) and builds upon and ballistic sciences research in PE 0601102A (Defense Research Sciences) / Project AA7 (Mechanics and Ballistics). The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy. Work in this project is performed by the Army Research Laboratory (ARL).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Materials for Advanced Lethality									1.899	1.910	-	
Description: This effort researches innovative materials aimed at achieving leap-ahead increases in lethality and weapons effectiveness through improvements in weight and volume efficiency, lethal effects, and sustainability of military systems that can only be achieved through advances in materials technology.												
FY 2025 Plans: Will mature the printed Orzo topology propellant technology. Investigation of materials and manufacturing methods for solid fuels for future air breathing propulsion: design and develop materials-by-design workflow to determine and mature novel alloy compositions to reduce gun barrel wear and erosion.												
FY 2025 to FY 2026 Increase/Decrease Statement: Project completed earlier than planned because of the accelerated transition of novel topology toolsets for gun charges in small-scale experiments.												
Accomplishments/Planned Programs Subtotals									1.899	1.910	-	

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602141A / <i>Lethality Technology</i>	Project (Number/Name) AH8 / <i>Lethality Materials and Processes Technology</i>
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
D. Acquisition Strategy N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602141A / Lethality Technology				Project (Number/Name) AH9 / Advanced Warheads Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
AH9: Advanced Warheads Technology	-	23.501	27.292	27.597	-	27.597	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This project explores multiple pathways to enhance lethal efforts for future warheads against emerging peer/near peer target sets and investigates synergistic effects of novel micro warheads using advanced materials. This project investigates innovative energetic materials and novel processing techniques for the next generation of explosives and propulsion applications to enable an increase in range, lethality, and utility of munitions. It also directly supports Army Modernization Priorities through researching and developing energetic (propellant) technologies and processes for increased performance, expanded operation temperature bounds, and improved safety and environmental compliance of missile systems.												
Work in this project complements Program Element (PE) 0602145A (Next Generation Combat Vehicle Technology) / Project BK5 (Adv Direct In-Direct Armament Sys (ADIDAS) Tech) and PE 0603464A (Long Range Precision Fires Advanced Technology) / Project CE9 (Armaments Advanced Technology).												
The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.												
Work in this project is performed by the Armaments Center.												
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2024	FY 2025	FY 2026
Title: Advanced Pyrotechnics										2.749	2.919	3.218
Description: This effort investigates compositions, components, and technologies to provide novel pyrotechnic formulations and devices to increase overall system performance and survivability. Coordinates research, strategic assessments and development of novel pyrotechnic technologies that will enable disruptive capabilities for Multidomain Operations.												
FY 2025 Plans: Will design and develop novel pyrotechnic materials, components, and configurations to extend shelf life and operate in extreme temperatures; design and develop the automation of pyrotechnic processes and procedures to improve safety, performance, and yield. Mature pyrotechnic components for multi-point igniters, alternate igniter formulations, and precision self-destruct pyrotechnic components.												
FY 2026 Plans: Will investigate and develop novel pyrotechnic materials, components, and configurations to extend shelf life and operate in extreme temperatures; determine performance benefits, yield, and safety by maturing design components and operation of the automation of pyrotechnic processes and procedures; investigate the function of pyrotechnic primers for improved initiation												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602141A / Lethality Technology	Project (Number/Name) AH9 / Advanced Warheads Technology		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
and advanced igniters including alternate igniter formulations; determines performance of precision self-destruct pyrotechnic components.				
FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects effort to investigate and develop novel pyrotechnic materials.				
Title: Next Generation Warheads Technology		-	11.194	11.411
Description: This effort designs novel warheads and lethal mechanisms for advanced payload concepts in current and future armaments. Develops methodologies to produce conventional, non-conventional, distributed, and synergistic effects and lethality in warhead payloads through advanced designs, materials, modeling, and manufacturing processes.				
FY 2025 Plans: Will fund research of reactive materials for blast augmentation and increased lethality through investigation of novel materials and updated equations of state. Design and develop advanced modeling techniques to optimize shaped charges, explosively formed penetrators, and advanced fragmentation lethal mechanisms. Investigate concepts for armor defeat, combined effects, and behind armor effects scalable to multiple payload sizes; investigate modular payload concepts for use in both traditional and non-traditional carriers for desired effects. Mature warhead components for survivability in high-g and other extreme environments.				
FY 2026 Plans: Will conduct experiments of reactive materials for blast augmentation and increased lethality through novel material formulations and validation of performance characteristics for updated equations of state; mature advanced modeling techniques to enhance shaped charge performance, explosively formed penetrators, and advanced fragmentation lethal mechanisms; design and develop concepts for armor defeat, combined effects warheads, modular payloads, and behind armor effects for multiple payload sizes; design and develop warhead component designs for survivability in high-g and other extreme environments.				
FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase is an economic adjustment.				
Title: Next Generation Energetics Technology		-	13.179	12.968
Description: This effort designs and develops energetics in support of increased lethality and range and seeks to reduce operational and safety risk. The effort will focus on the following areas related to energetics: additive manufacturing, tailorable outputs, survivability in extreme environments, and advanced processing techniques.				
FY 2025 Plans: Will design enhanced explosive fills, distributed energetic initiation, novel gun propulsion, and embedded ignition for additive and advanced manufacturing technologies; investigate energetic materials including high energy propulsion technologies and high energy explosives supporting lethal systems' capabilities; investigate energetic materials for extreme cold, extreme heat, high				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602141A / <i>Lethality Technology</i>	Project (Number/Name) AH9 / <i>Advanced Warheads Technology</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p>pressure, and extreme set-back conditions, funds research of continuous flow reactors and advanced mixing technologies for energetic materials.</p> <p>FY 2026 Plans: Will further the design and development of enhanced explosive fills through gradients and novel high performing materials; design and develop distributed energetic initiation, novel gun propulsion, and embedded ignition for additive and advanced manufacturing technologies; increase lethal systems' capabilities through investigation of energetic materials, including\ high energy propulsion technologies and high energy explosives; further investigate energetic materials for extreme cold, extreme heat, high pressure, and extreme set-back conditions, validate benefits of applying continuous flow reactors and advanced mixing technologies for energetic materials.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease is an economic adjustment.</p>			
<p>Title: Advanced Warheads</p> <p>Description: This effort explores multiple pathways to enhance lethal effects for future warheads against emerging peer/near peer target sets; Investigates synergistic effects of novel warheads using advanced concepts of operations, materials, geometries, and manufacturing processes.</p>		7.405	-
<p>Title: Advanced Energetics</p> <p>Description: This effort develops advanced energetic materials and novel processing techniques for future explosives and propulsion applications that enable an increase in range, lethality, and utility of ammunitions.</p>		13.347	-
Accomplishments/Planned Programs Subtotals		23.501	27.292
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602141A / Lethality Technology				Project (Number/Name) BS6 / Lethality Technology (CA)			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
BS6: Lethality Technology (CA)	-	68.000	34.000	-	-	-	-	-	-	-	-	-
Note Congressional Interest Item funding provided for Lethality Technology.												
A. Mission Description and Budget Item Justification Congressional Interest Item funding provided for Lethality Technology. The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2024	FY 2025			
Congressional Add: Convergent manufacturing for microfactories								2.000	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for Convergent manufacturing for microfactories												
Congressional Add: Quantum Technologies For Armament Systems								5.000	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for Quantum Technologies For Armament Systems												
Congressional Add: Carbon composites for hypersonic weapons								10.000	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for Carbon composites for hypersonic weapons												
Congressional Add: Advanced semiconductor power devices								12.500	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for Advanced semiconductor power devices												
Congressional Add: Ceramic protection materials								2.500	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for Ceramic protection materials												
Congressional Add: Advanced materials and manufacturing for modernization								20.000	20.000			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602141A / <i>Lethality Technology</i>	Project (Number/Name) BS6 / <i>Lethality Technology (CA)</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2024	FY 2025
<i>FY 2024 Accomplishments:</i> Congressional Interest Item funding provided for Advanced materials and manufacturing for modernization		
<i>FY 2025 Plans:</i> Congressional Interest Item funding provided for Advanced materials and manufacturing for modernization		
<i>Congressional Add:</i> Digital technologies for armament systems	2.000	-
<i>FY 2024 Accomplishments:</i> Congressional Interest Item funding provided for Digital technologies for armament systems		
<i>Congressional Add:</i> Tactical organic fire support	5.000	-
<i>FY 2024 Accomplishments:</i> Congressional Interest Item funding provided for Tactical organic fire support		
<i>Congressional Add:</i> Advanced materials research and development	9.000	-
<i>FY 2024 Accomplishments:</i> Congressional Interest Item funding provided for Advanced materials research and development		
<i>Congressional Add:</i> Additive manufacturing for missile application	-	4.000
<i>FY 2025 Plans:</i> Congressional Interest Item funding provided for Additive manufacturing for missile application		
<i>Congressional Add:</i> Advanced materials and manufacturing for hypersonic systems	-	6.000
<i>FY 2025 Plans:</i> Congressional Interest Item funding provided for Advanced materials and manufacturing for hypersonic systems		
<i>Congressional Add:</i> Assured AI-based autonomous rescue missions	-	4.000
<i>FY 2025 Plans:</i> Congressional Interest Item funding provided for Assured AI-based autonomous rescue missions		
Congressional Adds Subtotals	68.000	34.000

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

Remarks

D. Acquisition Strategy
N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army									Date: June 2025			
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602141A / <i>Lethality Technology</i>				Project (Number/Name) CF7 / <i>Solid-state Laser Concepts and Architectures</i>			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CF7: <i>Solid-state Laser Concepts and Architectures</i>	-	8.986	8.977	7.841	-	7.841	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This project provides the research and development of advanced solid-state laser materials and architectures to support the Army Directed Energy Strategy for laser-based directed energy (DE) weapons. This project investigates advanced laser technologies based on unconventional solid-state laser concepts and designs, scalable and intelligent power modules, and advanced thermal management systems for the development of less complex, low size, weight, and power (SWaP) Army DE weapons and tactical lasers with much improved capabilities.

Work in this project complements Program Element (PE) 0603466A (Air and Missile Defense Technology) / Project CV6 (Optimized High Energy Laser Source Adv Tech)

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

Work in this project is performed by the Army Research Laboratory (ARL).

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

	FY 2024	FY 2025	FY 2026
Title: High Energy Laser (HEL) Enabling Technologies for Tactical Directed Energy Weapons	2.250	2.266	2.252
Description: Investigate novel solid-state laser concepts, architectures, and components in support of the Army's HEL weapons strategy. Develop innovative laser gain materials with much improved spectral, thermal, thermo-mechanical, and thermo-optical properties. Develop increased power while reducing size and weight, and complexity of all HEL components.			
FY 2025 Plans: Assess the results achieved from a crystalline core/crystalline cladding (C4) fiber laser and a directly diode-pumped Raman fiber laser for laser power scaling toward the goal of 5 kW out of a single fiber aperture; identify the most feasible laser technology for further development towards achieving higher power based on Size, Weight and Power (SWaP) and manufacturability considerations.			
FY 2026 Plans: Will design and mature integrated concept of directly diode-pumped advanced fiber laser based on down-selected technology, with 10x power scaling ceiling versus conventional ytterbium (Yb)-doped fiber lasers; investigate all necessary custom-made			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602141A / <i>Lethality Technology</i>	Project (Number/Name) CF7 / <i>Solid-state Laser Concepts and Architectures</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
design components, including pump combiners and fiber gratings; mature design components to handle increased power requirements.			
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease is an economic adjustment.			
Title: Advanced High Energy Laser Technology		6.736	6.711
Description: Investigate power scaling strategies for advanced solid-state lasers through the exploitation of the unique properties of advanced materials to develop higher power lasers with lower size, weight, and power requirements. This effort funds research to maximize output power towards theoretical limits, design and develop scalable power conversion with intelligent control for improved efficiency and resiliency, and designs and develops an optimized preliminary design fiber laser to best serve the purpose of power scaling analysis toward 5 kW and 50 kW of output power. Effort will also assess scaled 50 kW power and thermal concepts.			
FY 2025 Plans: Mature the required components and develop conceptual designs for the breadboard 50 kW fiber laser; perform high power component damage validation and develop mitigation strategies; verify performance versus modelling as power scales beyond 5 kW; develop safety and assessment infrastructure for higher powers; develop thermal management system designs to achieve objective output power and develop experimental validation strategies.			
FY 2026 Plans: Will continue to investigate power scaling toward 50 kW fiber laser using surrogate pumps; design and mature power scalable fibers with added suppression of parasitic processes and targeting pure single-mode operation toward 50 kW output power goal; determine the necessary laser master oscillator-power amplifier design optimizations to enable power scaling toward single aperture with kW output power; investigate energetic performance of thermal management systems and assess power delivery and thermal management efficacies across relevant time and size scales.			
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects reduction in 5 kW laser research.			
Accomplishments/Planned Programs Subtotals		8.986	8.977
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602141A / <i>Lethality Technology</i>	Project (Number/Name) CF7 / <i>Solid-state Laser Concepts and Architectures</i>
D. Acquisition Strategy N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602141A / Lethality Technology				Project (Number/Name) CF8 / Terminal Effects Against Critical Targets Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CF8: Terminal Effects Against Critical Targets Tech	-	2.138	1.034	5.138	-	5.138	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project designs and develops engineering tools and high-fidelity modeling and simulation capabilities for materials and structural response to predict and enhance weapons performance to ensure lethality against structures and critical assets. Through dynamic impact experiments for a broad range of velocities against conventional and advanced structural materials, this project develops engineering tools and technologies to rapidly evaluate and predict weapon performance. Computational chemistry will be utilized to explore potential prediction and optimization pathways of high-energy density material formulations.												
Work in this Project complements Program Element (PE) 0603116A (Lethality Advanced Technology) / Project CH5 (Terminal Effects Against Critical Targets Adv Tech).												
The work cited is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.												
Work in this Project is performed by the United States Engineer Research and Development Center Geotechnical and Structures Laboratory.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Advanced Terminal Weapons Effects Technology									2.138	-	-	
Description: This effort develops and validates terminal weapons effects prediction capabilities for Long Range Precision Fires (LRPF) weapons against geomaterials, structures, and other critical assets.												
Title: Adaptive Technologies for Advanced Weapons									-	1.034	5.138	
Description: Develops and validates the capability to predict terminal weapons effects for new advanced warheads and weapon systems with initial operational capabilities past FY 2025 against geomaterials, structures, and other critical assets.												
FY 2025 Plans: Will conduct experiments of new advanced munitions against critical targets and target materials. Will investigate and develop fast running engineering tools to support new warhead capabilities for blast and blast/fragment effects. Design, develop and mature fast running penetration predictive models and analysis codes for high velocity impact/penetration conditions into critical targets of interest.												
FY 2026 Plans: Will conduct lab and scaled experiments of new and existing advanced munitions against critical targets and target materials; will investigate and mature high fidelity numerical modeling to support the development and validation of fast running engineering												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602141A / <i>Lethality Technology</i>	Project (Number/Name) CF8 / <i>Terminal Effects Against Critical Targets Tech</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
tools to predict warhead capabilities and effects against critical logistical targets; will investigate and develop fast-running predictive tools for the weapons effect from hypersonic warheads on structures and critical targets.			
<i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> Funding increase reflects planned addition of workflows to conduct scaled experiments of advanced munitions and develop and mature new and extend existing engineering tools to predict warhead capabilities and lethality effects against logistical targets.			
Accomplishments/Planned Programs Subtotals		2.138	1.034
C. Other Program Funding Summary (\$ in Millions) N/A			
Remarks N/A			
D. Acquisition Strategy N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602141A / <i>Lethality Technology</i>				Project (Number/Name) CG4 / <i>Advanced Radar Concepts and Technologies</i>			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CG4: <i>Advanced Radar Concepts and Technologies</i>	-	5.471	6.544	10.588	-	10.588	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This project conducts experiments on single crystal diamond and diamond hetero-structure semiconductor materials, layered structures, and novel devices for Diamond Electronics and integrated photonics structures and devices for Radar, Communications, and improved Size, Weight, and Power (SWaP) Department of Defense systems. Efforts include multiscale modeling, material and structure growth and characterization, and novel device design and fabrication as well as two-dimensional (2-D) electronics for bio-inspired neuromorphic sensors, processors, and memory. This research has application to radars, communication systems, electronic warfare, directed energy, electronics for hypersonic systems, radiation hard systems, quantum sensing, and others. This project directly supports Air and Missile Defense modernization priority capabilities by investigating essential component technologies for insertion into Multi-Mission Army Radar systems. This project addresses the challenges of integrating new materials into Silicon Complementary Metal Oxide Semiconductor (CMOS) processing flows, and electronics reliability including protection against unintended adversarial use of state-of-the-art semiconductor materials, devices, and systems for Air and Missile Defense in contested environments.

Work in this project complements Program Element (PE) 0603466A (Air and Missile Defense Advanced Technology) Project AD6 (Next Generation Fires Radar Advanced Technology).

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

Work in this project is performed by the Army Research Laboratory (ARL) and Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center.

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

	FY 2024	FY 2025	FY 2026
Title: Antennas and Radio Frequency (RF) Device Components for Advanced Electronic Systems	4.523	4.562	3.704
Description: Conduct experiments into novel diamond material and silicon photonic device structures operable in the RF electromagnetic spectrum with high radiated power density for increased radar range and better target detection, improved efficiency of communications systems, smaller SWaP for electronics/cooling of autonomous systems, high temperature electronics for hypersonics, and radiation hardened electronics.			
FY 2025 Plans: Will investigate phased array antenna with chip-scale beamformer photonic circuitry performance; investigate multi-layer electromagnetic metasurface designs incorporating wideband and multi-function conformal skins for smart radar enclosures; design low-size, weight, and Power (SWaP) multiband and distributed anti-jam antennas and algorithms for Army position, navigation and timing (PNT) and communications systems; assess novel multiband antenna array integrated with anti-jam system			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602141A / Lethality Technology	Project (Number/Name) CG4 / Advanced Radar Concepts and Technologies		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
testbed; mature diamond surface field effect transistor output power density, device stability, and frequency range; investigate techniques to expand electronic grade single crystal diamond wafer diameter size. FY 2026 Plans: Will investigate design for RF electronic interposer integration architectures to control chip-scale beamformer photonic circuitry; investigate the response function of topological materials and device designs; advance in-house growth of intrinsic and boron-doped diamond epitaxial layers and utilize it to develop robust, low resistance contacts in diamond field-effect transistors (FETs); implement multi-finger designs and larger probe pitch layouts to improve impedance matching and achieve larger power output performance of diamond FETs; employ new atomic layer deposition capabilities to improve the chemical and electrical stability of the acceptor layer doping of diamond. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects reduction in anti-jam system testbed experimentation.				
Title: Distributed Radar Architectures Description: This research seeks to validate critical functions and perform proof-of-concept laboratory experimentation to develop phase synchronous, coordinated radar and multi-function effects that enable distributed, global positioning system (GPS)-independent, autonomous capabilities. This effort validates critical synchronized distributed networked sensor functions and novel signal processing methods. This effort validates advanced antenna designs for low size, weight, power and cost (SWAP-C), multi-function systems. FY 2025 Plans: Will validate coherent beamforming performance with a 2-node distributed transceiver; create a 5-node distributed transceiver and benchmark its performance; develop methods to calibrate the distributed transceivers and optimize the two-way time and frequency transfer algorithm. FY 2026 Plans: Will design and fabricate a 5-node receiver network based on FY 2025 benchmark testing that is suitable for field experiments; will conduct field experiments to assess the performance of the receiver network and identify areas of needed improvement; assess internode synchronization and radar signal processing techniques; design and fabricate revised receivers that are packaged and ruggedized for future capstone field experiment; refine position calculation algorithm for a 5-node received network; assess and model multi-static radar techniques with varying synchronization performance. FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects additional research in field experiments to assess performance of the receiver network.		0.948	0.980	3.901
Title: Radar Digital Twin (EXHILARAMA)		-	1.002	2.983

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602141A / <i>Lethality Technology</i>	Project (Number/Name) CG4 / <i>Advanced Radar Concepts and Technologies</i>	

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2024	FY 2025	FY 2026
<p>Description: This effort researches, designs, and develops a radar digital engineering environment, virtual prototype radar system architecture, and component technology to address next generation radar requirements, and quantifies performance through rapid persistent modeling and simulation.</p> <p>FY 2025 Plans: Will investigate and perform a technology trade study to evaluate state-of-the-art hardware and software, determine system requirements, and quantify initial impact of hardware and software components to next generation radar performance through system-level modeling.</p> <p>FY 2026 Plans: Will design Digital Engineering- based virtual capability from emerging state-of-the-art hardware and software identified in the trade study; conduct initial virtual experiments and quantify performance of advanced radar capabilities.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects the planned milestones for design and development of a Digital Engineering- based virtual capability.</p>			
Accomplishments/Planned Programs Subtotals	5.471	6.544	10.588

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

Remarks

D. Acquisition Strategy
N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602141A / <i>Lethality Technology</i>				Project (Number/Name) C11 / <i>Advanced Armaments Lethality Technology</i>			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
C11: <i>Advanced Armaments Lethality Technology</i>	-	1.636	4.352	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This project designs and develops novel armament systems concepts and enabling technologies in weapons, munitions, and fire control, in order to advance range and accuracy capabilities.

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

Work in this project is performed by the Armaments Center (AC).

<u>B. Accomplishments/Planned Programs (\$ in Millions)</u>	FY 2024	FY 2025	FY 2026
<i>Title:</i> Advanced Armaments Lethality Technology <i>Description:</i> This project designs and develops novel armament systems concepts and enabling technologies in weapons, munitions, and fire control required to enable and dominate Multi Domain Operations (MDO). This includes advancing state of the art armament system technologies to provide overmatch against current and future threats. <i>FY 2025 Plans:</i> Investigate prioritization algorithms for multi-target engagement scenarios involving unmanned vehicles; design and develop weapon, munition, and fire control concepts to defeat multi-target swarming scenarios; investigate solutions for combined terrain shaping and breaching operations from a single armament system. <i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> Funding decrease reflects the completion of the development of lethal mechanisms and fire control targeting algorithms and the design of the mobile terrain shaping and breaching hardware components.	1.636	4.352	-
Accomplishments/Planned Programs Subtotals	1.636	4.352	-

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

Remarks

D. Acquisition Strategy
N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602141A / Lethality Technology				Project (Number/Name) CIA / Applied Armaments Tech for Distributed Lethality			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CIA: Applied Armaments Tech for Distributed Lethality	-	2.442	-	0.008	-	0.008	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This project investigates technologies that holistically maximize armament performance, minimize target engagement timelines, reduce crew workloads, enhance responsiveness and enable collaborative lethal effectiveness on target across distributed platforms & missions. This project researches cross caliber weapon, munition & fire-control technologies to enhance Remote Weapon Systems (RWS) responsiveness and single or combined platform lethality in Multi-Domain Operations (MDO) environments.												
The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.												
Work in this project supports the Next Generation Combat Vehicle Army Modernization Priority.												
Work in this project is performed by the Armaments Center.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Platform Agnostic Armaments Applied Tech									2.442	-	0.008	
Description: This effort designs and develops technologies that enables platform performance by increasing range without degrading accuracy, reducing size, weight, and power and impact to lighter platforms, enhancing weapon, munitions, fire control, & agnostic remote weapon automation tech to reduce the kill chain timeline. This effort enables Army Modernization and Multi-Domain Operations (MDOs) in support of the Army's future and planned vehicles.												
FY 2026 Plans: Will realign economic assumptions to provide enhanced capabilities to foster innovation and accelerate deployment of promising technology												
FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects economic assumptions expected for realignment to provide enhanced capabilities to foster innovation and accelerate deployment of promising technology												
Accomplishments/Planned Programs Subtotals									2.442	-	0.008	
C. Other Program Funding Summary (\$ in Millions)												
N/A												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602141A / <i>Lethality Technology</i>	Project (Number/Name) <i>CIA / Applied Armaments Tech for Distributed Lethality</i>
C. Other Program Funding Summary (\$ in Millions)		
Remarks		
D. Acquisition Strategy		
N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602141A / Lethality Technology				Project (Number/Name) CIB / Sensor to Shooter (STS) Applied Research			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CIB: Sensor to Shooter (STS) Applied Research	-	4.022	7.909	-	-	-	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This project designs and develops advanced algorithms for sensor to shooter decision aids and incorporates predictive tools and permissive airspace capabilities to reduce the sensor to shooter timeline and effects execution. Investigate technologies for enabling multi-sensor fusion for collaborative tracking of multi-theater threat tracks to enable tactical target engagement and counter fires across threat flight timeline.												
Work in this project complements Program Element (PE) 0603116A (Lethality Advanced Technology) / Project CID (Sensor to Shooter (STS) Advanced Technology).												
The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.												
Work in this project supports Next Generation Combat Vehicle, Tactical Network, Future Vertical Lift, and Long-Range Precision Fires Army Modernization Priorities.												
Work in this project is performed by the Armaments Center, Command, Control, Communication, Computers, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center, and United States Army Space and Missile Defense Technical Center.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Lethal Effects Architecture for Decision Synchronization Technology									4.022	7.909	-	
Description: This effort designs and develops advanced adaptive algorithms and architectures to improve threat prediction, reduce the sensor to shooter timeline, and enhance airspace deconfliction in support of Large-Scale Combat Operations in a dynamic multi-domain environment.												
FY 2025 Plans: Will design and develop advanced algorithms to support decision aid recommendations and distributed lethality multi-effects in a dynamic environment across echelons. Funds research development of algorithms predictive threat behavioral algorithms to improve sensor to shooter decision aids for large scale combat operations; design advanced predictive algorithms to synchronize and de-conflict airspace; investigate temporal decision aids concepts to enhance algorithm predictions across time as the battlefield evolves.												
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects realignment to Program Element (PE) 0602275A (Electronic Warfare Applied Research) / Project A63 (Sensor to Shooter (STS) Applied Research) as a part of the Department of Defense Capability Based (Agile) Funding pilot, which												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602141A / <i>Lethality Technology</i>	Project (Number/Name) <i>CIB / Sensor to Shooter (STS) Applied Research</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology and realignment within this Project.				
Accomplishments/Planned Programs Subtotals		4.022	7.909	-
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602141A / Lethality Technology				Project (Number/Name) CIC / Fire Control Lethality Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CIC: Fire Control Lethality Technology	-	1.409	2.958	1.472	-	1.472	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
Work in this project researches, investigates and develops concepts for common open architecture fire control systems to maximize distributed armament systems performance. Researches fire control architecture framework and protocols utilizing artificial intelligence and machine learning to minimize target engagement timelines, reduce cognitive processes, and enable collaborative lethal effectiveness on target across weapon platforms. Develops modular fire control concepts enabling safe, lethal, and agile integration of current systems to engage emerging threats and decrease system vulnerabilities for maximize performance and combined arms effects.												
Work in this project complements Program Element (PE) 0602141A Lethality Technology/ Applied Armaments Tech for Distributed Lethality, PE 0603462A Next Generation Combat Vehicle Advanced Technology/ Next Generation Intelligent Fire Control, and PE 0602183A Air Platform Applied Research/ Airborne Threat Defeat												
The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.												
Work in this project is performed by the Armaments Center.												
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2024	FY 2025	FY 2026
Title: Future Fire Control Tech (F2CT)										1.409	2.958	-
Description: This effort designs and develops fire control technologies to increase interoperability and improve performance across future distributed armament systems. This effort designs and develops novel components, algorithms, and architectures necessary for future fire control systems.												
FY 2025 Plans:												
Investigate a novel cross cutting fire control framework supporting armaments interoperability across distributed platforms; investigate the collection, processing and transmission of various target data sets and solutions across small arms, aviation, combat vehicle, mortars and artillery platforms; investigate the feasibility of an expanded fire direction center capability to include other fire support elements.												
FY 2025 to FY 2026 Increase/Decrease Statement:												
Funding decrease reflects realignment within this Project.												
Title: Fire Control Lethality Technology										-	-	1.472

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602141A / <i>Lethality Technology</i>	Project (Number/Name) CIC / <i>Fire Control Lethality Technology</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p>Description: This effort designs and develops fire control technologies to increase interoperability and improve performance across future distributed armament systems. This effort designs and develops novel components, algorithms, and architectures necessary for future fire control systems.</p> <p>FY 2026 Plans: Will investigate platform-agnostic software designs for engagements, stabilization, armament state management, and intelligent systems.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects realignment to Program Element (PE) 0602275A (Electronic Warfare Applied Research) / Project A63 (Sensor to Shooter (STS) Applied Research) as a part of the Department of Defense Capability Based (Agile) Funding pilot, which provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology and realignment within this Project.</p>			
Accomplishments/Planned Programs Subtotals		1.409	2.958
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602141A / Lethality Technology				Project (Number/Name) CJ1 / Lethality Enabling University Applied Research			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CJ1: Lethality Enabling University Applied Research	-	5.384	7.874	3.566	-	3.566	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

The project leverages research and technological innovations from academia, of lethal directed energy, laser diagnostics and accelerated design of future hypersonics, deep learning (DL) guidance tools, novel materials, and emerging technologies of importance to the Army, by accelerating research and conducting experiments focused on getting technology to the warfighter more quickly. This project performs discovery research efforts to focus more on mid to far-term Army modernization priorities while also maintaining delivery of near-term technologies critical to the Long Range Precision Fires and Air and Missile Defense. This project focuses on employment of research technologies originating from extramural applied research in academia pertaining to lethal directed energy, laser diagnostics, future hypersonic glide body and scramjet propulsor design, DL guidance tools, novel materials, and expansion of the Ballistic, Aero-Optics and Materials (BAM) range applied to lethality. This effort conducts applied research and development leading to potential emerging technologies in areas of importance to the Army in directed energy, future hypersonic glide body design, DL and novel materials, etc., by bringing competitively selected universities with research and development teams into technical alliances.

Work in this project complements Program Element (PE) 0602141A (Lethality Technology) / Project CZ9 (Foundational Hypersonic Weapons Research), PE 0602150A (Air and Missile Defense Technology) / Project DC1 (Next Generation DE Concept Development & Analysis), PE 0603116A (Lethality Advanced Technology) / Project CG2 (Lethality Enabling University Adv Development), and PE 0603464A (Long Range Precision Fires Advanced Technology) / Project BY2 (Advanced Hypersonic Technology).

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

Work in this project is performed by the Army Research Laboratory (ARL).

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

	FY 2024	FY 2025	FY 2026
Title: Laser Diagnostics for Hypersonics and Directed Energy	1.775	2.399	1.483
Description: This effort researched systematic expansion in laser diagnostics technologies to assess hypersonic turbulence and boundary layer transition. Work is conducted in collaboration with university partners to advance the effects of atmospheric turbulence on laser propagation and gain applied knowledge in directed energy systems effectiveness and range.			
FY 2025 Plans: Will design and develop diagnostic tools and methods for quantification and visualization of hypersonic flows and hypersonic interactions to improve prediction and optimization of the performance of hypersonic systems based on well characterized ground testing. Funds research in academia to enhance the effectiveness and utility of Directed Energy (DE) systems operating under realistic atmospheric conditions to enable the prediction of the effectiveness of DE systems. Funds academic applied research			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602141A / Lethality Technology	Project (Number/Name) CJ1 / Lethality Enabling University Applied Research		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
in emerging aero-optic technologies for laser diagnostic and directed energy effectiveness; funds research and incorporates the Ballistic Aero-Optics and Materials (BAM) range to validate data and improve test techniques. FY 2026 Plans: Will fund research from the academic innovation ecosystem to capture and integrate disruptive laser, directed energy, and associated technologies; fund research that incorporates the BAM range to validate data and improve test techniques for sub-scale hypersonic flight, wind tunnel, directed energy, and associated applications. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects efforts realigned to Program Element (PE) 0603464A (Long Range Precision Fires Advanced Technology) / Project CZ8 (PrSM Modular Payload Advanced Development) to support Sensor Fuzed Weapon Development.				
Title: Turbulence and Transition Modeling and Validation for Hypersonic Vehicles Description: This effort is conducted in collaboration with university partners to develop modeling tools to help inform the flight envelope of existing hypersonic vehicles to accelerate design of future hypersonic glide bodies. FY 2025 Plans: Will design and develop methods to predict and control drag and investigate thermal loading of hypersonic platforms. Develop accurate aerothermo-dynamic modeling of missile geometries with experimental validation from Mach 6 - 12 at true flight temperatures and high Reynolds numbers, including high incidence angles; funds academic applied research in emerging technologies to improve modeling for hypersonic flight activity; funds research and incorporates the BAM range to validate data and improve test techniques. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects planned completion of this effort.		1.904	3.342	-
Title: Novel Materials for Extreme Environments Description: This effort produces a test environment for thermal and ablation evaluation of novel materials relevant to hypersonic vehicles. Work is conducted in collaboration with university partners to assess material characteristics and develop computational models of high strain rate materials to mitigate the effects of high kinetic energy impacts. FY 2025 Plans: Will develop the test environment and manufacturing techniques of materials for production of hypersonic vehicles using newly developed refractory high-entropy alloy (RHEA) materials capable of withstanding extreme environments; funds applied academic		1.261	1.613	2.083

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602141A / <i>Lethality Technology</i>	Project (Number/Name) CJ1 / <i>Lethality Enabling University Applied Research</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p>research for emerging technologies for novel materials in hypersonic applications; funds research and incorporates the Ballistic Aero-Optics and Materials (BAM) range to validate data and improve test techniques.</p> <p><i>FY 2026 Plans:</i> Will fund research to mature novel materials for use in military applications, to include extreme environments such as high strain rate loading, extreme thermomechanical loading, hypersonic systems, and radiated environments; validate material characteristics and investigate manufacturability challenges and methods; continue to fund applied academic research for emerging technologies for novel materials in hypersonic applications; continue to fund research and incorporate the Ballistic Aero-Optics and Materials (BAM) range to validate data and improve test techniques.</p> <p><i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> Funding increase reflects a planned increase to capitalize on emerging academic applied research in this area.</p>			
<p><i>Title:</i> Intelligent Hypersonics and Other Vehicle Systems</p> <p><i>Description:</i> This effort develops and designs geometrically relevant testing hardware required to study aerothermodynamic performance, increase impact velocity and extend range of precision strike munitions. Work is conducted in collaboration with university partners to collect experimental data and insights required to train deep learning neural networks used for the development of hypersonic vehicle flight systems with adaptability and increased lethality.</p> <p><i>FY 2025 Plans:</i> Will fund applied academic research in emerging intelligent hypersonics systems; continues to develop relevant hardware required to study aerothermodynamic performance, collect experimental data and insights required to inform advanced technology research. The benefits of this effort improve hypersonic flight adaptability and lethality.</p> <p><i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> Funding decrease reflects planned completion of this effort.</p>		0.444	0.520
Accomplishments/Planned Programs Subtotals		5.384	7.874
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602141A / Lethality Technology				Project (Number/Name) CJ7 / Future Air Defense Missile Enabling Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CJ7: Future Air Defense Missile Enabling Tech	-	2.259	4.608	4.289	-	4.289	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
<p>This project investigates, develops, and evaluates critical missile technologies and components necessary for advanced lethal capability in support of future/mid to far term affordable short range air defense interceptor capability to defeat Cruise Missile (CM), Rotary Wing (RW), Tactical / Lethal Unmanned Aerial System (UAS), and Fixed Wing (FW) threats. This effort designs and develops technologies to provide advanced materials, seekers, guidance and control, and propulsion for reduced size weight and power and cost for Maneuver Short Range Air Defense (MSHORAD), Short Range Air Defense (SHORAD), and Lower Tier essential to maintain overmatch against mid-/far-term threats. This project will investigate, identify and develop advanced radar concepts, technologies and signal processing algorithms to enable multi-mission radar functions and expanded threat capability. This project supports Air and Missile Defense Modernization priority efforts.</p> <p>Work in this project complements Program Element (PE) 0602147A (Long Range Precision Fires Technology) / Project AF3 (Extended Range Propulsion Technology) and Project AF8 (Affordable Extended Range Precision Technology), PE 0602150A (Air and Missile Defense Technology) / Project SU1 (Counter Small Unmanned Aircraft Sys (C-sUAS) Tech), and PE 0603466A (Air and Missile Defense Advanced Technology) / Project SU2 (Counter Small Unmanned Aircraft Sys (C-sUAS) Adv).</p> <p>The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.</p> <p>Work in this project is performed by the Aviation & Missile Center (AvMC).</p>												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Future Air Defense Missile Enabling Technology									2.259	4.608	4.289	
Description: Designs and develops reduced cost advanced Air Defense missile critical components essential to maintain overmatch against mid/far term M-SHORAD, SHORAD, and Lower Tier threats.												
FY 2025 Plans:												
Develop and evaluate solid fuel ramjet (SFRJ) propulsion technology in the current Stinger form factor to achieve increased range while maintaining current launcher compatibility; validate missile attitude control systems (MACS) design by conducting experiments on component technology for various missile defense applications; develop and evaluate reactive material warhead technologies to improve lethality for lower-tier air and missile defense applications; investigate, develop concepts, perform trade studies, improve modeling and simulation capabilities, and develop critical missile component technologies required to defeat emerging Air and Missile Defense (AMD) threats.												
FY 2026 Plans:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602141A / <i>Lethality Technology</i>	Project (Number/Name) CJ7 / <i>Future Air Defense Missile Enabling Tech</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p>Will validate through lab and range testing SFRJ propulsion technology in the current Stinger form factor to achieve increased range while maintaining current launcher compatibility; develop modeling and simulation capability to analyze and design highly loaded grain (HLG) propulsion technology for air defense interceptor applications; validate practicality of reactive material warhead solutions to improve lethality for lower- tier air and missile defense and C-UAS applications; design, develop and analyze vertical launch technologies to inform design of future air defense interceptor launch technologies; investigate, concepts for advanced radar component technologies to improve air defense missile seeker Size Weight And Power (SWAP) and improve radar processing capabilities; perform trade studies, mature modeling and simulation capabilities, and design and develop critical missile component technologies required to defeat emerging AMD threats.</p> <p><i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> Funding decrease reflects planned lifecycle of this effort.</p>			
Accomplishments/Planned Programs Subtotals		2.259	4.608
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602141A / Lethality Technology				Project (Number/Name) CZ9 / Foundational Hypersonic Weapons Research			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CZ9: Foundational Hypersonic Weapons Research	-	8.055	10.801	11.205	-	11.205	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This project investigates foundational problems associated with high-speed weapons and informs the future strategic fires echelon of Long-Range Precision Fires (LRPF) capabilities. This Project funds the research of material science subjects such as extreme thermal loading and aero-thermodynamics and control technologies for high- speed vehicles which may encounter high mechanical loads at launch.												
Work in this project complements Program Element (PE) 0601102A (Defense Research Sciences) / Project AA7 (Mechanics and Ballistics) and PE 0602141A (Lethality Technology) / Project AH6 (Disruptive Energetics and Propulsion Technologies), Project AH7 (Lethal and Scalable Effects Technologies), and Project AH8 (Lethality Materials and Processes Technology), PE 0602144A (Ground Technology) / Project BL1 (Materials and Manufacturing Research Technology), and PE 0602145A (Next Generation Combat Vehicle) / Project BI4 (Materials Application and Integration Tech).												
The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.												
Work in this project is performed by the Army Research Laboratory (ARL) and the United States Army Space and Missile Defense Command, Technical Center.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Foundational Hypersonic Weapon Materials									6.050	6.389	6.322	
Description: This effort investigates materials synthesis and processing (including innovative approaches such as high-throughput materials-by-design using artificial intelligence and machine learning algorithms), novel experimental techniques, and fundamental theoretical modeling to decrease cost, increase availability, and model thermal and mechanical survivability on hypersonic vehicles. Specific research topics include polymer/resin synthesis for composites, novel three-dimensional composite weave architectures, composite processing (process by which the material is made), ceramic window/dome materials, high-temperature metallic alloys, and joining techniques.												
FY 2025 Plans: Investigate ultra-high temperature ceramic matrix composites for use as ablation-resistant, shape stable leading edges. Design and develop a matrix of composite chemistries and processing methods to infiltrate fiber pre-forms with ceramic material. Develop processing methods to produce coupons of novel alloys and execute high temperature characterization of optimized compositions. Investigate processing methods to join dissimilar materials such as composites to metal or composites to ceramic; examine												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602141A / Lethality Technology	Project (Number/Name) CZ9 / Foundational Hypersonic Weapons Research		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
functionally graded materials for use as window and dome materials; develop processing methods to fabricate layered structures and form them into curved structures. FY 2026 Plans: Will validate near-net shape manufacturing optimization of multiple materials into a subcomponent with a leading edge; validate performance models of materials and manufacturing processes; validate technical maturity of high-temperature material components in relevant environments ; validate alloy and ceramic formulation, composite processing techniques, and modeling and experimental characterization of all material classes; investigate coatings on ceramics, metals, or composites to improve structural integrity when subjected to high thermal and mechanical loads; mature design optimization tools for complex, multi-material solutions for high-speed munitions. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease is an economic adjustment.				
Title: Foundational Hypersonic Weapons Flight and Control Description: This effort increases understanding of hypersonic vehicle flight behavior and control approaches for more aggressive, rapid, low risk multi-disciplinary designs of future hypersonic vehicles featuring enhanced agility/stability necessary for survivable delivery to advanced threats of the future. Research includes fundamental flow physics and chemistry, guidance and flight control algorithms, vehicle maneuver control mechanisms, novel vehicle shapes, and the theoretical modeling, computational toolsets, and experimental techniques to achieve these advancements. FY 2025 Plans: Mature diagnostics for measuring hypersonic vehicle behaviors on free-flight ballistic ranges; investigates models coupling fluid-thermal-structural interactions with chemistry effects on hypersonic weapons; determines high-level control of hypersonic weapons to include dynamic path planning that considers adversarial response. FY 2026 Plans: Will validate experimental techniques and high-fidelity computational tools to model complex flows such as shock-boundary layer interaction and boundary layer transition; mature simulation environments and investigate representative hypersonic weapons to understand performance drivers. FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects additional research in performance drivers for hypersonic weapons.		2.005	2.408	3.020
Title: Foundational Hypersonic System Component Description: This effort investigates the susceptibility of hypersonic threats to high-power microwave (HPM) and radio frequency (RF) attack. Research includes HPM effects research on electronic components, investigation of HPM and RF attenuation through		-	2.004	1.863

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602141A / <i>Lethality Technology</i>	Project (Number/Name) CZ9 / <i>Foundational Hypersonic Weapons Research</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
hypersonic environments, development of hardware to represent foreign missile threats, and modeling and simulation to predict effectiveness of HPM attack on hypersonic threats.			
FY 2025 Plans: Will fund research and investigate high power microwave (HPM) as a solution for hypersonic defeat. Will investigate HPM effects on common electronic components and HPM attenuation in a hypersonic environment. Will investigate different methods of HPM attack on hypersonics (ground-based system, airborne system, left of launch system, etc.).			
FY 2026 Plans: Will research and investigate novel methods and techniques to defeat hypersonic systems left of launch to intercept utilizing high power microwave attack. Will investigate susceptibility and survivability hypersonic components when exposed to HPM. Research HPM weapon system requirements necessary for hypersonic defeat.			
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects realignment within project for additional research in performance drivers for hypersonic weapons.			
Accomplishments/Planned Programs Subtotals		8.055	10.801
C. Other Program Funding Summary (\$ in Millions) N/A			
Remarks			
D. Acquisition Strategy N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602141A / Lethality Technology				Project (Number/Name) DN6 / Science of Massed Responsive Fires			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
DN6: Science of Massed Responsive Fires	-	-	-	20.434	-	20.434	-	-	-	-	-	-
Note Science of Massed Responsive Fires is a new start within the Lethality Technology program in FY 2026. In FY 2026, this project is a New Start.												
A. Mission Description and Budget Item Justification This project supports research on munitions, kinetic and non-kinetic payloads, and weapons in energetics, propulsion, flight, guidance, warheads, guns, material science, and electromagnetic device packages and sensors. This project also supports research in novel energetic materials and energetic monomer/polymer synthesis, composable design science, models for gun wear and erosion, and the development of algorithms, frameworks, and toolsets for cost-effective collaborative autonomous delivery of weapons. Electronic (e.g., jamming, spoofing) and kinetic (e.g., intercept) counters that disrupt nodes of defeat are within adversary reach. Enablers delivered in this research project provide entirely new approaches of dynamically adapting multi-functional systems of weapon systems (beyond improvements to field/air defense and cannon/missile artillery) and the means to physically realize this capability at relevant speed and size scales in collapsed formations to defeat complex, rapidly changing threats at depth. Work in this project complements Program Element (PE) PE 0601102A (Defense Research Sciences) / Project AA7 (Mechanics and Ballistics), PE 0602141A (Lethality Technology) / Project AH6 (Disruptive Energetics and Propulsion Technologies), and PE 0602141A (Lethality Technology) / Project CZ9 (Foundational Hypersonic Weapons Research). This Project transitions to PE 0602141A (Lethality Technology) / Project AH9 (Advanced Warheads Technology), PE 0602147A (Long Range Precision Fires Technology) / Project AG4 (Extended Range Artillery Munition Suite Technology), PE 0602141A (Lethality Technology) / Project CI1 (Advanced Armaments Lethality Technology), PE 0602141A (Lethality Technology) / Project CIA (Applied Armaments Tech for Distributed Lethality), PE 0602147A (Long Range Precision Fires Technology) / Project AF8 (Affordable Extended Range Precision Technology), PE 0603464A (Long Range Precision Fires Advanced Technology) / Project CZ8 (PrSM Modular Payload Advanced Development), and PE 0603464A (Long Range Precision Fires Advanced Technology) / Project BY2 (Advanced Hypersonics Technology). The cited work is consistent with Under Secretary of Defense for Research and Engineering Science and Technology priority focus areas and the Army Modernization Strategy. Work in this project is performed by Army Research Laboratory (ARL).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Dense Energetic Materials Science									-	-	1.097	

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025			
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602141A / <i>Lethality Technology</i>	Project (Number/Name) DN6 / <i>Science of Massed Responsive Fires</i>		
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2024	FY 2025	FY 2026
<p>Description: This effort supports research in novel energetic materials and energetic monomer/polymer synthesis to maximize both performance and survivability in extreme operating conditions and incorporation into propulsion (gun and rocket propellants, air-breather fuels) and warhead (explosive) technologies.</p> <p>FY 2026 Plans: Will explore propellant and fuel formulation and processing in support of air-breathing propulsion and gun propulsion to include novel gas generation technology; identify power versus sensitivity relationship of explosive formulations.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects planned creation of this effort.</p>					
<p>Title: Mechanisms, Materials, and Processing for Lethality</p> <p>Description: This effort will investigate models that are formulated for gun wear and erosion. This effort also supports the design and development of materials and manufacturing techniques which will be confirmed for rifled tubes to increase tube lifetime by an order of magnitude and increase firing rate.</p> <p>FY 2026 Plans: Will investigate gun tube alloy synthesis and coating processing for the interior of the gun tube; conduct modeling approach for design optimization of guns; improve models of gun erosion using 37-mm combustion/vented chamber experiments.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects planned creation of this effort.</p>			-	-	3.564
<p>Title: Threat-Responsive Dynamic Munition Sciences for Survivability and Delivered Effects</p> <p>Description: This effort will investigate electronics packages, sensors, algorithms, frameworks, and toolsets for cost-effective collaborative autonomous delivery of weapons that consider emerging heterogeneous payloads for targeting, deep sensing, battle damage assessment, communications, networking, and electronic warfare along with munition kinematics (propulsion, flight) for specific threats. This effort will also formulate compact radio frequency (RF) architectures for targeting/deep sensing, comms/networking, and electronic warfare in extreme munitions environment.</p> <p>FY 2026 Plans: Will devise electromagnetic payloads/skins and algorithms for deep sensing/targeting/battle damage assessment, electronic warfare, and communications on munitions; investigate convergent manufacturing of electronics into munitions; formulate approach for design optimization of sensors/electronics into munitions using advanced manufacturing techniques; develop threat-responsive collaborative autonomous delivery algorithms for munitions.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement:</p>			-	-	5.764

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602141A / <i>Lethality Technology</i>	Project (Number/Name) DN6 / <i>Science of Massed Responsive Fires</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
Funding increase reflects planned creation of this effort.			
Title: Distributed, Dense, Multifunctional Architectures for Munitions Description: This effort support research into composable design science incorporating coupled physics/chemistry/engagement models of multiple components/munitions with new functionality which could be convergent manufactured. Advanced manufacturing of distributed components for airframe (propulsion, flight) and payloads (targeting, comms, electronic warfare (EW), control, warhead, post-launch propulsion) with multi-functionality will be addressed. FY 2026 Plans: Will improve ignition and interior gun ballistics modeling; conduct combustion and regression modeling of air-breathing propulsion in conjunction with small-scale experiments; mature novel gas generation technologies for munition propulsion applications; perform experiments and improve modeling of maneuvering and powered flight of munitions; formulate flight control algorithms and mechanisms; synthesize fine-grained alloys for warhead liners; mature convergent manufacturing of liners; conduct design optimization framework for chemical energy-based lethal payloads in munitions; understand penetration of shaped charges and explosively formed penetrators using fine-grained alloys (including those driven by high-power explosives); conduct understanding of fragmentation with high-power explosives (without internal spalling); consider multi-mechanism and multi-effector damage of munitions with small delivery error. FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects planned creation of this effort.		-	-
Accomplishments/Planned Programs Subtotals		-	20.434
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army I BA 2: Applied Research					R-1 Program Element (Number/Name) PE 0602142A I Army Applied Research							
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
Total Program Element	-	38.072	-	-	-	0.000	-	-	-	-	-	-
BS1: Army Applied Research	-	38.072	-	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

The Army Applied Research budget line includes systematic application of knowledge toward the production of useful materials, devices and systems or methods including the design, development and improvement of science and technology for Army applications.

Efforts in this budget line include studies, investigations and non-system specific technology efforts leading to bread-board hardware or proof of principle analysis.

B. Program Change Summary (\$ in Millions)	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026 Base</u>	<u>FY 2026 OOC</u>	<u>FY 2026 Total</u>
Previous President's Budget	34.572	0.000	0.000	-	0.000
Current President's Budget	38.072	0.000	0.000	-	0.000
Total Adjustments	3.500	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	3.500	-			
• SBIR/STTR Transfer	-	-			

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army	Date: June 2025
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Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 2: Applied Research	R-1 Program Element (Number/Name) PE 0602143A / Soldier Lethality Technology
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COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
Total Program Element	-	209.084	137.771	72.670	-	72.670	-	-	-	-	-	-
AY6: Soldier Squad Small Arms Armaments Technology	-	10.018	10.343	3.229	-	3.229	-	-	-	-	-	-
AZ2: Body Armor & Integrated Headborne Technology	-	6.321	5.807	4.739	-	4.739	-	-	-	-	-	-
AZ5: Soldier Protection Technology - Vulnerability	-	10.198	9.897	8.321	-	8.321	-	-	-	-	-	-
BB4: Dismounted Soldier Survivability Materials	-	4.838	5.267	4.786	-	4.786	-	-	-	-	-	-
BC2: Next Gen Mobility & Lethality Tech for Warfighters	-	6.726	8.334	5.623	-	5.623	-	-	-	-	-	-
BC7: Training Technology (Other than STE)	-	32.616	29.446	20.772	-	20.772	-	-	-	-	-	-
BD1: Adv Soldier Sensors/ Displays Tech for Dismounts	-	16.253	17.598	17.062	-	17.062	-	-	-	-	-	-
BD6: Soldier Sys Interfaces/ Integration- Sensor Tech	-	0.301	0.401	0.299	-	0.299	-	-	-	-	-	-
BD8: Soldier & Sm Unit Tactical Energy Tech	-	6.911	-	-	-	-	-	-	-	-	-	-
BE3: Joint Service Combat Feeding Technology	-	4.074	4.081	4.276	-	4.276	-	-	-	-	-	-
BP9: Soldier Lethality Technologies (CA)	-	107.800	43.500	-	-	-	-	-	-	-	-	-
BR9: Personnel & Airdrop Safety Technology	-	3.028	3.097	3.563	-	3.563	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Program Element (PE) conducts fundamental research on Soldier Lethality technologies to develop an integrated Soldier and Squad architecture of equipment and systems that improve Soldier and Small Combat Unit survivability, sustainability, mobility, combat effectiveness, and individual cognitive and physical readiness.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 2: Applied Research</i>		R-1 Program Element (Number/Name) PE 0602143A / <i>Soldier Lethality Technology</i>
<p>To address the challenges of integrating multiple technologies and sub-systems, research conducted in this PE, significant Science and Technology applied research investments in all areas of Soldier Lethality focuses on how to improve the effectiveness of the technologies a Soldier utilizes and apply systems-level practices to mitigate constraints from size and weight of the equipment. Research areas encompass individual and crew-served weapon designs and technologies as well as applied research in lightweight and transparent armor materials to mitigate effects from blast and ballistic threats, counter explosive hazard detection, counter-sensor capabilities, and signature management of weapons, equipment, personnel and high value targets. This PE investigates, develops and designs materials, technologies, methodologies and system models required to experiment and optimize Soldier lethality and survivability through investments in mobility, human-agent teaming, and improved situational awareness interfaces and display technologies as well as to provide Soldier-borne power and energy materials and components that support multiple Soldier-borne systems. This PE also investigates Warfighter training technologies and develops the underpinning technologies to establish architecture standards and interfaces necessary for creating realistic synthetic environments to create a single, interconnected synthetic training system to enable Army units and leaders to conduct realistic multi-echelon / multi-domain combined arms maneuver and mission command training, increasing proficiency through repetition. Human Factors Engineering projects conduct applied research to design weapon systems standards, guidelines, handbooks, and Soldier training curriculum and tools.</p> <p>Results of these efforts are transitioned within the Army Futures Command, the Program Executive Offices, Army Training and Doctrine Command (TRADOC), Army Medical Command (MEDCOM), and the Army Test and Evaluation Command (ATEC).</p> <p>Work in this PE complements PE 0603118A (Soldier Lethality Advanced Technology).</p> <p>Portions of this funding line support the Soldier Lethality Army Modernization Priority.</p> <p>The FY 2026 request was reduced by \$0.698 million for Advisory and Assistance Services to promote efficiencies and advance the policies of the Administration in alignment with Executive Order 14222, "Implementing the President's Department of Government Efficiency Cost Efficiency Initiative."</p> <p>The FY 2026 request was reduced by \$0.362 million for civilian personnel to optimize the workforce in compliance with Executive Order 14210, "Implementing the President's Department of Government Efficiency Workforce Optimization Initiative."</p>		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army				Date: June 2025		
Appropriation/Budget Activity		R-1 Program Element (Number/Name)				
2040: Research, Development, Test & Evaluation, Army / BA 2: Applied Research		PE 0602143A / Soldier Lethality Technology				
B. Program Change Summary (\$ in Millions)		FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Previous President's Budget		104.470	102.236	104.027	-	104.027
Current President's Budget		209.084	137.771	72.670	-	72.670
Total Adjustments		104.614	35.535	-31.357	-	-31.357
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-7.465			
• Congressional Rescissions		-	-			
• Congressional Adds		106.300	43.500			
• Congressional Directed Transfers		-	-			
• Reprogrammings		0.401	-			
• SBIR/STTR Transfer		-2.087	-			
• Adjustments to Budget Years		-	-0.500	-31.357	-	-31.357
Congressional Add Details (\$ in Millions, and Includes General Reductions)						
Project: BP9: Soldier Lethality Technologies (CA)						
Congressional Add: Academic accelerator program						FY 2024FY 2025
Congressional Add: Advanced Textiles And Shelters						17.000-
Congressional Add: Digital Night Vision Technology						6.000-
Congressional Add: Enhanced Ballistic Protective Eyewear						8.800-
Congressional Add: Enhanced Soldier Ballistic Technologies						1.000-
Congressional Add: Heroes						2.000-
Congressional Add: Nanolayered Polymer Optics						5.0002.000
Congressional Add: Pathfinder Adaptive Experimentation Force						5.000-
Congressional Add: Pathfinder Airborne						3.000-
Congressional Add: Pathfinder arctic warfare						8.0008.000
Congressional Add: Perovskite-based energy generation						5.000-
Congressional Add: Sustainability of soldier-borne equipment through synthetic biology						2.500-
Congressional Add: Wafer-level vacuum packaging						2.500-
Congressional Add: future force requirements experimentation advanced dynamic spectrum reconnaissance						5.500-
Congressional Add: materiel development for personal protection systems						10.000-
						5.000-

FY 2024	FY 2025
17.000	-
6.000	-
8.800	-
1.000	-
2.000	-
5.000	2.000
5.000	-
3.000	-
8.000	8.000
5.000	-
2.500	-
2.500	-
5.500	-
10.000	-
5.000	-

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army I BA 2: Applied Research		R-1 Program Element (Number/Name) PE 0602143A I Soldier Lethality Technology	
Congressional Add Details (\$ in Millions, and Includes General Reductions)		FY 2024	FY 2025
Congressional Add: <i>Pathfinder Air Assault</i>		10.000	2.000
Congressional Add: <i>Pathfinder multidomain operations ready ranger initiative</i>		10.000	-
Congressional Add: <i>Arctic Batteries</i>		1.500	-
Congressional Add: <i>Operational test environment and facility for cybersecurity training</i>		-	29.000
Congressional Add: <i>non PFAS firefighting protective equipment fix caps</i>		-	2.500
Congressional Add Subtotals for Project: BP9		107.800	43.500
Congressional Add Totals for all Projects		107.800	43.500
Change Summary Explanation			
Funding decrease in Fiscal Year (FY) 2026 from the previous PB to the current PB reflects realignment to Program Element (PE) 0603464A (Long Range Precision Fires Advanced Technology) for Sensor-Fuzed Weapon. The decrease reflects realignment of funding to PE 0602184A (Soldier Applied Research) to conceptualize vulnerabilities and exploitable biophysical mechanisms. The decrease reflects realignment of funding to PE 0603118A (Soldier Lethality Advanced Technology) to support small unit decision dominance.			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602143A / Soldier Lethality Technology				Project (Number/Name) AY6 / Soldier Squad Small Arms Armaments Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
AY6: Soldier Squad Small Arms Armaments Technology	-	10.018	10.343	3.229	-	3.229	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project investigates individual and crew-served weapon designs and technologies that enhance the fighting capabilities and survivability of the dismounted Warfighter in support of all of the Services. In addition, it conceives and advances weapon concepts based on innovative ballistic and advanced incapacitation technologies that will enhance the defeat of hard and soft infantry targets at extended ranges based upon the Joint Service Small Arms Technology Development Strategy (JSATDS). The Project will continue to support technology needs from all Services to include the Next Generation Family of Weapons. In addition, this Project will develop the technology/weapons concepts that will upgrade medium and heavy support weapons at echelons. Finally, this Project will perform research directed toward non-kinetic modalities to incapacitate combatants.												
Work in this Project supports key Army needs and leverages the technical research of several Program Elements (PEs) to include PE 0601102A (Defense Research Sciences) / Project AA7 (Mechanics and Ballistics), PE 0603118A (Soldier Lethality Advanced Technology), and PE 0602141A (Lethality Technology).												
The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.												
Work in this Project is performed by the Armaments Center (AC) and Army Research Laboratory (ARL).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Soldier/Squad Lethality Technology									3.801	3.875	2.497	
Description: This effort conceives and investigates advanced weapons concepts based on innovative ballistic technologies that will enhance the defeat of hard and soft infantry targets at extended ranges to ensure overmatch for Soldier Lethality. This effort will also perform research directed toward non-ballistic modalities to incapacitate combatants.												
FY 2025 Plans:												
Assess viability of candidate lethal mechanisms related to the mounted machine gun (MG) role to include defilade mission; mature understanding of threat growth implications to medium machine gun (MMG) and mounted MG capabilities; validate the fundamental explanations for the dispersion reductions in Next Generation Squad Weapons allowing for applications to other types of systems; conduct advanced diagnostic laboratory experiments of novel propellant charges; assess system applications and validate weapon technologies enabling high performance compact lightweight weapons; complete theoretical												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army			Date: June 2025		
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602143A / <i>Soldier Lethality Technology</i>		Project (Number/Name) AY6 / <i>Soldier Squad Small Arms Armaments Technology</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2024	FY 2025	FY 2026
and computational analyses for prescribing near-field energy field parameters for biological effects; validate the ability to produce scalable incapacitating effects using near-field energy field mechanism in the appropriate biological model.					
FY 2026 Plans: Will investigate accuracy improvement for infantry weapon systems leveraging unique instrumentation, such as the automated jump range; develop understanding and refine high pressure ballistic technology and associated performance and benefits; develop comprehensive understanding of emerging threat systems and develop ways to maintain or gain overmatch against said threat within the platoon formations; develop material and operational concepts to increase individual soldier lethality to include but not limited to the heavy machine gun (HMG) and medium machine gun (MMG) strategy.					
FY 2025 to FY 2026 Increase/Decrease Statement: Funding reflects reduction in near-field energy research in biological effect models. Funding restructure within project and to Program Element (PE) 0602184A (Soldier Applied Research) / Project DN1 (Directed Energy Biological Effects).					
Title: Small Arms Enabling Technologies			6.217	6.468	-
Description: This effort designs and develops small arms weapon systems, enablers, and ammunition technologies that will maintain decisive lethal overmatch capabilities to the Joint Warfighter. This effort matures small arms weapon system designs in support of Joint Warfighter's capability needs.					
FY 2025 Plans: Design concepts to study small arms characterization techniques and metrics; design and develop machine gun component technology for increased volume fire effectiveness; mature algorithms and models used for advanced ballistics and holistic weapon signature system analysis; investigate fire control components and methodologies to improve future small arms system performance and emission reduction.					
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects conclusion of this effort. Funding restructured within project.					
Title: 120mm Mortar Modernization			-	-	0.732
FY 2026 Plans: Will investigate the application of rocket motor technologies on 120mm Mortar Cartridges to increase range capabilities; mature energetic components for future application onto mortar cartridges while meeting Insensitive Munition requirements.					
FY 2025 to FY 2026 Increase/Decrease Statement:					

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602143A / Soldier Lethality Technology	Project (Number/Name) AY6 / Soldier Squad Small Arms Armaments Technology		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Funding increase reflects initiation of 120mm Mortar Modernization for initial component design for Intergration of Insensitive Munitions.				
Accomplishments/Planned Programs Subtotals		10.018	10.343	3.229
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602143A / Soldier Lethality Technology				Project (Number/Name) AZ2 / Body Armor & Integrated Headborne Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
AZ2: Body Armor & Integrated Headborne Technology	-	6.321	5.807	4.739	-	4.739	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project investigates and develops materials for Soldier-borne protective equipment, such as body armor and combat helmets, to increase protection from ballistic, blast, and blunt impact threats. This Project also investigates and executes systematic studies to design and develop materials, devices, systems and methods that enable the identification of protective solutions against ballistic, blast and directed energy threats. Included are investigations of emerging technologies, novel materials, and test methods and integration of personal armor, combat helmets, hearing protection, eyewear, and other personal protective equipment items.												
The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.												
Work in this Project is performed by Soldier Center (SC).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Body Armor & Integrated Headborne Technology									6.321	5.807	4.739	
Description: This research effort supports the investigation of novel materials, component designs, and material modeling to design and develop technologies that protect Soldiers against ballistic, blast, and directed energy threats. This effort utilizes a cross-disciplinary, human-focused approach to develop technologies which optimize tradeoffs in ballistic and blast protective component design. This effort addresses the Army challenge of easing overburdened Soldiers in small units and aligns to Soldier protection modernization priorities.												
FY 2025 Plans:												
Characterize relationship between processing parameters, microstructure, and ballistic performance of state of the art ballistic materials; explore improvements to helmet preform processing methods to achieve desired microstructures; develop novel helmet materials and design concepts to achieve protection parity with vital torso armor; mature novel headform concept for dynamic measurements of behind-helmet energy transfer during ballistic impact; mature electrowetting component technologies for low-powered antifogging solution for combat eyewear; investigate new active laser eye protection technology concepts and assess sensory protection gaps against emerging directed energy threats; investigate innovative backing materials to reduce behind armor blunt trauma and improve edge performance of vital torso protection; design and develop new approaches to scalable plate protection which incorporates novel materials and processing techniques; determine the feasibility of conformal and extreme												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602143A / <i>Soldier Lethality Technology</i>	Project (Number/Name) AZ2 / <i>Body Armor & Integrated Headborne Technology</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p>complex geometries with respect to ballistic performance; develop a test method to evaluate combat uniforms and blast protective equipment against long duration multi-fragmentation threats (earth, soil, structure, etc.).</p> <p><i>FY 2026 Plans:</i> Will begin validation of relationship between processing parameters, microstructure, and ballistic performance of state-of-the-art ballistic materials; begin maturing component improvements to helmet preform processing methods and materials design concepts to achieve protection parity with vital torso armor; begin validation of novel head form concept for dynamic measurements of behind-helmet energy transfer during ballistic impact; validate electrowetting component technologies for low-powered antifogging solution for combat eyewear; design new protective garment architecture that mitigates threat from blast debris based upon requirements recommendations that emerge from the multi-fragmentation threat test method development; conduct experiments to assess the effectiveness of new materials and processes against prevalent and emerging threats for vital torso protection; investigate conformable/flexible armor technologies to determine tradeoff between protection and Soldier performance.</p> <p><i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> Funding decrease reflects realignment to Program Element (PE) 0603464A (Long Range Precision Fires Advanced Technology) / Project CZ8 (PrSM Modular Payload Advanced Development) to continue Sensor Fuzed Weapon Development effort.</p>			
Accomplishments/Planned Programs Subtotals		6.321	5.807
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602143A / Soldier Lethality Technology				Project (Number/Name) AZ5 / Soldier Protection Technology - Vulnerability			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
AZ5: Soldier Protection Technology - Vulnerability	-	10.198	9.897	8.321	-	8.321	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Project investigates and develops Soldier protection methodologies, which includes the materials, methods, and models that enable design and integration of emerging material technologies into lightweight, flexible and modular Soldier equipment to protect against the range of existing and emerging battlefield threats for head, torso, and extremity protection. Specific research thrusts include the development of materials and mechanisms to enhance ballistic protection; computational models and associated laboratory experiments to provide a fundamental understanding of material properties and failure mechanisms, as well as correlation to ballistic/blast/blunt impact performance of Soldier personal protective equipment (PPE) and improved fibers, composite, and ceramic materials. Specific technologies support experimental helmets that reduce impact and blast loading to the head, Soldier torso protection systems to increase protection from ballistic and blunt impacts, and novel fibers and fabrics that provide additional survivability mechanisms.

Work in this Project supports key Army needs and is fully coordinated with several PEs to include PE 0602143A (Soldier Lethality Technology) and 0603118A (Soldier Lethality Advanced Technology); and leverages the technical research of several PEs to include PE 0601102A (Defense Research Sciences) / Project AA7 (Mechanics and Ballistics) and 0602144A (Ground Technology) / Project BL1 (Materials and Manufacturing Research Technology).

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.

Work in this Project is performed by the Army Research Laboratory (ARL).

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

	FY 2024	FY 2025	FY 2026
Title: Soldier Protection Technologies	4.021	4.075	3.908
Description: This effort develops integrated lightweight, flexible, and modular protection equipment that is tailored to support the 'Soldier as a system' approach for defeat of emerging threats. Research areas encompass high fidelity ballistic impact injury models for hard and soft tissues, novel ceramic architectures to include graded and hierarchically structured ceramics, and novel fiber solutions for backing materials to deliver Soldier protection systems to meet emerging ballistic and signature management threats. This effort supports small caliber lethal mechanisms research in PE 0602143A (Soldier Lethality Technology) / Project AY6 (Soldier Squad Small Arms Armaments Technology).			
FY 2025 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602143A / Soldier Lethality Technology	Project (Number/Name) AZ5 / Soldier Protection Technology - Vulnerability		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Augment and apply computational tools for ceramic-composite armor technology along with computational methods for critical tissue injury assessment for protection against current and emerging threats; implement conformal armor concepts into integrated protection system solutions; insert emerging material and fabrication solutions for robust protection systems. FY 2026 Plans: Will mature behind armor injury assessment tools and investigate new material solutions for improved Soldier protection concepts; explore and design new computational tools addressing protection solutions for emerging threats; mature computational tools to assess optimal protection solutions for Unmanned Aircraft System (UAS) borne threats; explore and mature conformal armor concepts. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects an economic adjustment.				
Title: Soldier-Borne Advanced Protection Materials Description: Utilizing understanding of protection materials such as armor ceramics and associated failure mechanisms, conduct applied research of emerging armor materials to enable affordable design of lightweight ballistic protective systems for the future Soldier. Provide quantitative scientific basis for modeling and simulation that result in materials that utilize new lethal mechanisms/ protection schemes for the individual Warfighter. This effort supports Soldier Protection Technologies bullet and small caliber lethal mechanisms research in PE 0602143A (Soldier Lethality Technology) / Project AY6 (Soldier Squad Small Arms Armaments Technology). FY 2025 Plans: Refine and mature highly diamond-loaded composite ceramics for advanced ceramic plates; validate novel manufacturing approaches for achieving improved diamond packing and bulk density; optimize micro-scale to meso-scale designs to achieve ideal pre-stresses at material interfaces; conduct experiments on ceramic materials with geometries and structures for point-of-need protection; validate engineer bonding and integration strategies for composites and ceramics to create armor packages that incorporate improved ballistic response relative to state-of-the-art. FY 2026 Plans: Will develop computational tools for armor optimization; mature bonding and integration strategies for composites and ceramics to develop armor packages with improved ballistic response relative to state-of- the-art and emerging threats scenarios. FY 2025 to FY 2026 Increase/Decrease Statement: Funding realigned to PE 0603464A (Long Range Precision Fires Advanced Technology) / Project CZ8 (PrSM Modular Payload Advanced Development) to continue Sensor Fuzed Weapon Development		3.270	2.878	1.474
Title: Novel Camouflage and Concealment Materials		2.907	2.944	2.939

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602143A / Soldier Lethality Technology	Project (Number/Name) AZ5 / Soldier Protection Technology - Vulnerability	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p>Description: The modern battlefield presents a new generation of detection threats across a wide range of wavelengths and host platforms, coupled with increasingly sophisticated computational analysis tools for identification and targeting. This effort will develop new materials and manufacturing concepts that enable a new generation of lightweight, efficient camouflage and concealment systems for the dismounted Soldier.</p> <p>FY 2025 Plans: Research novel camouflage and concealment materials identified as providing extreme material performance opportunities for use in decoy and deception systems; assess reported properties and pathways for materials developed through first generation machine learning strategies for further material development; design and develop materials providing novel camouflage and concealment to provide decoy and deception capabilities for autonomous assets in support of small dismounted Soldier teams and unit formations; validate material performance for further maturation through manufacturing science.</p> <p>FY 2026 Plans: Will design and develop camouflage and concealment materials identified by machine learning as providing extreme material performance opportunities for use in decoy and deception systems; assess reported properties and pathways for materials developed through second generation machine learning strategies for further material development; continue to design and develop materials providing novel camouflage and concealment to provide decoy and deception capabilities for autonomous assets with Aided Target Recognition (AiTR) capabilities focused in support of small dismounted Soldier teams and unit formations; investigate and develop processing and manufacturing science for integration of reconfigurable materials and coatings onto Army platforms.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects an economic adjustment for non-pay and non-fuel purchases.</p>			
Accomplishments/Planned Programs Subtotals		10.198	9.897
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602143A / Soldier Lethality Technology				Project (Number/Name) BB4 / Dismounted Soldier Survivability Materials			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
BB4: Dismounted Soldier Survivability Materials	-	4.838	5.267	4.786	-	4.786	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Project investigates fibers, textiles, components, and materials focused on enhancing Soldier survivability from combat threats (flame and thermal, blast and ballistic, multispectral sensor, and laser threats) and environmental threats (e.g., cold, heat, wet, vector, antimicrobial, etc.) to increase operational effectiveness while decreasing the Soldier's physical and cognitive burden. The results from this Project will transition knowledge, materials, subcomponents and methods to Advanced Technology Development efforts in support of enhancing Soldier Lethality by providing protective material solutions focused on the aspects of dismounted movement and maneuver operations of the Army. This Project develops and applies validation methods that enable systematic studies of human systems integration principles and practices to protective equipment materials and designs to advance the understanding of trade-offs between protection, lethality, and mobility.

Work in this Project supports key Army needs and leverages/complements the technical research of several Program Elements (PEs) to include PE 0601102A (Defense Research Sciences), PE 0602143A (Soldier Lethality Technology) / Project AZ5 (Soldier Protection Technology - Vulnerability), and PE 0603118A Soldier Lethality Advanced Technology / Project BB3 (Dismounted Soldier Survivability Equip/Tech Integ).

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.

Work in this Project is performed by the Soldier Center (SC).

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

	FY 2024	FY 2025	FY 2026
Title: Dismounted Soldier Survivability Materials	4.838	5.267	4.786
Description: This effort investigates materials, devices and methods that aid in the design and development of multifunctional materials for Soldier protective clothing and individual equipment. This effort conducts research to investigate and identify multifunctional material properties at the micron and sub-micron level to mitigate Soldiers susceptibility and vulnerability to operational threat, i.e., flame, thermal, environmental, and multispectral sensors. Efforts also investigate and develop devices and systems that enable extended dismounted mission duration by reducing the demand for water resupply and enabling Squad organic water filtration systems			
FY 2025 Plans: Perform studies to determine the effect of fiber spinning process parameters on the properties and fabrication of engineered fibers; investigate yarn design effect on properties and functionality, and design yarns to enhance multifunctional properties; investigate knitting, weaving and advanced fabric design methods to enhance blast debris protection, vector protection, flame resistance, and moisture wicking of potential military textiles; investigate electronics and programming needed for supporting			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602143A / <i>Soldier Lethality Technology</i>	Project (Number/Name) BB4 / <i>Dismounted Soldier Survivability Materials</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p>fabrics with incorporated conductors for power and data; investigate ability to incorporate power and data transmission using commercial sensors; investigate the design and use of a management hub to support power and data distribution within the textile; design and investigate handheld water quality sensors that can measure water quality via more than one indicator (multiplexed); design a single water purification device at the soldier/squad level that combines capabilities to remove microbiological contaminants, hazardous chemicals and salt; investigate novel camouflage material approaches to reduce effectiveness of aided target recognition algorithms and their ability to detect, recognize and identify dismounted soldiers; develop simulated and laboratory-level demonstrators for camouflage materials.</p> <p><i>FY 2026 Plans:</i> Will investigate the impact of incorporating multiple functionalities, such as blast debris protection, vector protection, flame resistance, and moisture wicking into fiber, yarn and fabric constructions on each functionality to balance complexity and functional efficacy; determine the appropriate combination of functionalities at the fiber, yarn and fabric level and validate the design in a garment form factor; conduct experiments on novel fiber constructions for per-fluoroalkyl substance (PFAS) free fabric treatments; determine the practical limits of power and data transmission through a textile and validate with commercial and military electronic hardware; validate a Soldier/squad level water purification device concept that removes microbiological contaminants and hazardous chemicals with complex, dosed water to simulate contaminated ground water; validate the operational lifespan of a multiplexed water quality sensor as an end of life indicator for water filtration systems; determine efficacy of a camouflage material concept designed to reduce the effectiveness of aided target recognition algorithms and their ability to detect, recognize and identify dismounted Soldiers.</p> <p><i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> Funding decrease reflects an economic adjustment.</p>			
Accomplishments/Planned Programs Subtotals		4.838	5.267
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602143A / Soldier Lethality Technology				Project (Number/Name) BC2 / Next Gen Mobility & Lethality Tech for Warfighters			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
BC2: Next Gen Mobility & Lethality Tech for Warfighters	-	6.726	8.334	5.623	-	5.623	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Project investigates the means to monitor, assess, predict and optimize/enhance Soldier/small unit and decision-making and shoot and move performance. In addition, it will provide design guidance for individual and mission specific equipment (e.g., individual protection, small arms, load carriage, information portrayal etc.) and quantitative impacts on Soldier I and small unit performance in the Future Operating Environment. Research conducted focuses on translating mission-essential tasks to define and measures of human Soldier performance in the trade space of mobility, survivability, and lethality. These measures of human performance will inform predictive algorithms, human based modeling and simulation, and assessment tools that enable Soldier performance trade space analysis for acquisition, training, and doctrine. These data and algorithms will allow the Army to determine the impact of new capabilities on Soldier and small unit performance and effectiveness, understand deficiencies in performance and investigate novel strategies to optimize and enhance performance.

This Project also complements and is fully coordinated with work performed across Army, Navy, and Air Force under the Human Systems Community of Interest: Protection, Sustainment, and Warfighter Performance.

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.

Work in this Project is performed by the Soldier Center (SC).

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

	FY 2024	FY 2025	FY 2026
Title: Human Interaction for Mobility & Lethality	6.726	8.334	5.623
Description: This effort investigates and develops human performance based design guidance for protection and weapon systems and sub systems to improve the mobility and lethality of individuals and small units. The applied research translates traditional means for measuring and understanding human performance to the means to conduct assessment for Warfighter and small unit readiness and/or new capabilities.			
FY 2025 Plans: Investigate a probiotic bacteria designed to mitigate fatigue and enhance Warfighter operational performance in a human study under simulated operational stress (sleep deprivation); investigate novel means (e.g., cognitive resistance training, neurostimulation, biofeedback, supplementation, physical augmentation systems) and guidelines for use to enhance Soldier performance; initiate the development of novel metrics to quantify the impacts of Soldier clothing and individual equipment (CIE) on Soldier performance that align to mobility, lethality and survivability continue to investigate the effects of head supported mass on Soldier task performance in order to develop higher fidelity models for simulation to inform headborne system design; conduct			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602143A / <i>Soldier Lethality Technology</i>	Project (Number/Name) BC2 / <i>Next Gen Mobility & Lethality Tech for Warfighters</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p>investigations to determine optimal combinations of information presentation and multimodal system inputs (e.g., gesture, gaze, voice, head movements) to optimize human performance when interacting with augmented reality during operationally relevant tasks; continue to conduct meta-analyses and conduct investigations to fill gaps of understanding between known stressors and their interaction on Soldier performance outcomes (e.g., reaction time, memory, endurance, strength, executive function, etc.).</p> <p><i>FY 2026 Plans:</i> Will investigate nutritional supplementation to understand impacts on performance (e.g., recovery, physical performance, immune response, etc.); investigate brain-computer interface technologies for cognitive workload assessment capability; execute research data collection of impact of headborne load on Soldier task performance for data integration into a musculoskeletal modeling effort; continue investigation through data collections, analysis and reporting on the optimal combinations of information presentation and multimodal system inputs (e.g., gesture, gaze, voice, head movements) to optimize Soldier-System performance when interacting with augmented reality and/or autonomous systems during operationally relevant tasks; validate the integration of results of previous years meta-analyses and investigations of gaps in understanding between known stressors and their interaction on Soldier performance outcomes into the prediction models and investigate other known gaps that exist.</p> <p><i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> Funding decrease reflects reduced investigations into expanded performance analytics, advanced decision support tools, technology assessment methodologies, dynamic anthropometry for improved design, and research on cognitive resilience and physical augmentation.</p>			
Accomplishments/Planned Programs Subtotals		6.726	8.334
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602143A / Soldier Lethality Technology				Project (Number/Name) BC7 / Training Technology (Other than STE)			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
BC7: Training Technology (Other than STE)	-	32.616	29.446	20.772	-	20.772	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Project funds research into technologies and their applications that can inform and/or enhance the Army's live, virtual, and constructive training systems. This Project conducts research in immersive virtual, mixed, and augmented reality (AR) environments that stimulate human senses (e.g., sight, sound, and touch) and also conducts laboratory experiments to understand how users interface with the technology in order to improve the realism of simulation environments and therefore create enhanced immersion and more effective training systems. Models and simulations are designed are developed to allow realistic, fair fight engagements across all training environments and training devices, to include the cyberspace domain. Included in the investigations of this Project are also medical training systems (e.g., part-task trainers and physiological modeling).

Work in this Project supports key Army needs and complements efforts in Program Element (PE) 0603118A (Soldier Lethality Advanced Technology) / Project BC8 (Training Advanced Technology (Other than STE)).

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.

Work in this Project is performed by the Soldier Center (SC) and the Institute for Creative Technologies (ICT) University Affiliated Research Center (UARC).

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2024	FY 2025	FY 2026
<div><div>Title: Medical Training Technology</div><div>Description: Included in this effort will be the development of new medical training simulations to train medical personnel across all levels of care. Improvements in haptic capabilities will ensure hyper bio-fidelity for all levels of care. Automated measures of student performance will support Army medical Individual Critical Task Lists (ICTLs). Research areas will also include more realistic tissue properties supporting part-task trainers and modular patient simulator systems. Initial exploration of Army ICTLs will result in early proof-of-concept development of proof-of concept training systems to support non-traditional medical areas, such as dental training simulations.</div><div>FY 2025 Plans: Implement/integrate physical and software solutions for prolonged care in support of Multi-Domain Operations (MDO) training environment; validate consolidated physiology engine and updated haptic hardware against more dynamic prolonged care use cases that support Army medical training, such as extended austere environment, gender care differences and patient handoff.</div><div>FY 2026 Plans:</div></div>	3.471	3.363	2.278

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602143A / Soldier Lethality Technology	Project (Number/Name) BC7 / Training Technology (Other than STE)		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Will mature physical and software solutions for prolonged care in support of Multi-Domain Operations (MDO) training environment; continue validation of consolidated physiology engine and updated haptic hardware against more dynamic prolonged care use cases that support Army medical training, such as extended austere environment, gender care differences and patient handoff. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects completion of initial design and development for physiology engine and migration into validation checks testing for specific prolonged care use cases.				
Title: Warfighting M/S Concepts and Design (ICT) Description: This Project designs and develops photorealistic synthetic environments, multi-sensory interfaces, artificially intelligent agents, and human performance assessment technologies to create virtual, augmented, and mixed reality simulation environments for training. This Project uses advanced modeling, simulation, and leadership development techniques to leverage the emerging immersive technologies of industry and the research and development community to advance the Army's capabilities. FY 2025 Plans: Investigate novel educational, operational, and training applications of emergent artificial intelligence (AI) methods such as generative AI; develop military-relevant AI training methods to expand the utility of AI for generating educational-, training-, or operational-insights and recommendations; continue investigation of adaptive, multi-modal interfaces for Army-specific applications of augmented reality applications; fund research to study staff-specific learning outcomes to better deliver content and improving training outcomes. FY 2026 Plans: Will continue research of novel educational, operational, and training applications of emergent artificial intelligence (AI) methods such as generative AI within militarily-relevant simulations; develop military-relevant AI-based training methods for both individual and collective training, expand the areas of modeling and simulation, to include investigating methods to expand representations of electronic and intelligence areas of operation, expand the utility of AI for generating educational-, training-, or operational-insights and recommendations; continue investigation of adaptive, multi-modal interfaces for Army-specific applications of augmented reality applications; study staff-specific learning outcomes to better deliver content and improving training outcomes independent of location. FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase corresponds to additional AI modeling efforts in support of Next Generation Constructive.		7.097	5.399	5.588
Title: Digital Terrain for Live Training Description: This effort investigates technologies to enhance the fidelity and visual effects of digital terrain for live training systems, with an objective metric of reducing overall training time to gain proficiency in the live environment. It addresses		6.721	6.545	1.225

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army			Date: June 2025		
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602143A / <i>Soldier Lethality Technology</i>	Project (Number/Name) BC7 / <i>Training Technology (Other than STE)</i>		
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2024	FY 2025	FY 2026
live training needs for conducting force-on-force, combined arms exercises to enhance readiness at Army home stations and Combat Training Centers by enhancing vertical terrain resolution, physics-based blast effects on terrain, and data compression technologies.					
FY 2025 Plans: Validate physics- based algorithms for munitions effects in live range environment, develop wireless data compression architecture for live/virtual/constructive training environments; develop data models that enable high fidelity engagements in live environment; and develop and implement layered and scalable terrain architecture for live range environment use cases.					
FY 2026 Plans: Will further mature physics- based algorithms for munitions effects in live range environment based on initial validation, validate wireless data compression architecture for live/virtual/constructive training environments; validate data models that enable high fidelity engagements in live environment; and validate and implement layered and scalable terrain architecture for live range environment use cases.					
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects planned completion of component and architecture design.					
Title: Simulation Management Technologies			7.794	6.513	3.300
Description: This effort aims to automate management of resources and equipment associated with the planning, preparation, execution, and assessment of individual through collective training exercises. This effort will inform requirements and research capabilities to enable a self-healing simulation architecture that can automatically architect, configure, detect, deploy, and manage resources to support individual and collective training use-cases. The design and development of fully autonomous constructive models will be leveraged within this architecture to further automate exercise execution and greatly increase time and effectiveness of training and readiness opportunities within the distributed training environment.					
FY 2025 Plans: Design and develop hardware acceleration architecture; validate limited number of dynamic behavior algorithms for large scale training exercise use cases; validate configuration and authoring components in relevant planning pre-exercise use cases; and integrate component architectures into a single solution for implementation in execution phase of large scale collective simulated exercises.					
FY 2026 Plans: Will validate initial hardware acceleration architecture; mature limited number of dynamic behavior algorithms for large-scale training exercise use-cases based on initial validation; mature configuration and authoring components in relevant planning pre-					

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602143A / <i>Soldier Lethality Technology</i>	Project (Number/Name) BC7 / <i>Training Technology (Other than STE)</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
exercise use-cases; and mature component architectures into a single solution for implementation in execution phase of large-scale collective simulated exercises.			
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects planned completion of design and development activities, as well as the beginning of architecture validation experiments.			
Title: Multi-Domain Environments for Training Description: This effort will define a new, common MDO competency framework to drive machine-supported training performance data collection, tracking and readiness projections for current and new MDO use-cases. This effort also investigates emerging operational/training paradigms, including a detailed focus on modeling non-combat factors of operational environments and developing models necessary to train for Information Advantage. FY 2025 Plans: Develop architecture design leveraging mature/reusable Measures of Performance/Effectiveness (MOPs/MOEs); develop and implement MDO profiles and authoring tools/user interfaces aligned to knowledge, skills, abilities and behaviors (KSABs) across identified MDO task structures; begin limited design architecture to simulate first order effects in information warfare domain. FY 2026 Plans: Will begin initial development of architecture previously designed to leverage mature/reusable Measures of Performance/Effectiveness (MOPs/MOEs); validate MDO profiles and authoring tools/user interfaces aligned to knowledge, skills, abilities and behaviors (KSABs) across identified MDO task structures; complete design architecture to simulate first order effects in information warfare domain. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects restructure within project to design and develop a consistent threat representation across the six modeling and simulation communities, restructure within the project Information Environment Simulation for Training to support STE One World Terrain tools and methods for delivering terrain and environmental data. Funding realigned to Program Element (PE) 0603464A (Long Range Precision Fires Advanced Technology) / Project CZ8 (PrSM Modular Payload Advanced Development) for Sensor-Fuzed Weapon.		7.533	7.626
Title: Processing Technologies for Live Training FY 2026 Plans: Will design and develop sensors and algorithms that will be used in next gen small arm weapon systems to estimate current posture of Soldiers during Live exercises. Will posture positions to be captured including static and dynamic (i.e. standing,		-	-
			1.785

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602143A / <i>Soldier Lethality Technology</i>	Project (Number/Name) BC7 / <i>Training Technology (Other than STE)</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
sitting, lying, kneeling, jumping, walking running, lifting, etc) Will conduct initial investigation of solutions to determine accuracy of engagements with and without posture determination. (fair fight analysis). <i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> Funding increase reflects the initiation of next generation algorithms to support Live training and next generation squad weapon systems. Funding realigned within project to reduce manual observer/controller interventions through use of digital assets and artificial intelligence to dynamically change scenario objectives in real-time to align to training goals during live training.			
<i>Title:</i> Synthetic Cyberspace Effects for Training <i>FY 2026 Plans:</i> Will investigate current capabilities for automated exercise generation, assessment, data collection, process, display and storing of relevant data methods. Will design and develop capability for initial data fusion in 2D/3D format using both government and commercial open-source sensors. <i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> Funding increase reflects the initiation of Cyberspace capability to support Army Cyber and Army Intelligence community simulated training that currently does not exist. Funding realigned within project to increase support for the Cyberspace Exercise Visualization and Interaction Technology in Cloud-Hosted Environment task, which aims to establish and develop high-fidelity cyberspace and information warfare capabilities that support cross-domain solutions for live, virtual, and constructive simulation environments.		-	-
			1.888
Accomplishments/Planned Programs Subtotals		32.616	29.446
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602143A / Soldier Lethality Technology				Project (Number/Name) BD1 / Adv Soldier Sensors/Displays Tech for Dismounts			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
BD1: Adv Soldier Sensors/ Displays Tech for Dismounts	-	16.253	17.598	17.062	-	17.062	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project designs and develops low power, next generation modular sensor and display components for detection and identification of both threats and friendlies in all environments to increase situational awareness, decrease fratricide, and enable Soldiers to respond more quickly for greater lethality.												
This Project complements s work done in Program Element (PE) 0603118A (Soldier Lethality Advanced Technology) / BC9 (Adv Soldier Sensors/Displays AdvTech for Dismounts).												
Work in this Project is performed by the Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Advanced Soldier Sensors/Displays Technology for Dismounts									16.253	17.598	17.062	
Description: This effort models, simulates, investigates, designs, and develops novel low power, modular electro-optic / infrared (EO/IR), displays, augmented reality approaches and integrates aided/automatic target detection and recognition techniques to enable improved Soldier maneuver and lethality through greater information fidelity to increase Soldier probability of recognition/ identification and tracking of all threats.												
FY 2025 Plans:												
Validate representation of autonomous unmanned aerial vehicle cues and operation for minimized cognitive burden to the Soldier; investigates optimal data fusion for digital low light and long-wave infrared imagers to improve situational awareness and reduce time to acquire threats; investigate degree of tolerable latency for fusion of disparate sensors versus dismounted tasks; develop methods to improve alternative advanced materials and processing for imaging during overcast starlight performance; mature improved Complementary Metal-Oxide Semiconductor (CMOS) low light level sensors in clear starlight light levels to validate readiness for integration into host systems; mature Read Out Integrated Circuit (ROIC) design and develop reduced pixel pitch high-definition longwave infrared (LWIR) sensors for tailorable SWaP and/or target acquisition performance; investigate novel technologies/algorithms to enable next generation micro-displays. Investigate novel battery technologies with applicability to current and emerging dismounted sensor systems.												
FY 2026 Plans:												
Will validate degree of improvement gained through advanced processing and signal multiplication methods for overcast starlight imagers; investigate high-speed, high definition supporting electronics for next generation small pixel large format infrared imaging												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602143A / Soldier Lethality Technology		Project (Number/Name) BD1 / Adv Soldier Sensors/Displays Tech for Dismounts
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
arrays to streamline size, weight, and power (SWaP) and processing; determine Read Out Integration Circuit (ROIC) hybridization to support early pixel fabrication designs, leading to low SWaP sensors; investigate state of the art organic and inorganic light emitting diodes (LED) micro display technology for military applications.				
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects completion of initial maturation of Read Out Integrated Circuit (ROIC) design for sensors.				
Accomplishments/Planned Programs Subtotals		16.253	17.598	17.062
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025																		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602143A / Soldier Lethality Technology				Project (Number/Name) BD6 / Soldier Sys Interfaces/Integration-Sensor Tech																			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost																
BD6: Soldier Sys Interfaces/Integration- Sensor Tech	-	0.301	0.401	0.299	-	0.299	-	-	-	-	-	-																
<div>Note</div> <div>Project BD6 has realignments from Soldier System Interfaces & Integration (Sensor Technology) within this project and from task PE 0603118A (Soldier Lethality Advanced Technology) / Project BD7 (Soldier Sys Interfaces Integration-Sensor Advanced Technology).</div> <div>A. Mission Description and Budget Item Justification</div> <div>This Project investigates, designs, and validates advanced technologies and algorithms for enhancing dismounted Soldier deployed robotics and autonomous systems used to improve the Small Unit's situational awareness, survivability, and lethality. Technologies to be investigated may include: algorithms for dismounted robotic systems to enable autonomous navigation, automated object recognition, persistent surveillance, launch and recovery from vehicles, networked lethality, manned-unmanned teaming, and collaborative behaviors; and advanced user interfaces to optimize human-robotic interaction during dismounted operations. These advanced technologies will enable Squad and Platoon level autonomous reconnaissance using robotic systems to minimize the operator's dedicated control of the systems and reduce their cognitive burden, thus allowing Soldiers to be more lethal and survivable.</div> <div>Work in this Project supports key Army needs and leverages the technical research of several Program Elements (PEs) / Projects to include PE 0603118A (Soldier Lethality Technology) / Project BD7 (Soldier Sys Interfaces/Integration-Sensor Tech) and Project BC9 (Advanced Soldier Sensors/Displays Advanced Technology for Dismounts).</div> <div>The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.</div> <div>Work in this Project is performed by the Soldier Center (SC).</div> <div>B. Accomplishments/Planned Programs (\$ in Millions)</div> <table><tr><td></td><td>FY 2024</td><td>FY 2025</td><td>FY 2026</td></tr><tr><td>Title: Soldier System Interfaces & Integration (Sensor Technology)</td><td>0.301</td><td>-</td><td>-</td></tr><tr><td>Description: This effort will investigate, design, and validate advanced dismounted Soldier robotic and autonomous systems technologies to enable autonomous navigation, manned-unmanned teaming, and networked reconnaissance to improve Soldier lethality, situational awareness, and survivability during tactical operations.</td><td></td><td></td><td></td></tr><tr><td>Title: Soldier Situational Awareness Technologies</td><td>-</td><td>0.401</td><td>0.299</td></tr></table>														FY 2024	FY 2025	FY 2026	Title: Soldier System Interfaces & Integration (Sensor Technology)	0.301	-	-	Description: This effort will investigate, design, and validate advanced dismounted Soldier robotic and autonomous systems technologies to enable autonomous navigation, manned-unmanned teaming, and networked reconnaissance to improve Soldier lethality, situational awareness, and survivability during tactical operations.				Title: Soldier Situational Awareness Technologies	-	0.401	0.299
	FY 2024	FY 2025	FY 2026																									
Title: Soldier System Interfaces & Integration (Sensor Technology)	0.301	-	-																									
Description: This effort will investigate, design, and validate advanced dismounted Soldier robotic and autonomous systems technologies to enable autonomous navigation, manned-unmanned teaming, and networked reconnaissance to improve Soldier lethality, situational awareness, and survivability during tactical operations.																												
Title: Soldier Situational Awareness Technologies	-	0.401	0.299																									

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602143A / <i>Soldier Lethality Technology</i>	Project (Number/Name) BD6 / <i>Soldier Sys Interfaces/Integration-Sensor Tech</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p>Description: This effort will investigate, design, and validate advanced dismounted Soldier robotic and autonomous systems technologies to enable autonomous navigation, manned-unmanned teaming, and networked reconnaissance to improve Soldier lethality, situational awareness, and survivability during tactical operations.</p> <p>FY 2025 Plans: Investigate, design and develop, government owned, autonomy and teaming algorithms for resource constrained Army Squad and Platoon level Small Unmanned Aerial Systems (SUAS) to unburden the Small Unit and improve their situational awareness, lethality, and reconnaissance.</p> <p>FY 2026 Plans: Will design and develop Small Unmanned Aerial Systems (SUAS) autonomy and multi-agent teaming capabilities for dismounted operations to improve the Small Unit's situational awareness and lethality.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects a reduction in efforts to investigate S&T on Small Unmanned Aerial systems autonomous capabilities and situational awareness technologies to PE 0603118A (Solider Lethality Advanced Technology) / Project BD7 (Soldier Sys Interfaces/Integration-Sensor AdvTech and to PE 0603464A (Long Range Precision Fires Advanced Technology) / Project CZ8 (PrSM Modular Payload Advanced Development).</p>			
Accomplishments/Planned Programs Subtotals		0.301	0.401
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602143A / Soldier Lethality Technology				Project (Number/Name) BD8 / Soldier & Sm Unit Tactical Energy Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
BD8: Soldier & Sm Unit Tactical Energy Tech	-	6.911	-	-	-	-	-	-	-	-	-	-
A. Mission Description and Budget Item Justification This Project conducts applied research and development on materials and component level power and energy technologies in the areas of energy storage, power generation, alternative energy, and intelligent power distribution and thermal management designs that support Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) and Soldier power needs to include next generation squad weapons and advanced optical devices and sensors. Enables future Soldier lethality and mobility for longer mission durations at lighter weights to provide enhanced lethality and tactical overmatch of adversaries, and to reduce the burden on the Soldier. This Project support key Army needs and complements the technical research of Program Element 0602184 (Soldier Applied Research) / Project CO1 (Soldier Power and Energy Concepts) and Program Element 0603118A (Soldier Lethality Advanced Technology) / BD9 (Soldier & Sm Unit Tactical Energy AdvTech). The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy. Work in this Project is performed by the Army Research Laboratory (ARL) and Command, Control, Communication, Computers, Cyber, Intelligence, Surveillance and Reconnaissance Center (C5ISR) Center.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Tactical Power for Soldier Lethality									5.946	-	-	
Description: This effort investigates, designs, and develops innovative materials and component level power generation and energy storage technologies that support next generation weapons, sensors, radios, and human augmentation devices enabling Soldiers and Small Units to maximize probability of target hits, improve collective situational awareness, ensure multiple communication streams, and assist with tactical tasks in order to decrease Soldier load and power burden, and increase power capabilities by providing more energy to prolong mission run-time.												
Title: Materials & Component Technologies for Energy Independence									0.965	-	-	
Description: The effort develops technologies to substantially reduce the number of batteries required to accomplish dismounted Soldier/Squad mission objectives by developing more efficient power and thermal management for small systems and harvesting energy and alternative energy technologies thereby significantly reducing Soldier-borne load and logistics requirements for Soldier/Squad power and energy.												
Accomplishments/Planned Programs Subtotals									6.911	-	-	

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602143A / Soldier Lethality Technology	Project (Number/Name) BD8 / Soldier & Sm Unit Tactical Energy Tech
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
D. Acquisition Strategy N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602143A / Soldier Lethality Technology				Project (Number/Name) BE3 / Joint Service Combat Feeding Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
BE3: Joint Service Combat Feeding Technology	-	4.074	4.081	4.276	-	4.276	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Project investigates and develops nutrient compositions and stabilization techniques to maximize the Warfighter's physical and cognitive performance on the battlefield, investigates technologies to enhance detection and identification capabilities of chemical and biological threats in foods, and develops innovative ration and field feeding technologies to reduce resupply requirements for the multi-domain battlefield. 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.

Work in this Program Element (PE) is related to and fully coordinated with PE 0602787A (Medical Technology) / Project MK4 (Warfighter Health Applied Research Technology) to develop technologies and concepts; Army Additive Manufacturing Community of Practice to enable customization, increase readiness, and improve sustainment due to fabrication of end-use items at point of need; Defense Threat Reduction Agency to maximize protection of rations from contamination; Defense Health Agency (DHA) to transition and develop materiel solutions in the microbiome technical areas; and the Defense Health Agency (DHA) Joint Program Committee-5, which seeks to develop effective nutritional countermeasures against stressors and to maximize health, performance, and well-being.

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.

Work in this Project is performed by the Soldier Center (SC).

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

	FY 2024	FY 2025	FY 2026
Title: Joint Service Combat Feeding Technology	4.074	4.081	4.276
Description: This effort investigates, designs, and develops nutrient compositions and stabilization techniques to maximize the Warfighter's physical and cognitive performance on the battlefield. The effort investigates technologies to enhance detection and identification capabilities of chemical and biological threats in foods and develops innovative ration and field feeding technologies to reduce resupply requirements. Work in this area results in increased performance, less food-borne illness, and overall increased readiness of the Warfighter.			
FY 2025 Plans: Investigate performance nutrition and the linkages to cognitive and physical performance; design and develop methodologies to apply both commercial off-the-shelf (COTS) and emerging technologies for the mitigation of food and water contaminants;			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602143A / <i>Soldier Lethality Technology</i>	Project (Number/Name) BE3 / <i>Joint Service Combat Feeding Technology</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
investigate survey technologies for food contaminant sensors that reduce response time and reagent resupply; and determine assess performance of novel insulation materials for use in field feeding operations.			
FY 2026 Plans: Will identify and investigate interventions for prevention of pathogens in operational rations; Investigate and validate detection sensors for biological contaminants that were developed in prior work, to support reducing response time and reagent resupply; Assess impacts of footprint reduction technologies on the retention and bioavailability of micronutrients in operational ration components; Research advances in the bio fabrication of nutritional biomass candidates to evaluate alternatives to nutrient dense nourishment without a 7-day resupply or burden on Soldier load;			
FY 2025 to FY 2026 Increase/Decrease Statement: Funding Increase reflects an economic adjustment.			
Accomplishments/Planned Programs Subtotals		4.074	4.081
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602143A / Soldier Lethality Technology				Project (Number/Name) BP9 / Soldier Lethality Technologies (CA)			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
BP9: Soldier Lethality Technologies (CA)	-	107.800	43.500	-	-	-	-	-	-	-	-	-

Note

Congressional Interest Item funding provided for Soldier Lethality Technologies.

A. Mission Description and Budget Item Justification

This Project is for congressional increases that support applied research in support of Soldier Lethality, where the Soldier and Squad are treated as an integrated combat platform.

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

	FY 2024	FY 2025
<i>Congressional Add:</i> Academic accelerator program	17.000	-
<i>FY 2024 Accomplishments:</i> Congressional Interest Item funding provided for Academic accelerator program		
<i>Congressional Add:</i> Advanced Textiles And Shelters	6.000	-
<i>FY 2024 Accomplishments:</i> Congressional Interest Item funding provided for Advanced Textiles And Shelters		
<i>Congressional Add:</i> Digital Night Vision Technology	8.800	-
<i>FY 2024 Accomplishments:</i> Congressional Interest Item funding provided for Digital Night Vision Technology		
<i>Congressional Add:</i> Enhanced Ballistic Protective Eyewear	1.000	-
<i>FY 2024 Accomplishments:</i> Congressional Interest Item funding provided for Enhanced Ballistic Protective Eyewear		
<i>Congressional Add:</i> Enhanced Soldier Ballistic Technologies	2.000	-
<i>FY 2024 Accomplishments:</i> Congressional Interest Item funding provided for Enhanced Soldier Ballistic Technologies		
<i>Congressional Add:</i> Heroes	5.000	2.000
<i>FY 2024 Accomplishments:</i> Congressional Interest Item funding provided for Heroes		
<i>FY 2025 Plans:</i> Congressional Interest Item funding provided for Heroes		
<i>Congressional Add:</i> Nanolayered Polymer Optics	5.000	-

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602143A / <i>Soldier Lethality Technology</i>	Project (Number/Name) BP9 / <i>Soldier Lethality Technologies (CA)</i>
B. Accomplishments/Planned Programs (\$ in Millions)	FY 2024	FY 2025
FY 2024 Accomplishments: Congressional Interest Item funding provided for Nanolayered Polymer Optics		
Congressional Add: Pathfinder Adaptive Experimentation Force	3.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Pathfinder Adaptive Experimentation Force		
Congressional Add: Pathfinder Airborne	8.000	8.000
FY 2024 Accomplishments: Congressional Interest Item funding provided for Pathfinder Airborne		
FY 2025 Plans: Congressional Interest Item funding provided for Pathfinder Airborne		
Congressional Add: Pathfinder arctic warfare	5.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Pathfinder arctic warfare		
Congressional Add: Perovskite-based energy generation	2.500	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Perovskite-based energy generation		
Congressional Add: Sustainability of soldier-borne equipment through synthetic biology	2.500	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Sustainability of soldier-borne equipment through synthetic biology		
Congressional Add: Wafer-level vacuum packaging	5.500	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Wafer-level vacuum packaging		
Congressional Add: future force requirements experimentation advanced dynamic spectrum reconnaissance	10.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for future force requirements experimentation advanced dynamic spectrum reconnaissance		
Congressional Add: materiel development for personal protection systems	5.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for materiel development for personal protection systems		
Congressional Add: Pathfinder Air Assault	10.000	2.000
FY 2024 Accomplishments: Congressional Interest Item funding provided for Pathfinder Air Assault		
FY 2025 Plans: Congressional Interest Item funding provided for Pathfinder Air Assault		
Congressional Add: Pathfinder multidomain operations ready ranger initiative	10.000	-

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602143A / <i>Soldier Lethality Technology</i>	Project (Number/Name) BP9 / <i>Soldier Lethality Technologies (CA)</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2024	FY 2025
FY 2024 Accomplishments: Congressional Interest Item funding provided for Pathfinder multidomain operations ready ranger initiative		
Congressional Add: Arctic Batteries	1.500	-
FY 2024 Accomplishments: Developed extreme cold weather (ECW) capability in 18650 cell with higher capacity; demonstrated initial ECW capability in a laboratory environment.		
Congressional Add: Operational test environment and facility for cybersecurity training	-	29.000
FY 2025 Plans: Congressional Interest Item funding provided for Operational test environment and facility for cybersecurity training		
Congressional Add: non PFAS firefighting protective equipment fix caps	-	2.500
FY 2025 Plans: Congressional Interest Item funding provided for non PFAS firefighting protective equipment fix caps		
Congressional Adds Subtotals	107.800	43.500

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

Remarks

D. Acquisition Strategy
N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025			
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602143A / Soldier Lethality Technology	Project (Number/Name) BR9 / Personnel & Airdrop Safety Technology		
B. Accomplishments/Planned Programs (\$ in Millions)					
and maturation to advance developed Guidance Navigation and Control (GN&C) strategies in support of GPS degraded/denied resupply operations.			FY 2024	FY 2025	FY 2026
FY 2026 Plans: Will develop high performance computational fluid structure interaction models, in support of next generation static line canopy redesigns as well as new cargo payload configurations; continue to develop and validate technologies for navigation in a Global Positioning System GPS denied environment; research the deployment of large scale, high aspect ratio parafoils from fixed wing aircraft.					
FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects the planned research and development associated with the modeling and validation required to inform the maturation of aerial delivery models and associated live experimentation. Funding realigned within project: Program Element (PE) 0602143A (Soldier Lethality Technology / Project BR9 (Personnel & Airdrop Safety Technology).					
Accomplishments/Planned Programs Subtotals			3.028	3.097	3.563
C. Other Program Funding Summary (\$ in Millions)					
N/A					
Remarks					
D. Acquisition Strategy					
N/A					

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 2: Applied Research					R-1 Program Element (Number/Name) PE 0602144A / Ground Technology							
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
Total Program Element	-	266.663	155.829	56.342	-	56.342	-	-	-	-	-	-
BK7: Robotics for Engineer Operations Technology	-	6.399	5.436	3.477	-	3.477	-	-	-	-	-	-
BL1: Materials and Manufacturing Research Technology	-	4.310	10.279	5.787	-	5.787	-	-	-	-	-	-
BL2: Explosives Forensics Technology	-	1.645	1.025	1.002	-	1.002	-	-	-	-	-	-
BL5: Expedient Passive Protection Technology	-	2.934	2.726	4.156	-	4.156	-	-	-	-	-	-
BL7: Power Projection in A2AD Environments Technology	-	2.908	2.161	4.103	-	4.103	-	-	-	-	-	-
BL9: Protection from Advanced Weapon Effects Technology	-	5.211	5.033	4.778	-	4.778	-	-	-	-	-	-
BN8: Ground Technology Materials(CA)	-	207.500	91.300	-	-	-	-	-	-	-	-	-
CG6: Ground Vehicle Power and Energy Concepts and Tech	-	2.580	-	-	-	-	-	-	-	-	-	-
CG7: Ground Protection Concepts and Technologies	-	10.473	8.328	9.859	-	9.859	-	-	-	-	-	-
CG8: Human Autonomy Teaming	-	9.170	9.284	-	-	-	-	-	-	-	-	-
CI2: Ground Enabling University Applied Research	-	3.763	5.533	-	-	-	-	-	-	-	-	-
CV3: Engineer Enablers Maneuver, LOG, & Sustainment Apl	-	2.115	1.257	4.166	-	4.166	-	-	-	-	-	-
DA1: SAFR Alternatives for Readiness Applied Research	-	4.982	4.025	6.251	-	6.251	-	-	-	-	-	-

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army **Date:** June 2025

Appropriation/Budget Activity					R-1 Program Element (Number/Name)								
2040: <i>Research, Development, Test & Evaluation, Army I BA 2: Applied Research</i>					PE 0602144A / <i>Ground Technology</i>								
DG1: <i>Development of Obscurants</i>	-	2.673	2.807	2.661	-	2.661	-	-	-	-	-	-	-
DI7: <i>Environmental Security Resilience Tech</i>	-	-	6.635	10.102	-	10.102	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Program element (PE) executes research that support and enable the Army's modernization priority for the Next Generation of Combat Vehicles including systems for the deployment and sustainment of ground movement and maneuver. This PE designs and validates technologies that are necessary and foundational for enduring and future ground movement, maneuver and protection of Soldiers and systems.

Project CG6: Ground Vehicle Power and Energy Concepts and Tech in PE 0602144A was eliminated to reflect Department of Defense priorities and will cease investigating, designing, and developing electronics technologies to reduce size and weight of military vehicles. Project CI2: Ground Enabling University Applied Research in PE 0602144A was eliminated to reflect Department of Defense priorities and will cease university partnerships in the development of autonomy.

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas.

Work is performed by the Army Research Laboratory (ARL); the Chemical Biological Center (CBC); the Data and Analysis Center (DAC); the University Technology Development Division; the Armaments Center (AC); the Aviation and Missile Center (AVMC); the Soldier Center (SC); the Ground Vehicle Systems Center (GVSC); the Environmental Laboratory; and the Cold Regions Research and Engineering Laboratory; the Construction Engineering Research Laboratory; the Information Technology Laboratory; the Geotechnical and Structures Laboratory.

Work in this PE complements PE 0602145A (Next Generation Combat Vehicle Technology), PE 0603119A (Ground Advanced Technology), PE 0603462A (Next Generation Combat Vehicle Advanced Technology), PE 0602143A (Soldier Lethality Technology) and PE 0603118A (Soldier Lethality Advanced Technology).

The FY 2026 request was reduced by \$0.499 million for Advisory and Assistance Services to promote efficiencies and advance the policies of the Administration in alignment with Executive Order 14222, "Implementing the President's Department of Government Efficiency Cost Efficiency Initiative."

The FY 2026 request was reduced by \$0.241 million for civilian personnel to optimize the workforce in compliance with Executive Order 14210, "Implementing the President's Department of Government Efficiency Workforce Optimization Initiative."

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army				Date: June 2025		
Appropriation/Budget Activity		R-1 Program Element (Number/Name)				
2040: Research, Development, Test & Evaluation, Army / BA 2: Applied Research		PE 0602144A / Ground Technology				
B. Program Change Summary (\$ in Millions)		FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Previous President's Budget		60.005	66.707	80.755	-	80.755
Current President's Budget		266.663	155.829	56.342	-	56.342
Total Adjustments		206.658	89.122	-24.413	-	-24.413
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-4.678			
• Congressional Rescissions		-	-			
• Congressional Adds		207.500	91.300			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-	-			
• SBIR/STTR Transfer		-0.842	-			
• Adjustments to Budget Years		-	2.500	-24.413	-	-24.413
Congressional Add Details (\$ in Millions, and Includes General Reductions)						
Project: BN8: Ground Technology Materials(CA)						
Congressional Add: Additive manufacturing for weapons and armaments components						
Congressional Add: Advanced Ceramic Technologies						
Congressional Add: Autonomous Digital Design						
Congressional Add: Carbon nanomaterials as functional additives						
Congressional Add: Coastal hydraulics laboratory project						
Congressional Add: Environmental quality enhanced coatings						
Congressional Add: Extreme battery technology						
Congressional Add: Flexible hybrid electronics						
Congressional Add: Integrity of transparent armor						
Congressional Add: Pavement preservation						
Congressional Add: Rapid advanced deposition						
Congressional Add: Rapid ultra-lightweight infrastructure manufacturing						
Congressional Add: Stainless steel applications for defense use						
Congressional Add: Critical hybrid advanced materials processing						
Congressional Add: Artificial intelligence framework for adaptive polymer composites						

FY 2024	FY 2025
5.000	-
5.000	-
6.000	-
10.000	6.500
4.000	-
5.000	-
10.000	-
10.000	-
5.000	5.000
3.500	-
15.000	10.000
6.000	-
10.000	-
5.000	-
5.000	-

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army I BA 2: Applied Research		R-1 Program Element (Number/Name) PE 0602144A I Ground Technology	
Congressional Add Details (\$ in Millions, and Includes General Reductions)		FY 2024	FY 2025
Congressional Add: <i>Ceramic materials for extreme environments</i>		3.000	4.000
Congressional Add: <i>Defense resiliency against extreme cold weather</i>		8.000	-
Congressional Add: <i>Electrolyzer technology</i>		3.500	-
Congressional Add: <i>Forecasting development of arctic maritime and permafrost conditions</i>		2.000	-
Congressional Add: <i>High temperature alloy powders</i>		10.000	-
Congressional Add: <i>Materials technology for rare earth elements</i>		10.000	-
Congressional Add: <i>Mine and improvised explosive device detection research</i>		2.000	-
Congressional Add: <i>Novel material solutions in austere operating environments</i>		10.000	-
Congressional Add: <i>PFAS predictive modeling</i>		5.000	-
Congressional Add: <i>Polar proving ground</i>		10.000	5.000
Congressional Add: <i>Predictive development of water-related hazards</i>		6.000	-
Congressional Add: <i>Protective coatings</i>		10.000	6.000
Congressional Add: <i>Research for hydrogen energy from galvanic aluminum</i>		5.000	-
Congressional Add: <i>Scaling of lightweight metallurgical development</i>		1.500	5.000
Congressional Add: <i>Verified inherent control</i>		1.500	-
Congressional Add: <i>High performance polymer composites</i>		3.500	-
Congressional Add: <i>Quadruped unmanned ground vehicles</i>		4.000	-
Congressional Add: <i>Autonomous rough terrain container handler</i>		3.000	-
Congressional Add: <i>Robotic operating system</i>		5.000	-
Congressional Add: <i>2D polymer scalable manufacturing</i>		-	5.000
Congressional Add: <i>Critical hybrid advanced manufacturing processes</i>		-	7.500
Congressional Add: <i>High deposition structural alloy</i>		-	12.500
Congressional Add: <i>Multimodal pavement scanner array</i>		-	2.800
Congressional Add: <i>Reuse consortium for water resiliency at installations</i>		-	5.000
Congressional Add: <i>Soil stabilization</i>		-	4.000
Congressional Add: <i>Sustainable solutions for coatings</i>		-	5.000

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army I BA 2: Applied Research		R-1 Program Element (Number/Name) PE 0602144A I Ground Technology	
Congressional Add Details (\$ in Millions, and Includes General Reductions)		FY 2024	FY 2025
Congressional Add: <i>Weather forecasting for real time decisions</i>		-	5.000
Congressional Add: <i>Windstorm resilience for facilities</i>		-	3.000
Congressional Add Subtotals for Project: BN8		207.500	91.300
Congressional Add Totals for all Projects		207.500	91.300
Change Summary Explanation Decrease is due to planned completion and transition of technologies of robotics for engineer operations, novel armor materials for vehicle protection, and advanced weapons effects.			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army Date: June 2025

Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602144A / <i>Ground Technology</i>				Project (Number/Name) BK7 / <i>Robotics for Engineer Operations Technology</i>			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
BK7: <i>Robotics for Engineer Operations Technology</i>	-	6.399	5.436	3.477	-	3.477	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This research investigates and develops standoff robotic capabilities to reduce Soldier/Combat Engineer risks and fatalities while conducting activities essential to shaping the environment. It will close the gaps between commercial construction equipment and the requirements of the future Engineer Force to support maneuver, movement, and sustainment. This research will develop the capability to generate a near real-time site model with appropriate engineering details to allow unmanned system shaping of the environment through physical interaction (e.g., push, pull, lift, or dig). This effort will also develop the requisite mission planner and task execution controller that accepts input from the user and provides suggestions and feedback based on updates to the site model, reporting from hardware agents, and resource allocation logic. The end state goal is the development of beyond line of sight teleoperation and semiautonomous capabilities allowing Engineer robotic support to match pace in future combat environments. This effort will support the development, testing, and evaluation of prototypical robotic Combat Engineer equipment. This Project develops modeling and simulation tools that represent realistic states for Engineer robotic operations and develops and assesses semi-autonomous and autonomous construction equipment technologies needed for remote control Engineer operations.

Work in this Project complements Program Element (PE) 0603119A (Ground Advanced Technology) / Project BK8 (Robotics for Engineer Operations Advanced Technology).

The work cited is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas.

Work in this Project is coordinated with Program Element (PE) 0603462A (Next Generation Combat Vehicle Advanced Technology).

Work in this Project is performed by the United States Army Engineer Research and Development Center Construction Engineering Research Laboratory, Information Technology Laboratory, and Geotechnical and Structures Laboratory.

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

	FY 2024	FY 2025	FY 2026
Title: Semi-Autonomous Engineer Operations	6.399	5.436	3.477
Description: This effort investigates and develops robotic machine tools and behaviors to perform semi-autonomous shaping of the terrain through physical interaction with the environment (push, pull, lift, and dig). The effort develops the necessary decision-making, data fusion, localization, and inter-platform communication to allow semi-autonomy on commercial off the shelf (COTS) equipment.			
FY 2025 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602144A / <i>Ground Technology</i>	Project (Number/Name) BK7 / <i>Robotics for Engineer Operations Technology</i>	

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2024	FY 2025	FY 2026
Will develop expanded autonomy algorithms for heavy Engineer equipment manipulation of terrain (e.g., blade and bucket). Will validate negative obstacle detection implemented on heavy Engineer equipment. Will conduct experiments on automated terrain shaping operations to remove negative obstacles. <i>FY 2026 Plans:</i> Will expand the number of autonomous simple Combat Engineer tasks for each type of heavy Engineer equipment. Will develop capability for the heavy Engineer equipment to have spatial awareness of other equipment within the worksite and track autonomous task progression by detecting changes in the environment due to terrain shaping activities. <i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> Funding decrease reflects adjustments to planned milestones and Army reduction.			
Accomplishments/Planned Programs Subtotals	6.399	5.436	3.477

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

Remarks
 N/A

D. Acquisition Strategy
 N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602144A / Ground Technology				Project (Number/Name) BL1 / Materials and Manufacturing Research Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
BL1: Materials and Manufacturing Research Technology	-	4.310	10.279	5.787	-	5.787	-	-	-	-	-	-
Note In FY 2026, a portion of funds are realigned from PE 0602144A (Ground Technology to Program Element) / Project BL1 (Materials and Manufacturing Research Technology) to PE 0602147A (Long Range Precision Fires Technology) / Project AH4 (Precision and Coop Weapons in a Denied Env Tech) and PE 0602184A (Soldier Applied Research) / Project CN9 (Soldier Enabling University Applied Research).												
A. Mission Description and Budget Item Justification This Project links materials research, manufacturing processes, and design to enable high quality additive manufacturing products for Army applications through the development of high-performance feedstock materials (polymers, metals, and ceramics), physics-based process models, and in-situ process monitoring. Integration of these tools with process models enables real-time control and manipulation of material structure and properties to produce three-dimensional hybrid electronics packaging, power and energy sources and converters and new materials/structures for protection. The goal of this work is to develop robust physics-based models to optimize material properties, structures, and manufacturing processes for Army applications in protection, maneuver, power, sensing, and signature management necessary to rapidly respond to emerging and unknown threats in a battlefield environment. This work is done in coordination with Program Element (PE) 0602145A (Next Generation Combat Vehicle Technology), 0602143A (Soldier Lethality Technology) and 0603118A (Soldier Lethality Advanced Technology). The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas. Work in this Project is performed by the Army Research Laboratory (ARL)												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Additive Manufacturing Research									3.371	3.383	1.847	
Description: This effort Investigates new additive manufacturing (AM) capabilities that enable production of lightweight materials for protection, survivability, and maneuverability that cannot be produced through traditional manufacturing methods. Efforts include the design and development of new feedstock materials engineered specifically for low-volume additive processes to produce net-shape materials with desired properties and functionalities; integrated process models and real-time monitoring for closed-loop control and production of lightweight materials with optimal architectures, property gradients, and interfaces; and												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602144A / <i>Ground Technology</i>	Project (Number/Name) BL1 / <i>Materials and Manufacturing Research Technology</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
design optimization capabilities that connect materials and manufacturing to access the full design space enabled by additive manufacturing.			
<p><i>FY 2025 Plans:</i> Assess printed fragmenting munition casing of novel metal alloys for active protection and explore improved conversion of casing-to-fragmentation to increase lethality; develop advanced manufacturing feedstock alloys and explore recycled feedstocks for advanced manufacturing; investigate controlled warhead fragmentation methods and develop methods to tailor fragmentation patterns; assess ultra-high strength steel and high strength/lightweight alloys for vehicle protection; investigate novel methods of creating controlled warhead fragmentation for higher energy density munition propulsion and consistent burn performance; develop and mature materials and processes for cost effective light weighting of combat vehicles for indirect fire platforms; assess 3D printed electronics for fuzing, guidance, navigation, and control (GNC), and communication links for high g-force survivability; optimize tailored fragmentation pattern utilizing computational optimization of tailored fragmentation utilization advanced manufacturing techniques.</p> <p><i>FY 2026 Plans:</i> Will mature components for printed fragmentation munition casing of novel metal alloys for active protection and optimize conversion of casing-to-fragmentation for increased lethality; continue to design and develop advanced manufacturing feedstock alloys and develop recycled feedstocks suitable for advanced manufacturing; mature high strength alloys and lightweight/ultra-high strength alloys for protection; mature processing and materials technologies for cost effective lightweighting of indirect fire platforms.</p> <p><i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> Funding decrease reflects reduction in research on 3D printed electronics for GNC and reprogrammed investment in University Affiliated Research Center for Advanced Manufacturing.</p>			
<p><i>Title:</i> Energy Sources and Storage</p> <p><i>Description:</i> This effort focuses on the design and characterization of chemistries, materials, and components for advanced batteries, fuel reformers, and fuel cells. Potential Army applications include hybrid power sources, smart munitions, hybrid power vehicles, and soldier power applications. This effort also investigates the applicability of photosynthesis to provide fuel and electricity for Soldier power applications and investigates silicon carbide power module components that could enable compact, high-efficiency, high-temperature, and high-power density converters for motor drive and pulse power applications.</p> <p><i>FY 2025 Plans:</i> Identify and assess electrolytes compatible with silicon anode batteries to optimize cycle life, charge rate, thermal stability, and low temperature performance; determine the failure modes of chemically modified silicon anodes and the stability as a function of</p>		0.939	3.445
			0.914

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army			Date: June 2025		
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602144A / <i>Ground Technology</i>		Project (Number/Name) BL1 / <i>Materials and Manufacturing Research Technology</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2024	FY 2025	FY 2026
utilization and pressure; investigate the origin of safety issues in both graphite and silicon anode high energy battery cells that are new and have been recharged many times; investigate thermal behavior of Lithium (Li)-ion battery cells at elevated temperatures; investigate the thermal stability of low cobalt or cobalt free high energy battery cathodes; assess Li-ion battery cells using oxide and rock-salt based anodes; investigate fast ion conductors for monolithic solid electrolytes, and complementary electrode integration for high energy Li-ion batteries; investigate origins of low initial columbic efficiency and capacity fade in use of micro-sized silicon anode nanoparticles for high-energy and high-rate Li-ion batteries; mature novel aqueous and non-aqueous battery electrolytes and their compatibility with high capacity and high voltage electrodes to enhance energy density and safety across different operating conditions; investigate the lifetime of AI-controlled, multi-chemistry battery systems under high charging-rates; develop baseline for electrochemical synthesis of ammonia and explore electrolyte and electrocatalyst candidates for ammonia synthesis from direct water and air inputs; mature liquid fuel energy conversion materials and components to include ethanol reformation catalysts to improve catalytic activity lifetime and coupling strategies between radiant tube burners and thermal energy converters to increase efficiency.					
FY 2026 Plans: Will research advanced electrolytes and interfaces for high energy rechargeable lithium-ion batteries; investigate high voltage electrolyte, cathodes, and different pairing combinations of each with high capacity anodes; explore electrode processing methods and effects of loading, additives, and material microstructure, to include process-induced changes on heterogeneity and ordering effects on electrode performance; determine electrolyte formulation to improve battery lifetime; determine physical, chemical and electrochemical properties of electrode-electrolyte interphase layer formation and stability, and methods of optimization for longer battery life; investigate advanced anodes and their stability under high power and fast charge conditions.					
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects a reduction in novel aqueous electrolytes and multivalent materials research.					
Title: Novel Armor Materials and Processes for Vehicle Protection			-	3.451	3.026
Description: This effort designs, develops, fabricates, and assesses a variety of materials (e.g. metals, ceramics, polymers, and composites) to enable more survivable, lighter weight armor, protection, and electronics for vehicle structures. Research focuses on novel material properties, developing physics-based models, materials characterization techniques, non-destructive testing methods, and traditional and advanced fabrication/processing methods to transition candidate solutions for maturation, scale-up, and integration into Army systems.					
FY 2025 Plans: Continue work restructured from PE 0602145A, Project BI4 Materials Application and Integration Tech, to develop lightweight, low cost, damage resistant transparent armor glass/polymer laminates with optical transmissivity at wavelengths suitable for personnel and sensor protection; assess transparent armor material processing methodologies; develop new materials or laminates for					

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602144A / <i>Ground Technology</i>	Project (Number/Name) BL1 / <i>Materials and Manufacturing Research Technology</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
vehicle and sensor protection; assess performance of dissimilar material joints (welded, solid state, adhesively joined) under high rate/complex loading conditions; design and develop weldable high toughness, high hard steel armor plate; assess novel metals for ground vehicle propulsion systems. <i>FY 2026 Plans:</i> Will design and develop lightweight armor for conventional kinetic and non-kinetic threats as well as emerging threats (unmanned aerial systems, high energy weapons, etc.); design and develop materials to protect from directed energy weapons; design and develop lightweight, damage resistant, transparent armor materials and data-driven processing methodologies for personnel and sensor protection; design and develop materials and processes for ground vehicle propulsion systems; investigate and determine evolving threats to guide materials design concept for non-conventional scenarios and emerging technologies. <i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> FY 2026 funding decrease due to planned lifecycle of this effort.			
Accomplishments/Planned Programs Subtotals		4.310	10.279
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025			
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602144A / Ground Technology				Project (Number/Name) BL2 / Explosives Forensics Technology				
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost	
BL2: Explosives Forensics Technology	-	1.645	1.025	1.002	-	1.002	-	-	-	-	-	-	
A. Mission Description and Budget Item Justification													
This Project investigates and develops sensor technology for the trace detection of military explosives, homemade explosives (HME), and solid chemical hazards found on contaminated surfaces. This project pursues research in signatures and algorithms required to provide improved trace analysis of chemical hazards to enable integration and augmentation into chemical and explosive detection equipment for the warfighter.													
Work in this Project compliments Program Element (PE) 0603119A (Ground Advanced Technology) / Project BL3 (Explosives Forensics Advanced Technology).													
The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.													
Work in this Project is performed by the Chemical Biological Center (CBC).													
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2024	FY 2025	FY 2026	
Title: Forensic Analysis of Explosives Signatures Applied Research										1.645	1.025	1.002	
Description: This effort investigates forensics analytical methods for military explosives, homemade explosives (HME), HME precursors, and residue analysis for attribution.													
FY 2025 Plans: Continue to investigate candidate new technology phenomenon to improve and enhance the location and detection of trace level solid explosive contamination on surfaces, focusing on bio-inspired explosive and chemical sensing technology, implementation of machine learning techniques, and impedance-based spectroscopy.													
FY 2026 Plans: Will investigate and develop candidate surface and ground chemical sensing technologies to enhance battlefield and mobile lab forensic detection capability of low levels of solid explosive and chemical contamination on surfaces, focusing on further implementing machine learning techniques, real-time analysis computational improvements, and canine sensor development sensor aids.													
FY 2025 to FY 2026 Increase/Decrease Statement: FY 2026 funding decrease due to the planned lifecycle of this effort.													
Accomplishments/Planned Programs Subtotals										1.645	1.025	1.002	

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602144A / <i>Ground Technology</i>	Project (Number/Name) BL2 / <i>Explosives Forensics Technology</i>
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
D. Acquisition Strategy N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602144A / Ground Technology				Project (Number/Name) BL5 / Expedient Passive Protection Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
BL5: Expedient Passive Protection Technology	-	2.934	2.726	4.156	-	4.156	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Project designs and develops rapidly deployable passive protective solutions; methodologies for intuitive decision support; and tactics, techniques, and procedures to increase the survivability of personnel, critical assets, and facilities from a range of threats. Through experimental and computational investigation and design, this project develops force protection technologies for complex and contested environments. This Project also develops expedient solutions and methodologies for decision support for protection against a range of threats, to include improvised, conventional, and emerging weapons such as ballistic missiles.

Work in this Project complements Program Element (PE) 0603119A (Ground Advanced Technology) / Project BL6 (Expedient Passive Protection Advanced Technology).

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

Work in this Project supports the Army Science and Technology Ground Portfolio.

Work in this Project is performed by the United States (US) Army Engineer Research and Development Center Geotechnical and Structures Laboratory.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2024	FY 2025	FY 2026
Title: Assessments of Solutions for Survivability from Emerging Threats (ASSET)	2.934	-	-
Description: This effort investigates emerging threat weapon effects on critical assets, theater of operation facilities, and existing protection technologies; designs and develops rapidly deployable passive protective solutions; algorithms for decision support applications and software; and tactics, techniques, and procedures to increase the survivability of personnel, critical assets, and facilities against emerging threats, such as high trajectory large caliber rockets and missiles as well as Unmanned Aircraft Systems (UAS) threats. This effort integrates experimental and computational analysis.			
Title: Deliberate Expedient Protection for Large-scale Operations Yielding Survivability (DEPLOYS)	-	2.726	4.156
Description: This effort investigates expedient survivability solutions for large-scale combat operations. This effort will develop logistically feasible passive protection solutions tailored for protection of key assets, logistical nodes, sustainment functions, and tactical operation centers to complement active protection and unconventional countermeasures, strengthening Guam's defense and enhancing overall mission assurance. This effort will also develop holistic survivability assessments and guidance for			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602144A / <i>Ground Technology</i>	Project (Number/Name) BL5 / <i>Expedient Passive Protection Technology</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
critical sites, functions, and personnel, accounting for various attack scenarios and the interdependencies of components, assets, systems, and systems of systems.			
<i>FY 2025 Plans:</i> Will investigate the protection requirements for logistic supply locations associated with large-scale combat operations and methodologies to rapidly predict the survivability of key assets from weapons effects. Will investigate novel multi-material protection solutions to increase survivability from shaped charges. Will investigate the feasibility of an expeditionary overhead cover solution to protect against runway penetrators.			
<i>FY 2026 Plans:</i> Will develop initial expedient concepts to rapidly increase the level of protection of key assets from weapons effects. Will develop survivability assessment methodologies for critical sites, functions, and personnel, accounting for various attack scenarios and the interdependencies of components, assets, systems, and systems of systems.			
<i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> FY26 funding increase due to planned addition of workflows to design and develop additional passive protection design concepts for key assets, logistical nodes, sustainment functions, and tactical operation centers. FY26 funding increase also due to planned additional experiments that characterize weapons effects against protection solutions.			
Accomplishments/Planned Programs Subtotals		2.934	2.726
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
N/A			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602144A / Ground Technology				Project (Number/Name) BL7 / Power Projection in A2AD Environments Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
BL7: Power Projection in A2AD Environments Technology	-	2.908	2.161	4.103	-	4.103	-	-	-	-	-	-
Note In FY 2026, Project BL7 (Power Projection in A2AD Environments Technology) includes a new effort "Maritime Contested Logistics". This effort is a new start in FY 2026.												
A. Mission Description and Budget Item Justification This Project designs and develops remote assessment technologies to determine entry and maneuver corridors, develops site selection tools and decision support technologies for climatic regions in all season conditions including aviation site selection tools, enhanced automated route reconnaissance technologies, mobility models for extreme temperatures, and road capacity assessment technologies. These technologies reduce reliance on manned on-site reconnaissance for projection platform assessments and provide all season capacity predictions to ensure air and ground battlespace entry and maneuver. This Project also designs and develops material solutions to repair, rebuild and construct infrastructure required for movement and maneuver in highly contested, complex operational environments such as Anti-Access/Area Denial (A2/AD). Work in this PE complements PE 0603119A (Ground Advanced Technology) / Project BL8 (Power Projection in A2AD Environments Adv Tech). The work cited is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas. Work in this Project is performed by the United States Army Engineer Research and Development Center Geotechnical and Structures Laboratory.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Engineering for Battlespace Maneuver									2.908	-	-	
Description: This effort develops the capability to rapidly repair and upgrade damaged infrastructure along mobility corridors and restaging areas to maintain and enhance freedom of maneuver achieving tactical advantage in contested complex environments.												
Title: Force Projection in Multi-Domain Operations									-	2.161	3.583	
Description: This effort develops capabilities for maneuver across air/land/sea domains using Combat Engineer assets to assess, modify, and upgrade transitional regions (such as beaches and coastal swamps) critical to force projection. Develops new methodologies for reconnaissance and analysis methods to provide predictive capabilities for selecting and prioritizing maneuver corridors for ground forces. Develops technologies that enable movement and maneuver through expanded terrain environments (i.e., soil stabilization) for distributed operations.												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602144A / <i>Ground Technology</i>	Project (Number/Name) BL7 / <i>Power Projection in A2AD Environments Technology</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p><i>FY 2025 Plans:</i> Will conduct site investigations in multiple littoral environments and determine vehicle mobility performance limitations; will develop scaled designs of site stabilization material or loose sand soils; will complete laboratory testing of geotextile materials (strong permeable fabrics used in construction and soil stabilization) available for fabrication.</p> <p><i>FY 2026 Plans:</i> Will develop scaled designs of materials for marsh soil site stabilization for military vehicle mobility; will develop algorithms for vehicle mobility predictions in littoral regions.</p> <p><i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> FY26 funding increase due to planned addition of workflows to develop scaled designs of materials for marsh soil site stabilization and littoral region mobility prediction algorithms.</p>			
<p><i>Title:</i> Maritime Contested Logistics</p> <p><i>Description:</i> This effort investigates and develops algorithms and techniques for understanding maritime littoral regions using sensing technologies available for tactical platforms and standoff assessment. New techniques are investigated to enable characterization of contested littoral environments from safe distances for automating environment characterization from multi-modal satellite data, rapid littoral modeling, and vessel-based hazard detection systems.</p> <p><i>FY 2026 Plans:</i> Will investigate data feeds and sensor processing algorithms for characterizing contested near-shore bathymetry conditions for modeling operational environments to enable military landing operations in littoral regions.</p> <p><i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> FY26 funding increase due to planned initiation of this effort. This Task is a new start in FY 2026.</p>		-	-
		0.520	
Accomplishments/Planned Programs Subtotals		2.908	2.161
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
N/A			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602144A / Ground Technology				Project (Number/Name) BL9 / Protection from Advanced Weapon Effects Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
BL9: Protection from Advanced Weapon Effects Technology	-	5.211	5.033	4.778	-	4.778	-	-	-	-	-	-
A. Mission Description and Budget Item Justification This Project designs and develops structural hardening, high-performance computing capabilities, and force protection technologies to enhance survivability of personnel and critical assets. This project investigates and develops advanced materials for protection against blast, fragmentation, and penetration through physical experiments and modeling and simulation. Additionally, this project investigates, designs, and develops passive protection technologies and protective design criteria to mitigate attack from emerging advanced threats. Work in this Program Element (PE) complements PE 0603119A (Ground Advanced Technology) / Project BM1 (Protection from Advanced Weapon Effects Adv Tech). The work cited is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas. Work in this Project is performed by the United States Army Engineer Research and Development Center Geotechnical and Structures Laboratory.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Advanced Materials and Modeling for Force Protection									1.595	1.598	1.568	
Description: This effort designs and develops capabilities in the use of poorly-understood and indigenous materials. This effort develops multi-scale material modeling frameworks incorporating physics of deformation and damage mechanisms; a 3D multi-physics material modeling capability to allow for weapons effects models to be informed by remote sensing; and advanced material technologies for force protection.												
FY 2025 Plans: Will mature component-level materials-by-design tools to further advance materials and manufacturing approaches . Will focus on materials inspired by geological systems (e.g., rock, clay, granular materials) for structural hardening as well as lightweight and small form factor materials for force protection requirements.												
FY 2026 Plans: Will complete validation of materials-by-design tools as well as constitutive models, model parameters, force protection materials, and manufacturing approaches for transition to system-level demonstrations and stakeholder design and analysis tools.												
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects adjustments to planned milestones and Army reduction.												
Title: Protection from Advanced Penetrators									3.616	3.435	3.210	

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602144A / <i>Ground Technology</i>	Project (Number/Name) BL9 / <i>Protection from Advanced Weapon Effects Technology</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p>Description: This effort designs and develops protective material solutions and enhances modeling and simulation (M&S) tools for designing, analyzing and improving these advanced protective materials to be used in large hardened protective structures; investigates and validates computational models and passive protective solutions for large hardened structures from advanced precision penetrating threat weapons.</p> <p>FY 2025 Plans: Will develop and validate efficient modeling and simulation (M&S) tools to support planning, designing, constructing, and maintaining hardened protective structures to mitigate the weapons effects of advanced penetrators of peer and near peer adversaries. Will enhance the M&S tools for high fidelity analyses and damage prediction of hardened protective structures from increased velocity advanced penetrators.</p> <p>FY 2026 Plans: Will develop subscale concepts to protect against advanced penetrators. Will conduct experiments on subscale protective concepts to validate M&S tools for increased impact velocities and detonations of explosive charges embedded in advanced penetrating weapons.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: FY 2026 funding decrease due to planned lifecycle of this effort and reduction of workflows as technologies transition to Program Element 0603119A (Ground Advanced Technology) / Project BM1 (Protection from Advanced Weapon Effects Adv Tech).</p>			
Accomplishments/Planned Programs Subtotals		5.211	5.033
C. Other Program Funding Summary (\$ in Millions) N/A Remarks N/A D. Acquisition Strategy N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602144A / Ground Technology				Project (Number/Name) BN8 / Ground Technology Materials(CA)			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
BN8: Ground Technology Materials(CA)	-	207.500	91.300	-	-	-	-	-	-	-	-	-
Note Congressional Interest Item funding provided for Ground Technology Materials.												
A. Mission Description and Budget Item Justification Congressional Interest Item funding provided for Ground Technology Materials. The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2024	FY 2025			
Congressional Add: Additive manufacturing for weapons and armaments components								5.000	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for Additive manufacturing for weapons and armaments components												
Congressional Add: Advanced Ceramic Technologies								5.000	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for Advanced Ceramic Technologies												
Congressional Add: Autonomous Digital Design								6.000	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for Autonomous Digital Design												
Congressional Add: Carbon nanomaterials as functional additives								10.000	6.500			
FY 2024 Accomplishments: Congressional Interest Item funding provided for Carbon nanomaterials as functional additives												
FY 2025 Plans: Congressional Interest Item funding provided for Carbon nanomaterials as functional additives												
Congressional Add: Coastal hydraulics laboratory project								4.000	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for Coastal hydraulics laboratory project												
Congressional Add: Environmental quality enhanced coatings								5.000	-			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602144A / <i>Ground Technology</i>	Project (Number/Name) BN8 / <i>Ground Technology Materials(CA)</i>
B. Accomplishments/Planned Programs (\$ in Millions)	FY 2024	FY 2025
FY 2024 Accomplishments: Congressional Interest Item funding provided for Environmental quality enhanced coatings		
Congressional Add: Extreme battery technology	10.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Extreme battery technology		
Congressional Add: Flexible hybrid electronics	10.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Flexible hybrid electronics		
Congressional Add: Integrity of transparent armor	5.000	5.000
FY 2024 Accomplishments: Congressional Interest Item funding provided for Integrity of transparent armor		
FY 2025 Plans: Congressional Interest Item funding provided for Integrity of transparent armor		
Congressional Add: Pavement preservation	3.500	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Pavement preservation		
Congressional Add: Rapid advanced deposition	15.000	10.000
FY 2024 Accomplishments: Congressional Interest Item funding provided for Rapid advanced deposition		
FY 2025 Plans: Congressional Interest Item funding provided for Rapid advanced deposition		
Congressional Add: Rapid ultra-lightweight infrastructure manufacturing	6.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Rapid ultra-lightweight infrastructure manufacturing		
Congressional Add: Stainless steel applications for defense use	10.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Stainless steel applications for defense use		
Congressional Add: Critical hybrid advanced materials processing	5.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Critical hybrid advanced materials processing		
Congressional Add: Artificial intelligence framework for adaptive polymer composites	5.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Artificial intelligence framework for adaptive polymer composites		
Congressional Add: Ceramic materials for extreme environments	3.000	4.000

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602144A / <i>Ground Technology</i>	Project (Number/Name) BN8 / <i>Ground Technology Materials(CA)</i>
B. Accomplishments/Planned Programs (\$ in Millions)	FY 2024	FY 2025
FY 2024 Accomplishments: Congressional Interest Item funding provided for Ceramic materials for extreme environments		
FY 2025 Plans: Congressional Interest Item funding provided for Ceramic materials for extreme environments		
Congressional Add: Defense resiliency against extreme cold weather	8.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Defense resiliency against extreme cold weather		
Congressional Add: Electrolyzer technology	3.500	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Electrolyzer technology		
Congressional Add: Forecasting development of arctic maritime and permafrost conditions	2.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Forecasting development of arctic maritime and permafrost conditions		
Congressional Add: High temperature alloy powders	10.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for High temperature alloy powders		
Congressional Add: Materials technology for rare earth elements	10.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Materials technology for rare earth elements		
Congressional Add: Mine and improvised explosive device detection research	2.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Mine and improvised explosive device detection research		
Congressional Add: Novel material solutions in austere operating environments	10.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Novel material solutions in austere operating environments		
Congressional Add: PFAS predictive modeling	5.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for PFAS predictive modeling		
Congressional Add: Polar proving ground	10.000	5.000

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602144A / <i>Ground Technology</i>	Project (Number/Name) BN8 / <i>Ground Technology Materials(CA)</i>
B. Accomplishments/Planned Programs (\$ in Millions)	FY 2024	FY 2025
FY 2024 Accomplishments: Congressional Interest Item funding provided for Polar proving ground		
FY 2025 Plans: Congressional Interest Item funding provided for Polar proving ground		
Congressional Add: Predictive development of water-related hazards	6.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Predictive development of water-related hazards		
Congressional Add: Protective coatings	10.000	6.000
FY 2024 Accomplishments: Congressional Interest Item funding provided for Protective coatings		
FY 2025 Plans: Congressional Interest Item funding provided for Protective coatings		
Congressional Add: Research for hydrogen energy from galvanic aluminum	5.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Research for hydrogen energy from galvanic aluminum		
Congressional Add: Scaling of lightweight metallurgical development	1.500	5.000
FY 2024 Accomplishments: Congressional Interest Item funding provided for Scaling of lightweight metallurgical development		
FY 2025 Plans: Congressional Interest Item funding provided for Scaling of lightweight metallurgical development		
Congressional Add: Verified inherent control	1.500	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Verified inherent control		
Congressional Add: High performance polymer composites	3.500	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for High performance polymer composites		
Congressional Add: Quadraped unmanned ground vehicles	4.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Quadraped unmanned ground vehicles		
Congressional Add: Autonomous rough terrain container handler	3.000	-

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602144A / <i>Ground Technology</i>	Project (Number/Name) BN8 / <i>Ground Technology Materials(CA)</i>
B. Accomplishments/Planned Programs (\$ in Millions)	FY 2024	FY 2025
FY 2024 Accomplishments: Congressional Interest Item funding provided for Autonomous rough terrain container handler		
Congressional Add: Robotic operating system	5.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Robotic operating system		
Congressional Add: 2D polymer scalable manufacturing	-	5.000
FY 2025 Plans: Congressional Interest Item funding provided for 2D polymer scalable manufacturing		
Congressional Add: Critical hybrid advanced manufacturing processes	-	7.500
FY 2025 Plans: Congressional Interest Item funding provided for Critical hybrid advanced manufacturing processes		
Congressional Add: High deposition structural alloy	-	12.500
FY 2025 Plans: Congressional Interest Item funding provided for High deposition structural alloy		
Congressional Add: Multimodal pavement scanner array	-	2.800
FY 2025 Plans: Congressional Interest Item funding provided for Multimodal pavement scanner array		
Congressional Add: Reuse consortium for water resiliency at installations	-	5.000
FY 2025 Plans: Congressional Interest Item funding provided for Reuse consortium for water resiliency at installations		
Congressional Add: Soil stabilization	-	4.000
FY 2025 Plans: Congressional Interest Item funding provided for Soil stabilization		
Congressional Add: Sustainable solutions for coatings	-	5.000
FY 2025 Plans: Congressional Interest Item funding provided for Sustainable solutions for coatings		
Congressional Add: Weather forecasting for real time decisions	-	5.000
FY 2025 Plans: Congressional Interest Item funding provided for Weather forecasting for real time decisions		
Congressional Add: Windstorm resilience for facilities	-	3.000
FY 2025 Plans: Congressional Interest Item funding provided for Windstorm resilience for facilities		
Congressional Adds Subtotals	207.500	91.300

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602144A / Ground Technology	Project (Number/Name) BN8 / Ground Technology Materials(CA)
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
D. Acquisition Strategy N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602144A / Ground Technology				Project (Number/Name) CG6 / Ground Vehicle Power and Energy Concepts and Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CG6: Ground Vehicle Power and Energy Concepts and Tech	-	2.580	-	-	-	-	-	-	-	-	-	-
Note In FY 2026, a portion of funds are realigned within PE 0602144A (Ground Technology) / Project CG6 (Ground Vehicle Power and Energy Concepts and Tech) from "Power Conversion for Platforms" effort to "Advanced Distributed Power for Autonomous Systems" effort.												
A. Mission Description and Budget Item Justification This Project investigates and develops advanced power and energy technologies for combat ground vehicles that are necessary for parallel hybrid, series hybrid, and all- electric vehicle systems. This Project investigates, designs, and develops electric conversion technologies to reduce size and weight of military vehicles while increasing performance and capabilities to support current and future mission loads and provide improved military vehicle mobility. Work in this Project is coordinated with PE 0602145A (Next Generation Combat Vehicle Technology) / PE 0603462A (Next Generation Combat Vehicle Advanced Technology). The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas. Work in this Project is performed by the Army Research Laboratory (ARL) and Data and Analysis Center (DAC).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Advanced Distributed Power for Autonomous Systems									0.946	-	-	
Description: This effort designs and develops technologies for electrification of both manned and unmanned Next Generation Combat Vehicle platforms. Electrification of these platforms will enable advanced lethality and protection systems, reduced battlefield fuel consumption, and provide new capabilities such as burst acceleration, extended silent mobility, and silent watch. The effort investigates, designs, and develops electric conversion technologies to reduce size and weight while increasing performance and capabilities to support current and future mission loads and provide improved military vehicle mobility. Research focuses on high power/ temperature power electronics, magnetic gears, electric drive motors, and adaptive device and component level control that optimized operation in real time. Investigation of advanced control methods at the module and conversion component levels provides an understanding of the impact real time optimization and energy tracking can have on power conversion optimization and mission effectiveness. The research enables the integration of component state and behavior into system level management algorithms that support non-autonomous and autonomous operations while providing modular and scalable electrification architectures. Efforts will also investigate non-contact magnetic gear technologies coupled with electrical motors and generators to reduce size and weight with an increase in reliability and performance through increased torque and												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602144A / <i>Ground Technology</i>	Project (Number/Name) CG6 / <i>Ground Vehicle Power and Energy Concepts and Tech</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
speed operational range. Results of the research inform PE 0602145A (Next Generation Combat Vehicle Technology) / BH5 (Platform Electrification and Mobility Tech).			
Title: Power Conversion for Platforms Description: This effort investigates, designs, and assesses technologies for platform electrification that will reduce Army impact to the environment through electrified systems that more effectively utilize energy and improve resiliency. Transitioning to hybrid electric and all electric platforms provides improved energy utilization while reducing emissions providing the Warfighter increased capabilities. Reduction in impact to the environment also improves Warfighter survivability by reducing emissions that can be used for tracking and locating. Research focuses on material and design concepts for compact high-power transformers required by power conversion components, fabrication of new power semiconductor packaging, and advances in control and component power management methods.		1.634	-
Accomplishments/Planned Programs Subtotals		2.580	-
C. Other Program Funding Summary (\$ in Millions) N/A Remarks D. Acquisition Strategy N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025			
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602144A / Ground Technology				Project (Number/Name) CG7 / Ground Protection Concepts and Technologies				
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost	
CG7: Ground Protection Concepts and Technologies	-	10.473	8.328	9.859	-	9.859	-	-	-	-	-	-	

A. Mission Description and Budget Item Justification

This Project investigates advanced materials and mechanisms to defeat the most common and most dangerous threats that are expected to be encountered by our ground forces in near-, mid-, and far-term. This Project also designs and develops experimental and computational tools and techniques (high resolution instrumentation to observe impact events, theories, and algorithms to explain these phenomena and numerical implementation of these algorithms) for the development of mass-efficient armor mechanisms. This project designs and develops armor mechanisms that will be integrated to create multi-threat armor technologies and form the building blocks for Adaptive and Cooperative Protection Technologies in the Advanced Concepts for Active Defense Project (Program Element (PE) 0602145A Next Generation Combat Vehicle Technology). Additionally, research will focus on subcomponent/component models to predict performance of early concepts and the means to assess effectiveness on ground platforms. The Project will balance designs and developments of active threat defeat measures with the necessary advanced passive and reactive components that will ultimately provide for full system solutions which meet the requirements of current and next generation ground tactical and combat vehicles.

This Project is coordinated with and transitions to Projects in PE 0603462A (Next Generation Combat Vehicle Advanced Technology), PE 0602145A (Next Generation Combat Vehicle Technology), and builds upon weapon target interaction research in PE 0601102A (Defense Research Sciences) / Project AA7 (Mechanics and Ballistics).

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas. Work in this Project is performed by the Army Research Laboratory (ARL).

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2024	FY 2025	FY 2026
Title: Advanced Armor and Protection Technologies	5.241	3.101	4.508
Description: This effort designs and develops the next generation of lightweight protective concepts and technologies for defeat of current and future threats by combining real-time information and threat knowledge to provide increased protection. This effort investigates the fundamental physics of new terminal effects concepts and provides an understanding of interaction between the platform's defeat mechanism and the threat. The effort also investigates the ability to analytically simulate complex threat interactions. Experiments will be conducted to validate the efficacy of the designs.			
FY 2025 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602144A / <i>Ground Technology</i>	Project (Number/Name) CG7 / <i>Ground Protection Concepts and Technologies</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p>Will design layered armor systems with unique heat treatments configured for a range of threats; design dynamic indentation apparatus and associated simulation framework to assess strength, strain hardening, strain rate, and temperature performance of materials.</p> <p>FY 2026 Plans: Will investigate automated armor design methodology optimized against a specific threat of interest while providing sufficient protection against current and emerging threats; investigate scaling behavior in aluminum alloys; assess the current state of constitutive models used for high-rate behavior of metals and provide recommendations for model parameters and improvements.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: FY 2026 funding increase due to additional research in automated armor design.</p>			
<p>Title: Computational and Experimental Capability</p> <p>Description: This effort will design and develop computational design tools along with diagnostic and experimental capabilities that support the development of advanced protection systems. Such systems include passive, active, and hybrid solutions for defeating (multiple) anti-armor threats and exploit solid-dynamic, explosive-driven, and magneto-hydrodynamic target interactions. This work allows for predicting armor performance and understanding mechanisms regardless of vehicle platform, with improved and quantified confidence. This effort leverages the Department of Defense and Department of Energy (DOE) Technical Coordination Group Memorandum of Agreement and directly leverages DOE investments in computational platforms for problems in solid dynamics and impact mechanics.</p> <p>FY 2025 Plans: Will design and develop enhanced computational modeling and simulation tools to assess threat explosives, running on High Performance Computing systems to shorten development times for new advanced armor concepts; develop techniques to measure electromagnetic fields during dynamic experiments and enhance material models to improve fundamental understanding of complex armor designs.</p> <p>FY 2026 Plans: Will explore low cost optical module for adaptive range control for advanced diagnostics; expand armor database and machine learning knowledge products; explore advanced active imaging techniques for penetration diagnostics of terminal effect events; design and develop enhanced Arbitrary-Lagrangian-Eulerian General Research Applications (ALEGRA) codes and tools for use on Department of Defense high performance computing (DoD HPC) machines; investigate directed energy for use in terminal effects diagnostics</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement:</p>		5.232	5.227
			5.351

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602144A / Ground Technology	Project (Number/Name) CG7 / Ground Protection Concepts and Technologies		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
FY 2026 funding increase due to planned lifecycle of this effort.				
Accomplishments/Planned Programs Subtotals		10.473	8.328	9.859
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army Date: June 2025

Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602144A / Ground Technology				Project (Number/Name) CG8 / Human Autonomy Teaming			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CG8: Human Autonomy Teaming	-	9.170	9.284	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Project performs applied research for capabilities that support teams of Soldier and Artificial Intelligence (AI)-enabled systems to execute missions in complex, dynamic, multi-domain operations environments. Centered on ground vehicle mission planning and operations, this Project is focused on core technologies to enable Soldiers and AI-enabled systems to function as a team, to perform at high levels, and to adapt to adversarial actions and new mission requirements. This Project will enable future Soldiers with AI-enabled systems to perform complex missions with increasingly sophisticated technologies, and in increasingly complex, dynamic, sociotechnical environments. The applied research will provide the fundamental technologies to enable scalable Soldier-AI teams and team-centered dynamic tasking to effectively utilize the full capabilities of team and technologies. The research will include considerations to reduce data requirements for AI adaptation, increasing appropriate Soldier trust and use of technology, and ensuring ethical behavior by teams of Soldier and AI-enabled systems. The capabilities created by this research will lead to increased overall Soldier-AI team mission performance, improved Soldier-centric situation awareness technologies, and units that can effectively integrate within a multi-domain battlefield.

Work in this Project is coordinated with PE 0602145A (Next Generation Combat Vehicle Technology), PE 0603462A (Next Generation Combat Vehicle Advanced Technology) and PE 0602143A (Soldier Lethality Technology).

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.

Work in this Project supports the Army Science and Technology Ground and Next Generation Combat Vehicle portfolios.

Work in this Project is performed by the Army Research Laboratory (ARL).

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2024	FY 2025	FY 2026
Title: Soldier-AI Team Mission Planning for Dynamic Complex Environments Description: Planning in multi-domain operations environments is complex and has increased temporal and spatial sensitivities for Soldiers to integrate with AI-enabled systems to plan and execute missions. This effort investigates the fundamental concepts and technologies to enable Soldier and AI to team together to plan for multidomain operations from a ground vehicle perspective. This effort determines planning enablers to maximize manned-unmanned team performance across squads and platoons and includes mid- to far-term crew station-based emerging technologies in the areas of human interaction with AI technologies and human-guided machine intelligence. Designs and develops models of both Soldier and AI capabilities and their limitations as a function of the mission environment and mission requirements and apply those models to form mission plans.	1.343	-	-
Title: Dynamic Soldier-AI Team Resource Allocation	2.612	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602144A / Ground Technology	Project (Number/Name) CG8 / Human Autonomy Teaming		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Description: This effort designs and develops the concepts and technologies necessary to dynamically allocate Soldiers and unmanned systems during missions to adapt mission plans to adversarial actions and other events at a squad and platoon level, including responding to degradation or loss of team capabilities, changes in mission goals or priorities, and responding to adversarial actions. The effort investigates the allocation of Soldiers, platforms, and platform sub-system capabilities with the focus to ensure that future AI and automation capabilities are focused on the circumstances and conditions where they are most likely to be successful, and to ensure that the Soldier's cognition is focused appropriately to ensure mission success.				
Title: Soldier Cognition-Centric Interface Technologies Description: This effort designs and develops cognitive-centric displays that ensure Soldiers are focused on aspects of situational awareness, mobility, target engagements, and communications that are critical to mission performance as future crew stations and displays provide vast amounts of multi-domain information that has the potential to distract, overwhelm, and mislead Soldiers. This effort ensures that our systems do not capture and misdirect Soldier attention and/or cognition, maximizing the utility of AI enabled systems to the Soldier. This effort also enables Soldiers to better understand the actions, goals, intents, and general reasoning of the AI systems to ensure they are effectively used, but not inappropriately relied upon.		1.754	-	-
Title: Enabling Soldier-AI Technology Adaptation Description: This effort designs and develops technologies to rapidly adapt and upgrade AI-enabled system capabilities in response to advancements in AI in the commercial and adversary environments. Focus areas include enabling rapid technology adaption during Soldier experimentation and enabling data to be collected during these events for rapid development of technology updates and modifications. This effort has four goals: 1) increasing the ability of Soldier-AI teams to rapidly adapt to adversarial actions, new technologies, environmental changes, and mission requirements; 2) decreasing the data requirements to train and adapt AI-enabled systems; 3) increasing appropriate Soldier trust and use of technology; and 4) ensuring ethical decisions by using Soldiers to guide the actions and in-field adaptations of Soldier-AI team behaviors. FY 2025 Plans: Will investigate approaches for within and across-mission adaptation of autonomous system behaviors; explore scalability of machine learning techniques to echelons above the platoon level; design and develop simulation environment for training multi-agent coordinated autonomous behaviors. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects efforts to foster innovation and accelerate deployment of promising technology in support of alignment with congressional priorities.		3.461	3.520	-
Title: Soldier-AI-Enabled System Team Operational Planning		-	2.656	-

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602144A / <i>Ground Technology</i>	Project (Number/Name) CG8 / <i>Human Autonomy Teaming</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p>Description: This effort focuses on complementary Soldier and machine capabilities that support the rapid planning and replanning of higher-echelon distributed operations. This effort will provide capabilities for distributed Soldier-AI-enabled system teams to rapidly adapt within complex, dynamic, multi-domain environments and identify fleeting windows of opportunity. This effort has four goals: (1) enable Soldier-AI-enabled system teams to rapidly generate mission plans, (2) enable Soldier-AI-enabled system teams to assess mission plans, (3) enable Soldier-AI-enabled system teams to continuously analyze mission progress and predict outcomes and the potential need to re-plan, and (4) identify necessary changes to operational structure and skills caused by the introduction of AI-based systems and tools.</p> <p>FY 2025 Plans: Will investigate capabilities to enable Soldiers and AI-enabled systems to team together to rapidly generate operational plans for multi-domain operations; create approaches to rapidly assess multiple mission plans; explore methods to predict effectiveness of mission plans within a single domain of operation.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects efforts to foster innovation and accelerate deployment of promising technology in support of alignment with congressional priorities.</p>			
<p>Title: Soldier-AI-Enabled System Team Tactical Planning</p> <p>Description: This effort focuses on complementary Soldier and machine capabilities that support rapid adaptive command and control (C2) of lower-echelon distributed operations. This effort designs and develops capabilities that support teams of Soldiers and AI-enabled systems to conduct tactical C2 in complex, dynamic, multi-domain environments. Focused on ground vehicle centric missions, this effort will research core technologies to enable Soldiers and AI-enabled systems to lead isolated units capable of exploiting narrow windows of opportunity by creating and adapting coordinated team behaviors across mission phases. This effort will focus on four goals: (1) enabling coordinated Soldier-AI-enabled system pre-mission planning within constraints of higher echelon plans, (2) enabling within-mission adaptation of mission plans, (3) developing tools and techniques for after-action review-based adaptation of coordinated Soldier-AI-enabled system team behaviors, and (4) identifying necessary changes to team structure and skills caused by the introduction of AI-based systems and tools.</p> <p>FY 2025 Plans: Will design a capability to leverage Soldier feedback and previous mission-data to enable mission-to-mission adaptation of coordinated Soldier-AI team behaviors; explore approaches to assess trust across multiple Soldiers, AI-enabled systems, as well as teams that cross echelon; assess capability of Soldier-AI-enabled system tactical teams to rapidly adapt to changing operational plans.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement:</p>		-	3.108
			-

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602144A / Ground Technology	Project (Number/Name) CG8 / Human Autonomy Teaming		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Funding decrease reflects efforts to foster innovation and accelerate deployment of promising technology in support of alignment with congressional priorities.				
Accomplishments/Planned Programs Subtotals		9.170	9.284	-
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602144A / Ground Technology				Project (Number/Name) CI2 / Ground Enabling University Applied Research			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CI2: Ground Enabling University Applied Research	-	3.763	5.533	-	-	-	-	-	-	-	-	-
Note In FY 2026, a portion of funds are realigned from PE 0602144A (Ground Technology) / Project CI2 (Ground Enabling University Applied Research) to PE 0603462A (Next Generation Combat Vehicle Advanced Technology) / Project BF4 (Combat Vehicle Robotics Adv Tech).												
A. Mission Description and Budget Item Justification The Project leverages applied research from academia, in the focus areas of ground autonomy, Artificial Intelligence/Machine Learning (AI/ML) and robotics, occupant/ vehicle survivability and other ground platform technologies of importance to the Army. This Project performs discovery research efforts to focus more on mid to far-term Army modernization priorities while also maintaining delivery of near-term technologies critical to the next generation combat vehicles. This Project focuses on employment of research technologies originating from extramural applied research in academia pertaining to navigation/routing, autonomous robotic vehicles with the use of artificial intelligence and machine learning as applied to ground mobility and maneuver, and other innovative ground enabling applied research technologies. This effort conducts applied research and development leading to potential emerging technologies in areas of strategic importance to the Army in autonomy, robotics and AI/ML, protection of both platform and occupant, and other ground platform technologies in propulsion, survivability, powertrain, etc., by bringing competitively selected Universities with research and development teams into Technical Alliances. Work in this Project complements Program Element (PE) 0603119A (Ground Advanced Technology), PE 0602145A (Next Generation Combat Vehicle Technology) and PE 0603462A (Next Generation Combat Vehicle Advanced Technology). The work cited is consistent with Under Secretary of Defense for Research and Engineering priority focus areas. Work in this Project is performed by the Army Research Laboratory (ARL).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Robust autonomous capabilities for ground vehicles									1.984	3.608	-	
Description: This effort investigates AI/ML and autonomous mobility-enabled ground vehicles to conduct off-road maneuvers to transition from tele-operated to either autonomous, or semi-autonomous scenarios. This effort improves autonomous behaviors and reduces the need for human interaction during operation. Research is conducted in collaboration with university partners to advance autonomous mobility and protection of both occupant and platform in optionally manned and autonomous ground vehicles.												
FY 2025 Plans:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602144A / <i>Ground Technology</i>	Project (Number/Name) CI2 / <i>Ground Enabling University Applied Research</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p>Will design and develop capability models for unified air/ground scene representations and demonstrations in a fleet of unmanned ground and air vehicles; designs and develops reasoning-based cooperative maneuvers, such as bounding over-watch, with multiple vehicles; mature a second phase of marsupial robotic deployment and recovery technologies; research software to quickly enable Soldiers to customize robotic assets in the field for varied mission requirements; design and develop a modular software tool that interfaces with existing Army software to combine terrain layers to create mobility maps that support autonomous ground vehicle route planning; research emerging technology for autonomous ground vehicles and ground-air teaming.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease due to a reduction in reasoning-based cooperative maneuvers research and reflects efforts to foster innovation and accelerate deployment of promising technology in support of alignment with congressional priorities.</p>			
<p>Title: Human-robot/AI interactions</p> <p>Description: This effort designs and develops systems involving physical and cognitive levels of interactions between humans and robots, with the use of reinforcement learning (an area of ML research) from human feedback, learning from demonstration, and safe human-aware controllers. Work is conducted in collaboration with university partners to advance autonomous mobility as well as other areas of ground platform technologies in propulsion, survivability, powertrain, etc. The benefit of this effort is improvements to machine learning and artificial intelligence with human-robot interactions.</p> <p>FY 2025 Plans: Will research sensing, contact-capable navigation, and activity recognition for vehicles to move without stopping among crowds; continues to investigate AI/ML research for robust autonomous capabilities, real-time basic feature extraction from sensor data, multi-robot long-duration autonomy, human-AI-enabled system collaboration, and human-in-the-loop ML for autonomous navigation.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects reduction in research on real-time basic feature extraction. Funding realigned to PE 0603462A (Next Generation Combat Vehicle Advanced Technology) / Project BF4 (Combat Vehicle Robotics Adv Tech).</p>		1.779	1.925
Accomplishments/Planned Programs Subtotals		3.763	5.533
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602144A / Ground Technology	Project (Number/Name) CI2 / Ground Enabling University Applied Research
D. Acquisition Strategy N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025																		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602144A / Ground Technology				Project (Number/Name) CV3 / Engineer Enablers Maneuver, LOG, & Sustainment Apl																			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost																
CV3: Engineer Enablers Maneuver, LOG, & Sustainment Apl	-	2.115	1.257	4.166	-	4.166	-	-	-	-	-	-																
<p>Note</p> <p>In FY 2026, Project CV3 (Engineer Enablers Maneuver, LOG, & Sustainment Apl) includes a new effort "Worldwide Gap Analysis Program Tech". This effort is a new start in FY 2026.</p> <p>A. Mission Description and Budget Item Justification</p> <p>This effort designs and develops decision support capabilities to modernize the Army's logistics planning. The project will research planning of logistics resupply via distributed supply routes through complex terrain and environmental conditions within a contested environment, while also improving the efficiency of logistics planning, enabling planners to develop and compare courses of action, and simulate logistics activities using complex algorithms. This effort links the engineer applications into a geospatial framework and enables planners to better understand the dynamic scenario development providing a simple and clear critical vulnerabilities assessment, easy visual comparison of inventories available, supply needs within the battlespace, and the logistics options to mitigate potential issues.</p> <p>Work in this Project complements Program Element (PE) 0603119A (Ground Advanced Technology) / Project CV5 (Engineer Enablers Maneuver, LOG, & Sustainment Adv).</p> <p>The work cited is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas.</p> <p>Work is performed at the United States Army Engineer Research and Development Center Geotechnical and Structures Laboratory, Coastal and Hydraulics Laboratory, Environmental Laboratory, Geotechnical Research Laboratory, Cold Regions Research and Engineering Laboratory, Construction Engineering Research Laboratory, and Information Technology Laboratory.</p> <p>B. Accomplishments/Planned Programs (\$ in Millions)</p> <table><tr><td></td><td>FY 2024</td><td>FY 2025</td><td>FY 2026</td></tr><tr><td>Title: Planning Logistics Analysis Network System Applied Research</td><td>2.115</td><td>1.257</td><td>1.148</td></tr><tr><td colspan="4">Description: This effort will design and develop new engineering applications and methodologies that support improved logistics planning via distributed networks, investigate methods to link existing data describing complex environmental features that impact planning into engineer applications, and design new automated algorithm technologies to improve the efficiency and effectiveness of the planning decision making.</td></tr><tr><td colspan="4">FY 2025 Plans:</td></tr></table>														FY 2024	FY 2025	FY 2026	Title: Planning Logistics Analysis Network System Applied Research	2.115	1.257	1.148	Description: This effort will design and develop new engineering applications and methodologies that support improved logistics planning via distributed networks, investigate methods to link existing data describing complex environmental features that impact planning into engineer applications, and design new automated algorithm technologies to improve the efficiency and effectiveness of the planning decision making.				FY 2025 Plans:			
	FY 2024	FY 2025	FY 2026																									
Title: Planning Logistics Analysis Network System Applied Research	2.115	1.257	1.148																									
Description: This effort will design and develop new engineering applications and methodologies that support improved logistics planning via distributed networks, investigate methods to link existing data describing complex environmental features that impact planning into engineer applications, and design new automated algorithm technologies to improve the efficiency and effectiveness of the planning decision making.																												
FY 2025 Plans:																												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602144A / <i>Ground Technology</i>	Project (Number/Name) CV3 / <i>Engineer Enablers Maneuver, LOG, & Sustainment Apl</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p>Will mature components of routing algorithms for distributed logistics planning for multiple transportation modalities (i.e., road, watercraft, train) incorporating unique elements associated with military convoy traffic, weather impacts, and intermodal transfer.</p> <p>FY 2026 Plans: Will investigate inclusion of road degradation and validate multi-modal, multi-route algorithms for distributed logistics planning operations across a transportation network by conducting multiple experiments. Will mature components of the road routing algorithms. Will complete development of knowledge products documenting riverine and rail routing algorithms.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects adjustments to planned milestones and Army reduction.</p>			
<p>Title: Worldwide Gap Analysis Program Tech</p> <p>Description: This effort will design and develop new engineering applications and methodologies that support distributed operations through investigation of methods to quickly identify feasible locations and times for dispersed gap crossing using existing infrastructure, standard bridging, ground vehicle fording, rafting, and/or swimming operations. This includes incorporation of complex environmental factors and Subject Matter Expert solutions for use by non-expert users in order to improve the efficiency and effectiveness of the planning and decision-making processes.</p> <p>FY 2026 Plans: Will investigate needed inputs and data variables across multiple fields of expertise necessary to select gap crossing sites; will design and develop a framework for combining critical, near real-time data with historical datasets for gap crossing analysis.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: FY 2026 funding increase due to initiation of this effort. This effort is a new start in FY 2026.</p>		-	-
		3.018	
Accomplishments/Planned Programs Subtotals		2.115	1.257
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602144A / Ground Technology				Project (Number/Name) DA1 / SAFR Alternatives for Readiness Applied Research			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
DA1: SAFR Alternatives for Readiness Applied Research	-	4.982	4.025	6.251	-	6.251	-	-	-	-	-	-
Note In FY 2026, Project DA1 (SAFR Alternatives for Readiness Applied Research) includes a new effort "Corrosion Control App Research". This effort is a new start in FY 2026.												
A. Mission Description and Budget Item Justification This Project will develop safer alternative technologies that enable Army readiness, support supply chain resilience, improve Soldier and worker safety and reduce environmental impacts, including reduction of greenhouse gas emissions. The Project investigates alternatives for cross-cutting materials, undergoing or threatened by regulatory scrutiny, found in ground vehicles and all other types of Army weapon systems. Research areas of focus include alloys, ceramics, composites, textiles, maintenance fluids, propellants, explosives, and pyrotechnics. This work addresses increasing threats to readiness associated with carcinogenic, toxic, and restricted materials such as lead, beryllium, perchlorates, volatile organic compounds and per- and polyfluoroalkyl substances (PFAS) (forever chemicals), which can diminish Soldier and community health, restrict training and interrupt critical maintenance activities. Future liabilities and risks are characterized early in the life cycle of material development to ensure truly sustainable alternatives. This Project also investigates, develops and designs technologies to allow Soldiers to rapidly prioritize risk for PFAS to enable informed, timely and cost-effective solutions. This Project complements and transitions technologies to Program Element (PE) 0603119A (Ground Advanced Technology) / Project DA2 (SAFR Alternatives for Readiness Advanced Tech). Work in this Project is performed by the Army Research Laboratory (ARL); the Armaments Center (AC); the Aviation and Missile Center (AvMC); the Soldier Center (SC); the Ground Vehicle Systems Center (GVSC); and the U.S. Army Corps of Engineers (USACE) Engineer Research and Development Center (ERDC).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: PFAS Risk Reduction Applied Research									1.157	-	-	
Description: This effort will design and develop a novel rapid risk characterization framework that will be validated with a rapid fate and transport screen, a breakthrough toxicity screening, and treatment approaches.												
Title: Safer Alternatives for Readiness (SAFR) Applied Research									3.825	4.025	4.765	
Description: Design and develop novel cross-cutting solutions to eliminate Soldier and worker exposure to airborne lead from energetic materials; efficiently and safely demilitarize materiel; support the next generation of enhanced and sustainable munitions; reduce the use of toxic and hazardous chemicals in cleaners, degreasers, lubricants and fluids to ensure Soldier												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602144A / <i>Ground Technology</i>	Project (Number/Name) DA1 / <i>SAFR Alternatives for Readiness Applied Research</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
and ground vehicle readiness; and minimize the life cycle health and safety risks associated with emerging high-performance materials.			
FY 2025 Plans: investigate PFAS-free engineering fluids for energetics formulation; research reduced solvent energetic primer coating formulations; and optimize lead-free energetic primers and initiators.			
FY 2026 Plans: Will investigate durable water repellant and/or oil repellant coatings for textiles; develop novel plasticizers for energetic materials to enable lead-free rocket propellants; and research PFAS-free fluids and barrier membranes for energetic formulations.			
FY 2025 to FY 2026 Increase/Decrease Statement: FY 2026 funding increase due to heightened efforts in PFAS regulations.			
Title: Corrosion Control App Research Description: Design and develop cross-cutting methods and materials for improved corrosion prevention for future weapon systems and product improvements to fielded systems. Investigate improved techniques, processes, and technologies for corrosion assessment and correction through depot- and field-level maintenance.		-	-
FY 2026 Plans: Will research processes for accelerated corrosion testing methods for lifecycle prediction of coating systems; determine the most effective corrosion protection methods for a variety of base materials, both ferrous and non-ferrous; conduct experiments on the mechanics of coating failure; and evaluate corrosion performance of conventional materials as well as additively manufactured substrates.			
FY 2025 to FY 2026 Increase/Decrease Statement: FY 2026 funding increase due to initiation of Corrosion Control App Research. This effort is a new start in FY 2026.			
Accomplishments/Planned Programs Subtotals		4.982	4.025
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602144A / Ground Technology				Project (Number/Name) DG1 / Development of Obscurants			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
DG1: Development of Obscurants	-	2.673	2.807	2.661	-	2.661	-	-	-	-	-	-
Note In FY 2026, a portion of funds are realigned from PE 0602144A (Ground Technology) / Project DG1 (Development of Obscurants) to PE 0603462A (Next Generation Combat Vehicle Advanced Technology) / Project BF4 (Combat Vehicle Robotics Adv Tech). A. Mission Description and Budget Item Justification This project will investigate and evaluate obscurants (i.e., materials) and obscurant technologies that are designed to degrade threat force surveillance sensors and defeat the enemy's target acquisition devices, missile guidance, and directed energy weapons. This project investigates advanced, infra-red, and multi-spectral obscurant materials that will provide effective, safe, and efficient screening of deployed units and platforms. Work in this project compliments Program Element (PE) 0602144A (Ground Technology) / Project DG2 (Advanced Development of Obscurants). The cited work is consistent with the Under Secretary of Defense Research and Engineering priority focus areas and the Army Modernization Strategy. Work in this Project is performed by the Chemical Biological Center (CBC). B. Accomplishments/Planned Programs (\$ in Millions)												
Title: Obscuration Enabling Technologies Description: This effort investigates new materials and compounds to enable safe and effective screening of personnel and equipment across the electromagnetic spectrum. This effort also provides vulnerability assessments against enemy threat targeting systems. FY 2025 Plans: Will research millimeter wave obscurant materials and dissemination methodologies. Will integrate obscurant material into safe and effective dissemination technology through the Screening and Obscuration Module. FY 2026 Plans: Will continue investigation of millimeter wave obscurant materials and dissemination methodologies. Will investigate obscurant material into safe and effective dissemination technology through the Screening and Obscuration Module. FY 2025 to FY 2026 Increase/Decrease Statement:									FY 2024	FY 2025	FY 2026	
									2.673	2.807	2.661	

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602144A / <i>Ground Technology</i>	Project (Number/Name) DG1 / <i>Development of Obscurants</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
FY 2026 funding decrease due to realignment of funds from PE 0602144A (Ground Technology) / Project DG1 (Development of Obscurants) to PE 0603462A (Next Generation Combat Vehicle Advanced Technology) / Project BF4 (Combat Vehicle Robotics Adv Tech).				
Accomplishments/Planned Programs Subtotals		2.673	2.807	2.661
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602144A / Ground Technology				Project (Number/Name) DI7 / Environmental Security Resilience Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
DI7: Environmental Security Resilience Tech	-	-	6.635	10.102	-	10.102	-	-	-	-	-	-
Note In FY 2026, Project DI7 (Environmental Security Resilience Tech) includes three new efforts: "Securing Water Resources", "Biotech Threat In the Environment", and "Ruggedized Unexploded Ordnance Ultra Light Electro-magnetic Array for Extreme Environments Tech". These efforts are new starts in FY 2026.												
A. Mission Description and Budget Item Justification This Project matures and demonstrates capabilities to support Army Environmental Security, providing decisions and support tools for critical mission environments to address natural resource impediments, man-made stressors, extreme weather, and environmental engineering challenges that impact mission, infrastructure, training activities, deployment staging or present security concerns to operations. Project capabilities span the functional domains of strategic support area management, emergency preparedness, surge capacity, environmental impact on operations, and analysis of future operational environment and environmental threats. This effort will provide new material solutions, models and decision support tools for operational planning and infrastructure management. Work in this Project complements Program Element (PE) 0602144A (DI7) / Project (Environmental Security Resilience Tech). The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy. Work in this Project is performed by the United States Army Engineer Research and Development Center Environmental Laboratory, Construction Research Engineering Laboratory, and the Cold Regions Research and Engineering Laboratory.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Atmospheric Impacts for Lethality Overmatch									-	2.304	3.040	
Description: This effort conducts Army-centric applied research in atmospheric impacts and effects on DoD systems and operations. Technology development includes decision support systems for mission commanders, ensuring interoperability, and enhancing the ability to conduct air-ground reconnaissance and combined arms maneuver.												
FY 2025 Plans: Will conduct field tests using the Distributed Virtual Proving Ground - Multi-Sensor Array in relevant scenarios and conditions to collect and investigate meteorological and other operational data to understand the impact of atmospheric phenomena on energy propagation; develop physical and numerical models that are representative of atmospheric effects; investigate sensing algorithms and strategies informed by atmospheric impacts on multi-modal (acoustic/radio frequency (RF)/optical/electromagnetic (EM))												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army			Date: June 2025		
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602144A / <i>Ground Technology</i>		Project (Number/Name) D17 / <i>Environmental Security Resilience Tech</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2024	FY 2025	FY 2026
sensors applicable to detection, localization, and tracking; develop techniques, methods, and models for the characterization of ambient atmospheric and threat aerosols (intentional/unintentional release) exploiting primarily optical techniques. FY 2026 Plans: Will conduct select field assessments at the Distributed Virtual Proving Ground - Multi-Sensor Array (MSA) and partner sites to focus on scenarios of buoyancy dominated turbulence (dry, quiescent conditions, thermal circulations dominant) where surface heterogenous surface fluxes are crucial to understand the impact of energy propagation; improve physical and numerical models that are representative of atmospheric effects based on MSA and select field assessment results; refine and advance investigation of sensing algorithms and strategies informed by atmospheric impacts on multi-modal (acoustic/radio frequency (RF)/optical/electromagnetic (EM)) sensors applicable to detection, localization, and tracking; modify and refine techniques, methods, and models for the characterization of ambient atmospheric and threat aerosols (intentional/unintentional release) exploiting primarily optical techniques. FY 2025 to FY 2026 Increase/Decrease Statement: FY 2026 funding increase due to additional research in buoyancy dominated turbulence.					
Title: Environmental Security Applied Research - Assessing and Mitigating Climate Risk Description: This effort conducts Army-focused environmental security applied research to include dynamics and changes in the atmospheric boundary layer in complex Multi-Domain Operations (MDO) environments (complex terrain and dense urban) with particular emphasis on the atmospheric surface layer and the land surface processes that effect the environmental state. Technology development includes decision support systems for mission commanders, ensuring interoperability, and enhancing the ability to plan air-ground reconnaissance and combined arms maneuver. FY 2025 Plans: Investigate climate relationships between teleconnection patterns (causal connections or correlations between meteorological or other environmental phenomena which occur a long distance apart) and the evapo-transpiration cycle (i.e. flash drought) for the purpose of designing computational tools to predict the magnitude and impact of weather on operations, weapon systems, and personnel. Some examples of impacts include effects on resources in areas the US Army provides stability operations. Resource competition hampered by drought lead to resource competition and conflict vulnerability. Additionally, flash drought affects erosion and dust lofting - particles that significantly effect Directed Energy (DE) weapon system propagation/operation and Hypersonic operations. Effects on the decision-making process of personnel in drought-stricken areas with increased heat and dust laden atmosphere also need to be understood. FY 2025 to FY 2026 Increase/Decrease Statement:			-	1.915	-

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602144A / Ground Technology	Project (Number/Name) D17 / Environmental Security Resilience Tech		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Funding decrease due to realignment within this Project.				
<p>Title: Interagency Council for the Advancement of Meteorological Services Program</p> <p>Description: This effort supports the Army's collaboration in the Interagency Council for Advancing Meteorological Services (ICAMS), which was chartered in 2020 per the "Weather Research and Forecasting Innovation Act of 2017" (Public Law 115-25, April 18, 2017).</p> <p>FY 2025 Plans: Will conduct weather research and forecast innovation based on Army operational environments om coordination with the ICAMS Program.</p> <p>FY 2026 Plans: Will conduct forecast innovation and weather research based on Army operational environments and coordination with the ICAMS Program.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: FY 2026 funding decrease due to reduction in weather research with the ICAMS program.</p>		-	0.166	0.085
<p>Title: Building Installation Resilience Carbon Sequestration and Reduction</p> <p>Description: This effort will develop and provide validated models for carbon accounting across Army natural lands to include the use of those lands. These models will provide a baseline of current carbon sequestration and quantify changes in sequestration capacity.</p> <p>FY 2025 Plans: Will investigate effects of Army training on soil carbon fluxes and identify key ecosystem processes influencing soil carbon fluxes.</p> <p>FY 2026 Plans: Will investigate necessary parameters, through data analysis and model refinement, for modeling soil structural and chemical properties to understanding the impacts of ground training on Army natural lands.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects adjustments to planned milestones and Army reduction.</p>		-	1.203	0.431
<p>Title: PFAS Risk Reduction Applied Research</p> <p>Description: This effort will develop a per- and polyfluorinated substances (PFAS) risk-based decision framework to enable rapid PFAS communication and risk decisions on Army installations. This effort will also establish a communications hub to provide distribution of PFAS decisions to Army installation managers.</p>		-	1.047	1.046

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army			Date: June 2025		
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602144A / <i>Ground Technology</i>		Project (Number/Name) D17 / <i>Environmental Security Resilience Tech</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2024	FY 2025	FY 2026
FY 2025 Plans: Will conduct experiments with the initial version of the communication hub and decision framework using mesocosm case studies and will start to develop PFAS small scale computational chemistry models.					
FY 2026 Plans: Will identify modular design reporting system architecture to host PFAS communications/resource hub and existing risk decision tools for installation managers. Will investigate parameters to validate PFAS modeling data.					
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects adjustments to planned milestones and Army reduction.					
Title: Securing Water Resources Description: This effort will develop tools for installation managers to assess and secure water resources. The tools will recommend decisions based on dynamic environmental considerations for water use and reuse.			-	-	1.087
FY 2026 Plans: Will investigate hydrology models that support near- and long-term forecasting of water need and sources for installations.					
FY 2025 to FY 2026 Increase/Decrease Statement: FY26 funding increase due to planned initiation of this effort.					
Title: Biotech Threat In the Environment Description: This effort characterizes bio-engineered threats using bio-informatic screening for genetic sequences to determine if gene editing is potentially unsafe to the intended targets.			-	-	1.336
FY 2026 Plans: Will conduct genomic research to identify DNA-sequence based features that identify genetic-engineering traces specifically in bio-threat species.					
FY 2025 to FY 2026 Increase/Decrease Statement: FY 2026 funding increase due to initiation of this effort. This effort is a new start in FY 2026.					
Title: Ruggedized Unexploded Ordnance Ultra Light Electro-magnetic Array for Extreme Environments Tech Description: This effort will develop a multi-platform compatible ultra-light electromagnetic array to identify and classify metallic/conventional unexploded ordnance in all operational environments, all terrains, and in all seasons. Updated systems will enable operations in ice- or snow-covered environments.			-	-	0.866

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602144A / <i>Ground Technology</i>	Project (Number/Name) DI7 / <i>Environmental Security Resilience Tech</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p><i>FY 2026 Plans:</i> Will investigate a platform agnostic ultra-light electromagnetic array and corresponding advanced processing algorithms to detect and classify metallic/conventional targets of interest in the subsurface.</p> <p><i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> FY 2026 funding increase due to initiation of this effort. This effort is a new start in FY 2026.</p>			
<p><i>Title:</i> Environmental Security Applied Research</p> <p><i>Description:</i> This effort conducts Army-focused environmental security applied research to include dynamics and changes in the atmospheric boundary layer in complex Multi-Domain Operations (MDO) environments (complex terrain and dense urban) with particular emphasis on the atmospheric surface layer and the land surface processes that effect the environmental state. Technology development includes decision support systems for mission commanders, ensuring interoperability, and enhancing the ability to plan air-ground reconnaissance and combined arms maneuver.</p> <p><i>FY 2026 Plans:</i> Will apply results of teleconnection pattern correlation investigation (causal connections or correlations between meteorological or other environmental phenomena which occur a long distance apart) and the surface energy budget, specifically surface sensible and latent energy flux (Bowen Ratio) to improve computational tools for predicting the magnitude and impact of weather on operations, weapon systems, and personnel; research and examine flash drought effects and dust lofting-particles on Directed Energy (DE) signal propagation.</p> <p><i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> This is not a new start. Funding increase reflects additional research in flash drought effects and dust lofting particles on DE signal propagation. Funding realigned from within this Project.</p>		-	-
Accomplishments/Planned Programs Subtotals		-	2.211
		-	6.635
		-	10.102
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 2: Applied Research					R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology							
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
Total Program Element	-	248.335	167.233	70.498	1.049	71.547	-	-	-	-	-	-
BF3: Combat Vehicle Robotics Tech	-	15.950	18.659	-	-	-	-	-	-	-	-	-
BF6: Crew Augmentation and Optimization Tech	-	10.997	9.675	-	-	-	-	-	-	-	-	-
BF8: Artificial Intelligence & Machine Learning Tech	-	16.908	13.507	0.000	1.049	1.049	-	-	-	-	-	-
BF9: Sensors for Autonomous Operations and Surv Tech	-	25.327	24.772	23.207	-	23.207	-	-	-	-	-	-
BG2: Modeling and Simulation for MUMT Technology	-	5.511	4.142	-	-	-	-	-	-	-	-	-
BG6: Advanced Concepts for Active Defense Technology	-	32.444	30.206	29.047	-	29.047	-	-	-	-	-	-
BH5: Platform Electrification and Mobility Tech	-	11.857	-	-	-	-	-	-	-	-	-	-
BI2: Sensor Protection Technology	-	5.428	5.782	4.237	-	4.237	-	-	-	-	-	-
BI4: Materials Application and Integration Tech	-	7.441	-	-	-	-	-	-	-	-	-	-
BJ2: Tactical and Navigation Lasers Sensors Technology	-	5.708	5.863	5.482	-	5.482	-	-	-	-	-	-
BK2: Virtual Prototyping Technology	-	5.410	7.042	-	-	-	-	-	-	-	-	-
BK5: Adv Direct In-Direct Armament Sys (ADIDAS) Tech	-	10.654	11.585	8.525	-	8.525	-	-	-	-	-	-
BP5: Ground Vehicle Technology (CA)	-	94.700	36.000	-	-	-	-	-	-	-	-	-

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 2: Applied Research</i>		R-1 Program Element (Number/Name) PE 0602145A / <i>Next Generation Combat Vehicle Technology</i>
A. Mission Description and Budget Item Justification <p>This Program element (PE) line is directly aligned to the Next Generation Combat Vehicle (NGCV) Army Modernization Priority. This PE researches, designs, and evaluates combat vehicle technologies that enable the Army to have a smarter, faster, more lethal, more precise, more protected, and more adaptable force. The focus is on building upon the foundational vehicle architectures to support the Next Generation of Combat Vehicles, to include autonomy architecture, power architecture, vehicle electronic architecture, physical architecture, lethality architecture and vehicle protection architecture. The research conducted will provide technologies to enable leap ahead capabilities for manned, optionally manned and unmanned vehicles that deliver decisive lethality.</p> <p>Project BF3: Combat Vehicle Robotics Tech was eliminated in PE 0602145A to reflect Department of Defense priorities and will cease Governmental development of autonomy software. Project BH5: Platform Electrification and Mobility Tech was eliminated in PE 0602145A to reflect Department of Defense priorities and will cease the design and development of hybrid-drive systems for combat vehicles. Project BK2: Virtual Prototyping was eliminated in PE 0602145A to reflect Department of Defense priorities and will cease Army capabilities to digitally design and evaluate prototype combat vehicle platforms. Projects CG8: Human Autonomy Teaming and BF6: Crew Augmentation and Optimization Tech in PE 0602145A were eliminated to reflect Department of Defense priorities and will cease Governmental development of autonomy software and autonomous platform controls.</p> <p>Work in this PE complements PE 0602141A (Lethality Technology), PE 0602144A (Ground Technology), PE 0602146A (Network C3I Technology), PE 0603116A (Lethality Advanced Technology), PE 0603119A (Ground Advanced Technology), PE 0603462A (Next Generation Combat Vehicle Advanced Technology), and PE 0603463A (Network C3I Advanced Technology).</p> <p>Work in this PE will transition to PE 0603462A (Next Generation Combat Vehicle Advanced Technology).</p> <p>The cited work is consistent with the Under Secretary of Defense for Research and Engineering Priority focus areas.</p> <p>Work is performed by the Ground Vehicle System Center (GVSC); the Army Research Laboratory (ARL); the Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center; the Geotechnical and Structures Laboratory; the Data and Analysis Center (DAC); and the Armaments Center (AC).</p> <p>Overseas Operations Costs (OOC) funds this requirement in the amount of \$1,041 thousand for FY 2025 Budget Estimate. Overseas Operations Costs (OOC) are those financed with former Overseas Contingency Operations (OCO) funding.</p> <p>The FY 2026 request was reduced by \$0.139 million for Advisory and Assistance Services to promote efficiencies and advance the policies of the Administration in alignment with Executive Order 14222, "Implementing the President's Department of Government Efficiency Cost Efficiency Initiative."</p> <p>The FY 2026 request was reduced by \$0.403 million for civilian personnel to optimize the workforce in compliance with Executive Order 14210, "Implementing the President's Department of Government Efficiency Workforce Optimization Initiative."</p>		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army				Date: June 2025		
Appropriation/Budget Activity		R-1 Program Element (Number/Name)				
2040: Research, Development, Test & Evaluation, Army / BA 2: Applied Research		PE 0602145A / Next Generation Combat Vehicle Technology				
B. Program Change Summary (\$ in Millions)		FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Previous President's Budget		166.500	149.108	155.296	-	155.296
Current President's Budget		248.335	167.233	70.498	1.049	71.547
Total Adjustments		81.835	18.125	-84.798	1.049	-83.749
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-15.160			
• Congressional Rescissions		-	-			
• Congressional Adds		94.700	36.000			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-11.501	-			
• SBIR/STTR Transfer		-1.364	-			
• Adjustments to Budget Years		-	-2.715	-84.798	1.049	-83.749
Congressional Add Details (\$ in Millions, and Includes General Reductions)						
Project: BP5: Ground Vehicle Technology (CA)						
Congressional Add: Active Protection Systems						
Congressional Add: Advanced materials development for survivability						
Congressional Add: Advanced Technologies for Autonomous Ground Vehicles and Warfighter Survivability						
Congressional Add: Armaments technology of unmanned systems						
Congressional Add: Fast-refueling fuel cell engines						
Congressional Add: Gunner restraint system						
Congressional Add: Highly Electrified Vehicles						
Congressional Add: Hydrogen technologies						
Congressional Add: Hyperspectral Sensors for Autonomous Operations						
Congressional Add: Large Metal Additive Manufacturing for Ground Vehicles						
Congressional Add: Machine learning optimized power electronics						
Congressional Add: Mobility Materials Research						
Congressional Add: Prototyping energy smart autonomous ground systems						
Congressional Add: Silicon carbide electronics						
Congressional Add: Small unit technology advancements						

FY 2024	FY 2025
10.000	-
10.000	-
6.000	-
1.000	-
3.500	-
2.200	-
5.000	-
10.000	-
2.000	-
10.000	-
5.000	5.000
10.000	-
5.000	-
8.000	14.000
7.000	-

FY 2024	FY 2025
10.000	-
10.000	-
6.000	-
1.000	-
3.500	-
2.200	-
5.000	-
10.000	-
2.000	-
10.000	-
5.000	5.000
10.000	-
5.000	-
8.000	14.000
7.000	-

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army I BA 2: Applied Research		R-1 Program Element (Number/Name) PE 0602145A I Next Generation Combat Vehicle Technology	
Congressional Add Details (\$ in Millions, and Includes General Reductions)		FY 2024	FY 2025
Congressional Add: <i>Analytics and visualization of autonomous vehicle systems</i>		-	7.000
Congressional Add: <i>Autonomous vehicle research initiative</i>		-	5.000
Congressional Add: <i>Standardized battery for enhanced performance</i>		-	3.000
Congressional Add: <i>Vehicle power protection</i>		-	2.000
Congressional Add Subtotals for Project: BP5		94.700	36.000
Congressional Add Totals for all Projects		94.700	36.000
Change Summary Explanation Funding decrease in Fiscal Year (FY) 2026 from the previous PB to the current PB is due to maturation of Soldier-adaptive AI interactions and advanced sensors with embedded processing, achievement of crew augmentation capstone, and planned completion of advanced direct in-direct armament systems.			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology				Project (Number/Name) BF3 / Combat Vehicle Robotics Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
BF3: Combat Vehicle Robotics Tech	-	15.950	18.659	-	-	-	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project designs, develops, and evaluates a variety of innovative technologies that enable scalable integration of multi-domain robotic and autonomous system capabilities teamed within Army formations supporting all combat warfighting functions (close combat, reconnaissance, targeting and acquisition, etc.). This Project focus areas include autonomous architecture, autonomous behaviors and perception, and soldier machine integration. Autonomous Behaviors efforts focus on enhancing the performance of autonomy such as obstacle detection and avoidance. Soldier Machine integration efforts focus on design and development of technologies to become more efficient and effective for a robotic operator to complete missions on government owned software.												
This work is this Project is done in coordination with Program Element (PE) 0603462A (Next Generation Combat Vehicle Advanced Technology) / Project BF4 (Combat Vehicle Robotics).												
The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas.												
Work in this Project is performed by Ground Vehicle System Center (GVSC).												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Title: Autonomous Behaviors and Perception								9.673	10.886	-	-	-
Description: This effort contributes to the NGCV Robotic Autonomous Strategy (RAS) to advance the mobility performance of autonomous systems within complex environments/ operations to allow for the completion of mission goals in separate and teaming configurations at varying levels of autonomy.												
FY 2025 Plans:												
Will research adaptable motion control, enabling autonomous vehicles to respond to changes in the operating environment and mission context. Will research frameworks to enable behavior switching and mobility adjustment based on terrain awareness, sensing, and object classification. Will investigate passive perception techniques to supplement or replace light detection and ranging (LIDAR) as the perception capability for the Robotic Technology Kernel (RTK) to reduce the detectability of the system during operations. Will research methods for a-priori map ingestion to enable better path planning in complex environments. Mature the commercial Robotic Operating System (ROS)-2 standard for components of RTK. Will continue to research and validate												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army			Date: June 2025			
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology		Project (Number/Name) BF3 / Combat Vehicle Robotics Tech		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
complex obstacle detection and avoidance at operationally relevant speeds and over rough terrain, started in FY 2024. Mature the Autonomous Ground Vehicle Reference Architecture (AGVRA) framework by developing mission models and associated test plan models to support engineering evaluation tests (EETs). Will mature and advance the robotics and autonomous architecture and associated digital engineering model profile, library and views advancing current technologies within a model-based systems engineering (MBSE) environment. Will develop interface model definition and tools to facilitate digital engineering model integration.						
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects efforts to foster innovation and accelerate deployment of promising technology in support of alignment with congressional priorities.						
Title: Human Robotic Interaction		2.570	3.965	-	-	-
Description: This effort contributes to the Next Generation Combat Vehicle Robotic Autonomous Strategy (NGCV RAS) to implement a focused approach to deliver optimized unmanned system and manned-unmanned system performance through reduced cognitive burden for the Soldier while maintaining real-time unmanned system status/activity, overall mission effectiveness, and predictive capability of the system's intended activity.						
FY 2025 Plans: Will design more efficient and effective robotic warfighter machine interface (WMI) technologies for a robotic operator to demonstrate the ability to complete missions in a combat scenario. Will investigate improvements of data fusion across multi-asset formations with routes, multi-phase mission plans and natural language processing. Will investigate ways for the operator to influence autonomous decisions through the WMI tools.						
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects efforts to foster innovation and accelerate deployment of promising technology in support of alignment with congressional priorities.						
Title: M&S for Autonomy Enabled Ground Systems		2.061	2.095	-	-	-
Description: This effort contributes to the NGCV RAS program by designing and developing modeling and simulation (M&S) tools for the development and evaluation of autonomy technologies. The effort designs and develops tools necessary to virtually evaluate Combat Vehicle Robotics (CoVeR) program autonomy algorithms. The capabilities and contents of the M&S tools will emulate the CoVeR EET events conducted in PE 0603462A (Next Generation Ground Vehicle Advanced Technology) / Project BF4 (Combat Vehicle Robotics Adv Tech) and allowing these tools to scale on other Army and Department of Defense compute platforms.						

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army				Date: June 2025		
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology		Project (Number/Name) BF3 / Combat Vehicle Robotics Tech		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
<p>FY 2025 Plans: Will mature CoVeR M&S capability through targeted model developments in line with autonomous capability increments supporting CoVeR evaluations, specifically the FY 2026 virtual EET. Will enhance the architecture to maintain stable integration and interoperability with updated releases of CoVeR technologies to include the RTK, Robotic Vehicle Integration and Safety (RVIS) and Warfighter Machine Interface (WMI). Will develop M&S models focusing on real-time improved sensors, vehicle dynamics, and communications enabling autonomy development. Will develop simulations focusing on CoVeR platforms operating in off-road terrain and operational mission scenarios to stimulate robotic and autonomous capabilities in the FY 2026 EET. Will validate technologies through a virtual EET to assess technology readiness prior to participation in the EET.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects efforts to foster innovation and accelerate deployment of promising technology in support of alignment with congressional priorities.</p>						
<p>Title: Small Unmanned Ground Vehicle (UGV) as Deployable Sensor</p> <p>Description: This effort advances teaming between autonomous small Unmanned Ground Vehicles (UGVs) and Next Generation Combat Vehicles (NGCV) to execute collaborative mission tasks in support of reconnaissance and clearing missions.</p> <p>FY 2025 Plans: Will design and develop behaviors for unmanned systems with emphasis on quadruped (legged) robots for increased to evaluate reconnaissance applications in rough terrain. Will design and develop an optimized system control architecture to overcome size, weight, and power (SWaP) limitations of small unmanned platforms enabled with sensors to perform complex and long duration mission tasks. Will further research and develop supporting autonomous behaviors identified during previous EETs. Will validate newly developed enhancements to autonomous teaming, AI-enabled sensing, and Modular Mission Payloads (MMPs) through EETs to evaluate performance and system safety.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects efforts to foster innovation and accelerate deployment of promising technology in support of alignment with congressional priorities.</p>		1.646	1.713	-	-	-
Accomplishments/Planned Programs Subtotals		15.950	18.659	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology	Project (Number/Name) BF3 / Combat Vehicle Robotics Tech
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
D. Acquisition Strategy N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology				Project (Number/Name) BF6 / Crew Augmentation and Optimization Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
BF6: Crew Augmentation and Optimization Tech	-	10.997	9.675	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This project designs capabilities for reduced vehicle crew sizes to successfully operate a larger number of closed-hatch manned and remote unmanned vehicles in a complex multi-domain operations environment. This project will enable future crews to perform missions with increasingly sophisticated technologies, and in increasingly complex, dynamic socio-technical environments. The applied research will provide the fundamental technologies to enable integrated performance improved learning - Warfighter Machine Interfaces (WMIs) that are scalable to multiple crew hardware and functional configurations; reconfigurable frameworks and simulation for concept experimentation and exploration; and team-centered dynamic tasking by machine intelligence to effectively utilize full capabilities of crew and technologies. The research will generate Soldier-informed data, reports, and analysis to support operational use in future vehicles through Soldier experimentation and assessment of technical concepts in simulation and in-field WMIs. The capabilities created by this research will increase overall crew and team performance; improved Soldier safety due to fewer Soldier per vehicle, closed-hatch operations, and improved standoff from effective control; and vehicles that can effectively conduct multiple domain operations.

Work in this project complements Program Element (PE) 0603462A (Next Generation Combat Vehicle Advanced Technology) and PE 0602143A (Soldier Lethality Technology).

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas.

Work in this project is performed by the Ground Vehicle System Center (GVSC) and the Army Research Laboratory (ARL).

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

	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Title: Crew Capability Enhancement	3.447	2.668	-	-	-
Description: This effort focuses on the dynamic interaction of Soldiers, responsible for both manned and unmanned ground vehicles, working together within a platoon formation. The project funds research on the simultaneous use of multiple technologies by Soldiers including transparent multi-modal user interfaces, commander's tools for maintaining and enhancing situation awareness, decision aids for enabling dynamic resource allocation and orchestration, and tools to interact with and adapt vehicle based autonomy. Products will include artificial intelligence algorithms, information display technologies, and team-centric design principles.					
FY 2025 Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army				Date: June 2025		
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology		Project (Number/Name) BF6 / Crew Augmentation and Optimization Tech		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Will research autonomous systems capabilities to learn from in Soldier behavior observed during the conduct of a mission; develop algorithms to dynamically allocate tasks between Soldiers and autonomous systems during missions based on communication and sensing of Soldier behavior and workload. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects efforts to foster innovation and accelerate deployment of promising technology in support of alignment with congressional priorities.						
Title: Characterize Soldier-Adaptive AI Interactions Description: This effort develops approaches for characterizing Soldier interactions and overall human-system performance of mixed Soldier and intelligent-agent teams to enable robust human system performance for manned and unmanned teams. This effort will focus on flexible, tailorable methodologies for laboratory-grade, high-resolution characterization of Soldier and Artificial Intelligence (AI) enabled intelligent-agent adaption in complex environments. FY 2025 Plans: Will conduct experiments to determine the effectiveness of Next Generation Combat Vehicle (NGCV) Dashboard tool for assessing and improving Soldier-autonomy team performance; investigate initial data management and evaluate autonomous system interventions associated with increased Soldier span of control. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects efforts to foster innovation and accelerate deployment of promising technology in support of alignment with congressional priorities.		1.941	2.626	-	-	-
Title: Human Augmentation for Collective Training Description: This effort investigates assessment techniques of crew performance to inform the development of individual and collective training for military vehicles. Assessment techniques will be applicable across a variety of vehicle platforms, training tasks and vehicle crew roles. This effort will support training and increased force readiness of vehicle crews in complex environments by developing accurate and efficient performance assessment techniques evaluated in complex Operational Environments (OE) enabled by the latest advances in simulation and training technology. FY 2025 Plans:		1.918	0.717	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army			Date: June 2025			
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology		Project (Number/Name) BF6 / Crew Augmentation and Optimization Tech		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Will investigate initial data management and determine relationship of autonomous system interventions associated with increased Soldier span of control. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects efforts to foster innovation and accelerate deployment of promising technology in support of alignment with congressional priorities.						
Title: Crew Interaction Interfaces and Technologies Description: This effort focuses on the design and development of crew interaction interfaces and intelligent technologies. It includes WMI modification to improve cross-platform situational awareness and enables real-time, data-driven prediction of the crew to support changing mission goals. FY 2025 Plans: Will design and evaluate crew interaction interfaces, crew augmentation and embedded training technologies, and optimize these hardware and software interfaces based on warfighter feedback and performance data; improve WMI to refine cross-platform situational awareness and enable data-driven augmentation to optimize crew task loading during multiple mission scenarios. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects efforts to foster innovation and accelerate deployment of promising technology in support of alignment with congressional priorities.		-	3.664	-	-	-
Title: Platoon Teaming Capability Description: This effort focuses on the design, development and validation of intelligent, real-time, within-vehicle task management; data-driven allocation of situational awareness (SA) across platforms within the platoon; coordinated platoon-level manned-unmanned teaming (MUM-T) semi-autonomous maneuver with complex formations; and on-the-fly, platoon-level task optimization. This effort includes WMI modification to conduct experiments with these capabilities in application of intelligent task management and data-driven prediction of crew to support changing mission goals.		3.691	-	-	-	-
Accomplishments/Planned Programs Subtotals		10.997	9.675	-	-	-
C. Other Program Funding Summary (\$ in Millions) N/A						

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology	Project (Number/Name) BF6 / Crew Augmentation and Optimization Tech
C. Other Program Funding Summary (\$ in Millions)		
Remarks		
D. Acquisition Strategy		
N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology				Project (Number/Name) BF8 / Artificial Intelligence & Machine Learning Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
BF8: Artificial Intelligence & Machine Learning Tech	-	16.908	13.507	0.000	1.049	1.049	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
<p>This project develops and characterizes artificial intelligence and machine learning software and algorithms to team with soldiers in support of fully autonomous maneuver of the Next Generation Combat Vehicle (NGCV) and other autonomous systems, both physical and non-embodied. Efforts develop capabilities for NGCV and other autonomous agents that increase autonomy, unburdening the soldier operator, with a high degree of survivability and lethality in a highly contested environment. This work also investigates power distribution and conversion technologies to provide compact, efficient, and high-power capabilities for electrical and electro-mechanical loads supporting both mobile and stationary unmanned platforms. Research enables combat vehicles to rapidly learn, adapt, and reason faster than the adversary; accomplish missions in contested, austere and congested environments, characterized by lack of structure, adversarial actions, and minimal a priori knowledge; and provide force reduction through self-learning vehicles that can operate in complex militarily relevant environments. This project also matures emerging research leading to potential technology development in areas of strategic importance to the Army by bringing competitively selected Universities with research teams into Technical Alliances.</p> <p>The cited work is consistent with Under Secretary of Defense for Research and Engineering priority focus areas.</p>												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Title: Scalable, Adaptive, and Resilient Autonomous Systems								5.245	4.090	-	-	-
Description: This effort develops emerging research in Autonomous Vehicle intelligence and decision making, human agent teaming, scalable and collaborative behaviors, embodied and embedded intelligence, and autonomous operations for next generation Army platforms in dynamic Army relevant environments, architectures, and missions. Specific focus will be on the application of Artificial Intelligence/Machine Learning (AI/ML) to autonomous systems and human-intelligent agent teaming; scalable and collaborative behaviors in support of heterogeneous air and ground manned-unmanned teaming (MUM-T) operations; methods for embodied and embedded intelligence for increased understanding, manipulation, and reflexive maneuver through and interaction with dynamic environments; techniques for improved perception, decision making, and adaptive behaviors in contested environments for MUM-T; and new methods for testing and evaluating emerging technologies for intelligent and autonomous systems under Army relevant constraints and environments and in Army relevant architectures.												
FY 2025 Plans:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army			Date: June 2025			
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology		Project (Number/Name) BF8 / Artificial Intelligence & Machine Learning Tech		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Will explore methods to incorporate human-guided input and learning methods into real-time task interpretation and adaptation in autonomous behaviors; develop methods and applications to increase small unmanned systems ability to efficiently traverse complex and varying different terrains.						
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects efforts to foster innovation and accelerate deployment of promising technology in support of alignment with congressional priorities.						
Title: Context-Based Information Dynamics		2.599	1.056	-	-	-
Description: This effort investigates techniques that integrate on-board and external information sources, and it applies ML analytic approaches to support automated intelligence analysis and decision making. The goal is to enable tactical agents to cooperatively share relevant and timely tactical information within a distributed environment.						
FY 2025 Plans: Will validate enhanced object estimation algorithms and automated autonomous maneuver reasoning tools; investigate algorithms and machine learning approaches to enable autonomous systems to collaborate through context-informed dialogue; investigate limited set of computational linguistics-based semantic approaches to augment deep learning language models.						
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects planned completion of this effort.						
Title: Heterogeneous Computing and Computational Sciences		1.913	1.055	-	-	-
Description: This effort funds research to develop algorithms and architectures that allow adaptable, energy efficient information processing across different computing hardware platforms. The goal of this research is to provide high performance computing and processing capabilities to the Soldier on the battlefield.						
FY 2025 Plans: Will investigate scalable computing methods for complex inference tasks and methods for model partitioning; explore novel strategies for adaptive and efficient execution of analytic models in extremely resource constrained, heterogenous environments; investigate methods to optimize analytic performance and accuracy.						
FY 2025 to FY 2026 Increase/Decrease Statement:						

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army			Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology		Project (Number/Name) BF8 / Artificial Intelligence & Machine Learning Tech		
B. Accomplishments/Planned Programs (\$ in Millions)					
	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Funding decrease reflects reduction in research on methods for model partitioning and efforts to foster innovation and accelerate deployment of promising technology in support of alignment with congressional priorities.					
<p>Title: Machine Learning with Constrained Resources</p> <p>Description: This effort will research new ML and reinforcement learning methods to address issues of statistically mismatched and incomplete information which must be annotated, collected, classified, and used for rapid decisions by joint intelligent agent-human teams. In addition, multi-modal human interaction approaches will be investigated to ensure effective Soldier interactions and understanding of intent. The goal of this research is to enable joint human-intelligent agent decision making, optimizing the strengths of each in the decision process and creating an adaptive, agile team. This work applies research conducted in PE 0611102A (Defense Research Sciences) / AA6 (Robotics and Mobile Energy) and AA9 (Information and Networking).</p> <p>FY 2025 Plans: Will assess ground vehicle autonomy performance using modular navigation, perception, and state estimation; mature autonomous navigation components to sustain performance while adapting to environmental features optimize and assess route planning capability for autonomous systems in partially obscured complex environments; validate simulation-based coordination techniques for multiple autonomous systems using research platforms; investigate automated extraction of full scene information based on autonomous system sensor data; experiment with automated optimization methods for perception algorithms under constraints including network bandwidth, computer memory, and compute capacity; develop inference algorithms for artificial reasoning systems for automated decision making and course of action recommendations for autonomous maneuver; develop fundamental methods for enhanced deep learning language models to create intelligent systems with increased effectiveness; investigate computational models to detect camouflaged, obscured, or non-obvious objects, and detect rare and novel conditions using contextual information from sensor fusion.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects efforts to foster innovation and accelerate deployment of promising technology in support of alignment with congressional priorities.</p>	4.500	4.602	-	-	-
<p>Title: Intelligence for High Operational Tempo Maneuver</p> <p>Description: Applied research on intelligence for cognitive learning and control architectures to enable efficient and full use of embodied physical capabilities and create the machine intelligence required of autonomous</p>	1.627	1.663	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army				Date: June 2025		
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology		Project (Number/Name) BF8 / Artificial Intelligence & Machine Learning Tech		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
systems to understand physical limitations. Investigates the means through which robotic physical performance attributes (e.g. speed, agility) will be coupled with artificial intelligence to enable resilient maneuver in high operational tempo missions in complex environments.						
FY 2025 Plans: Will continue to investigate novel models, artificial intelligence algorithms, and architectures that enable autonomous systems to operate at operationally relevant speeds and agility; conduct research focused on increasing complexity for autonomous navigation and planning related to natural environmental conditions such as dust, snow, and rain; develop performance prediction models for autonomous systems.						
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects efforts to foster innovation and accelerate deployment of promising technology in support of alignment with congressional priorities.						
Title: Operational Assessment of Artificial Intelligence Developmental Systems		1.024	1.041	0.000	1.049	1.049
Description: This effort supports the Combatant Commander's needs by performing operational assessments of AI-intense developmental weapon systems.						
FY 2025 Plans: Will continue to optimize results from ongoing studies to support Combatant Commander identified needs.						
FY 2026 Base Plans: N/A						
FY 2026 OOC Plans: Will continue to optimize results from ongoing studies to support Combatant Commander identified needs.						
FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase is an economic adjustment.						
Accomplishments/Planned Programs Subtotals		16.908	13.507	0.000	1.049	1.049
C. Other Program Funding Summary (\$ in Millions)						
N/A						
Remarks						

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology	Project (Number/Name) BF8 / Artificial Intelligence & Machine Learning Tech
D. Acquisition Strategy N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology				Project (Number/Name) BF9 / Sensors for Autonomous Operations and Surv Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
BF9: Sensors for Autonomous Operations and Surv Tech	-	25.327	24.772	23.207	-	23.207	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This project designs and develops modular and adaptive sensor components, novel embedded processing approaches, innovative threat cueing solutions and novel multi-function sensor payloads integrated with novel signal image processing techniques to provide improved manned and unmanned ground vehicle situational understanding in all environments. This project will also investigate and develop techniques to detect maneuver obstacles, to include explosive hazards, tank ditches, and concrete blockades.

This research is coordinated with Program Element (PE) 0603462A (Next Generation Combat Vehicle Advanced Technology), PE 0603118A (Soldier Lethality Advanced Technology), PE 0602143A (Soldier Lethality Technology), PE 0602148A (Future Vertical Lift Technology) and PE 0603465A (Future Vertical Lift Advanced Technology).

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas.

Work in this project is performed by the Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center.

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

	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Title: Advanced Sensors with Embedded Processing	16.339	16.325	15.469	-	15.469
Description: Designs and develops advanced, automated multi-spectral and multi-function sensor components, and image processing techniques with improved performance in all environments and against all threats to include low-contrast targets in camouflage or in degraded conditions to enable combined arms maneuvers in complex environments for NGCV via manned, optionally manned, and robotic platform applications.					
FY 2025 Plans: Will develop dual-band, high dynamic range digital readout integrate circuits (DROICs) with enhanced sensitivity at smaller semiconductor foundry processing nodes that contain standardized control and output formats for all-digital sensor system solutions; continue to develop full resolution cooled DROICs for integration with avalanche photodiode (APD) detectors at smaller pixel pitches (size), capable of enhanced sensitivity at faster frame rates to enable covert target geo-location capabilities. Will validate preliminary design and mature a detailed design of at-sensor processing hardware components to improve performance and size, weight, power, and cost (SWAP-C) of image processing for Army sensor applications. Will investigate board-level Modular Open					

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army			Date: June 2025			
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology		Project (Number/Name) BF9 / Sensors for Autonomous Operations and Surv Tech		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
System Approaches (MOSA) configurations for the advanced processing components to enable more complex processing at the sensor. Will investigate suitability of other emerging commercial processing technologies for low-SWAP-C sensors. Will validate a reasoning software module using scene information and meta-data to reduce high-confidence false alarms. Will mature the reasoning software module framework and hardware components, ensuring compliance with a transitioning Aided Target Detection and Recognition (AiTDR) Interface Control Document (ICD). Will develop additional capabilities for the reasoning software module that enhance target confidence and battlefield context using external sources of data or meta-data (e.g., blue force tracking). Will design and develop mid-wavelength infrared (MWIR) capable microbolometer sensor hardware through semiconductor processes for hostile fire detection. Will investigate pixel size, resolution, noise parameters, and thermal time constant specifications in MWIR and long-wavelength infrared (LWIR) microbolometer sensors for counter-unmanned aircraft systems (C-UAS) applications.						
FY 2026 Base Plans: Will investigate optical modulator technologies for integration with digital readout integrated circuits (ROICs) that are capable of high-bandwidth data transmission and high stability at cryogenic temperature operation. Will investigate laser sources to couple with photonic integrated circuits that show high temperature stability and enable high data transfer rates. Will investigate size, weight, and power (SWAP)-optimized Modular Open System Architecture (MOSA)-compliant hardware implementations of neuromorphic and other advanced artificial intelligence processing devices. Will investigate emerging components that reduce platform SWAP and enhance mission effectiveness of Army platforms through application of embedded and highly efficient edge-based sensor processing. Will investigate and mature supplemental image processing capabilities for aggregating targets and resolving ambiguity from multiple detections of the same target from different platforms and sensors to establish an clear common operating picture. Will determine design parameters of advanced ROIC for uncooled thermal sensors with hardware-integrated capabilities, such as snapshot and external triggers, that are optimized for machine-vision applications. Will improve pixel pitch for uncooled thermal sensors, enabling higher resolution sensors at lower size, weight, power, and cost (SWAP-C), as well as multi-sensor solutions. Will investigate advanced electronics for uncooled long-wavelength (LWIR) thermal sensors to couple with time-correlated algorithms for image stabilization and correcting image blur while on-the-move.						
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease based on maturity of technology and current economic assumptions.						
Title: Sensors, Electronics and Processing Approaches for Threat Overmatch		8.988	8.447	4.213	-	4.213

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army			Date: June 2025			
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology		Project (Number/Name) BF9 / Sensors for Autonomous Operations and Surv Tech		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
<p>Description: This effort design, develops, matures and validates novel electro-optic/infrared (EO/IR), radar and other sensor components, sensor payloads and image processing approaches to enable enhanced detection of line of sight and beyond line-of-sight threats and complex obstacles in all environments via manned, optionally manned and robotic platforms. It will enable cueing and target hand-off to maintain overmatch while on-the-move, at speed, in cluttered environments.</p> <p>FY 2025 Plans: Will conduct experiments using multiple sensor modalities to support the development and training of algorithms to improve automated threat detection. Will investigate and develop new processing approaches and methods using location and position data from multi-spectral and high definition polarized EO/IR sensor components to improve target detection and location accuracy from an unmanned aerial system (UAS). Will develop new image formation and processing techniques to improve target detection performance using radar antennas mounted on a small UAS.</p> <p>FY 2026 Base Plans: Will validate the use of multiple sensor modalities together with new algorithms to improve automated threat recognition. Will mature and validate techniques using additional data from multispectral cameras on an unmanned aerial system to recognize maneuver threats in highly cluttered environments, expanding the recognition capability currently demonstrated in low vegetation environments.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease represents completion of sensor modality data collection and shift to validation of improved threat recognition.</p>						
<p>Title: Advanced Technologies for Countermines in Complex Environments</p> <p>Description: This effort investigates and validates techniques and methods to automatically recognize maneuver threats and obstacles, such as landmines and other explosive hazards, using novel processing approaches. This project leverages existing tactical airborne and geospatial intelligence data to provide locations to lower echelon maneuver formations to direct UAS threat recognition and support breaching operations. It also provides content for inclusion within a modified combined obstacle overlay for intelligence preparation and situational awareness.</p> <p>FY 2026 Base Plans:</p>		-	-	3.525	-	3.525

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army			Date: June 2025			
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology		Project (Number/Name) BF9 / Sensors for Autonomous Operations and Surv Tech		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Will investigate automated pattern recognition, and spatial association techniques to detect obstacles utilizing existing imagery of realistic, complex environments. Will collect geospatial imagery to determine effectiveness of detection techniques. Will investigate methods to insert techniques into a multi-domain common operating picture.						
FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase represents planned initiation of this effort.						
Accomplishments/Planned Programs Subtotals		25.327	24.772	23.207	-	23.207
C. Other Program Funding Summary (\$ in Millions) N/A						
Remarks						
D. Acquisition Strategy N/A						

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology				Project (Number/Name) BG2 / Modeling and Simulation for MUMT Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
BG2: Modeling and Simulation for MUMT Technology	-	5.511	4.142	-	-	-	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
<p>This project develops Modeling and Simulation (M&S) tools and technologies to assess and improve freedom of movement for ground forces and supports vehicle developers by addressing challenges for robotic and ground vehicles. Through investigation and design, this project develops obstacle detection and classification algorithms for dynamic mobility hazards in urban and complex environments. This project develops tools to evaluate system performance reducing the need for physical testing including: real-time mobility decision support tools, vehicle-terrain interactive models for autonomous convoy operations, simulation tools for vehicle mobility in highly altered terrain, and M&S tools for predicting the performance of autonomous vehicles in a wide variety of weather and terrain conditions. These M&S technologies can be integrated across Army vehicle platforms as required.</p> <p>Work in this project complements Program Element (PE) 0603462A (Next Generation Combat Vehicle Advanced Technology) / Project BG3 (Modeling and Simulation for MUMT Advanced Tech).</p> <p>The work cited is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas.</p> <p>Work in this project is performed by the Geotechnical and Structures Laboratory.</p>												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Title: Autonomous Vehicle/Terrain Interactions								5.511	4.142	-	-	-
Description: This effort develops Modeling and Simulation (M&S) capabilities to evaluate autonomous vehicle formation performance on mission-relevant terrain and environments (i.e., soft soil, gap crossing, obstacle override, cold regions, low-light, etc.). This effort develops algorithms for improved manned/unmanned and air/ground teaming for off-road tactical behaviors.												
FY 2025 Plans: Will develop physics-based environment modeling capabilities to support autonomy performance evaluations and predictions in low-light emission and nighttime environments. Will mature advanced M&S tools for evaluating ground vehicle formations and human / machine interactions in complex operational environments.												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army			Date: June 2025			
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology		Project (Number/Name) BG2 / Modeling and Simulation for MUMT Technology		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Will mature advanced vehicle-terrain interface algorithms to support mobility performance evaluations and predictions of ground vehicle systems operating in cold weather environments.						
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects Army reduction. Will eliminate high fidelity modeling and simulation capability to inform and predict the capabilities of future mine plow designs and solutions required for breaching and proofing during future mine clearing operations.						
Accomplishments/Planned Programs Subtotals		5.511	4.142	-	-	-
C. Other Program Funding Summary (\$ in Millions) N/A						
Remarks N/A						
D. Acquisition Strategy N/A						

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology				Project (Number/Name) BG6 / Advanced Concepts for Active Defense Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
BG6: Advanced Concepts for Active Defense Technology	-	32.444	30.206	29.047	-	29.047	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
<p>This project funds research for advanced materials and mechanisms to defeat the most common and most dangerous threats that are expected to be encountered by our ground forces in the near, mid and far term. Work conducted in this project will result in concepts for Adaptive and Cooperative Protection of ground combat vehicles. Additionally, research will focus on subcomponent/component models to predict performance of early concepts and the means to evaluate effectiveness on ground platforms. The project will balance developments of active threat defeat measures with the necessary advanced passive and active components to provide solutions which will help meet the requirements of current and next generation ground tactical and combat vehicles.</p> <p>This project is coordinated with and transitions to Program Element (PE) 0603462A (Next Generation Combat Vehicle Advanced Technology) and builds upon weapon target interaction research in PE 0602144A (Ground Technology) and PE 0601102A (Defense Research Sciences) / Project AA7 (Mechanics and Ballistics).</p> <p>The cited work is consistent with Under Secretary of Defense for Research and Engineering priority focus areas.</p> <p>Work in this project is performed by the Army Research Laboratory (ARL), Command, Control, Communication, Computers, Cyber, Intelligence, Surveillance and Reconnaissance Center (C5ISR), Data and Analysis Center (DAC), and Ground Vehicle Systems Center (GVSC).</p>												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Title: Multi-Threat Armor Technologies								8.188	6.754	6.110	-	6.110
Description: This effort develops multi-threat hybrid armor technologies incorporating both active and passive mechanisms for ground vehicle systems that are effective against future conventional weapons and evolving improvised threats including kinetic and chemical energy as well as blast threats.												
FY 2025 Plans: Develop vulnerability mapping of threats to emerging and proliferated chemical energy weapons; enhance armor protection mechanisms for medium caliber kinetic energy (KE) threats utilizing novel armor mechanisms including multi-threat and multi-hit armor mechanisms to improve vehicle protection technologies; develop and validate protection capability for future threats.												
FY 2026 Base Plans:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army				Date: June 2025		
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology		Project (Number/Name) BG6 / Advanced Concepts for Active Defense Technology		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Will assess the ballistic effectiveness of improved armor designs for protection from emerging medium and large caliber KE threats; optimize protection of crew and uncrewed platform critical components to reduce fire and reduce size and weight; mature armor architecture and materials to optimize mass efficiency, multi-hit performance and reduce weight. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease is due to realignment to support the creation of Directed Energy for Terminal Effects within this project.						
Title: Adaptive and Cooperative Protection Description: This effort pursues a holistic approach toward achieving significant weight reduction and protection from future threats by utilizing real-time information, combined with threat knowledge, to provide ever-increasing protection. This approach includes integrating individual vehicle capabilities of armor, underbody blast protection, active protection systems, and advanced soft kill methods into one layered solution to maximize survivability and minimize weight for combat and tactical vehicles. This effort will investigate modern protective technologies that implement complex kinematic mechanisms in order to bend, break and disperse threat projectiles before they can injure crew or disable vehicles. FY 2025 Plans: Enhance statistically based computational models for adaptive technologies to include hemispherical protection concepts; conduct experiments on advanced adaptive concepts to counter emerging threats; enhance numerical models to explore the kinematics of multiple adaptive protective technologies and establish optimal defeat range of incoming threats with increased protection. FY 2026 Base Plans: Will explore novel adaptive protection mechanisms and technologies to enhance protection from emerging rocket propelled grenade (RPG), Anti-Tank Guided Munitions (ATGM), and Shaped Charged Jet (SCJ) threats, while reducing size and weight requirements; assess the performance of advance top attack adaptive protection technologies; design and develop components for top attack adaptive protection technologies. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease is due to realignment to support the creation of Directed Energy for Terminal Effects within this project.		6.746	6.163	5.079	-	5.079
Title: Emerging Overmatch Technologies		2.442	2.475	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army				Date: June 2025		
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology		Project (Number/Name) BG6 / Advanced Concepts for Active Defense Technology		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
<p>Description: This effort designs, develops, and conduct experiments to validate the lethality and protection concepts that re-establish overmatch for the next generation of manned and unmanned combat platforms. It will tightly couple scientific research within a campaign of learning to form technology concepts for battlefield domination against current and future threats. This research will heavily leverage other efforts within PE 0602145A (Next Generation Combat Vehicle Advanced Technology) and PE 0603462A (Next Generation Combat Vehicle Advanced Technology).</p> <p>FY 2025 Plans: Validate collaborative protection technologies against real threats in field experiments; document proof-of-concept for cooperative protection and collaborative lethality and evaluate preliminary performance based on a limited set of simulation runs; assess residual technology risk and document recommendations for transition partners.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects planned completion of this effort.</p>						
<p>Title: Survivability/Lethality/Vulnerability Analysis Tools and Methodology</p> <p>Description: This effort devises state-of-the-art survivability/lethality/vulnerability methodologies to dynamically model the interaction of conventional ballistic threats against future weapon systems.</p> <p>FY 2025 Plans: Research human machine teaming methodology and develop vulnerability analysis capability with combined voice and data communication focusing on cognitive burden and network traffic impact over time; develop vulnerability analysis capability of Aided Target Recognition to small Unmanned Aerial Systems (UAS) obscuration of target; develop direct fire analysis capability for advanced medium caliber munitions against moving vehicle targets; continue development of UAS target vulnerability to advanced medium caliber munitions and active protection technologies; improve methodology for assessing capabilities of advanced active, reactive, passive, and roof armors; improve methodology for collaborative protection of multiple vehicles in a formation and sensor assessment, as well as improve intercepted munition residual characterizations in support of next generation combat vehicle protection.</p> <p>FY 2026 Base Plans: Will investigate and develop direct fire ballistic analysis capability for medium caliber munitions to protect from hovering UAS targets. Will investigate and integrate control structure with vulnerability analysis capability for</p>		5.695	5.488	3.445	-	3.445

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army				Date: June 2025		
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology		Project (Number/Name) BG6 / Advanced Concepts for Active Defense Technology		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
unmanned ground vehicles, leading to the development of a multi-discipline analysis capability to address Artificial Intelligence (AI) enabled system control failures. Will investigate methodology to assess Directed Energy, including lasers performance and vulnerability. Will begin to incorporate AI/Assistive Automation (AA) algorithms with force-on-force Human Machine Teaming mission analysis. Will continue to improve methodology for assessing capabilities of advanced active, reactive, passive, and roof armors. Will continue to improve methodology for collaborative protection of multiple vehicles in a formation and sensor assessment, as well as improve intercepted munition residual characterizations in support of next generation combat vehicle protection. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects reduction of control structure investigation and integration.						
Title: Collaborative Defense Description: This effort expands the capability of the Army to protect ground vehicles. This is done by conducting research into technologies that can enable the sharing of protection resources across multiple platforms in real time, allowing for the expansion of the zone of protection on the battlefield beyond a single vehicle and its protection system. These technologies include components such as sensors which can be used to identify and track incoming threats, radios/networks which will allow local sharing of threat detection and tracking information, and effectors which can disrupt or destroy threats before terminal engagement with the platform. In order to enable collaboration across multiple platforms, including integration factors such as size, weight, power consumption, and cost impacts to the platform, this effort will study various system-level approaches to integrating these aforementioned technologies. Additionally, this effort will validate performance of the system in the laboratory environment. FY 2025 Plans: Continue investigation of collaborative countermeasure concepts through advanced modeling and simulation tools and system-level trade studies. Will down-select and mature the most-promising technology concept through computational analysis and physical experiments. Will develop system-level model for selected approach and develop hardware components. Will begin detailed design of countermeasure system architecture for Modular Active Protection Framework compliance. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects planned completion of this effort.		6.455	9.326	-	-	-
Title: Directed Energy for Terminal Effects		-	-	2.780	-	2.780

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army				Date: June 2025		
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology		Project (Number/Name) BG6 / Advanced Concepts for Active Defense Technology		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
<p>Description: This effort supports research to enable the Army to utilize the most promising directed energy sources against guided munitions in Global Positioning System (GPS)-denied environments and counter enemy unmanned ground vehicle (UGVs) while providing protection for our sensor technologies, denying adversaries a transparent battlefield.</p> <p>FY 2026 Base Plans: Will investigate advanced directed energy (DE) technologies to design and develop capabilities at lower size, weight, and power requirements to disrupt and defeat emerging threats on the battlefield; investigate current DE Modeling and Simulations (M&S) tools and build robust DE M&S capability that can predict and inform Terminal Effects in Army environments.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects planned creation of this effort.</p>						
<p>Title: Advanced Vehicle Survivability (AVS) Research</p> <p>Description: This effort expands the capability of ground vehicles to support multi-domain operations through research into the benefits of new and novel materials and threat defeat mechanisms that enable a lighter, more survivable maneuver force. The project will design armor and non-armor concepts, such as, for vehicle self-protection, and subsequent crew/occupant protection, against the spectrum of current and emerging threats including top, front, side, and underbelly attack. Emerging threats will be exploited, and surrogates will be developed for use in research experiments that determine efficacy of new designs. Vehicle integration studies will be used to validate overall concept design and support down-selection of technologies and concepts for further maturation and demonstration.</p> <p>FY 2026 Base Plans: Will investigate the integration potential of multiple novel survivability and protection technologies for protection against emerging threats. These technology concepts will be evaluated in advanced M&S to create high fidelity integrated component concepts. The best performing concepts will be fabricated for physical testing to validate technology performance. Will leverage internal M&S capability to determine path forward for protection system and enhancements.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase to research new and novel technologies that support multi-domain operations.</p>		-	-	7.067	-	7.067
<p>Title: Vehicle Intelligent Survivability (VIS) Research</p>		-	-	4.566	-	4.566

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army				Date: June 2025		
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602145A / <i>Next Generation Combat Vehicle Technology</i>		Project (Number/Name) BG6 / <i>Advanced Concepts for Active Defense Technology</i>		
B. Accomplishments/Planned Programs (\$ in Millions)						
		FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
<p>Description: This effort will research interoperability between survivability technologies and other vehicle subsystems (e.g.: mobility, lethality, and C5ISR) and other formation assets to provide the Ground Combat Vehicle crew with the ability to take more suitable and effective defensive action while receiving an enriched threat picture. Will examine the state-of-art in vehicle interoperability and subsystem technology to identify opportunities for exploitation. These findings will inform the development of advanced control algorithms and interfaces for survivability technologies.</p> <p>FY 2026 Base Plans: Will investigate current and emerging technologies, data networks, and interfaces to identify opportunities to establish relationships between survivability and non-survivability (e.g. mobility, lethality, C5ISR) sub-systems to improve platform and formation survivability.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: This funding increase is to realign research interoperability opportunities that benefit platform and formation survivability.</p>						
<p>Title: Advanced Threat APS Radar Technology</p> <p>Description: This effort develops ground combat vehicle survivability technologies including radar techniques to support hard-kill countermeasures as a part of an integrated survivability suite for ground combat platforms in all-weather, day or night conditions with 360 degree situational awareness and Kinetic Energy threat defeat.</p>		2.195	-	-	-	-
<p>Title: Detection Avoidance Applique Technology Research</p> <p>Description: This effort is to design and develop a technology concept for ground vehicles that integrates multiple signature management component technologies into a system in order to create a holistic solution to avoid detection across spectrums of interest.</p>		0.723	-	-	-	-
Accomplishments/Planned Programs Subtotals		32.444	30.206	29.047	-	29.047
C. Other Program Funding Summary (\$ in Millions)						
N/A						
Remarks						

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology	Project (Number/Name) BG6 / Advanced Concepts for Active Defense Technology
D. Acquisition Strategy N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology				Project (Number/Name) BH5 / Platform Electrification and Mobility Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
BH5: Platform Electrification and Mobility Tech	-	11.857	-	-	-	-	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This project researches and develops advanced power and energy technologies for tactical and combat ground vehicles that are necessary for parallel or series hybrid-electric drive. Research energy storage, distribution and battlefield charging technologies to enable future plug-in hybrid-electric drive and all electric tactical vehicle systems.												
This project researches and develops advanced power and energy technologies for combat ground vehicles that are necessary for parallel hybrid, series hybrid and all-electric vehicle systems.												
Work in this project complements PE 0603462A (Next Generation Combat Vehicle Advanced Technology).												
The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas.												
Work in this project is performed by the Ground Vehicle System Center (GVSC)												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Title: Scalable Electrification & Control Architecture								1.999	-	-	-	-
Description: This effort designs and develops the power distribution and control components to implement a common, scalable, electrified vehicle power architecture to enable advanced lethality and protection capabilities, fast vehicle charging from the grid, and silent mobility on combat platforms across light to heavy weight classes. This power architecture enables the hybrid electric, fuel cell electric, and all-electric powertrains.												
Title: Platform Electrification Research								5.862	-	-	-	-
Description: This effort designs and develops the electric power generation, energy storage and electrified components and sub-systems required to electrify combat vehicles across light to heavy weight classes.												
Title: Robotic Combat Vehicle Silent Watch and Mobility Range Extension								1.946	-	-	-	-
Description: This effort designs and develops the Jet Propellant 8 (JP8) reformer based silent watch and mobility extension subsystem required to electrify robotic combat vehicles. The Army's robotic combat vehicles												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army			Date: June 2025			
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology		Project (Number/Name) BH5 / Platform Electrification and Mobility Tech		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
are expected to have increased silent watch and silent mobility requirements that are not met by current technologies.						
Title: Battlefield Electric Vehicle Recharge Technology Description: This effort develops technologies to enable highly mobile Electric Vehicle (EV) rechargers that are essential to allow highly electrified tactical and combat platforms to be fielded by the Army to enable capabilities such as persistent silent mobility. This effort includes highly mobile power generation and wireless power transfer to the tactical and combat platforms.		2.050	-	-	-	-
Accomplishments/Planned Programs Subtotals		11.857	-	-	-	-
C. Other Program Funding Summary (\$ in Millions) N/A						
Remarks						
D. Acquisition Strategy N/A						

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025			
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology				Project (Number/Name) BI2 / Sensor Protection Technology				
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost	
BI2: Sensor Protection Technology	-	5.428	5.782	4.237	-	4.237	-	-	-	-	-	-	

A. Mission Description and Budget Item Justification

This project investigates, designs, and develops techniques for masking friendly force capabilities and intentions. The project pursues technologies to reduce the susceptibility of sensor systems to detection and targeting by threat forces, as well as to inform the development of next generation signature reduction schemas. This project also designs, investigates, fabricates, evaluates and characterizes advanced sensor protection technologies, components, and concepts that will enable the future soldier to see and operate through a laser directed energy weapon attack. Both active and passive protection technologies will be investigated to protect Army sensors that operate in the visible, short-wave infrared, mid-wave infrared, and long-wave infrared spectra from battlefield laser threats. Areas of research include passive optical limiters such as nonlinear organic dyes, semiconductors, and meta-materials, as well as fast active switches and tunable filters. Technologies investigated include novel optics designs combined with signal processing, spectral filtering, and threat sensing algorithms.

Work in this project is coordinated with Program Element (PE) 0603462A (Next Generation Combat Vehicle Advanced Technology), PE 0603118A (Soldier Lethality Advanced Technology), PE 0603465A (Future Vertical Lift Advanced Technology), and PE 0602143A (Soldier Lethality Technology)

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas.

Work in this project is performed by the Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Title: Sensor Protection Technology	5.428	5.782	4.237	-	4.237
Description: This effort will design and develop component technology to improve protection of sensors and sensor electronics from threats via techniques to harden optics, reduce sensor optical cross sections, novel coating approaches, filter improvements, and emerging signature reduction schemas.					
FY 2025 Plans: Conduct experiments on spectrally agile filters in the visible and infrared waveband to determine which filter device(s) are applicable to military applications; validate commercial spectrally agile filter performance; investigate the interactions and effects of out-of-band stressing laser threats on infrared optical materials; begin					

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army			Date: June 2025			
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology		Project (Number/Name) BI2 / Sensor Protection Technology		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
development of a filter, coating, or new material to provide out-of-band protection for high performance cooled infrared systems. FY 2026 Base Plans: Will develop an automatic selectable filter (ASF) for Color Day TV systems and pair with a selection of visible, spectrally agile filters; conduct experiments with the ASF and spectrally agile filter technology in a laboratory environment; investigate performance of these protection technologies against various laser threats. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects reduction in experiments on spectrally agile filters.						
Accomplishments/Planned Programs Subtotals		5.428	5.782	4.237	-	4.237
C. Other Program Funding Summary (\$ in Millions) N/A						
Remarks						
D. Acquisition Strategy N/A						

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology				Project (Number/Name) BL4 / Materials Application and Integration Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
BL4: Materials Application and Integration Tech	-	7.441	-	-	-	-	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
<p>This project designs, develops, fabricates and evaluates a variety of materials (e.g. metals, ceramics, polymers and composites) to enable more survivable, lighter weight vehicle armor, chemical and biological protection, armaments and electronics for the next generation combat vehicle. Research focuses on unique and /or novel materials properties, developing physics-based models, materials characterization techniques, non-destructive testing methods and advanced fabrication/processing methodologies to transition candidate solutions for maturity, scale-up, and integration into systems.</p> <p>This project also continues the Advanced Vehicle Power Technology Alliance between the Department of Energy and the Army with a focus on materials, providing an emphasis on developing advanced technologies that enable military ground vehicles to become significantly more energy efficient. The alliance is chartered to accelerate the conceptualization and transition into deployment of inventive and creative energy-saving concepts that the Nation needs to achieve energy security. This project matures and integrates lightweight materials and joining technologies in support of lighter military vehicles which are more fuel-efficient and expeditionary with superior mobility and protection of both vehicles and occupants.</p> <p>Work in this project leverages research from Program Element (PE) 0601102A (Defense Research Sciences) / Project AA7 (Mechanics and Ballistics) and 0602144A (Ground Technology) / Project BL1 (Materials and Manufacturing Research Technology). This work is also coordinated with PE 0603462A (Next Generation Combat Vehicle Advanced Technology).</p> <p>The cited work is consistent with Under Secretary of Defense for Research and Engineering priority focus areas.</p> <p>Work in this project is performed by the Army Research Laboratory (ARL).</p>												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Title: Novel Armor Materials and Processes for Vehicle Protection								7.441	-	-	-	-
Description: Develop novel metal alloys and associated processes through the scale-up and exploitation of revolutionary new metal alloys, which have demonstrated capabilities to overcome traditional engineering trade-offs (e.g., strength and ductility) with exceptional high temperature stability.												
Accomplishments/Planned Programs Subtotals								7.441	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology	Project (Number/Name) BI4 / Materials Application and Integration Tech
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
D. Acquisition Strategy N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology				Project (Number/Name) BJ2 / Tactical and Navigation Lasers Sensors Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
BJ2: Tactical and Navigation Lasers Sensors Technology	-	5.708	5.863	5.482	-	5.482	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This project designs and develops novel laser sensor technologies which provide improved maneuver, lethality, and survivability capabilities via manned and autonomous navigation, adversary sensor threat detection, and target detection and designation in all environments. It will deliver novel laser technologies which will provide low size, weight, and power (SWaP) laser sources and receivers for optical augmentation detection systems; and compact Laser Detection and Ranging (LADAR) sources for situational awareness and air and ground vehicle operations and navigation in all environments. This project is a critical enabler for autonomous operations in environments where other imaging technologies are not sufficient.												
This project is coordinated with Program Element (PE) 0603462A (Next Generation Combat Vehicle Advanced Technology), PE 0603118A (Soldier Lethality Advanced Technology), PE 0603465A (Future Vertical Lift Advanced Technology), and PE 0602143A (Soldier Lethality Technology).												
The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas.												
Work in this project is performed by the Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center.												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Title: Tactical and Navigation Lasers Sensors Technology								5.708	5.863	5.482	-	5.482
Description: This effort designs and develops novel low SWaP, compact, high peak power pulsed laser sources and receivers for optical augmentation detection systems; and compact LADAR sources for situational awareness and manned and unmanned air and ground vehicle operations and navigation in all environments. This effort delivers component technologies needed to support future Army autonomous, covert targeting approaches.												
FY 2025 Plans: Design high-sensitivity laser detectors with optimized pixel pitch (size) and dark current (sensitivity) and optimize advanced laser sources to increase array resolution and detection ranges. Model laser detector components to predict performance based on design specifications of high-sensitivity laser detectors. Begin validation of laser												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army				Date: June 2025		
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602145A / <i>Next Generation Combat Vehicle Technology</i>		Project (Number/Name) BJ2 / <i>Tactical and Navigation Lasers Sensors Technology</i>		
B. Accomplishments/Planned Programs (\$ in Millions)						
		FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
detector model using laboratory test results of components and update models based on validation testing to guide development and predict future system performance. <i>FY 2026 Base Plans:</i> Will develop hybridized high-sensitivity laser detectors with deep-well readout-integrated circuits for increased range performance, range resolution, and active/passive operation in long wavelength infrared. Will investigate planar and mesa structures for advanced, high-sensitivity laser detectors to further reduce pixel pitch (size) to align with other Army devices. Will further mature component-level modeling for laser detector using hybridized device parameters to determine detectability levels and guide further development efforts. <i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> Funding decrease reflects execution of initial design of high-sensitivity laser detector technology.						
Accomplishments/Planned Programs Subtotals		5.708	5.863	5.482	-	5.482
C. Other Program Funding Summary (\$ in Millions)						
N/A						
Remarks						
D. Acquisition Strategy						
N/A						

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology				Project (Number/Name) BK2 / Virtual Prototyping Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
BK2: Virtual Prototyping Technology	-	5.410	7.042	-	-	-	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
<p>This project designs and analyzes novel NGCV system level ground vehicle concepts by integrating advanced mobility, survivability, lethality, sensing and electrical/electronic technologies to address emerging and future advanced threats. This project provides system level ground vehicle design concepts and performance analysis, assesses cost and performance trades, and provides real-time soldier feedback on technology performance for the Army's NGCVs. Technologies to be evaluated include high efficiency advanced powertrains, power generation, vehicle electrification, active protection systems, active blast, advanced lethality and robotic control and autonomy technologies. The NGCV virtual prototypes include Virtual Soldier Operational Experiments (VSOE) with System Integration Labs (SILs) to give warfighters an understanding into how behaviors and tactics change given emerging operation concepts based on new technologies and capabilities. Future integration of VSOEs with software and hardware SILs with realistic interfaces and utilizing mixed reality technology will provide higher fidelity Soldier evaluations, without the time and cost associated with physical prototypes. The virtual prototyping results provide critical inputs to the Army's NGCV program by providing independent technical and operational performance results for the Army's next generation of ground combat vehicles while reducing risk and accelerating transition to physical prototypes.</p> <p>Work in this project is coordinated with Program Element (PE) 0603462A (Next Generation Combat Vehicle Advanced Technology) / Project BF4 (Combat Vehicle Robotics Adv Tech).</p> <p>The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas.</p> <p>Work in this project is performed by the Ground Vehicle System Center (GVSC).</p>												
B. Accomplishments/Planned Programs (\$ in Millions)												
								FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Title: Virtual Prototyping								5.410	7.042	-	-	-
Description: This effort utilizes virtual prototyping to address technical and integration challenges in the areas of mobility, survivability, lethality, vehicle architecture, and systems integration for the Army's next generation of ground combat vehicles. Specifically, this effort focuses on developing integrated design concepts, performance analysis, identifying and assessing trade space, and conducting virtual operational experiments for the NGCV. The combination of technical performance and operational feedback provides insights that will inform designs and reduce development and testing time.												
FY 2025 Plans:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army				Date: June 2025		
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602145A / <i>Next Generation Combat Vehicle Technology</i>		Project (Number/Name) BK2 / <i>Virtual Prototyping Technology</i>		
B. Accomplishments/Planned Programs (\$ in Millions)						
		FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
<p>Will continue modeling and simulation to virtually design, develop, and assess new NGCV manned and unmanned systems that include projected lethality, mobility, sensing, protection, and autonomous vehicle technologies. Will integrate technologies into multiple combat vehicle concepts with a focus on robotic combat platform design approaches and integration of autonomous technologies into Virtual Soldier Operational Experiments (VSOE) to enable evaluation of human machine teaming (HMT) capabilities and requirements. Will continue to inform S&T and NGCV plans with knowledge, M&S analyses, and Soldier feedback. Will develop simulation environment to include system integration labs with realistic hardware/software interfaces and mixed reality technology to provide higher fidelity Soldier evaluations. Will assess ground vehicle concepts, autonomous technologies and HMT capabilities for military utility, mission performance, and Soldier preference to inform NGCV capabilities and requirements.</p> <p><i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> Funding decrease reflects efforts to foster innovation and accelerate deployment of promising technology in support of alignment with congressional priorities.</p>						
Accomplishments/Planned Programs Subtotals		5.410	7.042	-	-	-
C. Other Program Funding Summary (\$ in Millions) N/A						
Remarks						
D. Acquisition Strategy N/A						

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology				Project (Number/Name) BK5 / Adv Direct In-Direct Armament Sys (ADIDAS) Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
BK5: Adv Direct In-Direct Armament Sys (ADIDAS) Tech	-	10.654	11.585	8.525	-	8.525	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This project matures and conducts experiments on component technologies for large caliber direct fire light-weight armament systems that will exceed the current capability of 120mm direct fire and be optimized for future operational environment with cross-domain engagement capability. This project also researches large caliber direct fire munitions to project overwhelming lethality while ensuring maneuver forces remains mobile and sustainable during close-combat engagements at extended ranges.												
Research in this project is related to and fully integrated with the efforts funded in Program Element (PE) 0603462A (Next Generation Combat Vehicle Advanced Technology) / Project BK6 (Advanced Technology Direct In Direct Armament Sys (ADIDAS) Advanced Technology).												
The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas.												
Research in this project is performed by the Armaments Center (AC) and Army Research Laboratory (ARL).												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Title: Advanced Lethality Armament System- Large Caliber (ALAS-LC)								4.403	2.945	-	-	-
Description: Investigate increased lethality solutions for next generation large caliber direct fire armament systems that will ensure battlefield dominance of US ground forces. Design reduced recoil armament systems capable of increased rate of fire enabled by a compact autoloader with performance that exceeds current state of the art 120mm direct fire cannons for current and future Army platforms.												
FY 2025 Plans: Will mature armament system component technologies that increase lethality for future large caliber direct fire systems. Will conduct experiments on armament system component technologies to inform future integration tasks. Will investigate technologies to reduce large caliber target defeat timeline via enhanced direct fire automation.												
FY 2025 to FY 2026 Increase/Decrease Statement:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army				Date: June 2025		
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology		Project (Number/Name) BK5 / Adv Direct In-Direct Armament Sys (ADIDAS) Tech		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Funding decrease reflects planned conclusion of this effort in FY 2026. Work will transition to PE 0603462 (Next Generation Combat Vehicles) / Project BK6 (Adv Direct Indirect Armament Sys (ADIDAS) Adv Tech).						
<p>Title: Decisive Lethality</p> <p>Description: This effort develops energy-efficient lethal mechanism technologies for the next-generation of large-caliber ammunition launched from direct fire weapon systems to maximize the lethality against an array of targets and provide tactical advantage at extended ranges against current and future threats. This includes research and development to produce a compact, high energy density propelling charge, engineered aerodynamics for improved accuracy, a novel kinetic penetrator with next generation lethal mechanism, and the ability to defeat advanced and smart armors.</p> <p>FY 2025 Plans: Will evaluate concepts for robust large caliber penetrators for increased lethality; mature compact, high-energy propellant charges for direct fire which provide increased energy as well as advanced ignition safety or timelines; explore the interaction between ignition and propellant to ensure controllable, repeatable combustion; evaluate technologies to improve accuracy necessary for future large-caliber weapon systems; evaluate system viability of counter-countermeasure technologies against projected threat systems for defeat of advanced protection technologies.</p> <p>FY 2026 Base Plans: Will assess next-generation penetrator concepts for more robust lethality; investigate next-generation lethal mechanisms for more energy-efficient lethality; scale-up next generation high-energy propellant charge fabrication using advanced manufacturing methods; mature advanced ignition concepts for controllable and repeatable combustion of very high-energy charges; continue to assess weapon technologies for improved large caliber projectile accuracy; determine technologies to mitigate against smart protection systems.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease is an economic adjustment.</p>		6.251	8.640	8.525	-	8.525
Accomplishments/Planned Programs Subtotals		10.654	11.585	8.525	-	8.525
C. Other Program Funding Summary (\$ in Millions)						
N/A						
Remarks						

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology	Project (Number/Name) BK5 / Adv Direct In-Direct Armament Sys (ADIDAS) Tech
D. Acquisition Strategy N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology				Project (Number/Name) BP5 / Ground Vehicle Technology (CA)			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
BP5: Ground Vehicle Technology (CA)	-	94.700	36.000	-	-	-	-	-	-	-	-	-
A. Mission Description and Budget Item Justification Congressional Interest Item funding provided for Ground Vehicle Technology. The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas.												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2024	FY 2025			
Congressional Add: Active Protection Systems								10.000	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for Active Protection Systems												
Congressional Add: Advanced materials development for survivability								10.000	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for Advanced materials development for survivability												
Congressional Add: Advanced Technologies for Autonomous Ground Vehicles and Warfighter Survivability								6.000	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for Advanced Technologies for Autonomous Ground Vehicles and Warfighter Survivability												
Congressional Add: Armaments technology of unmanned systems								1.000	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for Armaments technology of unmanned systems												
Congressional Add: Fast-refueling fuel cell engines								3.500	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for Fast-refueling fuel cell engines												
Congressional Add: Gunner restraint system								2.200	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for Gunner restraint system												
Congressional Add: Highly Electrified Vehicles								5.000	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for Highly Electrified Vehicles												
Congressional Add: Hydrogen technologies								10.000	-			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602145A / <i>Next Generation Combat Vehicle Technology</i>	Project (Number/Name) BP5 / <i>Ground Vehicle Technology (CA)</i>
B. Accomplishments/Planned Programs (\$ in Millions)		
	FY 2024	FY 2025
FY 2024 Accomplishments: Congressional Interest Item funding provided for Hydrogen technologies		
Congressional Add: Hyperspectral Sensors for Autonomous Operations	2.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Hyperspectral Sensors for Autonomous Operations		
Congressional Add: Large Metal Additive Manufacturing for Ground Vehicles	10.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Large Metal Additive Manufacturing for Ground Vehicles		
Congressional Add: Machine learning optimized power electronics	5.000	5.000
FY 2024 Accomplishments: Congressional Interest Item funding provided for Machine learning optimized power electronics		
FY 2025 Plans: Congressional Interest Item funding provided for Machine learning optimized power electronics		
Congressional Add: Mobility Materials Research	10.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Mobility Materials Research		
Congressional Add: Prototyping energy smart autonomous ground systems	5.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Prototyping energy smart autonomous ground systems		
Congressional Add: Silicon carbide electronics	8.000	14.000
FY 2024 Accomplishments: Congressional Interest Item funding provided for Silicon carbide electronics		
FY 2025 Plans: Congressional Interest Item funding provided for Silicon carbide electronics		
Congressional Add: Small unit technology advancements	7.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Small unit technology advancements		
Congressional Add: Analytics and visualization of autonomous vehicle systems	-	7.000
FY 2025 Plans: Congressional Interest Item funding provided for Analytics and visualization of autonomous vehicle systems		
Congressional Add: Autonomous vehicle research initiative	-	5.000

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602145A / Next Generation Combat Vehicle Technology	Project (Number/Name) BP5 / Ground Vehicle Technology (CA)
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024 FY 2025
FY 2025 Plans: Congressional Interest Item funding provided for Autonomous vehicle research initiative		
Congressional Add: Standardized battery for enhanced performance		- 3.000
FY 2025 Plans: Congressional Interest Item funding provided for Standardized battery for enhanced performance		
Congressional Add: Vehicle power protection		- 2.000
FY 2025 Plans: Congressional Interest Item funding provided for Vehicle power protection		
Congressional Adds Subtotals		94.700 36.000
C. Other Program Funding Summary (\$ in Millions)		
N/A		
Remarks		
D. Acquisition Strategy		
N/A		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 2: Applied Research					R-1 Program Element (Number/Name) PE 0602146A / Network C3I Technology							
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
Total Program Element	-	135.543	110.417	56.529	-	56.529	-	-	-	-	-	-
AM6: Modular RF Communications Technology	-	5.803	8.335	1.191	-	1.191	-	-	-	-	-	-
AM8: Protected SATCOM Technology	-	4.358	6.510	3.489	-	3.489	-	-	-	-	-	-
AN3: Non Traditional Waveforms Technology	-	10.661	10.069	7.446	-	7.446	-	-	-	-	-	-
AN7: COE - Every Receiver is a Sensor Technology	-	0.997	-	-	-	-	-	-	-	-	-	-
AN9: UNT - Every Receiver is a Sensor Technology	-	2.073	4.624	8.898	-	8.898	-	-	-	-	-	-
AO4: Energy Efficient Devices Technology	-	4.469	-	-	-	-	-	-	-	-	-	-
AP5: Electronic Warfare Technology	-	5.334	5.400	-	-	-	-	-	-	-	-	-
AQ2: EW Techniques Technology	-	0.521	3.701	-	-	-	-	-	-	-	-	-
AQ7: High Tempo Data Driven Decision Tools Technology	-	1.258	-	2.316	-	2.316	-	-	-	-	-	-
AT7: Network-Enabled GeoSpatial-GEOINT Services Tech	-	2.462	4.045	2.760	-	2.760	-	-	-	-	-	-
AT9: Tactical GeoSpatial Information Capabilities Techn	-	2.618	2.069	2.951	-	2.951	-	-	-	-	-	-
AV5: Protective Technologies	-	6.356	5.307	4.844	-	4.844	-	-	-	-	-	-
AV9: Advanced PNT for GPS Independent Environments Tech	-	8.993	8.062	7.952	-	7.952	-	-	-	-	-	-
AW1: Autonomous Navigation Technology	-	-	1.002	-	-	-	-	-	-	-	-	-

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army **Date:** June 2025

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 2: Applied Research</i>					R-1 Program Element (Number/Name) PE 0602146A / <i>Network C3I Technology</i>								
AW5: <i>Modular GPS Independent Sensors Technology</i>	-	-	4.546	-	-	-	-	-	-	-	-	-	-
BP2: <i>Sensor and Electronic Network Initiatives (CA)</i>	-	62.000	33.000	-	-	-	-	-	-	-	-	-	-
CG3: <i>Assured PNT Communications Applied Research</i>	-	5.494	4.158	1.767	-	1.767	-	-	-	-	-	-	-
CI3: <i>Mobile and Survivable Command Post (MASCP) Tech</i>	-	3.170	2.375	-	-	-	-	-	-	-	-	-	-
CU6: <i>Adaptive Information Mediation and Analytics</i>	-	6.962	5.957	11.884	-	11.884	-	-	-	-	-	-	-
CV4: <i>Pathfinder 3D Applied Technology</i>	-	2.014	1.257	1.031	-	1.031	-	-	-	-	-	-	-

Note

In FY 2026, Project CI3 / Mobile and Survivable Command Post (MASCP) Tech has no additional RDTE efforts and will be transitioning.

A. Mission Description and Budget Item Justification

This Program Element (PE) is aligned to the Network and Assured Positioning, Navigation, & Timing (APNT) Army Modernization Priorities. This PE investigates technologies, techniques, components and tools to provide an Army tactical network and enabling infrastructure that support Multi-Domain operations in contested, congested, degraded, and/or denied environments. This is accomplished through the design and development of technologies and components (e.g., electronic components, software and protocols) that provide unified transport and are supportable; mobile, and survivable, and robust mission command on the move; assured and secure positioning, navigation, and timing in all environments; converged and coordinated cyber and electronic warfare activities; resilient communication and intelligence, surveillance, and reconnaissance payloads for tactical space and high-altitude platforms, and the collection, processing, and dissemination of intel/ops information into a common operating environment. Commercial technologies are continuously investigated and leveraged where possible.

Work in this PE complements PE 0602143A (Soldier Lethality Technology), PE 0602145A (Next Generation Combat Vehicle Technology), PE 0602147A (Long Range Precision Fires Technology), PE 0602148A (Future Vertical Lift Technology), PE 0602150A (Air and Missile Defense Technology), PE 0603118A (Soldier Lethality Advanced Technology), PE 0603462A (Next Generation Combat Vehicle Advanced Technology), PE 0603464A (Long Range Precision Fires Advanced Technology), PE 0603465A (Future Vertical Lift Advanced Technology), PE 0603466A (Air and Missile Defense Advanced Technology), PE 0603463A (Network C3I Advanced Technology).

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

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army			Date: June 2025			
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army I BA 2: Applied Research		R-1 Program Element (Number/Name) PE 0602146A I Network C3I Technology				
Work in this performed by the United States Army Futures Command, the United States Army Space and Missile Defense Command and the Army Engineer Research and Development Center.						
The FY 2026 request was reduced by \$1.144 million for Advisory and Assistance Services to promote efficiencies and advance the policies of the Administration in alignment with Executive Order 14222, "Implementing the President's Department of Government Efficiency Cost Efficiency Initiative."						
The FY 2026 request was reduced by \$0.222 million for civilian personnel to optimize the workforce in compliance with Executive Order 14210, "Implementing the President's Department of Government Efficiency Workforce Optimization Initiative."						
B. Program Change Summary (\$ in Millions)		FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Previous President's Budget		81.618	84.576	82.597	-	82.597
Current President's Budget		135.543	110.417	56.529	-	56.529
Total Adjustments		53.925	25.841	-26.068	-	-26.068
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-7.159			
• Congressional Rescissions		-	-			
• Congressional Adds		62.000	33.000			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-5.836	-			
• SBIR/STTR Transfer		-2.239	-			
• Adjustments to Budget Years		-	-	-26.068	-	-26.068
Congressional Add Details (\$ in Millions, and Includes General Reductions)						
Project: BP2: Sensor and Electronic Network Initiatives (CA)						
Congressional Add: Advanced Packaging Technologies for Hardware Security						
Congressional Add: Distributed radio frequency sensor effector technology						
Congressional Add: Integrated photonics for contested RF environments						
Congressional Add: PNT for Inertial Systems						
Congressional Add: Urban subterranean mapping technology						
Congressional Add: Agile Sensing for Radio Frequency and Radar Capabilities						
Congressional Add: Collaborative for hierarchical and agile responsive materials						
Congressional Add: Secure Microelectronic Interposer Technology for Hardware Assurance						
Congressional Add: Social network analysis						

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army I BA 2: Applied Research		R-1 Program Element (Number/Name) PE 0602146A I Network C3I Technology	
Congressional Add Details (\$ in Millions, and Includes General Reductions)		FY 2024	FY 2025
Congressional Add: <i>Development of advanced radio frequency applications</i>		-	3.000
Congressional Add: <i>Distributed 3D radar satellite technology</i>		-	5.000
Congressional Add: <i>Multi-static radar system</i>		-	2.000
Congressional Add: <i>Securing 3D packaging against adversaries</i>		-	15.000
Congressional Add Subtotals for Project: BP2		62.000	33.000
Congressional Add Totals for all Projects		62.000	33.000
Change Summary Explanation Funding decrease in Fiscal Year (FY) 2026 from the previous PB to the current PB reflects the net effect of realignments for the following efforts: electronic warfare; information mediation and analytics; every receiver is a sensor; and non-traditional waveforms.			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025			
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602146A / Network C3I Technology				Project (Number/Name) AM6 / Modular RF Communications Technology				
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost	
AM6: Modular RF Communications Technology	-	5.803	8.335	1.191	-	1.191	-	-	-	-	-	-	

A. Mission Description and Budget Item Justification

This Project investigates and develops techniques, methods, and standards for automation and intelligence to optimally broadcast data among available radio frequency (RF) and networking technologies. This Project adds resiliency to the network through diversity and automation techniques to make automated network decisions (e.g., automated Primary, Alternate, Contingency, and Emergency (PACE)) for the tactical Army to maintain operation in continually changing environments.

Work in this Project complements Program Element (PE) 0603463A (Network C3I Advanced Technology) / Project AM7 (Modular RF Communications Advanced Technology).

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.

Work in this Project is performed by the Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance, and Reconnaissance (C5ISR) Center.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2024	FY 2025	FY 2026
Title: Predictive Intelligent Network (PIN)	5.803	8.335	1.191
Description: The effort investigates the Automated PACE plan capability by developing predictive algorithms and using various sources of information to create a resilient and adaptive network configuration that allows continued and secure communications in Anti-Access/Area Denial (A2AD) environments. The PIN predictive algorithms plans the optimal network topology and configuration by leveraging information on network loads, cyber activities, terrain, weather, movement, and RF situational awareness. In addition, this effort leverages and disseminates RF sensing electronic support information for use by operational forces, to coordinate and enable continued communications through electronic and navigation warfare effects.			
FY 2025 Plans: Investigate fielded sensors, sensor data collection systems, and the platforms on which they reside to determine the types of RF situational awareness information available for use in predictive algorithms; determine the current state-of-the-art for network prediction from the Army, Joint Service, and industry partners; further refine understanding of algorithm performance, limitations, and computational requirements.			
FY 2026 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602146A / Network C3I Technology		Project (Number/Name) AM6 / Modular RF Communications Technology
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Will continue to refine understanding of algorithm performance, limitations and computational requirements and investigate suitable solutions to enable Automated Priced, Alternate, Contingency, and Emergency (PACE) technologies.				
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects the partial transition and realignment to Program Element (PE) 0603463A (Network C3I Technology) / Project AM7 (Modular RF Communications Advanced Technology).				
Accomplishments/Planned Programs Subtotals		5.803	8.335	1.191
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025			
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602146A / Network C3I Technology				Project (Number/Name) AM8 / Protected SATCOM Technology				
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost	
AM8: Protected SATCOM Technology	-	4.358	6.510	3.489	-	3.489	-	-	-	-	-	-	

A. Mission Description and Budget Item Justification

This Project investigates resiliency of Wideband Satellite Communications (SATCOM) in contested and congested electromagnetic environments. Wideband SATCOM is the primary high-bandwidth Beyond Line of Sight (BLOS) communications used by the tactical Army. This Project designs and develops technologies and components, such as interference cancellation, to increase availability and reliability of Wideband SATCOM in spectrum-challenged environments.

Work in this Project complements Program Element (PE) 0603463A (Network C3I Advanced Technology) / Project AM9 (Protected SATCOM Advanced Technology).

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.

Work in this Project is performed by Command, Control, Computer, Communications, Cyber, Intelligence, Surveillance, and Reconnaissance (C5ISR) Center.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2024	FY 2025	FY 2026
<div><div>Title: Multi-Orbit Modem (MOM)</div><div>Description: This effort designs and develops Satellite Communications (SATCOM) ground terminal modem and management technology components to enable operation over multiple satellite constellations to increase performance and resiliency of wideband SATCOM in contested and congested electromagnetic environments. Modem components will include a software based terminal controller for modem management, repository of modem waveforms, and supporting network management. This effort develops resiliency through a flexible modem technology investigation and is complementary with Protected SATCOM efforts focused on antenna development.</div><div>FY 2025 Plans: Will investigate virtualization/containerization of waveforms and use of a 3U Virtual Path Cross-Connect (VPX) carrier card for Application Specific Integrated circuit (ASIC)-based waveforms; investigate path to Digital-IF (DIFI) for analog-based waveforms; mature management and control system technology as applicable to satellite communications waveforms.</div><div>FY 2026 Plans: Will develop additional resiliency and redundancy by leveraging multiple simultaneous military and commercial satellite constellations. Will investigate virtualization of waveforms leveraging emerging technologies such as Digital Intermediate Frequency Interoperability (DIFI).</div><div>FY 2025 to FY 2026 Increase/Decrease Statement:</div></div>	4.358	6.510	3.489

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602146A / Network C3I Technology	Project (Number/Name) AM8 / Protected SATCOM Technology		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Funding decrease reflects planned lifecycle of this effort with a decrease in applied research activities and an increase advanced technology development. Effort continues in 0603463A/AM9.				
Accomplishments/Planned Programs Subtotals		4.358	6.510	3.489
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602146A / Network C3I Technology				Project (Number/Name) AN3 / Non Traditional Waveforms Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
AN3: Non Traditional Waveforms Technology	-	10.661	10.069	7.446	-	7.446	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project investigates non-traditional protocols and technologies to provide spectrally efficient, high bandwidth, low latency, lower spectrum footprint, and/or anti-jam capabilities to tactical networks. This Project develops network resiliency for the dismounted and vehicular units through science & technology investigation.												
Work in this Project complements Program Element (PE) 0603463A (Network C3I Advanced Technology) / Project AN4 (Non-Traditional Waveforms Advanced Technology).												
The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.												
Work in this Project is performed by the Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance, and Reconnaissance (C5ISR) Center.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Tactical Application of Advanced Comms									0.410	-	-	
Description: This effort investigates the use of commercial communication services and associated technologies to support high bandwidth, low latency communications for tactical environments with mobile infrastructures. This effort will leverage the latest semi-conductor material research to enable compact antenna aperture designs that provide output power and/or broader frequency coverage required to support aerial platforms performing relay mission in support of non-line-of sight applications without increasing the overall SWAP.												
Title: Spectrum Superstorm									1.789	2.033	-	
Description: This effort investigates the use of obfuscation and technical effects in the radio frequency spectrum using distributed and dispersed techniques to coordinate signal effects against adversaries from distant transmitters. This effort enables Army emitters to operate free from adversary geolocation attempts through technical effect applications.												
FY 2025 Plans: Will develop orchestration software to dynamically manage RF emissions with emphasis on proof of concept of command and control and incorporating feedback from vendor commercial off the shelf hardware; demonstrate minimum viable product over the air.												
FY 2025 to FY 2026 Increase/Decrease Statement:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602146A / Network C3I Technology	Project (Number/Name) AN3 / Non Traditional Waveforms Technology		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Funding decrease reflects realignment to Program Element (PE) 0602275A (Electronic Warfare Applied Research) / Project A67 (Electronic Warfare Technology) as a part of the Department of Defense Capability Based (Agile) Funding pilot, which provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology.				
Title: Relay for Aerial to Non-line-of-sight Ground Environments (RANGE) Description: This effort investigates the use of aerial platforms as communications relays ensuring communications coverage is maintained in non-line-of-sight (NLOS) environments, while considering communications resiliency such as anti-jam and low probability of detection. This effort will mature covert, multiband, and embedded antenna elements using new antenna materials for compact antenna aperture designs.		5.940	-	-
Title: Quantum Sensing Description: This effort investigates the use of novel quantum-enhanced spectral receivers capable of wideband sensing of extremely low power signals at very large standoff distances. This effort matures quantum component technologies for use in very high receiver sensitivity. This effort designs and develops tactically relevant quantum sensors, considering form-factor, size, weight, power, and receiver performance. FY 2025 Plans: Will develop improved modeling and simulation of Josephson Junction and Rydberg receiver quantum sensor technologies with increased fidelity, additional capabilities, and/or increased model scope. Will investigate non-traditional system configurations such as hybrid sensors and external accessories to enhance capability for targeted applications. Will conduct experiments to characterize performance limitations of quantum sensors and their auxiliary components including response to environmental conditions. Will mature classical auxiliary components as necessary to achieve the receiver sensitivity and spectrum agility of quantum sensors. FY 2026 Plans: Will mature Rydberg, Josephson Junction and other superconducting receivers and determine suitable Army applications for technology; investigate cryogenic superconducting system to negate magnetic interference from Army platforms; investigate existing integrated quantum interference devices and combine with cryogenically rated designs to mature solutions for electromagnetic interference. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease is a result of using data collected in FY25 to inform a planned technology down select for FY26.		2.522	4.930	3.969
Title: Extremely High Bandwidth Communications (ExHiBComm)		-	3.106	1.994

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602146A / <i>Network C3I Technology</i>	Project (Number/Name) AN3 / <i>Non Traditional Waveforms Technology</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p>Description: This effort develops communication systems capable of 100X today's data rates while providing spatial low probability of intercept and low probability of detection to the links due to extremely high frequencies of operation. This effort will generate two products: Free Space Optics (FSO) and access points supporting multiple users with extremely high bandwidth. ExHibComm will target on-the-move ground links, but it can support ground to air, ground to space, air to air and air to space applications, enabling multi domain operations. ExHiBComm solves the challenge of spectrum scarcity and enables links anywhere in the world without the need of frequency clearances.</p> <p>FY 2025 Plans: Will conduct an analysis of alternatives to investigate Free Space Optics (FSO) capabilities when mounted on a mobile platform. Will determine the capabilities and limitations for FSO systems to perform 360-degree sector scanning to track well and maintain connectivity while a vehicular platform is on-the-move. Will conduct experiments to assess the capabilities of the FSO system on frequency transport legacy communication radios, enable multipoint operations and fail over with a primary, alternate, contingency and emergency (PACE) communication plan.</p> <p>FY 2026 Plans: Will develop algorithms for on-the-move (OTM) tracking capability and, reacquisition/node discovery. Will investigate modeling and simulation techniques to assess Free Space Optics (FSO) FSO system performance in various atmospheric and propagation conditions. Will conduct experiments on interfacing the FSO system with other radio frequency (RF) signals to provide a transport agnostic mechanism for high throughput communications. Will develop multiple-aperture FSO system for 360-degree coverage and multipoint communication capability. Will conduct proof of concept experimentation to validate the feasibility and assess the maturity of high throughput wireless access point technologies such as 5G, millimeter Wave (mmW) and Sub-TeraHertz systems. Will investigate compact FSO systems with photonic integrated circuits enabling beam steering for short range communication distances.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects planned lifecycle of this effort with a decrease in applied research activities and an increase advanced technology development. Effort continues in 0603463/AN4.</p>			
<p>Title: Antenna Technology</p> <p>Description: This effort investigates radio agnostic software defined antenna (SDA) systems with the capability to rapidly adapt the radio carrier frequency among diverse targeted frequency bands using analog and/or digital frequency conversion. Frequency bands for consideration will include UHF, L, S, C, X, Ku, Ka, k, and V. This effort will evaluate and mature multiband antenna design, time division duplexing schemes, digital interfaces for radio head, digital combining technologies to support multiple simultaneous radios, and sensing/automation algorithms.</p>		-	1.483

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602146A / <i>Network C3I Technology</i>	Project (Number/Name) AN3 / <i>Non Traditional Waveforms Technology</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
<i>FY 2026 Plans:</i> Will investigate multiband antenna design for operation across multiple frequency bands to allow for support for multiple simultaneous radios. Will investigate time half duplex time division duplexing for tactical waveform compatibility to enable increase of the number of Army radios that can utilize software defined antenna.				
<i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> Funding realigned from Program Element (PE) 0603463A (Network C3I Advanced Technology) / Project CI7 (Mobile & Survivable Command Post (MASCP) Adv Tech) to initiate a new effort to Investigate antenna technology.				
Accomplishments/Planned Programs Subtotals		10.661	10.069	7.446
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602146A / <i>Network C3I Technology</i>				Project (Number/Name) AN7 / <i>COE - Every Receiver is a Sensor Technology</i>			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
AN7: <i>COE - Every Receiver is a Sensor Technology</i>	-	0.997	-	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Project investigates, designs, and codes advanced automated exploitation and fusion analysis tools, applications, and software services that harvest, correlate and fuse tactical receiver sources with new and emerging data sources to improve understanding of the threat picture and more efficiently support near-real time Situational Understanding of the battlefield. This project investigates deep sensing capabilities to detect emitters in a dense electromagnetic environment.

Work in this Project complements Program Element (PE) 0603463A (Network C3I Advanced Technology) / Project AN8 (COE - Every Receiver is a Sensor Advanced Tech) and PE 0602146A (Network C3I Technology) / Project AN9 (UNT - Every Receiver is a Sensor Technology).

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.

Work in this Project is performed by the Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance, and Reconnaissance (C5ISR) Center.

<u>B. Accomplishments/Planned Programs (\$ in Millions)</u>	FY 2024	FY 2025	FY 2026
<i>Title:</i> Intelligence Surveillance and Recognizance (ISR) Optimization for MDO Support Technology	0.997	-	-
<i>Description:</i> This effort investigates and designs Intelligence Surveillance and Reconnaissance (ISR) collection management technologies and analytics to enhance performance and optimize use of Army ISR resources during multi-domain operations (MDO). Efforts focus on developing the analytics necessary to increase situational awareness of non-organic collections across all domains (Air, Land, Maritime, Space, Cyber and Electromagnetic spectrum), determine highest payoff use of tactical ISR assets, and optimize sensor selection and placement to answer unit intelligence requirements.			
Accomplishments/Planned Programs Subtotals	0.997	-	-

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

Remarks

D. Acquisition Strategy
N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602146A / Network C3I Technology				Project (Number/Name) AN9 / UNT - Every Receiver is a Sensor Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
AN9: UNT - Every Receiver is a Sensor Technology	-	2.073	4.624	8.898	-	8.898	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project develops algorithms that enable every communication receiver in the tactical environment to operate as a sensor while maintaining the systems' original networking capability. It matures standards and protocols to expand the Cyber-Electromagnetic Activity (CEMA) situational understanding. This Project investigates resource management approaches to increase simultaneity within resource constrained environments. It extends the Army's deep sensing capability by improving simultaneous functionality, leveraging all potential sensing assets within the area of operations and supporting real time feedback of mission effectiveness. This project helps the Army pace global electromagnetic spectrum technology advancements by designing and developing critical near peer signals intelligence (SIGINT) capabilities designed for the Army's size, weight, and power (SWaP)-constrained tactical edge.												
Work in this Project complements Program Element (PE) 0603463A (Network C3I Advanced Technology) / Project AO1 (UNT - Every Receiver is a Sensor Advanced Tech) and PE 0602146A (Network C3I Technology) / Project AN7 (COE - Every Receiver is a Sensor Technology).												
The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.												
Work in this Project is performed by the Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance, and Reconnaissance (C5ISR) Center.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Multi-Int Modernization Combined Architecture (MIMCA)									2.073	2.119	-	
Description: This effort investigates optimization of radio frequency transmit and receive resources to conduct simultaneous electronic warfare (EW), signals intelligence (SIGINT) and offensive cyber missions. Efforts will leverage low power interference techniques adapted to high power applications to reduce interference from co-located capabilities on multifunction systems and novel resource scheduling characteristics to execute Cyber and ElectroMagnetic Activities (CEMA) and support real-time feedback such as Battle Damage Assessment (BDA) and adaptive Electronic Attack (EA).												
FY 2025 Plans: Will mature commercial interference mitigation concepts that operate with high power multifunction systems to increase the efficiency of Radio Frequency (RF) spectrum resources; design of multifunction scheduling interfaces to ensure compatibility with the commercial interference mitigation technology.												
FY 2025 to FY 2026 Increase/Decrease Statement:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602146A / Network C3I Technology	Project (Number/Name) AN9 / UNT - Every Receiver is a Sensor Technology		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Funding decrease reflects realignment to Program Element (PE) 0602275A (Electronic Warfare Applied Research) / Project A66 (UNT - Every Receiver is a Sensor Technology) as a part of the Department of Defense Capability Based (Agile) Funding pilot, which provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology.				
<p>Title: Army SIGINT Modernization</p> <p>Description: This effort will investigate and develop Radio Frequency (RF) signal analysis and processing techniques to improve detection, identification, and exploitation of high priority peer/near-peer adversary military signals. Effort will significantly increase detection and parameterization of unknown signals, improving battlespace operations in contested Radio Frequency (RF) environments.</p> <p>FY 2025 Plans: Will design detection, classification, direction finding, and multi-channel adaptive beamforming techniques for peer/near-peer adversary military RF signals; conduct experiments to validate technique performance metrics to quantify algorithm robustness against various RF environments and scenarios.</p> <p>FY 2026 Plans: Will conduct experiments with novel RF processing techniques to intelligently group signals spatially in a complex environment; mature techniques to correctly identify signals in a low signal to noise ratio environment; validate concepts for optimal signal processing hardware implementations.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects realignment to Program Element (PE) 0602275A (Electronic Warfare Applied Research) / Project A66 (UNT - Every Receiver is a Sensor Technology) and PE 0603275A (Electronic Warfare Advanced Technology) / Project A76 (UNT - Every Receiver is a Sensor Advanced Tech) as a part of the Department of Defense Capability Based (Agile) Funding pilot, which provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology.</p>		-	2.505	2.098
<p>Title: Army SIGINT Modernization (ASM-SIGINT Modernization AI/ML RF Detection and Analysis Tech)</p> <p>Description: This effort will investigate Radio Frequency Machine Learning (RFML) as a means to autonomously detect, identify or characterize previously unknown signals and adversarial wartime reserve modes, significantly increasing situational awareness by assisting SIGINT analysts in finding high priority signals of interest.</p> <p>FY 2026 Plans:</p>		-	-	3.695

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602146A / <i>Network C3I Technology</i>	Project (Number/Name) AN9 / <i>UNT - Every Receiver is a Sensor Technology</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Will investigate and design data generation and labeling tools to produce diverse training data, including directionality and different electromagnetic environments; develop RFML approaches to detect, characterize and catalogue previously unobserved signals of interest in real time in contested radio frequency environments. FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects planned initiation of this effort.				
Title: AI/ML Based ATR (ABA) for Array Geometries Description: This effort will research and develop signal processing approaches for radars to allow them to detect, identify, locate and report threats from low-grazing angle geometries appropriate to emerging Army intelligence, surveillance, and reconnaissance (ISR) systems. Research will develop technologies to enable the reporting for targets while de-emphasizing false alarms and detections of non-interest. This effort will significantly improve target prosecution timelines enabling actionable targeting at the pace of battle. FY 2026 Plans: Will develop radar techniques and processing for automated, intelligent moving target indication; conduct experiments to validate technique performance against benchmarks in a laboratory environment. FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects planned initiation of this effort.		-	-	3.105
Accomplishments/Planned Programs Subtotals		2.073	4.624	8.898
C. Other Program Funding Summary (\$ in Millions) N/A Remarks D. Acquisition Strategy N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602146A / Network C3I Technology				Project (Number/Name) AO4 / Energy Efficient Devices Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
AO4: Energy Efficient Devices Technology	-	4.469	-	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Project addresses sustainment operations by unburdening the Soldier and reducing logistics requirements (e.g., fewer batteries) for communications, computing, and sensing. The objective is to investigate the underlying energy efficiency of supply and demand for Soldier-portable and distributed sensor electronics to enable the dismounted Soldier to maintain communications, freedom of movement, and increase mission duration. The majority of the electronics power used by the dismounted Soldier and by distributed electronics is attributable to radio frequency (RF) communications. In addition, freedom of movement and action during sustained and high tempo operations requires seamless battery recharging. To address these challenges, energy efficient electronics research includes RF and optoelectronic circuits, devices, materials and wireless power (and data) transfer.

Work in this Project complements Program Element (PE) 0602146A (Network C3I Technology) / Project AN3 (Non-Traditional Waveforms Technology), PE 0602143A (Soldier Lethality Technology) / Project BD8 (Soldier & Sm Unit Tactical Energy Tech), and PE 0601102A (Defense Research Sciences) / Project AA9 (Information and Networking).

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.

Work in this Project is performed by the Army Research Laboratory (ARL).

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2024	FY 2025	FY 2026
Title: Energy Efficient Electronic and Photonic Components	4.469	-	-
Description: This effort investigates energy efficiency improvements in support of four key areas: RF component devices, optoelectronic devices for alternative communications modes, long-lived and high efficiency power sources, and efficient wireless power and data transfer technologies. These components enable energy-efficient communications and networked energy, specifically leading to increased Soldier mission duration and long-lived networked electronics.			
Accomplishments/Planned Programs Subtotals	4.469	-	-

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

Remarks

D. Acquisition Strategy
N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army	Date: June 2025
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Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602146A / Network C3I Technology				Project (Number/Name) AP5 / Electronic Warfare Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
AP5: <i>Electronic Warfare Technology</i>	-	5.334	5.400	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Project investigates emerging technologies related to Electronic Warfare (EW) applications, non-kinetic survivability/lethality, and emerging concepts of employment in the increasingly contested and congested electromagnetic environment, with the goal of enhancing the survivability/lethality of Army platforms through Electronic Attack (EA), electronic warfare support (ES), and Electronic Protection (EP) with high operational realism for current and future threats being implemented at multiple scales.

Work in this Project complements Program Element (PE) 0603463A (Network C3I Advanced Technology) / Project AO7 (EW for Maneuver Operations (EMO) Adv Tech).

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.

Work in this Project is performed by the Army Research Laboratory (ARL) and Data and Analysis Center (DAC).

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

	FY 2024	FY 2025	FY 2026
Title: Electronic Warfare Technology Research Description: This research investigates emerging Electromagnetic Warfare technologies and novel approaches to apply distributed and combined effects to a broader class of threats, with a goal of adequately degrading threat performance. This effort examines approaches for interdisciplinary laboratory and field experiments with analysis and assessment tools to address survivability and effective countermeasures in a realistic Electromagnetic environment. FY 2025 Plans: Will validate cognitive countermeasures by improving network-enabled Hardware-in-the-loop (HIL) assessment environment; adapt cognitive algorithms to emerging high performance processing innovations; leverage advancements in generative artificial intelligence and reinforcement learning to improve effectiveness of countermeasures against emerging complex emitters and cognitive radar threats. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects planned completion of this effort in Fiscal Year (FY) 2025.	2.499	2.524	-
Title: Electronic Warfare Assessment Technologies Description: This effort investigates emerging technologies related to EW applications (e.g., digital RF memory, software defined radios, cognitive radars) and electromagnetic-enabled cyberspace operations in the increasingly contested and congested	0.686	0.690	-

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602146A / <i>Network C3I Technology</i>	Project (Number/Name) AP5 / <i>Electronic Warfare Technology</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
environment. Research is focused on near-peer and future threats to enhance survivability/lethality, and discover critical vulnerabilities, of Army technologies and systems through cyber and electromagnetic activities (CEMA).			
<p>FY 2025 Plans: Will investigate emerging complex threats related to cognitive radars and near peer adversary use of artificial intelligence/machine learning (AI/ML) techniques in radars for identification and classification of targets; develop EW threat emulation capabilities to investigate the effects of emerging radar threats (e.g., cognitive, AI-enabled functions) by conducting laboratory, hardware-in-the loop, and field experiments of technology; develop metrics to quantify and understand EW effects.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects realignment to Program Element (PE) 0602275A (Electronic Warfare Applied Research) / Project A67 (Electronic Warfare Technology) as a part of the Department of Defense Capability Based (Agile) Funding pilot, which provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology. Funding decrease reflects efforts to foster innovation and accelerate deployment of promising technology in support of alignment with congressional priorities.</p>			
<p>Title: Combined and Distributed Electromagnetic Warfare (CDEW)</p> <p>Description: This research investigates emerging Electromagnetic Warfare technologies and novel approaches to apply distributed nodal and combined/coordinated electromagnetic spectrum warfare effects to counter a broader class of threats, with a goal of adequately degrading threat performance, increasing standoff distance to target, and increasing the survivability of US systems contested and complex environments.</p> <p>FY 2025 Plans: Will design and build a 5-node, distributed transceiver aperture for electronic attack and benchmark its performance; implement an algorithm to measure the relative position of the distributed nodes without Global Positioning System (GPS); mature the synchronization algorithm for the 5-node architecture; and assess increased power density on a target.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects realignment to Program Element (PE) 0602275A (Electronic Warfare Applied Research) / Project A67 (Electronic Warfare Technology) as a part of the Department of Defense Capability Based (Agile) Funding pilot, which provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology. Funding decrease reflects efforts to foster innovation and accelerate deployment of promising technology in support of alignment with congressional priorities.</p>		2.149	2.186
			-
Accomplishments/Planned Programs Subtotals		5.334	5.400
			-

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602146A / Network C3I Technology	Project (Number/Name) AP5 / Electronic Warfare Technology
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
D. Acquisition Strategy N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army									Date: June 2025			
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602146A / Network C3I Technology				Project (Number/Name) AQ2 / EW Techniques Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
AQ2: EW Techniques Technology	-	0.521	3.701	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Project develops countermeasures against adversarial counter-fire systems that obscure and create distractive blue force locations. This Project will develop and mature distributed, coordinated electromagnetic warfare (EW) capabilities designed to extend effective range, reduce blue transmitter susceptibility to localization, and introduce errors in adversary intelligence, surveillance and reconnaissance (ISR) systems to facilitate maneuver within multi-domain operations (MDO).

Work in this Project complements Program Element (PE) 0603463A (Network C3I Advanced Technology) / Project AO7 (EW for Maneuver Operations (EMO) Adv Tech).

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.

Work in this Project is performed by the Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance, and Reconnaissance (C5ISR) Center.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2024	FY 2025	FY 2026
Title: Simultaneous Counter Measures (CM) for Active Reconnaissance and Surveillance (SCARS)	0.521	-	-
Description: This effort will provide investments in Electronic Warfare (EW), against advancing counter-fire sensors. This effort will investigate highly synchronized techniques to achieve advanced effects.			
Title: Sparrow Technology	-	3.701	-
Description: This effort will fund research in Electronic Warfare (EW) to impair and/or degrade adversary counter-fire sensor networks. This effort will investigate and mature highly synchronized techniques to simultaneously produce advanced effects against RF systems capable of degrading Army countermeasures (camouflage, concealment, tactics, and other EW capabilities) leaving friendly forces susceptible to detection, location, and kinetic engagement. The hardware and software capabilities developed will provide opportunistic, multiplatform delivery of electromagnetic warfare capabilities that are more challenging for adversaries to mitigate.			
FY 2025 Plans: Will perform hardware and software validation supporting the design and development of distributed EW payloads; mature and develop software capabilities on distributed EW payload for specific threat(s).			
FY 2025 to FY 2026 Increase/Decrease Statement:			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602146A / Network C3I Technology	Project (Number/Name) AQ2 / EW Techniques Technology		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Funding decrease reflects realignment to Program Element (PE) 0602275A (Electronic Warfare Applied Research) / Project A68 (EW Techniques Technology) as a part of the Department of Defense Capability Based (Agile) Funding pilot, which provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology.				
Accomplishments/Planned Programs Subtotals		0.521	3.701	-
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602146A / Network C3I Technology				Project (Number/Name) AQ7 / High Tempo Data Driven Decision Tools Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
AQ7: High Tempo Data Driven Decision Tools Technology	-	1.258	-	2.316	-	2.316	-	-	-	-	-	-
Note In Fiscal Year (FY) 2025, this Project has a skip year.												
A. Mission Description and Budget Item Justification This Project investigates and develops data driven decision tools that increase operational tempo and allow commanders to dominate decision spaces over adversaries. The tools will provide the commander with contextually relevant data and adaptive decision models. Information and recommendations will be made and disseminated to commander and staff in a cognitively appropriate manner. Work in this Project complements Program Element (PE) 0603463A Network C3I Advanced Technology / Project AQ8 (High Tempo Data Driven Decision Tools Adv Tech). The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy. Work in this Project is performed by the Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance, and Reconnaissance (C5ISR) Center.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: RoadRunner									1.258	-	-	
Description: This effort investigates and develops stakeholder prioritized capabilities that fuse intel and ops perspectives that drive decisions to enable dominance in complex Multi-Domain Operations. Effort will design applications which provide enhanced operations, and intelligence functions through efficient analysis and utilization of battlespace data, and increased speed of action.												
Title: Intelligent Decision Assistant (IDA) Technology									-	-	2.316	
Description: This effort investigates and matures techniques for automated selection of sensing and processing resources for intelligence collection and targeting missions. This effort will research and develop messaging protocols to increase bandwidth efficiency of distributed intelligence surveillance and reconnaissance (ISR) systems operating on tactical networks.												
FY 2026 Plans:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602146A / <i>Network C3I Technology</i>	Project (Number/Name) AQ7 / <i>High Tempo Data Driven Decision Tools Technology</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
Will investigate sensor performance models capable of predicting sensor performance in realistic environments. Will conduct laboratory experiments to mature and validate messaging protocols suitable for use over tactical networks.			
<i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> Funding increase represents planned initiation of this effort.			
Accomplishments/Planned Programs Subtotals		1.258	-
C. Other Program Funding Summary (\$ in Millions) N/A			
Remarks			
D. Acquisition Strategy N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602146A / Network C3I Technology				Project (Number/Name) AT7 / Network-Enabled GeoSpatial-GEOINT Services Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
AT7: Network-Enabled GeoSpatial-GEOINT Services Tech	-	2.462	4.045	2.760	-	2.760	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
<p>This Project investigates and develops an integrated capability to rapidly share mission critical 3-dimensional (3D) information that supports planning and execution at the Soldier level. This will be achieved through the maturation of next-generation geospatial analytical models for 3D complex urban environment data, delivering enriched understanding of dynamic Operational Environments and distributed to a tactical Common Operating Environment. This Project will result in improved situational awareness and autonomy at low echelons, contributing to increased maneuver and mobility during manned and unmanned teaming operations.</p> <p>Work in this Project complements Program Element (PE) 0603463A (Network C3I Advanced Technology) / Project AT8 (Network-Enabled GeoSpatial and GEOINT Services AdvTech).</p> <p>The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.</p> <p>Work in this Project is performed by the United States Army Engineer Research and Development Center Geospatial Research Laboratory, Cold Regions Research and Engineering Laboratory, and Information Technology Laboratory.</p>												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Geospatial - Intelligence Community Merge Research									1.614	1.139	-	
Description: This effort researches different approaches to automatically search Intelligence Community (IC) databases to discover and then extract relevant attributes to be added as new metadata to adaptively scaled 3D terrain features and/or geographic areas. Geospatial and relevant intelligence data will be merged together, discoverable, and capable of user-selected query from a single computing environment. An enhanced 3D common operating picture will be demonstrated providing a more comprehensive understanding of the Operational Environment for greater situational awareness and decision making.												
FY 2025 Plans: Will investigate GIS mapping software deployment for mesh and intelligence attributes and explore other types of information with geographics (or derivable location) that can be fused on mesh data. Will develop software for automated crawling, discovery, and extraction of IC database attributes and appending of these attributes as new 3D model metadata.												
FY 2025 to FY 2026 Increase/Decrease Statement:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602146A / <i>Network C3I Technology</i>	Project (Number/Name) AT7 / <i>Network-Enabled GeoSpatial-GEOINT Services Tech</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
Funding decrease reflects planned conclusion of this effort and transition to Program Element 0603463A (Network C3I Advanced Technology) / Project AT8 (Network-Enabled GeoSpatial-GEOINT Services AdvTech).			FY 2026
Title: Geospatially Relevant Intuitive Propagation Services Technology Description: This effort researches a novel expert propagation model to integrate battlefield sensor data with environmental predictive modeling (weather and terrain influences). The resulting technology will optimize collection asset employment against adversaries as well as providing situational awareness of friendly units' multi-modal signature footprint (e.g. radio frequency, thermal, acoustic). This effort will significantly reduce the analyst cognitive load, and fill an important need for fused, validated, environment and terrain-aware analyses for multi-modal sensors in support of C2, Intelligence and Protection Warfighting Functions. FY 2025 Plans: Will develop multi-modality software to take real-time cues from the sensor network and publish sensor performance results back to the Sensor Compute Environment producing geospatial data discoverable within Army devices. Will integrate fractional line of sight algorithms into the Geospatial Relevant Intuitive Propagation Services (GRIPS) sensor performance modeling environment. FY 2026 Plans: Will expand software architecture to incorporate selected sensor modalities that take real-time cues from the sensor network and publish sensor performance results for high-priority target detection, recognition and identification back to the Sensor Compute Environment producing geospatial data discoverable within Army devices. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects adjustments to planned milestones and Army reduction. S&T will focus on selected use cases involving high-priority targets.		0.848	2.404
Title: Terrain & Battlefield Computing, Optimized Network Computing Resources Description: This effort investigates the Army's network ability to provide appropriate resources for geospatial data to include tools that require a wide range of data volumes (from low to very heavy), and as a consequence, may incur significant computational costs. The goal is to develop a simulation testbed for geospatial tools under different network configurations and application scenarios. The simulation testbed will measure and inform network requirements that can accommodate geospatial products downstream and as far out as necessary. FY 2025 Plans: Will research and assess geospatial tools that perform machine learning, require medium-to-high data volumes, and enable visualization. Will investigate computing environments based on hardware capabilities (server, desktops, small devices).		-	1.005

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602146A / <i>Network C3I Technology</i>	Project (Number/Name) AT7 / <i>Network-Enabled GeoSpatial-GEOINT Services Tech</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p>Will determine access and permissions to existing networks that will be targeted for deployment and design initial testbed specifications for simulation based on targeted tools.</p> <p><i>FY 2026 Plans:</i> Will investigate geospatial algorithms, geospatial data structures, and processing requirements for providing geospatial capabilities on various Army networks. Will assess network configuration constraints for geospatial technologies at various echelons.</p> <p><i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> Funding increase reflects planned milestones for the development of a simulation testbed for geospatial tools.</p>			
Accomplishments/Planned Programs Subtotals		2.462	4.045
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602146A / Network C3I Technology				Project (Number/Name) AT9 / Tactical GeoSpatial Information Capabilities Techn			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
AT9: Tactical GeoSpatial Information Capabilities Techn	-	2.618	2.069	2.951	-	2.951	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project investigates and develops next generation geospatial analytical tools for 3-dimensional complex environments for low echelon and tactical edge exploitation. Research focuses on improving geospatial and Geospatial Intelligence (GEOINT) aspects of situational awareness in the complex environments by exploiting new data sources, automating analytical tasks, and testing new collection technologies, including interiors of infrastructure. Research develops capabilities to enhance/update provisioned (baseline) standard, sharable, geospatial foundation (SSGF) data through automated analytics on multi-sourced spatial data resulting in streamlined, enhanced high fidelity terrain analysis products. Reducing data gaps and processing timelines will greatly increase Soldier situational awareness and support faster decision making in complex terrain.												
Work in this Project complements Program Element (PE) 0603463A (Network C3I Advanced Technology) / Project AU1 (Tactical GeoSpatial Information Capabilities ATech).												
The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.												
Work in this Project is performed by the United States Army Engineer Research and Development Center Geospatial Research Laboratory.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Geospatial Analytics and Prediction Technology									2.618	2.069	1.147	
Description: This effort designs and develops automated/semi-automated geospatial tools implementing spatial/temporal data analysis, creation of predictive scenarios, anomaly detection and cross-scale and local scale analysis of terrain.												
FY 2025 Plans: Will conduct investigations of terrain and scenario forecasting for integrated effects of changing terrain, in support of anticipatory decision making. Will advance spatial-temporal and cross-scale analysis of terrain to identify regions requiring additional surveillance and generate seasonally adjusted layers.												
FY 2026 Plans: Will advance terrain and scenario forecasting for integrated effects of changing terrain, such as weather impacts on cross-country mobility.												
FY 2025 to FY 2026 Increase/Decrease Statement:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602146A / <i>Network C3I Technology</i>	Project (Number/Name) AT9 / <i>Tactical GeoSpatial Information Capabilities Techn</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
Funding decrease reflects adjustments to planned milestones and Army reduction.			
Title: Optimized Rendition of the Built Environment Description: This effort supports mission training, planning and execution within the Common Operating Picture (COP) through developed workflows effectively rendering the local built urban 3D environment. This effort aims to balance and optimize key enduring metrics supported by shared community requirements (e.g. file sizes, file formats, visual/special quality, attribution/functionality, timelines, automation and ease of use). Further, this effort will add geospecific interior and subterranean spaces (via organic Soldier sensing capabilities) to the foundational and/or One World Terrain (OWT) datasets (facilitating enriched high resolution 3D urban terrain and tactical overlays, and assessment for changed conditions). Payoffs include (1) enabling capabilities such as exterior-to-interior routing planning, interior navigation (by soldier or robots), and urban-scale mission planning and rehearsal, and (2) S&T to inform future requirements for tactical visualization, mission planning devices and training simulators. FY 2026 Plans: Will improve upon methods and timelines associated with local-scale 3D terrain visualization workflows. Will explore methods to combine and integrate 3D/2D imagery data, capable of being gathered by Soldier units in the field, with previously collected imagery data and/or existing foundational datasets. FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects planned initiation of this effort.		-	-
			1.804
Accomplishments/Planned Programs Subtotals		2.618	2.069
			2.951
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
N/A			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602146A / Network C3I Technology				Project (Number/Name) AV5 / Protective Technologies			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
AV5: Protective Technologies	-	6.356	5.307	4.844	-	4.844	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project designs and develops Anti-Tamper tools, devices, and techniques to protect acquisition program systems' Critical Program Information (CPI) from continually evolving adversarial reverse engineering/exploitation threats due to battlefield loss and foreign sale. Loss of CPI will impact the ability of these systems to maintain US overmatch capabilities.												
Research in this Project complements Program Element (PE) 0603042A (C3I Advanced Technology) / Project DI6 (Anti-Tamper Advanced Tech Development)												
The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.												
Work in this Project is performed by the Aviation & Missile Center (AvMC).												
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2024	FY 2025	FY 2026
Title: Protective Technologies										6.356	-	-
Description: This effort develops tools, devices, and techniques to protect acquisition program systems' Critical Program Information (CPI) from adversarial reverse engineering/exploitation threats due to battlefield loss and foreign sale. Loss of CPI will impact the ability of these systems to maintain US overmatch capabilities.												
Title: Anti-Tamper Technology Development										-	5.307	4.844
Description: This task continues the development of anti-tamper tools, devices, and techniques to protect acquisition program systems' (CPI) from adversarial reverse engineering/exploitation threats due to battlefield loss and foreign sale. Loss of CPI will impact the ability of these systems to maintain US overmatch capabilities. Such tools, devices and techniques are not readily available for use by US Army and DoD programs to use in their systems.												
FY 2025 Plans: Will develop advanced microelectronics-based security solutions for anti-tamper application to address emerging adversarial threats. Will evaluate new anti-tamper technologies for integration in Army and DoD systems to protect critical technology with improved resilience to exploitation.												
FY 2026 Plans:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602146A / Network C3I Technology	Project (Number/Name) AV5 / Protective Technologies		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Will continue design and development of Anti-Tamper technologies to thwart adversarial reverse engineering techniques that endanger effectiveness of systems employed by U.S. warfighters. Technologies being developed will be validated for further maturation				
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects funding realignment to PE 06033464 Project CZ8 (PrSM Modular Payload Advanced Development) to fund higher Army requirements.				
Accomplishments/Planned Programs Subtotals		6.356	5.307	4.844
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602146A / Network C3I Technology				Project (Number/Name) AV9 / Advanced PNT for GPS Independent Environments Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
AV9: Advanced PNT for GPS Independent Environments Tech	-	8.993	8.062	7.952	-	7.952	-	-	-	-	-	-
A. Mission Description and Budget Item Justification <p>This Project develops technologies that will enable precise and assured Positioning, Navigation, and Timing (PNT) in Global Positioning System (GPS)-denied environments by addressing the PNT's toughest Scenario - Scenario 4 (no available GPS signal during the mission duration) with a goal of enabling Soldier missions of up to seven days in a GPS denied environment. This is achieved by researching advanced quantum timing circuits, advanced inertial measurement unit (IMU) components, multi-sensor modalities, perception techniques, geo-location data, vision aided navigation sensors, and available radio frequency (RF) signals.</p> <p>This work also addresses the PNT Scenario 1 (GPS operations that start well and have degraded GPS signals throughout the mission duration) through Scenario 3 (GPS operations that have bad or limited availability of GPS signals throughout the entire mission). This is achieved by investigating the ability to transmit jam- resistant, precision timing synchronized signals using optical fibers, free-space using lasers, and in the RF domain using innovative RF antenna concepts to extend the reach of Soldier compatible capabilities in heavily contested GPS environments.</p> <p>Work in this Project complements Program Element (PE) 0603463A (Network C3I Advanced Technology) / Project AW6 (Modular GPS Independent Sensors Advanced Tech) and Program Element (PE) 0602146A (Network C3I Technology) / Project AW5 (Modular GPS Independent Sensors Technology).</p> <p>The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.</p> <p>Work in this Project is performed by the Army Research Laboratory (ARL).</p>												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Precision Measurement Technology for Contested Environments									3.298	2.464	-	
Description: This effort will develop technologies that will enable precise and assured PNT in GPS-denied environments for extended durations. This research will improve the accuracy while also focusing on size, weight, power, cost (SWAP-C) of current IMUs to advance capability at the tactical edge to include sUAS and dismounts. This effort will address the design, fabrication, and assessment of novel micro-electromechanical system (MEMS) sensor designs and materials and the integration of multiple sensor modalities with the IMUs using sensor fusion and perception techniques to reduce drift and increase positional accuracy. Research will also include the ability to transmit jam-resistant precision position, navigation, and timing signals via electro-optical and/or RF transmission methods.												
FY 2025 Plans:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602146A / <i>Network C3I Technology</i>	Project (Number/Name) AV9 / <i>Advanced PNT for GPS Independent Environments Tech</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
<p>Will assess performance limits of micro-electromechanical systems (MEMS) inertial sensors with novel self-calibration and tuning methods based on integrated novel piezoelectric materials; investigate new high-quality-factor structural materials for next-generation inertial sensors; validate inertial measurement unit (IMU) system-level modeling techniques for multiple degrees of freedom.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects planned completion of this effort. Funding realigned to support the creation of Advanced PNT for Precise Complex Effects within this Project.</p>				
<p>Title: Quantum Effects for Assured PNT in Zero-GPS Environments</p> <p>Description: This effort will research SWAP-C quantum based timing sub-systems, incorporate advanced sensors, RF signals (beyond GPS), navigation databases, and advanced algorithms. This effort incorporates advanced quantum timing circuits, advanced IMU components, multi-sensor modalities, perception techniques, geolocation data, vision aided navigation sensors, and available RF signals in order to increase precise and assured PNT operations in a GPS denied environments for up to seven days.</p> <p>FY 2025 Plans: Will investigate optimized algorithms and architecture for modular positioning, navigation, and timing (PNT) sensor fusion state estimation; down-select self-stabilization circuitry architecture for frequency stabilization of micro-resonator optical frequency combs; assess integration techniques for micro-resonator optical frequency combs, injection-locked laser, and self-stabilization circuit that enable low-SWAP chip-scale optical clocks/oscillators; investigate performance of low SWAP-C optical transmit/receive unit for free-space optical positioning and time transfer.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects planned completion of this effort. Funding realigned to support the creation of Advanced PNT for Precise Complex Effects within this Project.</p>		5.695	5.598	-
<p>Title: Advanced PNT for Precise Complex Effects</p> <p>Description: This effort develops precision Positioning, Navigation, and Timing (PNT) capability to enable assured navigation without GPS for extended durations. This research will improve the accuracy of positioning and timing holdover sensors while also reducing the size, weight, and power. Research will also focus on the localized distribution and synchronization of time, position, and information. The benefits of this effort are a flexible, scalable PNT synchronization architecture and sensing capability for improved coordination of systems at the tactical edge.</p> <p>FY 2026 Plans:</p>		-	-	7.952

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602146A / Network C3I Technology	Project (Number/Name) AV9 / Advanced PNT for GPS Independent Environments Tech	
B. Accomplishments/Planned Programs (\$ in Millions)				
Will assess the performance of micro-electromechanical systems (MEMS) inertial sensors based on integrated advanced materials for precision PNT; will design and validate improved inertial sensors components and technologies for precision PNT; will develop techniques for distributed, collaborative radio frequency (RF) resiliency and threat detection, and navigation warfare (NAVWAR) technologies; will investigate and develop multi-modal sensor architectures and fusion algorithms for precision PNT; investigate synchronization and distribution architectures for resilient communications and precision PNT across payloads, platforms, and user equipment; will develop and assess optical technologies to improve precision timing and holdover; will assess epsilon near zero metamaterial resonators and retroreflectors for precision PNT.				
FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects planned creation of this effort. Funding realigned from Precision Measurement Technology for Contested Environments and Quantum Effects for Assured PNT in Zero-GPS Environments within this Project.				
Accomplishments/Planned Programs Subtotals		8.993	8.062	7.952
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602146A / Network C3I Technology				Project (Number/Name) AW1 / Autonomous Navigation Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
AW1: Autonomous Navigation Technology	-	-	1.002	-	-	-	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
<p>This Project investigates use of sensors on the platform and available navigation signals to the localization and decision making of Robotic/Autonomous Systems. Additionally, it examines the use of machine learning algorithms for cooperative navigation to aid in a Positioning, Navigation and Timing (PNT) solution. This will enable the user to achieve operational overmatch in a Global Positioning System (GPS) impeded environment as well as enhanced navigation (reducing dependence on GPS) through challenging terrains. This project investigates and develops techniques and algorithms to provide assured access to PNT in degraded electromagnetic (jamming), space, or cyber environments and notify Soldiers, Systems, and Platforms when PNT cannot be trusted for mission duration. This project seeks to study and develop an innovative, adaptive Navigation Warfare (NAVWAR) electronic attack (EA) capability, both jamming and spoofing, utilizing cooperative platforms to deny adversaries the ability to utilize GNSS receivers, reducing their overall mission effectiveness. The cooperative platforms can defeat advanced Global Navigation Satellite System (GNSS) capabilities, including controlled reception pattern antennas (CRPAs), by creating a diverse and adaptive jamming geometry. Cooperative platforms can leverage their distributed environmental situational awareness to establish and transmit spoofing solutions.</p> <p>Work in this Project complements Program Element (PE) 0603463A (Network C3I Advanced Technology) / Project AV8 (Navigation Warfare (NAVWAR) Advanced Technology).</p> <p>The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.</p> <p>Work in this Project is performed by the United States Army Space and Missile Defense Technical Center and Command, Control, Computer, Communications, Cyber, Intelligence, Surveillance, and Reconnaissance (C5ISR) Center.</p>												
B. Accomplishments/Planned Programs (\$ in Millions)												
Title: Positioning, Navigation and Timing (PNT) Defeat Techniques Description: This effort enables simultaneous execution of Electronic Warfare (EW) and PNT defeat missions with more efficient use of available EW/Cyber and Electromagnetic Activities/PNT (EW/CEMA/PNT) resources. It will provide a unique approach to defeat adversary systems utilizing NAVWAR Attack as an embedded mode in EW systems. FY 2025 Plans: Will investigate current-state and novel NAVWAR Attack techniques. Will determine the capabilities and limitations of utilizing existing EW systems for NAVWAR Attack. FY 2025 to FY 2026 Increase/Decrease Statement:									FY 2024	FY 2025	FY 2026	
									-	1.002	-	

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602146A / Network C3I Technology	Project (Number/Name) AW1 / Autonomous Navigation Technology		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Funding decrease reflects realignment to Program Element (PE) 0602275A (Electronic Warfare Applied Research) / Project A64 (Autonomous Navigation Technology) as a part of the Department of Defense Capability Based (Agile) Funding pilot, which provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology.				
Accomplishments/Planned Programs Subtotals		-	1.002	-
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602146A / Network C3I Technology				Project (Number/Name) AW5 / Modular GPS Independent Sensors Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
AW5: Modular GPS Independent Sensors Technology	-	-	4.546	-	-	-	-	-	-	-	-	-
Note In Fiscal Year (FY) 2025, funding was realigned from Project Element (PE) 0603463A (Network C3I Advanced Technology) / Project AW6 (Navigation Warfare (Modular GPS Independent Sensors Advanced Tech) and Project AV8 (Navigation Warfare (NAVWAR) Advanced Technology).												
A. Mission Description and Budget Item Justification This Project performs research and development of modular Global Positioning System (GPS)-independent sensors and an open architecture sensor fusion core enabling simple, plug-and-play sensor modules that can be tailored for any platform based on mission needs and requirements. This Project investigates the design of a single receiver that integrates multiple commercial and military signal sources to provide Position Navigation and Timing (PNT) solution effective in contested environments. Work in this Project complements Program Element (PE) 0603463A (Network C3I Advanced Technology) / Project AW6 (Modular GPS Independent Sensors Advanced Tech). The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy. Work in this Project is performed by the Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance, and Reconnaissance (C5ISR) Center.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Frequency Independent Localization and Time for Enhanced Resiliency (FILTER)									-	2.040	-	
Description: This effort increases the resilience of Position, Navigation and Timing (PNT) systems by enabling them to take advantage of additional, non-Global Navigation Satellite Systems (GNSS) Radio Frequency (RF) sources. This effort investigates the design of a single PNT receiver that integrates multiple commercial and military signal sources to provide a PNT solution that enables operation in contested environments.												
FY 2025 Plans: Will begin investigation of non-GNSS RF sources, such as signals of opportunity (SOOPS) and Low Earth Orbit (LEO) satellite system technologies developed by industry and academia, to determine feasibility for use as alternate PNT sources; evaluate												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602146A / <i>Network C3I Technology</i>	Project (Number/Name) AW5 / <i>Modular GPS Independent Sensors Technology</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
selected RF sources performance to determine their position and timing accuracies; conduct experiments with sensor fusion algorithms to incorporate selected RF sources into a single solution.			
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects realignment to Program Element (PE) 0602275A (Electronic Warfare Applied Research) / Project A65 (Modular GPS Independent Sensors Technology) as a part of the Department of Defense Capability Based (Agile) Funding pilot, which provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology.			
Title: Techniques and Algorithms for Cooperative Assured Position, Navigation and Timing (PNT) Description: This effort develops techniques for precision time transfer across Army platforms (Soldier, Ground Vehicles, Aviation) to ensure accurate timing down to the most disadvantaged user It will enable provision of cooperative PNT between Army platforms as a core enabler of many warfighter capabilities (Electronic Warfare (EW, Radar, etc.)). Effort increases resilience of PNT systems through usage of additional RF sources reducing the effectiveness of outside interference of congested and contested environments.		-	2.506
FY 2025 Plans: Will investigate novel time transfer techniques/concepts at nanosecond and picosecond precision levels to develop proof of concept; determine priority application areas for proof of concept cooperative PNT between Army platforms.			
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects realignment to Program Element (PE) 0602275A (Electronic Warfare Applied Research) / Project A65 (Modular GPS Independent Sensors Technology) as a part of the Department of Defense Capability Based (Agile) Funding pilot, which provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology.			
Accomplishments/Planned Programs Subtotals		-	4.546
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602146A / Network C3I Technology				Project (Number/Name) BP2 / Sensor and Electronic Network Initiatives (CA)			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
BP2: Sensor and Electronic Network Initiatives (CA)	-	62.000	33.000	-	-	-	-	-	-	-	-	-
Note Congressional Interest Item funding provided for Sensor and Electronic Network Initiatives.												
A. Mission Description and Budget Item Justification Congressional Interest Item funding provided for Sensor and Electronic Network Initiatives.												
The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2024	FY 2025			
Congressional Add: Advanced Packaging Technologies for Hardware Security								10.000	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for Advanced Packaging Technologies for Hardware Security												
Congressional Add: Distributed radio frequency sensor effector technology								10.000	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for Distributed radio frequency sensor effector technology												
Congressional Add: Integrated photonics for contested RF environments								10.000	5.000			
FY 2024 Accomplishments: Congressional Interest Item funding provided for Integrated photonics for contested RF environments												
FY 2025 Plans: Congressional Interest Item funding provided for Integrated photonics for contested RF environments												
Congressional Add: PNT for Inertial Systems								10.000	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for PNT for Inertial Systems												
Congressional Add: Urban subterranean mapping technology								2.000	-			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602146A / <i>Network C3I Technology</i>	Project (Number/Name) BP2 / <i>Sensor and Electronic Network Initiatives (CA)</i>
B. Accomplishments/Planned Programs (\$ in Millions)		
	FY 2024	FY 2025
FY 2024 Accomplishments: Congressional Interest Item funding provided for Urban subterranean mapping technology		
Congressional Add: Agile Sensing for Radio Frequency and Radar Capabilities	5.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Agile Sensing for Radio Frequency and Radar Capabilities		
Congressional Add: Collaborative for hierarchical and agile responsive materials	5.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Collaborative for hierarchical and agile responsive materials		
Congressional Add: Secure Microelectronic Interposer Technology for Hardware Assurance	5.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Secure Microelectronic Interposer Technology for Hardware Assurance		
Congressional Add: Social network analysis	5.000	3.000
FY 2024 Accomplishments: Congressional Interest Item funding provided for Social network analysis		
FY 2025 Plans: Congressional Interest Item funding provided for Social network analysis		
Congressional Add: Development of advanced radio frequency applications	-	3.000
FY 2025 Plans: Congressional Interest Item funding provided for Development of advanced radio frequency applications		
Congressional Add: Distributed 3D radar satellite technology	-	5.000
FY 2025 Plans: Congressional Interest Item funding provided for Distributed 3D radar satellite technology		
Congressional Add: Multi-static radar system	-	2.000
FY 2025 Plans: Congressional Interest Item funding provided for Multi-static radar system		
Congressional Add: Securing 3D packaging against adversaries	-	15.000
FY 2025 Plans: Congressional Interest Item funding provided for Securing 3D packaging against adversaries		
Congressional Adds Subtotals	62.000	33.000
C. Other Program Funding Summary (\$ in Millions)		
N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602146A / Network C3I Technology	Project (Number/Name) BP2 / Sensor and Electronic Network Initiatives (CA)
C. Other Program Funding Summary (\$ in Millions)		
Remarks		
D. Acquisition Strategy		
N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602146A / Network C3I Technology				Project (Number/Name) CG3 / Assured PNT Communications Applied Research			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CG3: Assured PNT Communications Applied Research	-	5.494	4.158	1.767	-	1.767	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project designs and develops technologies for Space-enabled, High Altitude (HA) and Counter-Surveillance and Reconnaissance (C-SR) applications to support Army tactical ground forces. The Project focuses on advancing technology discovery and development in key research areas that support Army's access to space-based capabilities, C-SR, quantum science communications and sensing, multi-function and multi-mission applications. This Project supports Tactical Land Component Forces access to Space-enabled and C-SR capabilities for force projection and maneuver through persistent and deep sensing.												
Work in this Project complements Program Element (PE) 0603463A (Network C3I Advanced Technology) / Project CJ8 (Assured PNT Communications Advanced Tech).												
The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.												
Work in this Project is performed by the United States Army Space and Missile Defense Technical Center.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Assured PNT Communications Applied Research									5.494	-	-	
Description: This effort will design, develop, and validate Space and High Altitude technologies, components, and tools that lead to smaller, lighter, more responsive payloads and applications. These technologies will allow for the rapid integration and development of tactical payloads in support of responsive Space or High Altitude environments. Will develop High Altitude (HA) testbed environment. Will continue classified capability development. Will validate Quantum Entanglement (QE) in the lab.												
Title: HAYFINS									-	1.838	-	
Description: This effort researches and develops a ground-based system supporting Space and Autonomy Modernization priorities by fusing protection technologies with legacy systems that provide multi-modal capabilities to the Army to enhance freedom of maneuver supporting Multi-Domain Operations (MDO). This provides a tailored selection and application of multi-layered active and passive measures.												
FY 2025 Plans:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602146A / Network C3I Technology	Project (Number/Name) CG3 / Assured PNT Communications Applied Research		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Will validate component levels in the lab through integration and simulated testing of components. Investigate concept of component analysis.				
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects planned conclusion of this effort and transition to Program Element 0603275A (Electronic Warfare Advanced Technology) / Project A77."				
Title: Quantum Sensing Description: This effort investigates quantum sensing technologies for application to Army missions and matures capabilities to experimentally validate applications to the Army sensing missions. This effort will validate Quantum based Radio Frequency (RF) and Electro Optical (EO) architectures for enhancing Army sensor performance standards with particular interests in radar, deep sensing missions, Low Probability of Intercept/Low probability of Detection (LPI/LPD) signals acquisition and transmission, environmental characterizations, and traditional sensor sensitivity enhancements.		-	0.600	0.396
FY 2025 Plans: Will design and develop a quantum sensing technology applicable to Army sensing missions. Will mature sensing components to enhance traditional sensing capabilities.				
FY 2026 Plans: Will mature the hardware components developed for quantum-based RF components. The team will conduct experiments of the hardware to validate performance metrics.				
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects adjustment in support of Army S&T priorities and missions.				
Title: Multi-Function RF Applications Research Description: This effort investigates multi-function Radio Frequency (RF) systems for Army missions. Design and develop a flexible configuration enabling multi-mission applications utilizing single or multi-antenna configurations. This effort will validate the complex combinations of multi-antenna configurations, and multi-mission waveforms for enhancements to traditional sensor modalities such as radar, communications and other missions. Components will be matured enabling optimal combinations of RF architectures to enhance traditional sensor and RF system performances (e.g., enhanced receiver sensitivities, enhanced sensing distances, enhanced simultaneous multi-mission performance metrics, and more).		-	1.720	1.371
FY 2025 Plans:				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602146A / <i>Network C3I Technology</i>	Project (Number/Name) CG3 / <i>Assured PNT Communications Applied Research</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p>Will design and develop an architecture capable of supporting multiple Army missions, investigate waveforms and system configurations to optimize the independent missions from the multi-function system.</p> <p><i>FY 2026 Plans:</i> Will leverage previously developed modeling and simulations to support hardware maturation. Early experimentation will take place to validate performance metrics of multiple missions from single RF architectures.</p> <p><i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> Funding decrease reflects adjustment in support of Army S&T priorities and missions.</p>			
Accomplishments/Planned Programs Subtotals		5.494	4.158
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602146A / Network C3I Technology				Project (Number/Name) CI3 / Mobile and Survivable Command Post (MASCP) Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CI3: Mobile and Survivable Command Post (MASCP) Tech	-	3.170	2.375	-	-	-	-	-	-	-	-	-
Note In FY 2026, Project CI3 / Mobile and Survivable Command Post (MASCP) Tech has no additional RDTE efforts and will be transitioning.												
A. Mission Description and Budget Item Justification This Project develops and investigates emerging communications, tactical cloud, distributed computing, power management and storage, and shielding materials necessary to improve Command Post (CP) survivability and effectiveness for near-peer Multi-Domain Operations (MDO) engagements. Work in this Project complements Program Element (PE) 0603463A (Network C3I Advanced Technology) / Project CI7 (Mobile and Survivable Command Post (MASCP) Adv Tech). The cited work is consistent with the Under Secretary of Defense for Research and Engineering Science and Technology focus areas and the Army Modernization Strategy. Work in this Project is performed by the Command, Control, Communication, Computers, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center and Soldier Center (SC).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: CP Modularity and Dispersion Technology									2.577	-	-	
Description: Funds research to enable CP's to reconfigure and reconstitute at speeds consistent with a near-peer MDO engagement. Investigates emerging low probability of interception (LPI)/low probability of detection (LPD) radio technologies, distributed computing, tactical data and security architectures, and distributed collaboration methods. Develops mobile, and integrated power systems that enable CP's to disperse geographically and create extended at-the-halt and on-the-move command and control.												
Title: Technology Supporting Camouflage, Concealment, and Deception									0.593	2.375	-	
Description: This effort matures innovative camouflage, concealment and deception technologies for expeditionary high-value assets to defeat advanced current and emerging adversary Intelligence, Surveillance and Reconnaissance (ISR) threats, and to reduce the probability of detection in multi-domain operations. Matures physics-based models for material and system performance that support probability of detection metrics in the multi-domain operational environment, assisting in closing the												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602146A / Network C3I Technology		Project (Number/Name) CI3 / Mobile and Survivable Command Post (MASCP) Tech
B. Accomplishments/Planned Programs (\$ in Millions)				
capability gap between current camouflage, concealment and deception technologies and defeating enemy sensorial capabilities in future operating environments.		FY 2024	FY 2025	FY 2026
FY 2025 Plans: Will investigate and develop novel solutions to improve the electromagnetic signatures of Mobile Command Posts to avoid detection and improve Command Post survivability.				
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects completion of this effort. Funding realigned to Program Element (PE) 0603463A (Network C3I Advanced Technology) / Project CI7 (Mobile & Survivable Command Post (MASCP) Adv Tech) to fund work in Technical Effects/ Deception as well as to integrate work in novel camouflage coatings/ natural camouflage coatings work.				
Accomplishments/Planned Programs Subtotals		3.170	2.375	-
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602146A / <i>Network C3I Technology</i>	Project (Number/Name) CU6 / <i>Adaptive Information Mediation and Analytics</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
Soldiers equipped with XR devices to execute command and control of robotic autonomous systems and other intelligent sensors to improve battlefield awareness and enhance lethality across multiple domains.			
FY 2026 Plans: Will investigate how a cross-reality (XR) common operating picture (COP) can interoperate across Augmented/Virtual/Mixed Reality (AR/VR/MR) and traditional 2-dimensional (2D) devices; investigate seamless and user-intuitive adaptive visualization technique in multi-user environment; investigate methods for controlling the level of detail and amount of information flow by adapting to user needs and mission context; investigate techniques for AR-enabled human machine teaming; investigate robot and autonomous command control (RAC2) to enhance human machine interface (HMI), improve battlefield awareness, and enhance lethality across multiple domains.			
FY 2025 to FY 2026 Increase/Decrease Statement: FY 2026 funding increase due to revised economic assumptions.			
Title: Multi-Domain Information Analytics (MDIA) Description: This effort develops Artificial Intelligence/Machine Learning (AI/ML) approaches for providing Situational Awareness (SA) across echelons that are robust to compromised, corrupted, or limited data and networks in contested and unpredictable battlespace environments. These approaches will provide increased probability of discernment of true vs. false targets, and incorporate uncertainty-aware neuro-symbolic AI/ML to calibrate confidence in algorithm predictions. Research will incorporate multimodal analysis with multi-view scene understanding from heterogeneous sensor systems for context-aware inference, utilize transfer learning techniques to bridge domain gap between real and synthetic data for improved machine learning, and employ Size, Weight and Power-Time (SWaP-T) constrained processing at the edge on emerging low power secure compute architectures through neural network pruning and compression. Simulations of Command and Control (C2) strategies will incorporate the MDIA approaches.		4.894	3.797
FY 2025 Plans: Will develop an NTC data pipeline that includes dataset preparation and data extraction software encoding; use Geospatial Data Integration Server (GDIS) to store geographically-synchronized data for planning and visualization tools; investigate optimization techniques, such as hyperparameter and neural-architecture search to determine uncertainty- aware evidential reasoning configuration to obtain optimal tradeoff across accuracy, uncertainty calibration, robustness to adversarial manipulation, and computational efficiency in light weight SWaP compute devices; investigate multiple user feedback approaches; develop approaches to fuse Aided Target Recognition (AiTR) and synthetically trained models with mission data.			1.916
FY 2026 Plans: Will research repeatable collection and curation of operationally relevant C2 data from the Combat Training Centers (CTCs); explore approaches based on foundation models, reinforcement learning, graph and game theory for course of action (COA)			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602146A / Network C3I Technology	Project (Number/Name) CU6 / Adaptive Information Mediation and Analytics		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
generation, and mission analysis; develop AI decision aids for threat-aware path planning and autonomous navigation using Gaussian splatting and graph neural networks, and integrate into the Geospatial Data Integration Server (GDIS); explore multi-modal neuro-symbolic architectures for activity recognition. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects realignment to Tactical Information Synthesis and Distribution for Scalable, Cross-Echelon C2 within this Project.				
Title: Foundation Models of Multimodal Battlefield Phenomena Description: This effort develops foundation models to enhance battlefield situational awareness, human-Artificial Intelligence (AI) interaction and speed of decision making for mission planning and mission execution. These approaches enable robust and generalizable perception of the battlefield, provide military doctrine summarization, and natural language interaction for human-machine integration. Research incorporates multimodal heterogeneous data, including visual, language, audio, and haptic, and seek to establish a unified latent space representation to enable robust reasoning and querying of battlespace information. FY 2026 Plans: Will develop methods to fuse latent spaces from foundation models corresponding to different modalities (visual-language, audio, and haptic), generate unified multimodal latent space for reasoning about the battlefield; investigate solutions to train and fine-tune foundation models to store knowledge and support advanced reasoning; develop methods for holistic validation of foundation models on key metrics (e.g., accuracy, bias, privacy) and research solutions to mitigate those risks in both short- and long-term interactions. FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects initiation of Foundation Models of Multimodal Battlefield Phenomena. Funding realigned from Program Element (PE) 0602181A (All Domain Convergence Applied Research) / Project CM7 (Collaborative Convergence Applied Research).		-	-	3.251
Title: Predictive Analytics and Information Saliency for Tactical Decision Making Description: This effort investigates methods that can detect and predict events occurring in highly dynamic, complex, and uncertain environments. These methods will provide situational awareness by echelon through an understanding of complex events occurring in the local environment. This effort investigates distributed algorithms when single-echelon information is not sufficient to detect and identify events. Research supports saliency and decision making by developing multi-modal fusion techniques that prioritize information by echelon. Research also investigates methods for situational awareness that run at individual echelons, are efficient at-the-edge, account for uncertainty, and handle limited information from multi-modal sources. FY 2026 Plans:		-	-	2.478

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602146A / <i>Network C3I Technology</i>	Project (Number/Name) CU6 / <i>Adaptive Information Mediation and Analytics</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p>Will investigate the use of Quickest Change Detection (QCD) algorithms with uncertain models to detect events via changes in multi-modal information; study and develop information fusion algorithms for QCD with uncertain models over a network of distributed agents across echelons; investigate multi-sensor QCD for detecting complex events and Value of Information (Vol) to extract the most salient information leading to recommendations for courses of action.</p> <p><i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> Funding increase reflects initiation of Predictive Analytics and Information Saliency for Tactical Decision Making. Funding realigned from Program Element (PE) 0602181A (All Domain Convergence Applied Research) / Project CM7 (Collaborative Convergence Applied Research).</p>			
<p><i>Title:</i> Tactical Information Synthesis and Distribution for Scalable, Cross-Echelon C2</p> <p><i>Description:</i> This effort investigates approaches capable of exploiting multimodal data from the battlespace for cross-echelon command and control in a highly distributed manner. Approaches, such as reinforcement learning, multi-agent learning, foundation models, graph and game theoretic formulations, will be investigated to exploit battlespace data and incorporate military doctrine to generate and synthesize tactical information in the form courses of action (COAs) disseminated across the echelons to exploit windows of superiority.</p> <p><i>FY 2026 Plans:</i> Will develop secure reinforcement learning agents for Command and Control (C2) resilient to adversarial attacks; investigate multi-agent reinforcement learning, graph and game theoretic approaches using a network of distributed agents to perform C2 operations across echelons; research methods to characterize and leverage the scientific reasoning capability of foundation models in exploiting multimodal tactical information; utilize reasoning capability in foundation models for courses of action (COA) generation across echelons for mission planning and for rapid replanning during mission execution.</p> <p><i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> Funding increase reflects initiation of Tactical Information Synthesis and Distribution for Scalable, Cross-Echelon C2. Funding realigned from Multi-Domain Information Analytics (MDIA) within this Project and Program Element (PE) 0602181A (All Domain Convergence Applied Research) / Project CM7 (Collaborative Convergence Applied Research).</p>		-	2.108
Accomplishments/Planned Programs Subtotals		6.962	11.884
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602146A / Network C3I Technology	Project (Number/Name) CU6 / Adaptive Information Mediation and Analytics
D. Acquisition Strategy N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602146A / Network C3I Technology				Project (Number/Name) CV4 / Pathfinder 3D Applied Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CV4: Pathfinder 3D Applied Technology	-	2.014	1.257	1.031	-	1.031	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project investigates and develops a geospatial rapid position and navigation solution in Global Positioning System (GPS) degraded and denied environments. Research focuses on using onboard sensors and high-resolution digital terrain geospatial alternative solution based upon Visual Three-Dimensional (3-D) Terrain Referencing and Navigation (VTRAN). This Project will result in the linkage of air and ground assets integrating sensory and (One World Terrain and Reference) geospatial data within the modular GPS Independent Sensors architecture. This Project provides critical alternatives to maneuver forces for position and navigation in a multi-domain operational environment.												
Work in this Project complements Program Element (PE) 0603463A (Network C3I Advanced Technology) / Project DB6 (Pathfinder 3D Adv Technology).												
The work cited is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.												
Work in this Project is performed by the United States Army Engineer Research and Development Center Geospatial Research Laboratory.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: PATHFINDER 3-D Navigation Technology									2.014	1.257	1.031	
Description: This effort will design and develop enhanced feature classification for improved position navigation performance and will improve 3-D data extraction techniques to reduce computation.												
FY 2025 Plans: Will expand visual terrain referencing solutions to include inputs from thermal IR, intensified EO, and incorporate metrics for ancillary passive sensor devices to generate a two-dimensional feature set matched to a three-dimensional foundation terrain data set.												
FY 2026 Plans: Will improve visual terrain referencing solutions and establish preliminary metrics for precision and tolerance thresholds. Will exploit organic sensor devices to generate a two-dimensional feature set matched to a three-dimensional foundation terrain data set.												
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects adjustments to planned milestones and Army reduction.												
Accomplishments/Planned Programs Subtotals									2.014	1.257	1.031	

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602146A / Network C3I Technology	Project (Number/Name) CV4 / Pathfinder 3D Applied Technology
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
D. Acquisition Strategy N/A		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army	Date: June 2025
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Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 2: Applied Research</i>					R-1 Program Element (Number/Name) PE 0602147A / <i>Long Range Precision Fires Technology</i>							
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
Total Program Element	-	96.154	67.589	25.744	-	25.744	-	-	-	-	-	-
AF3: <i>Extended Range Propulsion Technology</i>	-	10.956	-	2.797	-	2.797	-	-	-	-	-	-
AF8: <i>Affordable Extended Range Precision Technology</i>	-	9.692	9.151	8.878	-	8.878	-	-	-	-	-	-
AG4: <i>Extended Range Artillery Munition Suite Technology</i>	-	1.310	10.161	9.865	-	9.865	-	-	-	-	-	-
AH4: <i>Precision and Coop Weapons in a Denied Env Tech</i>	-	8.903	9.260	-	-	-	-	-	-	-	-	-
BN5: <i>Fuze and Power for Munitions</i>	-	3.293	3.517	2.731	-	2.731	-	-	-	-	-	-
BO9: <i>WEAPONS & MUNITIONS TECH PROGRAM INITIATIVE (CA)</i>	-	62.000	35.500	-	-	-	-	-	-	-	-	-
DM6: <i>Cannon Fires Automation Research</i>	-	-	-	1.473	-	1.473	-	-	-	-	-	-

Note

Cannon Fires Automation Research is a new start within the Long Range Precision Fires Technology program in FY 2026.

A. Mission Description and Budget Item Justification

This Program Element (PE) is directly aligned to the Army Long Range Precision Fires (LRPF) Modernization Priority. Work in this PE investigates and develops LRPF technologies to destroy, neutralize, or suppress the enemy by cannon artillery and missile fire and enable integration of fire support assets into combined arms operations. Major Focus Areas for LRPF Science and Technology include: Missiles, Cannon Artillery, and Supporting LRPF Technologies covering Strategic, Operational and Tactical Fires Lines of Effort. LRPF Missiles Applied Research investigates and develops a broad range of Missile technologies to enhance Army integrated LRPF capabilities at extended range. Cannon Artillery Applied Research investigates and develops critical technologies to increase range, precision, and both point and area effects for cannon artillery. Supporting LRPF Technologies Applied Research investigates and develops a broad range of component technologies to address weapon cost drivers and enhance performance of future LRPF munitions and systems.

Research in this PE complements PE 0603464A (Long Range Precision Fires Advanced Technology).

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army			Date: June 2025			
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army I BA 2: Applied Research		R-1 Program Element (Number/Name) PE 0602147A I Long Range Precision Fires Technology				
The cited research is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.						
The FY 2026 request was reduced by \$1.1 million for Advisory and Assistance Services to promote efficiencies and advance the policies of the Administration in alignment with Executive Order 14222, "Implementing the President's Department of Government Efficiency Cost Efficiency Initiative."						
The FY 2026 request was reduced by \$0.177 million for civilian personnel to optimize the workforce in compliance with Executive Order 14210, "Implementing the President's Department of Government Efficiency Workforce Optimization Initiative."						
B. Program Change Summary (\$ in Millions)		FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Previous President's Budget		34.683	32.089	37.664	-	37.664
Current President's Budget		96.154	67.589	25.744	-	25.744
Total Adjustments		61.471	35.500	-11.920	-	-11.920
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		48.500	35.500			
• Congressional Directed Transfers		-	-			
• Reprogrammings		13.501	-			
• SBIR/STTR Transfer		-0.530	-			
• Adjustments to Budget Years		-	-	-11.920	-	-11.920
Congressional Add Details (\$ in Millions, and Includes General Reductions)					FY 2024	FY 2025
Project: BO9: WEAPONS & MUNITIONS TECH PROGRAM INITIATIVE (CA)						
Congressional Add: Advanced manufacturing for refractory alloys					5.000	-
Congressional Add: design for additive manufacturing for missile applications					5.000	-
Congressional Add: extended range projectiles					5.000	-
Congressional Add: High Speed Missile Materials					18.000	-
Congressional Add: Hypersonic wind tunnel development					5.000	-
Congressional Add: reactive alloy munition with enhanced blast for force modernization					10.500	-
Congressional Add: Advanced Manufacturing of Energetic Materials					8.500	8.500
Congressional Add: Advanced Manufacturing of Energetics					5.000	-
Congressional Add: Hypersonic additive-manufacturing					-	20.000
Congressional Add: Reactive materials					-	7.000

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 2: Applied Research		R-1 Program Element (Number/Name) PE 0602147A / Long Range Precision Fires Technology	
<u>Congressional Add Details (\$ in Millions, and Includes General Reductions)</u>			
Congressional Add Subtotals for Project: BO9		FY 2024	FY 2025
		62.000	35.500
Congressional Add Totals for all Projects		62.000	35.500
<u>Change Summary Explanation</u> Funding decrease in Fiscal Year (FY) 2026 from the previous PB to the current PB reflects the net effect of realignment to Program Element (PE) 0602141A (Lethality Technology)			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602147A / Long Range Precision Fires Technology				Project (Number/Name) AF3 / Extended Range Propulsion Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
AF3: Extended Range Propulsion Technology	-	10.956	-	2.797	-	2.797	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project directly supports Long Range Precision Fires Modernization Priority capabilities by designing, fabricating, and investigating missile enabling propulsion technologies to enable range extension and/or block speed improvement for long range applications; and enables improvement in High Performance Propellants (HPP) via gains in energy density and burn rate control.												
Work in this Project complements Program Element (PE) 0602147A (Long Range Precision Fires Technology) / Project AF8 (Affordable Extended Range Precision Tech) and Program Element (PE) 0603464A (Long Range Precision Fires Advanced Technology) / Project AF2 (Long Range Maneuverable Fires (LRMF) Advanced Tech).												
The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.												
Work in this Project is performed by the Aviation & Missile Center (AvMC).												
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2024	FY 2025	FY 2026
Title: Extended Range Propulsion Technology										10.956	-	-
Description: Designs, fabricates, and investigates missile enabling propulsion technologies to enable significant range extension and/or block speed improvement for long range applications and enables improvement in HPP via gains in energy density and burn rate control.												
Title: Emerging Missile Propulsion Tech										-	-	2.797
Description: This effort investigates emerging propulsion technologies that can significantly extend missile range within existing launcher constraints; matures higher energy propellants and signature suppression methods to defeat adversary launch detection and increase survivability; and evaluates mitigation techniques and technologies for thermal environments associated with extended flights.												
FY 2026 Plans: Will identify and investigate emerging propulsion technologies driven by the future operating environment for Long Range Precision Fires design concepts and missile propulsion and sub-component performance requirements. Perform trade studies and												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602147A / <i>Long Range Precision Fires Technology</i>	Project (Number/Name) AF3 / <i>Extended Range Propulsion Technology</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
initial modeling and simulation performance evaluations including non-traditional propulsion technologies for extended ranges, and hypersonic applications.				
<i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> Funding increased to continue the Emerging Missile Propulsion Tech effort.				
Accomplishments/Planned Programs Subtotals		10.956	-	2.797
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602147A / Long Range Precision Fires Technology				Project (Number/Name) AF8 / Affordable Extended Range Precision Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
AF8: Affordable Extended Range Precision Technology	-	9.692	9.151	8.878	-	8.878	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project directly supports Long Range Precision Fires (LRPF) Modernization Priority capabilities by investigating the design and fabrication of components and subsystems critical to produce affordable extended range precision missiles as well as critical component technologies including advanced propulsion, seekers/sensors, fire control, datalink, guidance, navigation and controls, airframes, survivability techniques and technologies, and additional high payoff areas.												
Work in this Project complements Program Element (PE) 0602147A (Long Range Precision Fires Technology) / AF1 (Long Range Maneuverable Fires (LRMF) Technology) / AF3 (Extended Range Propulsion Tech) and PE 0603464A (Long Range Precision Fires Advanced Technology) / AF2 (Long Range Maneuverable Fires (LRMF) Advanced Tech); and PE 0603464A (Long Range Precision Fires Advanced Technology) / BY2 (Advanced Hypersonic Technology)												
The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.												
Research in this Project is performed by the Aviation & Missile Center (AvMC).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: LRPF High Payoff Missile Technology									9.692	9.151	8.388	
Description: Identify and explore potential breakthrough technologies to mitigate or eliminate warfighter gaps in Long Range Precision Fires to gain overmatch against potential peer and near-peer adversaries.												
FY 2025 Plans: Will continue to research missile battery size, weight, power, and cost upgrades over existing off the shelf components; conduct experiment of a fully integrated software defined receiver for alternative navigation to allow operation in GPS degraded and denied environments; conduct experiments to mature and validate solid thermodynamic latent propulsion technology for potential to enable throttling of solid rocket propellants, enhancing system capabilities and survivability; continue investigations into high energy propellants utilizing novel ingredients and formulations; conduct proof of principle experiment for a reachback datalink to support employment of on-board missile sensors for deep fires targeting; continue investigating survivability and effector technologies for long range fires.												
FY 2026 Plans: Will conduct experiments to validate the use of advanced materials to increase the energy density of batteries; develop technologies to maintain munition accuracy in GPS denied environments; continue experiment to mature and validate advanced												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602147A / Long Range Precision Fires Technology	Project (Number/Name) AF8 / Affordable Extended Range Precision Technology	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
component propulsion technologies to extend range, improve survivability, and maintain form factor; mature component datalink technology for deep targeting in Anti-Access / Area Denial (A2/AD) environments; investigate advanced, reduced space and weight, seeker and warhead technologies to defeat future threats. FY 2025 to FY 2026 Increase/Decrease Statement: FY 2026 funding decrease due to revised economic assumptions.			
Title: Advanced Fires Concepts Tech Description: Investigate, develop, integrate, and conduct experiments for leveraging advanced missile survivability methods and technologies in existing and future Army missiles systems to maintain technological and operational superiority for penetrating increasingly sophisticated threat A2/AD environments. FY 2026 Plans: Will conduct feasibility studies of integrating advanced survivability concepts within Army missile architecture; investigate advanced technologies, and techniques for technology insertion in existing and future Army missile systems to include advanced materials, algorithms, and sensors to maximize survivability on the future battlefield; and perform survivability studies to quantify the improvements of each advanced concept to identify leading methods and technology for future implementation. FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase in Fiscal Year (FY) 2026 supports the development of technologies to increase missile survivability against adversaries. Funding realignment from Program Element (PE) 0602147A (Long Range Precision Fires Technology) / Project AF3 (Extended Range Propulsion Technology). Realigned \$273K within the project from LRPF High Payoff Missile Technology, as this effort is moving to completion and the planned funding requirement is reduced.		-	-
			0.490
Accomplishments/Planned Programs Subtotals		9.692	9.151
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602147A / Long Range Precision Fires Technology				Project (Number/Name) AG4 / Extended Range Artillery Munition Suite Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
AG4: Extended Range Artillery Munition Suite Technology	-	1.310	10.161	9.865	-	9.865	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project directly supports Long Range Precision Fires Modernization Priority capabilities by investigating critical enabling component technologies and designing high precision terminal guidance in denied environments, capable of surviving high gun shock loads, at extended ranges, and automated cannon artillery technologies to increase operational tempo and unburden the soldier.												
The cited research is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.												
Work in this Project is performed by the Armaments Center.												
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2024	FY 2025	FY 2026
Title: Large Caliber Cannon Technologies										-	3.258	3.248
Description: This effort will advance the current state of the art in cannon and barrel technology for compatibility with higher velocity and precision munitions, harder rotating bands, high temperature operation, robustness against non-firing loads, and minimized weight and imbalance. This effort will investigate cannon concepts focused on residual stress & dynamic strain reduction, coating metallurgy, and barrel cooling to increase tube life and performance in high demand environments.												
FY 2025 Plans:												
Will assess novel materials to improve the expected life and performance of large caliber cannons to include: cannon cooling methods, high temperature composites, refractory coatings, and advanced methods of heat rejections/ transmission for new cannon designs.												
FY 2026 Plans:												
Will design and develop novel materials to improve the expected life and performance of large caliber cannons to include: cannon cooling methods, high temperature composites, and advanced high-strength materials, processing techniques, bore coatings and methods of heat rejections/ transmission for new cannon designs; validate advanced modeling methods for complex cannon structures and performance.												
FY 2025 to FY 2026 Increase/Decrease Statement:												
Funding decrease is a realignment within this project.												
Title: Precision Munitions Technology										1.310	3.056	2.401

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602147A / <i>Long Range Precision Fires Technology</i>	Project (Number/Name) AG4 / <i>Extended Range Artillery Munition Suite Technology</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p>Description: This effort develops technology enablers which are critical to increasing precision and effectiveness for large caliber armaments at extended ranges in extreme launch and flight environments. These technology enhancements are required for sustaining and increasing mission capabilities in degraded and contested environments.</p> <p>FY 2025 Plans: Will mature munition components to include: radio frequency convergence and multimodal seeker technologies, gun-hardened inertial navigation systems, on-board targeting algorithms, and munition self-protection capabilities to increase precision and effectiveness for large caliber armaments at extended ranges; investigate small form factor gun hardened components against aerial and ground targets; design and develop hardware and software in the loop for a full array of precision subsystems.</p> <p>FY 2026 Plans: Will design and develop munitions enabling technologies including targeting algorithms that focus on Synthetic Aperture Radar data; determine collaborative engagement algorithms into hardware in the loop modeling and simulation architecture; continue maturation of gun hardening technologies to include inertial measurement units and seeker processor hardware; investigate technologies to reduce munition radar cross section</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease due to realignment to Program Element (PE) 0603116A (Lethality Advanced Technology) / Project DB2 (Future Armaments Scalable Technologies).</p>			
<p>Title: Multidomain Artillery Munition</p> <p>Description: Multi-Domain Artillery Munition will develop components required to integrate novel payload components within conventional and developmental airframe carriers. Develops precision capabilities, collaborative engagement, automated on-board trajectory/engagement processing, and counter-counter measures for current and future munition platforms.</p> <p>FY 2025 Plans: Will investigate the operational effectiveness of component payloads at current and extended ranges; investigate data requirements across the setter, projectile, and payload subsystems for operation at extended ranges in austere environments; design and develop key interfacing munition component features to enable integration within munition airframe volume constraints; mature munition and sub-munition payload component designs for gun-launch survivability.</p> <p>FY 2026 Plans: Will design and develop lethal and non-lethal sub-munition component technologies and designs to ensure survivability within cannon artillery gun launch environments; conduct experiments to determine robustness of baseline designs; mature key</p>		-	3.847
			4.216

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602147A / Long Range Precision Fires Technology	Project (Number/Name) AG4 / Extended Range Artillery Munition Suite Technology		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
interfacing munition component features to enable integration within munition airframe volume constraints; determine the overall operational effectiveness of component payloads at extended ranges.				
FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects realignment from Program Element (PE) 0603464A (Long Range Precision Fires Advanced Technology) / Project AG5 (Extended Range Artillery Munition Suite Adv Tech) to Multidomain Artillery Munition Adv Tech effort.				
Accomplishments/Planned Programs Subtotals		1.310	10.161	9.865
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602147A / Long Range Precision Fires Technology				Project (Number/Name) AH4 / Precision and Coop Weapons in a Denied Env Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
AH4: Precision and Coop Weapons in a Denied Env Tech	-	8.903	9.260	-	-	-	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project investigates technologies to deliver accurate fires from extended ranges in denied environments and informs future close- and deep-range Long Range Precision Fires (LRPF) capabilities (e.g., Extended Range Cannon Artillery, Precision Strike Missile).												
Work in this Project research technologies for navigation of munitions without Global Positioning System (GPS) and flying munitions to much greater distances against advanced threat Area Denial Assets by delivering navigation technology for multiple munitions with complementary sensors and maneuverability technology for munitions with enhanced lift and control characteristics.												
Work in this Project complements PE 0602141A (Lethality Technology) / Project AH6 (Disruptive Energetics and Propulsion Technologies), Project AH7 (Lethal and Scalable Effects Technologies), and Project AH8 (Lethality Materials and Processes Technology).												
The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.												
Work in this Project is performed by the Army Research Laboratory (ARL).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Foundational Weapons Flight and Guidance Technology in Extreme Environments									8.903	9.260	-	
Description: This effort investigates, designs, and develops technologies to improve guidance (e.g., better accuracy, more information/aim-point refinement, reduce GPS dependency) and flight (extended range glide, intercept moving target, course correct to imperfectly located target, perform evasive terminal maneuver to increase survivability) of munitions subject to extreme environments (e.g., set-back, set-forward and balloting load, electro-magnetic spectrum contested, counter-measures). Key navigation technologies include algorithms for image processing, state estimation, communications, embedded processing and electronics, and sensors (e.g., inertial, imagers with optics, software-defined radios and antennae). Key maneuvering technologies include the airframe, control actuation, and flight control algorithms.												
FY 2025 Plans:												
Will explore high-level control algorithms for high-speed weapons that employ data-driven or model-based approaches to include formation flight, trajectory shaping, and optimal real-time information gathering and evasion; improve aerodynamic modeling and understanding of complex, high-speed maneuvering weapon vehicle dynamics via free-flight experimentation (spark range, onboard sensor) and computational studies; formulate parameter estimation algorithms and use for onboard sensor gun firing data												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602147A / Long Range Precision Fires Technology		Project (Number/Name) AH4 / Precision and Coop Weapons in a Denied Env Tech
B. Accomplishments/Planned Programs (\$ in Millions) analysis to confirm aerodynamic performance of high-speed weapon; incorporate onboard electronics, sensors, and actuators into lab-scale experimental platform for research range gun firings; conduct all-digital and hardware-in-the-loop simulation to assess full spectrum and edge case delivery accuracy performance; perform assessments focused on confirming technology readiness level of maneuvering flight and mid-course navigation technologies; complete analysis of artificial intelligence and image-based geo-registration algorithms for Army indirect fires applications; formulate algorithms and conduct studies for accurately delivering multiple payloads to targets when subject to threat detection, engagement, and contested electromagnetic spectrum. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects planned completion of this effort. Funding realigned to support the creation of Distributed, Dense, Multifunctional Architectures for Munitions and Threat-Responsive Dynamic Munition Sciences for Survivability and Delivered Effects in PE 0602141A (Lethality Technology) / Project DN6 (Science of Massed Responsive Fires).		FY 2024	FY 2025	FY 2026
Accomplishments/Planned Programs Subtotals		8.903	9.260	-
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602147A / Long Range Precision Fires Technology				Project (Number/Name) BN5 / Fuze and Power for Munitions			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
BN5: Fuze and Power for Munitions	-	3.293	3.517	2.731	-	2.731	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project directly supports Long Range Precision Fires Modernization Priority capabilities by investigating critical component technologies and designs capable to enable advanced lethality and scalable warheads for future munitions as well as exploring new power technologies for extended run time and extended range munitions.												
The cited research is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.												
Research in this Project is performed by the Armaments Center.												
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2024	FY 2025	FY 2026
Title: Advanced Energetics										3.293	-	-
Description: This effort develops advanced fuze and power technologies for future munition applications that enable an increase in range and lethality, of ammunitions.												
Title: Fuze and Power Technologies for Munitions										-	3.517	2.731
Description: This effort develops advanced fuze and power technologies for future munition applications that enable an increase in range and lethality, of ammunitions.												
FY 2025 Plans: Will investigate novel fuze and power technologies including tracking proximity sensor single chip technology, aimpoint refinement sensing, energy transfer mechanisms for advanced initiation schemes and high-power density technology for munitions and extreme environments; validate wireless fuze setting for increased fuze setting speed and future automation; develop algorithms and architectures for dynamic triggering.												
FY 2026 Plans: Will investigate novel fuze and power technologies to advance capabilities within electronic safe and arm devices, fuze setting, highly configurable fuzing, and optimal height of burst; mature single chip component proximity sensors for reduced size, weight, and power; design and develop munition power sources and common interfaces to meet emerging energy and power requirements.												
FY 2025 to FY 2026 Increase/Decrease Statement:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602147A / Long Range Precision Fires Technology	Project (Number/Name) BN5 / Fuze and Power for Munitions		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Funding decrease reflects the planned completion of the wireless fuze setting speed validation for increased fuze setting speed and future automation efforts along with the planned completion of the algorithm and architecture development for dynamic triggering.				
Accomplishments/Planned Programs Subtotals		3.293	3.517	2.731
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602147A / Long Range Precision Fires Technology				Project (Number/Name) BO9 / WEAPONS & MUNITIONS TECH PROGRAM INITIATIVE (CA)			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
BO9: WEAPONS & MUNITIONS TECH PROGRAM INITIATIVE (CA)	-	62.000	35.500	-	-	-	-	-	-	-	-	-
Note Congressional Interest Item funding provided for Weapons and Munitions Tech Program Initiative.												
A. Mission Description and Budget Item Justification Congressional Interest Item funding provided for Weapons and Munitions Tech Program Initiative. The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2024	FY 2025			
Congressional Add: Advanced manufacturing for refractory alloys								5.000	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for Advanced manufacturing for refractory alloys.												
Congressional Add: design for additive manufacturing for missile applications								5.000	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for design for additive manufacturing for missile applications												
Congressional Add: extended range projectiles								5.000	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for extended range projectiles												
Congressional Add: High Speed Missile Materials								18.000	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for High Speed Missile Materials												
Congressional Add: Hypersonic wind tunnel development								5.000	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for Hypersonic wind tunnel development												
Congressional Add: reactive alloy munition with enhanced blast for force modernization								10.500	-			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602147A / Long Range Precision Fires Technology	Project (Number/Name) BO9 / WEAPONS & MUNITIONS TECH PROGRAM INITIATIVE (CA)

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2024	FY 2025
FY 2024 Accomplishments: Congressional Interest Item funding provided for reactive alloy munition with enhanced blast for force modernization		
Congressional Add: Advanced Manufacturing of Energetic Materials	8.500	8.500
FY 2024 Accomplishments: Congressional Interest Item funding provided for Advanced Manufacturing of Energetic Materials		
FY 2025 Plans: Congressional Interest Item funding provided for Advanced Manufacturing of Energetic Materials		
Congressional Add: Advanced Manufacturing of Energetics	5.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Advanced Manufacturing of Energetics		
Congressional Add: Hypersonic additive-manufacturing	-	20.000
FY 2025 Plans: Congressional Interest Item funding provided for Hypersonic additive-manufacturing		
Congressional Add: Reactive materials	-	7.000
FY 2025 Plans: Congressional Interest Item funding provided for Reactive materials		
Congressional Adds Subtotals	62.000	35.500

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

Remarks

D. Acquisition Strategy
N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602147A / Long Range Precision Fires Technology				Project (Number/Name) DM6 / Cannon Fires Automation Research			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
DM6: Cannon Fires Automation Research	-	-	-	1.473	-	1.473	-	-	-	-	-	-
Note Cannon Fires Automation Research is a new start within the Long Range Precision Fires Technology program in FY 2026.												
A. Mission Description and Budget Item Justification This project develops new technologies to enhance tactical cannon fires capabilities for future operational environments requiring cross-domain engagements across distributed formations. Designs, develops, and conducts experiments on component technologies for unmanned, optionally manned, and autonomous indirect fires armaments system and subsystem tasks. Designs, develops, and conducts experiments on cannon technologies to achieve automated / autonomous indirect fires across platforms and missions. Investigates remote and autonomous command and control for indirect fires systems to enable technology insertion, commonality, and optimized performance across multiple Fires functions and formations. The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy. Work in this Project is completed by the Armaments Center (AC).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: HAWA - Howitzer Automation & Weapons Architectures									-	-	1.473	
Description: This effort matures fundamental weapon design architectures and component technologies for uncrewed, optionally manned, and autonomous indirect fires armaments systems Investigates advancements in robotics, machine learning advanced algorithms, and local platform networks; designs and develops automated remotely operated artillery weapon systems capable of being integrated onto mobility platforms; investigates use cases for controlled and full autonomy in lethality systems.												
FY 2026 Plans: Will investigate methods to improve cannon artillery fires to support future operational environment in cross-domain engagements with manned, uncrewed, optionally manned, and autonomy-enabled systems.												
FY 2025 to FY 2026 Increase/Decrease Statement: In Fiscal Year (FY) 2026, this Project is a New Start. Funding realigned from Strategic Armaments Advanced Tech in Strategic Armaments Advanced Tech in Program Element (PE) 0603464A (Long Range Precision Fires Advanced Technology) / Project CE9 (Armaments Advanced Technology).												
Accomplishments/Planned Programs Subtotals									-	-	1.473	

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602147A / Long Range Precision Fires Technology	Project (Number/Name) DM6 / Cannon Fires Automation Research
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
D. Acquisition Strategy N/A		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 2: Applied Research					R-1 Program Element (Number/Name) PE 0602148A / Future Verticle Lift Technology							
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
Total Program Element	-	104.850	52.350	20.420	-	20.420	-	-	-	-	-	-
AK9: Adv Teaming for Tactical Aviation Operations Tech	-	14.863	14.898	-	-	-	-	-	-	-	-	-
AL8: Holistic Situational Awareness and Dec Making Tech	-	0.967	3.023	2.399	-	2.399	-	-	-	-	-	-
BP7: Future Vertical Lift Air Platform Tech (CA)	-	33.500	5.000	-	-	-	-	-	-	-	-	-
BZ7: Future Vertical Lift Medical Technologies	-	7.624	7.460	6.921	-	6.921	-	-	-	-	-	-
CC3: FVL Radar Technologies	-	-	5.198	3.401	-	3.401	-	-	-	-	-	-
CH2: Air Launched Effects Technology	-	4.204	2.087	-	-	-	-	-	-	-	-	-
CH3: Holistic Team Survivability Technology	-	10.904	11.066	3.490	-	3.490	-	-	-	-	-	-
CH4: Power & Thermal Management for FVL Tech	-	8.481	-	-	-	-	-	-	-	-	-	-
CI4: Adaptive Avionics Technologies	-	0.982	3.618	3.604	-	3.604	-	-	-	-	-	-
CI5: High Speed Maneuverable Missile (HSMM) Tech	-	23.325	-	0.605	-	0.605	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Program Element (PE) is directly aligned to the Future Vertical Lift (FVL) Army Modernization Priority. This PE conducts air vehicle and mission system component design, fabrication, and evaluation to enable Army Future Vertical Lift. Emphasis is on developing aviation platform and mission system technologies to enhance manned and unmanned air vehicle combat and combat support operations for attack, reconnaissance, air assault, survivability, logistics, and command and control missions.												
Research in this PE contributes to the Army Science and Technology (S&T) air systems portfolio and is fully coordinated with efforts in PE 0603465A (Future Vertical Lift Advanced Technology), PE 0602183A (Air Platform Applied Research) and PE 0603043A (Air Platform Advanced Technology).												

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army				Date: June 2025		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army I BA 2: Applied Research		R-1 Program Element (Number/Name) PE 0602148A I Future Verticle Lift Technology				
The cited research is consistent with the Under Secretary of Defense for Research and Engineering S&T focus areas and the Army Modernization Strategy.						
The FY 2026 request was reduced by \$0.228 million for Advisory and Assistance Services to promote efficiencies and advance the policies of the Administration in alignment with Executive Order 14222, "Implementing the President's Department of Government Efficiency Cost Efficiency Initiative."						
The FY 2026 request was reduced by \$0.094 million for civilian personnel to optimize the workforce in compliance with Executive Order 14210, "Implementing the President's Department of Government Efficiency Workforce Optimization Initiative."						
B. Program Change Summary (\$ in Millions)		FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Previous President's Budget		73.844	52.685	53.269	-	53.269
Current President's Budget		104.850	52.350	20.420	-	20.420
Total Adjustments		31.006	-0.335	-32.849	-	-32.849
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-5.335			
• Congressional Rescissions		-	-			
• Congressional Adds		33.500	5.000			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-1.019	-			
• SBIR/STTR Transfer		-1.475	-			
• Adjustments to Budget Years		-	-	-32.849	-	-32.849
Congressional Add Details (\$ in Millions, and Includes General Reductions)						
Project: BP7: Future Vertical Lift Air Platform Tech (CA)						
Congressional Add: Adaptive Flight Control Technology						
Congressional Add: Future vertical lift technologies						
Congressional Add: High Density eVTOL Power Source						
Congressional Add: High strength functional composites						
Congressional Add: Low-cost counter drone EW force protection						
Congressional Add: Multi-static radar system						
Congressional Add: High density eVTOL power source development						
Congressional Add Subtotals for Project: BP7						

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 2: Applied Research		R-1 Program Element (Number/Name) PE 0602148A / Future Verticle Lift Technology	
Congressional Add Details (\$ in Millions, and Includes General Reductions)		FY 2024	FY 2025
Congressional Add Totals for all Projects		33.500	5.000
Change Summary Explanation Decrease is due to faster than anticipated acceleration of transition levels for autonomous teamed operations, transition of Holistic Mission Manager technology, and the completion of preliminary sensor design.			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602148A / Future Verticle Lift Technol ogy				Project (Number/Name) AK9 / Adv Teaming for Tactical Aviation Operations Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
AK9: Adv Teaming for Tactical Aviation Operations Tech	-	14.863	14.898	-	-	-	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project investigates and develops subsystem and component level technologies that enable advanced teaming behaviors for mixed platform formations in combined arms operations. Primary component technologies to develop are in the areas of resilient autonomy algorithms, team-based communications and situational awareness management, decision aiding for weapons systems engagement, autonomous terrain and collision avoidance, and human autonomy interface design.												
Work in this Project is fully coordinated with Program Element (PE) 0603465A (Future Vertical Lift Advanced Technology) / Project AL1 (Adv Teaming for Tactical Aviation Oper Adv Tech).												
The cited work is consistent with the Under Secretary of Defense for Research and Engineering Science and Technology focus areas and the Army modernization strategy.												
Work in this Project is performed by the Aviation & Missile Center (AvMC), and the Command, Control, Communication, Computers, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Advanced Teaming Concepts									8.715	8.708	-	
Description: Investigates and develops subsystem and component level technologies that enable advanced manned and unmanned teaming behaviors for mixed air and ground platform formations in combined arms operations.												
FY 2025 Plans:												
Will further develop a suite of technologies that enable UAS team-o- teams ecosystem operations in contested, complex urban / fringe and littoral environments with degraded networks. Will develop autonomy and teaming technologies that build in behavior resilience to dynamically adjust to component failures and enhance contingency management for extended durations without human intervention required. Will begin designing domain-specific data generation and training methods to develop learning-based solutions for risk-informed course of action selection and decision aiding of human supervisor.												
FY 2025 to FY 2026 Increase/Decrease Statement:												
Funding decrease reflects the shift from predominantly developing new autonomous behaviors in FY 2025 to enhancing existing technologies that facilitate autonomous teamed operations in complex environments in FY26. Funding realigned to Program Element (PE) 0602345A (Unmanned Aerial Systems Launched Effects Applied Research) / Project A41 (Adv Teaming for												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602148A / <i>Future Verticle Lift Technol ogy</i>	Project (Number/Name) AK9 / <i>Adv Teaming for Tactical Aviation Operations Tech</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
Tactical Aviation Operations Tech) as a part of the Department of Defense Capability Based (Agile) Funding pilot, which provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology and realignment to PE 0603043A (Air Platform Advanced Technology) / Project CX1 (Advanced Rotors Advanced Tech).			
Title: Enhanced Optics for Long Range Targeting Description: This effort will deliver advanced airborne optics and reconfigurable filtering devices to enable agile, multi-task sensors for compact, long-range targeting, enhanced survivability and lethality of the Future Vertical Lift (FVL) and Future Unmanned Aircraft System (FUAS). This effort will restore visual overmatch in any (day/night) environment through visual penetration of all obscurants (e.g. brownout, white out, engineered smokescreens) from a single sensor, as well as narrowband filtering for active imaging through obscurants while maintaining advanced target acquisition. Improved detection and identification and long-range target acquisition capability will result from filtering out scattered light and enabling 3-dimensional ranging through environmental obscurants. FY 2025 Plans: Will mature the new dual band infrared (IR) optical material Calcium Lanthanum Sulfide (CLS) and conduct experiments with complex dual-band optics representative of fielded high performance targeting sensors. Will mature infrared sensor optics packages suitable for low SWaP-C gimbal integration for small-unmanned aerial vehicle (UAV) and launched effects platforms. Will conduct experiments with infrared optics packages against Commercial off the Shelf (COTS) EOIR payloads. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects realignment to Program Element (PE) 0602345A (Unmanned Aerial Systems Launched Effects Applied Research) / Project A41 (Adv Teaming for Tactical Aviation Operations Tech) as a part of the Department of Defense Capability Based (Agile) Funding pilot, which provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology.		6.148	6.190
Accomplishments/Planned Programs Subtotals		14.863	14.898
C. Other Program Funding Summary (\$ in Millions) N/A Remarks D. Acquisition Strategy N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602148A / Future Verticle Lift Technol ogy				Project (Number/Name) AL8 / Holistic Situational Awareness and Dec Making Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
AL8: Holistic Situational Awareness and Dec Making Tech	-	0.967	3.023	2.399	-	2.399	-	-	-	-	-	-
A. Mission Description and Budget Item Justification This Project focuses on modeling and simulation of pilotage and decision aiding system technology that allows for carefree operations in complex and hostile environments. Work in this Project is fully coordinated with PE 0603465A (Future Vertical Lift Advanced Technology Development) / Project AL9 (Holistic Sit Awareness and Dec Making Adv Tech). The cited work is consistent with the Under Secretary of Defense for Research and Engineering Science and Technology focus areas and the Army modernization strategy. Work in this Project is performed by Aviation & Missile Center (AvMC).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Holistic Mission Manager (HMM) Concepts									0.967	3.023	2.399	
Description: Investigate and demonstrate the capability of agent-based, software solutions to increase future and enduring Army vertical lift mission effectiveness by improving in-flight, aircrew, mission management capabilities and processes in dynamic, time-constrained, tactical environments through information synthesis, automation, and autonomy.												
FY 2025 Plans: Will engage with Academia, Industry, and other DOD agencies to initiate research for the integration of the relevant technology outputs from applicable S&T programs into a holistic mission manager for FVL platforms.												
FY 2026 Plans: Will fund research and conduct in-house experiments into in-flight, dynamic mission planning technologies and capabilities; investigate information synthesis and management, communication, and in-flight reporting in complex, contested environments.												
FY 2025 to FY 2026 Increase/Decrease Statement:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602148A / Future Verticle Lift Technol ogy	Project (Number/Name) AL8 / Holistic Situational Awareness and Dec Making Tech		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Funding decrease reflects this effort's draw down of Applied Research activities and the transition into Advanced Technology Development. Funding realigned to Program Element (PE) 0603043A (Air Platform Advanced Technology) / Project CX1 (Advanced Rotors Advanced Tech).				
Accomplishments/Planned Programs Subtotals		0.967	3.023	2.399
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602148A / Future Verticle Lift Technol ogy				Project (Number/Name) BP7 / Future Vertical Lift Air Platform Tech (CA)			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
BP7: Future Vertical Lift Air Platform Tech (CA)	-	33.500	5.000	-	-	-	-	-	-	-	-	-
Note Congressional Interest Item funding provided for Future Vertical Lift Air Platform Technology.												
A. Mission Description and Budget Item Justification Congressional Interest Item funding provided for Future Vertical Lift Platform Technology. The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2024	FY 2025			
Congressional Add: Adaptive Flight Control Technology								3.000	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for Adaptive Flight Control Technology												
Congressional Add: Future vertical lift technologies								2.500	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for Future vertical lift technologies												
Congressional Add: High Density eVTOL Power Source								10.000	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for High Density eVTOL Power Source												
Congressional Add: High strength functional composites								5.000	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for High strength functional composites												
Congressional Add: Low-cost counter drone EW force protection								5.000	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for Low-cost counter drone EW force protection												
Congressional Add: Multi-static radar system								8.000	-			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602148A / Future Verticle Lift Technol ogy	Project (Number/Name) BP7 / Future Vertical Lift Air Platform Tech (CA)
B. Accomplishments/Planned Programs (\$ in Millions)		
	FY 2024	FY 2025
FY 2024 Accomplishments: Congressional Interest Item funding provided for Multi-static radar system.		
Congressional Add: High density eVTOL power source development	-	5.000
FY 2025 Plans: Congressional Interest Item funding provided for High density eVTOL power source development		
Congressional Adds Subtotals	33.500	5.000
C. Other Program Funding Summary (\$ in Millions)		
N/A		
Remarks		
D. Acquisition Strategy		
N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602148A / Future Verticle Lift Technol ogy				Project (Number/Name) BZ7 / Future Vertical Lift Medical Technologies			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
BZ7: Future Vertical Lift Medical Technologies	-	7.624	7.460	6.921	-	6.921	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project involves research to prevent injury and performance degradation in Aviators, Unmanned Arial System (UAS) Operators and other Warfighters in training and operations; refines risk assessment and performance models based on operational stressors, e.g., sleep deprivation, work load, fatigue; and delivers biomedical-based spinal injury criteria and assessment methodologies. This research provides medical information important to the design and operational use of future vertical lift aircraft, and when appropriate, ground vehicles.												
The cited research is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.												
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2024	FY 2025	FY 2026
Title: Medical Standards to Support Future Vertical Lift (FVL)										7.624	7.460	6.921
Description: This effort develops and delivers medical guidelines and strategies to assure optimal Soldier performance and protection on the future technologically-intensive battlefield. Key elements of the program include: 1) tailored medical selection and retention standards for FVL; 2) medical strategies to maintain and enhance human performance in multi-domain operations (MDO); 3) human-centered technology design guidance to accommodate the range of aircrew; 4) improved protection standards to reduce FVL occupant injury; and 5) operator state monitoring tools to enable scalable autonomy in FVL aircraft.												
FY 2025 Plans: Assess physiologic changes in aviators during cognitive workload. Define the temporal components of an aviator/operator state monitoring system. Determine the efficacy of multisensory cues to maintain optimal flight performance and increase situational awareness under operational stressors. Provide a correlation of HGU-56/P Aircrew Integrated Helmet System damage to head injury. Measure operator response to simulated adaptive automation. Study neurophysiological patterns of spatial disorientation in rotary-wing operations. Conduct a retrospective analysis of injures in accidents involving DoD tilt-rotor and standard rotary wing airframes. Study the effects of 3D auditory cues and automatic noise reduction on aircrew performance. Compare the visual outcomes of different vision improvement surgeries. Efforts in this task are further developed in Program Element 060465A, Project CJ5.												
FY 2026 Plans: Provide a correlation of HGU-56/P Aircrew Integrated Helmet System damage to head injury in Army helicopter accidents. Determine efficacy of novel technologies to predict aviator performance and increase operator situational awareness. Investigate face/eye injury and neck/spine injury for Future Vertical Lift platforms.												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602148A / Future Verticle Lift Technol ogy	Project (Number/Name) BZ7 / Future Vertical Lift Medical Technologies		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Create and validate an adaptive automation system driven by physiological input from the Army aircrew or UAS operator, and identify specific challenges related to engagement and workload transitions. Continue developing algorithms to determine when an aviator becomes cognitively overloaded. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects cancellation of planned study of Army aircrew visual performance with advance helmet-mounted displays (HMDs).				
Accomplishments/Planned Programs Subtotals		7.624	7.460	6.921
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602148A / Future Verticle Lift Technol ogy				Project (Number/Name) CC3 / FVL Radar Technologies			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CC3: FVL Radar Technologies	-	-	5.198	3.401	-	3.401	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project develops underlying technologies applicable to next generation airborne radars used for detection, tracking and precision targeting, navigation and fire control for multiple modalities. It develops fully automated target recognition for radar, advanced processing techniques, distributed radar sensing and sensor coordination methods needed for targeting-quality detect, identify, locate and report (DILR) capabilities from airborne platforms. Efforts improve radar survivability and lethality across the Aviation ecosystem, speed target prosecution timelines for actionable information on the battlefield and provide the Warfighter with persistent DILR enabling day/night/all-weather sensing in congested/contested Multi-Domain Operations (MDO) environments.												
Work in this Project is fully coordinated with Program Element (PE) 0603465A (Future Vertical Lift Advanced Technology) / Project CC4 (FVL Radar Advanced Technologies).												
The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.												
Work in this Project is performed by Command, Control, Communication, Computers, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Airborne Distributed Radar									-	5.198	3.401	
Description: Research and develop distributed radar techniques, including approaches for Automatic Target Recognition for distributed airborne radar applications. Conduct monostatic and distributed vulnerability analyses.												
FY 2025 Plans: Will perform a trade study to investigate and inform government and industry of potential problem space contributions through experimentation, studies, and modeling and simulation. Create appropriate documentation and trade studies report to capture findings. Investigate radar waveforms and AI/ML technologies supporting target identification, classification, tracking and prosecution of battlefield threats using radar observations made across distributed platforms. Conduct experiments and laboratory proof-of-concepts to validate initial component designs and concepts.												
FY 2026 Plans: Will investigate and develop distributed radar automatic target recognition (ATR) methods and techniques; determine impact of timing and synchronization approaches on radar image formation; conduct experiments to validate distributed radar ATR algorithm performance and evaluate against benchmarks.												
FY 2025 to FY 2026 Increase/Decrease Statement:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025				
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602148A / Future Verticle Lift Technol ogy		Project (Number/Name) CC3 / FVL Radar Technologies		
B. Accomplishments/Planned Programs (\$ in Millions)				FY 2024	FY 2025	FY 2026
Funding decrease represents completion and validation of preliminary sensor design and movement into less expensive algorithm optimization and processing techniques, as well as realignment of funds to Program Element (PE) 0603465A (Future Vertical Lift Advanced Technology) / Project CC4 (FVL Radar Advanced Technologies) to advance a radio frequency (RF) multi-function air launched effects (ALE) payload.						
Accomplishments/Planned Programs Subtotals				-	5.198	3.401
C. Other Program Funding Summary (\$ in Millions)						
N/A						
Remarks						
D. Acquisition Strategy						
N/A						

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602148A / Future Verticle Lift Technol ogy				Project (Number/Name) CH2 / Air Launched Effects Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CH2: Air Launched Effects Technology	-	4.204	2.087	-	-	-	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project utilizes improved analytic modeling to investigate the effects that potential unmanned system capabilities could have on air vehicle design considerations and operational concepts. This Project improves government capability to design and assess novel Unmanned Aircraft System (UAS) concepts. This Project also develops and investigates the ability to launch a UAS from a manned or unmanned future vertical lift aircraft at tactical altitudes and to control the same after launch from nearby Future Vertical Lift (FVL) aircraft, as well as development of the associated payloads (recon, battle damage assessment, targeting, comms, decoy). This Project will assess the enabled capabilities and determine their relevance to current Army Aviation engagement and survivability portfolios.												
Work in this Project is fully coordinated with Program Element (PE) 0603465A (Future Vertical Lift Advanced Technology) / Project AK8 (Air Launched Effects Advanced Technology).												
The cited work is consistent with the Under Secretary of Defense for Research and Engineering Science and Technology focus areas and the Army modernization strategy.												
Work in this Project is performed by Aviation and Missile Center (AvMC).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Systems Concepts Studies for Air Launched Effects									4.204	-	-	
Description: Investigates and models air vehicle concepts to understand the effects that potential operational Air Launched Effects capabilities will have on air vehicle properties.												
Title: Versatile Air Launched Effects (VALE) Concepts									-	2.087	-	
Description: Conducts configuration trades analysis studies and develops technologies that support air and ground launched effects operations in complex, contested environments including urban / fringe and littoral. Matures individual technologies and design concepts that shape investment for Versatile Air Launched Effects Demonstration and inform the System Specifications for the LE Program of Record.												
FY 2025 Plans:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025					
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602148A / Future Verticle Lift Technol ogy		Project (Number/Name) CH2 / Air Launched Effects Technology			
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024		FY 2025		FY 2026	
Will begin exploration of modular air vehicle concepts that incorporate payloads, propulsion, and energy storage for air and ground launched effects operations in long-range littoral and high-maneuverability urban missions.							
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects realignment to Program Element (PE) 0602345A (Unmanned Aerial Systems Launched Effects Applied Research) / Project A42 (Air Launched Effects Technology) as a part of the Department of Defense Capability Based (Agile) Funding pilot, which provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology.							
Accomplishments/Planned Programs Subtotals		4.204		2.087		-	
C. Other Program Funding Summary (\$ in Millions) N/A							
Remarks							
D. Acquisition Strategy N/A							

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025			
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602148A / Future Verticle Lift Technol ogy				Project (Number/Name) CH3 / Holistic Team Survivability Technology				
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost	
CH3: Holistic Team Survivability Technology	-	10.904	11.066	3.490	-	3.490	-	-	-	-	-	-	

A. Mission Description and Budget Item Justification

This Project will investigate and design advanced survivability technologies to develop a holistic team-based solution that delivers advanced sensing and electronic warfare (EW) effects across a family of aircraft to optimally penetrate and survive in the anti-access/area denial (A2AD) environment. This Project will take an integrated team-based system of systems survivability approach through a purpose-driven mix of improved survivability situational awareness, signature management, vulnerability reduction, enhanced platform survivability against directed energy munitions, route and maneuver optimization, expendables, advanced sensors, and electro-optics (EO) & radio frequency (RF) jamming for existing and future air platforms. This Project will also provide advanced teaming algorithms for survivability. This Project develops and evaluates multi layered survivability concepts and supporting technologies for increased survivability of Future Vertical Lift (FVL) Family of Systems (FVL FoS) in an advanced and evolving integrated air defense systems environment.

Work in this Project is fully coordinated with Program Element (PE) 0603465A (Future Vertical Lift Advanced Technology) / Project CG1 (Holistic Team Survivability Adv Tech).

The cited research is consistent with the Under Secretary of Defense for Research and Engineering Science and Technology focus areas and the Army modernization strategy.

Work in this Project is performed by Aviation & Missile Center (AvMC) and Command, Control, Communication, Computers, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center.

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

	FY 2024	FY 2025	FY 2026
Title: Advanced Survivability Concepts	3.421	3.488	3.490
Description: This effort will provide analysis of the rapidly evolving and emerging threat environment and impacts to Future Vertical Lift Family of Systems FVL FoS platforms, developing and evaluating full spectrum survivability concept, collaborative team based survivability algorithms and behaviors			
FY 2025 Plans: Will continue the maturation of RF material for improved durability improvement and weight reduction. Continue to mature and refine algorithms, behaviors, and human machine interface for team-based survivability and begin software in the loop integration. Will continued development and testing of uniquely tailored Electro-Optical/ Infrared coating formulations for FVL and UAS applications. Developed microclimatology algorithms improved survivability situational understanding. Development			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602148A / <i>Future Verticle Lift Technol ogy</i>	Project (Number/Name) CH3 / <i>Holistic Team Survivability Technology</i>		
B. Accomplishments/Planned Programs (\$ in Millions) and maturation of survivability and mission effectiveness modeling and simulation toolsets. Will investigate aviation survivability science and technology concepts and component technologies. FY 2026 Plans: Will continue the maturation and testing of aircraft signature reduction technologies; mature and refine team-based survivability planning algorithms and behaviors utilizing software integration lab (SIL) testing; improve modeling and simulation tools and expertise in anticipation of team-based operations in complex future threat environments; update test, evaluation, and data reduction capabilities in support of future army aircraft signature measurements and survivability assessments. FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase is an economic adjustment.		FY 2024	FY 2025	FY 2026
Title: Distributed Electronic Warfare Effects Description: This effort investigates and develops critical EW components and techniques to enable the FVL capability to operate and survive in A2/AD environments. It provides scalable low size, weight, power, and cost (SWaP-C) signal processing components and decision-making algorithms that adapt and counter the characteristics of advanced and emerging threats. FY 2025 Plans: Will develop decision-making algorithms capable of dynamically adapting to changes in threat state and position; assess methods for distributed detection and geolocation of A2/AD threats and quantify improvements in accuracy; model multi-mission EW payload hardware and simulate sensing and effects performance in multi-node configuration. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects realignment to Program Element (PE) 0602275A (Electronic Warfare Applied Research) / Project A69 (Holistic Team Survivability Technology) as a part of the Department of Defense Capability Based (Agile) Funding pilot, which provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology.		7.483	7.578	-
Accomplishments/Planned Programs Subtotals		10.904	11.066	3.490
C. Other Program Funding Summary (\$ in Millions) N/A Remarks D. Acquisition Strategy N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602148A / Future Verticle Lift Technol ogy				Project (Number/Name) CH4 / Power & Thermal Management for FVL Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CH4: Power & Thermal Management for FVL Tech	-	8.481	-	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Project directly supports Future Vertical Lift (FVL) Modernization Priority capabilities by investigating and developing power and thermal management technologies to provide significantly higher electrical power capability to FVL aircraft while addressing consequential size, weight, and thermal issues. This Project provides power capability for advanced electric aeromechanical effectors, advanced mission systems algorithms for route planning and teaming, and advanced electronic warfare devices. This also Project investigates emerging electrical power generation and distribution, energy storage, and thermal management technologies needed for future Command, Control, Communications, Computers, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) and survivability equipment for application to FVL and other Army platforms. Enables significantly increased aircraft electrical power capability for advanced electric aeromechanical effectors, advanced mission systems to include algorithms for route planning and teaming, and for advanced electronic warfare devices while minimizing size and weight.

Work in this Project is fully coordinated with Program Element (PE) 0603465A (Future Vertical Lift Advanced Technology) / Project CH7 (Power & Thermal Management for FVL Adv Tech).

The cited work is consistent with the Under Secretary of Defense for Research and Engineering Science and Technology focus areas and the Army modernization strategy.

Work in this Project is performed by Aviation & Missile Center (AvMC) and Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2024	FY 2025	FY 2026
Title: Optimized Energy for C5ISR Platforms	4.107	-	-
Description: This effort investigates electrical power and thermal management associated with high power C5ISR capabilities on ground and air platforms enabling enhanced mobility and mission flexibility. This effort funds research to improve FVL aircraft and other Army platforms power efficiency through the use of on-demand hybrid electrical power architectures, while also researching ways to eliminate platform thermal constraints. This effort will also investigate safer battery chemistries which enable very high density electrical power sources and energy storage to be flight certified for high rate pulsed power, electrical power management, and thermal management for dynamic high rate pulsed power.			
Title: Adaptive Power Component Technologies	2.418	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602148A / Future Verticle Lift Technol ogy		Project (Number/Name) CH4 / Power & Thermal Management for FVL Tech
B. Accomplishments/Planned Programs (\$ in Millions)				
Description: This effort develops adaptive propulsion and power system component technologies to provide highly efficient propulsion and power capability to FVL aircraft while addressing consequential SWAP & thermal issues. Technology will be validated through component level test.		FY 2024	FY 2025	FY 2026
Title: Hybrid Propulsion Conceptual Design Analysis Description: Explore design and development of hybrid-electric propulsion concepts / applications (conventional & non-conventional) for multiple manned-VTOL classes to achieve greatest operational benefit for FVL future Platforms. Analysis will include trade studies to identify metrics, best architectures/technologies/configurations, and demonstration path for improved FVL aircraft capability.		1.956	-	-
Accomplishments/Planned Programs Subtotals		8.481	-	-
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025			
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602148A / Future Verticle Lift Technol ogy				Project (Number/Name) C14 / Adaptive Avionics Technologies				
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost	
C14: Adaptive Avionics Technologies	-	0.982	3.618	3.604	-	3.604	-	-	-	-	-	-	
A. Mission Description and Budget Item Justification <p>This Project will Build on Modular Open Systems Approach (MOSA) successes to enable future aviation mission systems to proactively exploit emerging innovation from multiple technological domains, employing continuous development and continuous deployment by researching and developing advanced avionics integration techniques and optimized processing management.</p> <p>Work in this Project is fully coordinated with Program Element (PE) 0603465A (Future Vertical Lift Advanced Technology) / Project C18 (Adaptive Avionics Advanced Technologies).</p> <p>The cited work is consistent with the Under Secretary of Defense for Research and Engineering Science and Technology focus areas and the Army modernization strategy.</p> <p>Work in this Project is performed by Aviation & Missile Center (AvMC).</p>													
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026		
Title: Future Avionics Implementation Research (FAIR)									0.982	3.618	3.604		
Description: This effort will investigate evolving advanced avionics technologies and integration techniques in disparate environments for FVL mission systems, and will research complex computing environments, contextual resource management and ownship network technologies to implement on FVL air platforms.													
FY 2025 Plans: Will continue to conduct trade studies that further explore and narrow technology focuses in support of Adaptive Avionics advanced research activities. The types of research envisioned under these studies may include, but are not limited to, market research, analysis, and experimentation. Conduct engagements with stakeholders to ensure priority alignment and will begin to provide lessons learned from trade studies and market research to respective Adaptive Avionics 6.3 efforts.													
FY 2026 Plans: Will continue to conduct trade studies that investigate and begin to determine which technologies to pursue and/or mature; continue to conduct engagements with stakeholders to ensure priority alignment for the technologies selected to be pursued and/or matured, respective to Adaptive Avionics 6.3 efforts.													
FY 2025 to FY 2026 Increase/Decrease Statement:													

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602148A / Future Verticle Lift Technol ogy	Project (Number/Name) Cl4 / Adaptive Avionics Technologies		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Funding decrease due to economic adjustment.				
Accomplishments/Planned Programs Subtotals		0.982	3.618	3.604
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025			
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602148A / Future Verticle Lift Technol ogy				Project (Number/Name) CI5 / High Speed Maneuverable Missile (HSMM) Tech				
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost	
CI5: High Speed Maneuverable Missile (HSMM) Tech	-	23.325	-	0.605	-	0.605	-	-	-	-	-	-	
Note (HSMM) has been designated for a skip year due to completion of the effort on High-Speed Maneuverable Missile Technology ahead of schedule with a successful transition to BA3. FY26 shows the planned initiation of High Payoff Aviation Missile Technology on schedule.													
A. Mission Description and Budget Item Justification The Project investigates, designs, and evaluates missile component technologies compatible with Future Vertical Lift (FVL) and Future Unmanned Aircraft Systems (FUAS) aviation platforms and ground platforms in a Multi-Domain Battle/Cross-domain Maneuver operational environment. Efforts provide technologies to support a smaller, faster, maneuverable missile capable of long-range non-line-of-sight attack in contested/degraded environments. Technology development increases aviation and ground lethality and platform survivability by increasing missile standoff range, speed, and maneuverability, a faster rate of fire, shorter times of flight, and multi-threat lethal effects. Enables cross domain applications for aviation and ground vehicle platforms, including handoff capability, to engage threats in dead zones, and to operate in contested environments. Work in this Project is fully coordinated with Program Element (PE) 0603465A (Future Vertical Lift Advanced Technology), Project CK2 (High Speed Maneuverable Missile Adv Tech). The cited research is consistent with the Under Secretary of Defense for Research and Engineering Science and Technology focus areas and the Army modernization strategy. Work in this project is performed by Aviation and Missile Center (AvMC).													
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026		
Title: High Speed Maneuverable Missile (HSMM) Technology									23.325	-	-		
Description: Efforts provide technology development to support a maneuverable missile capable of both short range direct attack and long range non-line-of-sight attack with reduced time to target; reduced size and weight for increased load-out; capable of air launched missions in degraded/contested environments.													
Title: High Payoff Aviation Missile Technology (HPAMT) Dev									-	-	0.605		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602148A / <i>Future Verticle Lift Technol ogy</i>	Project (Number/Name) C15 / <i>High Speed Maneuverable Missile (HSMM) Tech</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p>Description: Investigate, design, develop and evaluate missile technologies to provide autonomous capabilities, enhanced lethal mechanisms, advanced propulsion, novel navigation and guidance in contested environments, and reduced size and weight components which will defeat future Integrated Air Defense Systems and Main Battle Tanks.</p> <p>FY 2026 Plans: Will perform trade studies to evaluate emerging technologies with high payoff potential to address current technology shortfalls; perform concept development of high payoff emerging technologies.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects initiation of High Payoff Aviation Missile Technology (HPAMT) Dev to enable high payoff tactical missile technology development for Army 2040 and beyond.</p>			
Accomplishments/Planned Programs Subtotals		23.325	-
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army	Date: June 2025
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Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 2: Applied Research					R-1 Program Element (Number/Name) PE 0602150A / Air and Missile Defense Technology							
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
Total Program Element	-	102.784	49.188	25.992	-	25.992	-	-	-	-	-	-
AE2: <i>Unconventional Countermeasures-Survivability Tech</i>	-	3.361	2.772	2.694	-	2.694	-	-	-	-	-	-
BN6: <i>Advanced Weapons Components (CA)</i>	-	70.500	10.000	-	-	-	-	-	-	-	-	-
CV7: <i>High Energy Laser Direct Diode Apl Tech</i>	-	1.440	3.224	2.382	-	2.382	-	-	-	-	-	-
CV8: <i>Vulnerability Modules for Multi-Domain Operations</i>	-	8.659	7.750	7.230	-	7.230	-	-	-	-	-	-
DA9: <i>Radar Survivability through Dis Sensing Tech</i>	-	4.531	4.084	0.995	-	0.995	-	-	-	-	-	-
DC1: <i>Next Generation DE Concept Development & Analysis</i>	-	6.309	8.303	6.686	-	6.686	-	-	-	-	-	-
DE3: <i>Adv Beam Control Component Development for C-CM</i>	-	7.984	5.361	5.505	-	5.505	-	-	-	-	-	-
HP1: <i>High Power Microwave Technology</i>	-	-	-	0.500	-	0.500	-	-	-	-	-	-
SU1: <i>Counter Small Unmanned Aircraft Sys (C-sUAS) Tech</i>	-	-	7.694	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Program Element (PE) line is directly aligned with the Air & Missile Defense (AMD) Army Modernization Priority. Work in this PE investigates and develops AMD technologies to enable defense of ground forces and selected geopolitical assets from aerial attack, missile attack, and surveillance. Major focus areas for AMD Science and Technology include: Missiles, Directed Energy, Gun-Based Air Defense Technologies, and Battlefield Sensors and Supporting AMD Technologies. Missiles Applied Research investigates and develops a broad range of Missile technologies to enhance Army integrated AMD capabilities at extended range. Directed Energy Applied Research investigates and develops critical High Energy Laser (HEL) technologies to explore performance against Air Defense threats and for other Directed Energy applications across Army Modernization Priorities. Gun-Based Air Defense Technologies Applied Research investigates and develops Combined Arms for Air

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army				Date: June 2025	
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army I BA 2: Applied Research			R-1 Program Element (Number/Name) PE 0602150A I Air and Missile Defense Technology		
Defense (CAFAD) technologies and components in a laboratory environment. Sensors and Supporting AMD Technologies Applied Research investigates and develops Battlefield Sensor and radar technologies required for detection, acquisition and tracking of air defense targets as well as supporting technologies that enhance AMD.					
Work in this PE complements PE 0603466A (Air and Missile Defense Advanced Technology).					
The cited research is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.					
Research is performed by U.S. Army Aviation and Missiles Center (AvMC).					
The FY 2026 request was reduced by \$1.463 million for Advisory and Assistance Services to promote efficiencies and advance the policies of the Administration in alignment with Executive Order 14222, "Implementing the President's Department of Government Efficiency Cost Efficiency Initiative."					
The FY 2026 request was reduced by \$0.078 million for civilian personnel to optimize the workforce in compliance with Executive Order 14210, "Implementing the President's Department of Government Efficiency Workforce Optimization Initiative."					
B. Program Change Summary (\$ in Millions)			FY 2024	FY 2025	
Previous President's Budget			33.301	39.188	42.813
Current President's Budget			102.784	49.188	25.992
Total Adjustments			69.483	10.000	-16.821
• Congressional General Reductions			-	-	
• Congressional Directed Reductions			-	-	
• Congressional Rescissions			-	-	
• Congressional Adds			70.500	10.000	
• Congressional Directed Transfers			-	-	
• Reprogrammings			-0.001	-	
• SBIR/STTR Transfer			-1.016	-	
• Adjustments to Budget Years			-	-	-16.821
Congressional Add Details (\$ in Millions, and Includes General Reductions)					
Project: BN6: Advanced Weapons Components (CA)					
Congressional Add: Beam Control Systems and Industry Grade Optical Fiber Fabrication for Energy Laser					
Congressional Add: Low SWAP-C Next Generation HEL					
Congressional Add: High Energy Laser Range in a Box					
Congressional Add: Cyber Autonomy Range					

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army I BA 2: Applied Research		R-1 Program Element (Number/Name) PE 0602150A I Air and Missile Defense Technology	
Congressional Add Details (\$ in Millions, and Includes General Reductions)		FY 2024	FY 2025
Congressional Add: <i>Soldier Touchpoint Center</i>		7.000	-
Congressional Add: <i>Detection of unexploded ordnance technology</i>		6.000	-
Congressional Add: <i>Army missile risk-based mission assurance</i>		2.500	-
Congressional Add: <i>Counter-UAS center of excellence</i>		5.000	-
Congressional Add: <i>Unmanned aircraft systems testing and research center</i>		5.000	-
Congressional Add: <i>C-UAS center of excellence</i>		-	5.000
Congressional Add Subtotals for Project: BN6		70.500	10.000
Congressional Add Totals for all Projects		70.500	10.000
Change Summary Explanation			
FY2025 funding increase of \$10M is a Congressional Add for Beam Control Systems and Industry Grade Optical Fiber Fabrication for Energy Laser.			
FY2026 funding decrease of \$16.821M is due to the completion of high energy laser direct diodes and radar survivability.			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602150A / Air and Missile Defense Technology				Project (Number/Name) AE2 / Unconventional Countermeasures-Survivability Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
AE2: Unconventional Countermeasures-Survivability Tech	-	3.361	2.772	2.694	-	2.694	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project designs and develops technologies to deter tactical surveillance and targeting by adversarial area denial systems and munitions. The Project investigates methods to increase survivability of critical assets against precision-guided near-peer advanced weapons threats, investigates and develops tonedown methods for signature management, and computationally develops novel countermeasures. This Project also develops a suite of high-fidelity, physics-based modeling and simulation tools for the design and development of unconventional countermeasures and survivability enhancers applicable to a wide range of operating environments.												
Work in this Project complements Program Element (PE) 0603466A (Air and Missile Defense Advanced Technology) / Project AE3 (Unconventional Countermeasures-Survivability ATech).												
The work cited is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.												
Work in this Project is performed by the United States Army Engineer Research and Development Center Geotechnical and Structures Laboratory.												
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2024	FY 2025	FY 2026
Title: Advanced Integrated Unconventional Countermeasures Applications										1.640	1.036	-
Description: This effort develops methods and materials to defeat peer advanced reconnaissance, surveillance, targeting methods through advancements in material science and computational prototyping to reduce targetable signatures and confuse targeting systems.												
FY 2025 Plans:												
Will develop and optimize physical prototype survivability enhancement kits for FIRES assets.												
FY 2025 to FY 2026 Increase/Decrease Statement:												
Funding decrease reflects planned milestones and conclusion of this effort and transition to Program Element 0603466A (Air and Missile Defense Advanced Technology) / Project AE3 (Unconventional Countermeasures-Survivability ATech).												
Title: Virtual Unconventional Countermeasure Environment										1.721	1.736	1.719
Description: This effort develops physics-based modeling and simulation tools for rapid prototyping of novel unconventional countermeasures across multiple relevant operational environments and sensing modalities on an assortment of platforms.												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602150A / <i>Air and Missile Defense Technology</i>	Project (Number/Name) AE2 / <i>Unconventional Countermeasures-Survivability Tech</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p><i>FY 2025 Plans:</i> Will validate and incorporate new physics algorithms for heavily vegetated regions into high fidelity modeling capabilities to increase precision in comparison to environmental data.</p> <p><i>FY 2026 Plans:</i> Will investigate expanded spectral sensing range to increase the capability of computational prototyping in geo-specific or geo-typical environments, in addition to developing model performance parameters.</p> <p><i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> Funding decrease reflects Army reduction.</p>			
<p><i>Title:</i> Unconventional Countermeasures in Multi-Domain Operations</p> <p><i>Description:</i> This effort develops tunable materials, methods, and advanced computational tools for data-driven analytics to increase survivability of large complex critical assets against advanced surveillance, reconnaissance, and targeting systems in Multi-Domain Operations.</p> <p><i>FY 2026 Plans:</i> Will investigate the protection of next generation logistical supply nodes and other critical systems against emerging AI/ML and other asymmetric threats.</p> <p><i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> FY26 funding increase due to planned initiation of this effort. This task is a new start in FY 2026.</p>		-	-
Accomplishments/Planned Programs Subtotals		3.361	2.772
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
N/A			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602150A / Air and Missile Defense Technology				Project (Number/Name) BN6 / Advanced Weapons Components (CA)			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
BN6: Advanced Weapons Components (CA)	-	70.500	10.000	-	-	-	-	-	-	-	-	-
Note Congressional Interest Item funding provided for Advanced Weapons Components.												
A. Mission Description and Budget Item Justification Congressional Interest Item funding provided for Advanced Weapon Components. The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2024	FY 2025			
Congressional Add: Beam Control Systems and Industry Grade Optical Fiber Fabrication for Energy Laser								15.000	5.000			
FY 2024 Accomplishments: Congressional Interest Item funding provided for Program Increase - Beam Control Systems and Industry Grade Optical Fiber Fabrication for Energy Laser												
FY 2025 Plans: Continue to characterize and optimize a diverse set of fiber laser systems, optics, and photonics to support development, maturation, and suitability assessments for technology insertion for High Energy Laser (HEL) weapon systems.												
Increase development and maturation of next generation direct diode laser systems. Research techniques for high energy continuous wave and pulsed power applications for next generation HEL systems.												
Congressional Add: Low SWAP-C Next Generation HEL								7.000	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for Low SWAP-C Next Generation HEL												
Congressional Add: High Energy Laser Range in a Box								20.000	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for High Energy Laser Range in a Box												
Congressional Add: Cyber Autonomy Range								3.000	-			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602150A / Air and Missile Defense Technology	Project (Number/Name) BN6 / Advanced Weapons Components (CA)

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2024	FY 2025
FY 2024 Accomplishments: Congressional Interest Item funding provided for Cyber Autonomy Range		
Congressional Add: Soldier Touchpoint Center	7.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Soldier Touchpoint Center		
Congressional Add: Detection of unexploded ordnance technology	6.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Detection of unexploded ordnance technology		
Congressional Add: Army missile risk-based mission assurance	2.500	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Army missile risk-based mission assurance		
Congressional Add: Counter-UAS center of excellence	5.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Counter-UAS center of excellence		
Congressional Add: Unmanned aircraft systems testing and research center	5.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Unmanned aircraft systems testing and research center		
Congressional Add: C-UAS center of excellence	-	5.000
FY 2025 Plans: This is a Congressional add for FY25.		
Congressional Adds Subtotals	70.500	10.000

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

Remarks

D. Acquisition Strategy
 N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602150A / Air and Missile Defense Technology				Project (Number/Name) CV7 / High Energy Laser Direct Diode Applied Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CV7: High Energy Laser Direct Diode Applied Tech	-	1.440	3.224	2.382	-	2.382	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
<p>This Project designs and develops single mode diode emitters to increase output power to 100 Watts with >60% electrical-to-optical efficiency and packaging for an array of emitters. This Project will leverage industry and National Labs research to overcome gain limitations in the semi-conductor gain region. This Project also funds research necessary to make significant improvements to the size, weight, and power (SWaP) of laser subsystems. Research in this Project complements other Army Directed Energy efforts conducted under (PE) 0602150A (Air and Missile Defense Technology)/Project DC1 (Next Generation Directed Energy Concept Development and Analysis) and PE 0603466A (Air and Missile Defense Advanced Technology)/Project CV6 (Optimized High Energy Laser Source Advanced Technology).</p> <p>The cited research is consistent with the Army's modernization programs, the Under Secretary of Defense for Research and Engineering priority focus areas, the Army Modernization Strategy, and supports the Army's future capability opportunities for leap-ahead technology for Directed Energy.</p> <p>Research is performed by the United States Army Space and Missile Defense Command - Technical Center (USASMDC-TC) in coordination with RCCTO.</p>												
B. Accomplishments/Planned Programs (\$ in Millions)												
<p>Title: High Energy Laser Direct Diode Applied Technology</p> <p>Description: This effort designs and develops single mode diode emitters to increase output power to 100 Watts with >60% electrical-to-optical efficiency and develop packaging for an array of emitters. This effort will leverage industry and National Labs research to overcome gain limitations in the semi-conductor gain region.</p> <p>FY 2025 Plans: Design and develop technology to passively phase lock many single mode emitters. Research will focus on design concepts that include emitter architectures, packaging, and combining techniques that will get to kilowatt class modules with good beam quality. Initiate proof of concept combining experiments.</p> <p>FY 2026 Plans: This effort will finalize the design, fabrication and packaging of emitters culminating in a demonstration of spectral beam combiner laser array. Conduct experiments to determine 100W emitter laser array to inform the government on further advancement of direct diode technology and future utilization in US Army Directed Energy weapons systems or prototyping efforts.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement:</p>									FY 2024	FY 2025	FY 2026	
									1.440	3.224	2.382	

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602150A / Air and Missile Defense Technology	Project (Number/Name) CV7 / High Energy Laser Direct Diode Appl Tech		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Funding decrease reflects a planned decrease in procurement activities, a shift in focus to experimentation and fabrication of emitters, and economic assumptions.				
Accomplishments/Planned Programs Subtotals		1.440	3.224	2.382
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602150A / Air and Missile Defense Technology				Project (Number/Name) CV8 / Vulnerability Modules for Multi-Domain Operations			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CV8: Vulnerability Modules for Multi-Domain Operations	-	8.659	7.750	7.230	-	7.230	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project will design and develop High Energy Laser (HEL) Vulnerability Modules (VM), engagement tactics data and kill signatures for targeting Unmanned Aerial Systems, Cruise Missiles, and Rotary Wing threats for future HEL weapon systems. VM development includes Smart VM development to enable real time threat feature detection and targeting. Smart VMs enable optimized aimpoint selection across a large range of current and future threat targets, increasing the HEL Weapon Systems lethality.												
Research in this Project complements other Army Directed Energy efforts conducted under (PE) 0602150A (Air and Missile Defense Technology)/Project DC1 (Next Generation Directed Energy Concept Development and Analysis).												
The cited research is consistent with the Army's modernization programs, the Under Secretary of Defense for Research and Engineering priority focus areas, the Army Modernization Strategy, and supports the Army's future capability opportunities for leap-ahead technology for Directed Energy.												
Research is performed by the United States Army Space and Missile Defense Command - Technical Center (USASMDC-TC) in coordination with RCCTO and PEO Missiles and Space/PM Shield.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Vulnerability Modules for Multi Domain Operations									8.659	7.750	7.230	
Description: This effort will design and develop Vulnerability Modules for Multi Domain Operations against current and emerging high priority threats. Investigates and conducts experiments on High Energy Laser Lethality against Unmanned Aerial Systems, Cruise Missiles and Rotary Wing aircraft. The effort will fund research and conduct experiments to optimize aimpoints for rapid and effective High Energy Laser weapon systems fire control solutions.												
The effort will fund conduct research and experiments to understand target High Energy Laser vulnerabilities and create smart methods to optimize aimpoints for effective High Energy Laser weapon systems fire control solutions.												
FY 2025 Plans:												
This effort will mature Vulnerability Modules for Group 2-3 Unmanned Aerial Systems, Rotary Wing, and subsonic cruise missiles to a Vulnerability Modules Readiness Level 5; Supersonic Cruise Missiles to Vulnerability Module Readiness Level 4; and												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602150A / <i>Air and Missile Defense Technology</i>	Project (Number/Name) CV8 / <i>Vulnerability Modules for Multi-Domain Operations</i>	

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2024	FY 2025	FY 2026
<p>Hypersonic CM VM Readiness Level 3. The Smart Vulnerability Module methodology will be expanded to targets beyond the initial use in Group 1-2 Unmanned Aerial Vehicles.</p> <p><i>FY 2026 Plans:</i> This effort will continue to mature Vulnerability Modules for Group 2-3 Unmanned Aerial Systems, Rotary Wing, and subsonic cruise missiles to a Vulnerability Modules Readiness Level 5; Subsonic Cruise Missiles to Vulnerability Module Readiness Level 5; and Supersonic CM VM Readiness Level 4. The Smart Vulnerability Module methodology will be expanded to cover additional features on Group 2-3 Unmanned Aerial Systems and integrate weapon performance prediction in order to provide a complete component capable of providing stand alone time-to-kill predictions. In addition, will conduct investigations of target response kill mechanisms in order to improve weapon lethality and/or increase weapon range.</p> <p><i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> Funding decrease reflects a planned decrease in design activities and economic assumptions.</p>			
Accomplishments/Planned Programs Subtotals	8.659	7.750	7.230

C. Other Program Funding Summary (\$ in Millions) N/A	Remarks	
D. Acquisition Strategy N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602150A / Air and Missile Defense Technology				Project (Number/Name) DA9 / Radar Survivability through Dis Sensing Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
DA9: Radar Survivability through Dis Sensing Tech	-	4.531	4.084	0.995	-	0.995	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This project investigates and develops critical radar capability enhancements to defeat advanced Air and Missile threats and protect Army maneuver forces and critical assets. Radar enhancements are required for advanced Electronic Protection (EP) techniques against advanced jammers, electronic Combat Identification (CID), and resource optimization across the threat spectrum while retaining 360 degree coverage capability. Technology development includes providing capabilities for: dispersed multi-static operation, classifying/tracking emerging threats and high-volume threats; adaptive digital beam forming to enable resource efficiency, performance in a dynamic clutter environment and enhanced survivability in a contested battlespace; and multi-modal tracking and additional discrimination models to support diverse and emerging threats, such as swarms and guided munitions. Enhanced development for the state-of-the-art scalable, digital array radar testbed to include advanced algorithms, transmitted power, antenna gain, detection range and angle accuracy/resolution upgrades to the existing/new radar front/back ends will allow greater performance characterization for Multi-mission Army Radar systems supporting Multi-domain Operations (MDO).

This research complements Program Element (PE) 0602141A (Lethality Technology) / Project CG4 (Advanced Radar Concepts); PE 0602148A (Future Vertical Lift Technology) / Project CC3 (FVL Radar Technology); and PE 0601102A (Defense Research Sciences) / Project AA8 (Foundational Distributed Radar); and PE0602141A (Lethality Technology) / Project CJ7 (Future Air Defense Missile Enabling Technology) and PE 0603466A (Air and Missile Defense Advanced Technology) / Project DB3 (Radar Survivability through Dis Sensing Adv Tech)); and PE 0602275A (Electronic Warfare Applied Research)/ Project A70 (Sensor Electronic Support Tech); and PE 0603275A (Electronic Warfare Advanced Technology) / Project A78 (Sensor Electronic Support Adv Tech)

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.

Work in this Project is performed by the Aviation & Missile Center (AvMC).

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

	FY 2024	FY 2025	FY 2026
Title: Radar Survivability through Dis Sensing (RSDS) Tech	4.531	4.084	0.995
Description: Investigates and develops critical radar capability enhancements to defeat advanced Air and Missile threats and protect Army maneuver forces and critical assets			
FY 2025 Plans: Will develop a multi-static sensing concept of operations (CONOPS) to inform future requirements for Lower Tier Air and Missile Defense Sensor (LTAMDS); develop a strategy and framework to integrate multi-static awareness in the Integrated Air and Missile Defense Battle Command System (IBCS). Enhance the modeling and simulation efforts and concepts in the areas of operations			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army			Date: June 2025		
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602150A / Air and Missile Defense Technology	Project (Number/Name) DA9 / Radar Survivability through Dis Sensing Tech		
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2024	FY 2025	FY 2026
analysis, radar resource optimization, and radar communications; inform performance metrics of distributed sensing in a multi-static radar configuration.					
FY 2026 Plans: Will complete modeling and simulation efforts and concepts in the areas of operations analysis, radar resource optimization, and radar communications.					
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects realignment to Program Element (PE) 0602275A (Electronic Warfare Applied Research) / Project A70 (Radar Survivability through Dis Sensing Tech) as a part of the Department of Defense Capability Based (Agile) Funding pilot, which provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology.					
Accomplishments/Planned Programs Subtotals			4.531	4.084	0.995
C. Other Program Funding Summary (\$ in Millions)					
N/A					
Remarks					
D. Acquisition Strategy					
N/A					

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602150A / Air and Missile Defense Technology				Project (Number/Name) DC1 / Next Generation DE Concept Development & Analysis			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
DC1: Next Generation DE Concept Development & Analysis	-	6.309	8.303	6.686	-	6.686	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
<p>This Project researches and investigates technologies that will enable next generation directed energy weapons to operate more efficiently and defend against challenging evolving threats. Research areas investigated include lethality effectiveness, adaptive optics, beam control, laser sources, algorithms, and analyses for applications that will enable an improved layered defense capability. This Project determines critical activities to enable next generation directed energy technical innovations.</p> <p>Work in this Project complements (PE) 0602150A (Air and Missile Defense Technology)/Projects CV7 (High Energy Laser Direct Diode Applied Technology), CV8 (Vulnerability Modules for Multi-Domain Operations) and DE3 (Advanced Beam Control Component Development for Counter-Cruise Missile) and PE 0603466A (Air and Missile Defense Advanced Technology)/Projects CV6 (Optimized High Energy Laser Source Advanced Technology) and IB1 (Integrated Beam Control Systems Demonstration for Counter-Cruise Missile).</p> <p>The cited research is consistent with the Army's modernization programs, the Under Secretary of Defense for Research and Engineering priority focus areas, the Army Modernization Strategy, and supports the Army's future capability opportunities for leap-ahead technology for Directed Energy.</p> <p>Research is performed by the United States Army Space and Missile Defense Command - Technical Center (USASMDC-TC).</p>												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Next Generation Direct Energy Concept Development and Analysis									6.309	8.303	6.686	
Description: This effort funds foundational research on next generation directed energy technologies that will enable improved capabilities to current weapon systems and expand capabilities to different mission areas as threats emerge. This effort investigates directed energy lethality against evolving threats and identifies architectures necessary to provide the capability. This effort develops physics-based model of complex phenomenology to understand performance of weapon systems.												
FY 2025 Plans:												
Will research and investigate laser sources, beam control and lethal effectiveness for emerging threats and increased high energy laser (HEL) system effectiveness against a range of existing threats. Will perform analysis on HEL weapon systems in varying												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602150A / <i>Air and Missile Defense Technology</i>	Project (Number/Name) DC1 / <i>Next Generation DE Concept Development & Analysis</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p>architectures against emerging threats and develop concept architectures that will provide advanced warfighting capabilities. Develop technical research strategies and funding requirements for future advanced HEL capabilities.</p> <p><i>FY 2026 Plans:</i> Will continue to research and investigate laser sources, beam control, pulsed lasers and lethal effectiveness for emerging threats and increased high energy laser (HEL) system effectiveness against a range of existing and future threats. Will perform analysis on HEL weapon systems in varying architectures against emerging threats and develop concept architectures that will provide advanced warfighting capabilities. Develop technical research strategies and funding requirements for future advanced Directed Energy capabilities.</p> <p><i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> Funding decrease is due to economic assumptions.</p>			
Accomplishments/Planned Programs Subtotals		6.309	8.303
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602150A / Air and Missile Defense Technology				Project (Number/Name) DE3 / Adv Beam Control Component Development for C-CM			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
DE3: Adv Beam Control Component Development for C-CM	-	7.984	5.361	5.505	-	5.505	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This project researches and develops advanced beam control technologies to enable new sensors, illuminators, deformable mirrors, wavefront sensors (WFS), optical components, and acquisition and tracking concepts. Design and develop an advanced large-aperture off-axis beam expander, incorporating innovative, cost-saving component research. Develop algorithms for WFS and laser-quality tracking. This effort will increase effective range for multi-domain missions, including counter-cruise missile operations.

Work in this Project complements (PE) 0602150A (Air and Missile Defense Technology)/Project DC1 (Next Generation Directed Energy Concept Development and Analysis) and PE 0603466A (Air and Missile Defense Advanced Technology)/Project IB1 (Integrated Beam Control Systems Demonstration for Counter-Cruise Missile).

The cited research is consistent with the Army's modernization programs, the Under Secretary of Defense for Research and Engineering priority focus areas, the Army Modernization Strategy, and supports the Army's future capability opportunities for leap-ahead technology for Directed Energy.

Research is performed by the United States Army Space and Missile Defense Command - Technical Center (USASMDC-TC) in coordination with RCCTO.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2024	FY 2025	FY 2026
Title: Advanced Beam Control Component Developments for C-CM	7.984	5.361	5.505
Description: Support Advanced Beam Control			
Develop New Technologies for Beam Director Assemblies.			
Support the Space and Missile Defense Commands efforts in developing Counter Cruise Missile Components/Subsystems.			
FY 2025 Plans:			
Continue research and development of beam control technologies that will enable a high energy laser weapon system to extend the effective range. Continue development of 50-cm class high energy laser beam expander with Technology Readiness Level (TRL) 4 laboratory validation. Continue development of advanced adaptive optics systems in a laboratory environment with a TRL 4 demonstration. Continue development of laser quality tracking improvements.			
FY 2026 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602150A / <i>Air and Missile Defense Technology</i>	Project (Number/Name) DE3 / <i>Adv Beam Control Component Development for C-CM</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Continue development of beam control technologies and algorithms to increase the effective range of a high energy laser weapon system. Mature component-level concepts to support readiness for transition. Develop a stabilized pointing environment for a large-aperture high energy laser beam expander. Conduct advanced adaptive optics algorithm development in a laboratory environment, with a TRL 4 demonstration planned for FY26. Continue optimization of laser-quality tracking algorithms.				
<i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> Funding increase is due to economic assumptions.				
Accomplishments/Planned Programs Subtotals		7.984	5.361	5.505
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602150A / Air and Missile Defense Technology				Project (Number/Name) HP1 / High Power Microwave Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
HP1: High Power Microwave Technology	-	-	-	0.500	-	0.500	-	-	-	-	-	-
Note High Power Microwave Technology is a new start within the Air and Missile Defense Technology program in FY 2026. HP1 - New start in FY26. A. Mission Description and Budget Item Justification This Project will design and develop High Power Microwave (HPM) Vulnerability Data, engagement tactics data and kill signatures for targeting Unmanned Aerial Systems, Cruise Missiles, and Precision Guided Munition (PGM) threats for future HPM weapon systems. It will also develop additional HPM capabilities unique to the Army needs including antennas, sources, and other HPM system components. Data developed will be incorporated to enable real time threat detection and targeting, increasing the lethality of the HPM weapon systems through optimizing waveform selection. Research in this Project complements other Army Directed Energy efforts conducted for IFPC-HPM, PE 0604019A / Expanded Mission Area Missile (EMAM). The cited research is consistent with the Army's modernization programs, the Under Secretary of Defense for Research and Engineering priority focus areas, the Army Modernization Strategy, and supports the Army's future capability opportunities for leap-ahead technology for Directed Energy. Research is performed by the United States Army Space and Missile Defense Command - Technical Center (USASMDC-TC) in coordination with RCCTO and PEO Missiles and Space. B. Accomplishments/Planned Programs (\$ in Millions)												
									FY 2024	FY 2025	FY 2026	
Title: High Power Microwave Enabling and Support Technologies									-	-	0.500	
FY 2026 Plans: Will establish baseline procedures for testing RF components and begin testing components and subsystems suggested by MISIC and RCCTO.												
FY 2025 to FY 2026 Increase/Decrease Statement: New project starting in FY26												
Accomplishments/Planned Programs Subtotals									-	-	0.500	

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602150A / Air and Missile Defense Technology	Project (Number/Name) HP1 / High Power Microwave Technology
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
D. Acquisition Strategy N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602150A / Air and Missile Defense Technology				Project (Number/Name) SU1 / Counter Small Unmanned Aircraft Sys (C-sUAS) Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
SU1: Counter Small Unmanned Aircraft Sys (C-sUAS) Tech	-	-	7.694	-	-	-	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project investigates, designs and develops novel Counter-small Unmanned Aircraft System (C-sUAS) kinetic missile interceptor capabilities. Project will transition technologies for increased range, reduce reaction time, increase lethality, improve reliability, reduce reload time for fixed site and mobile C-sUAS configurations.												
Provides maneuver forces a quick-response, high speed, long-range kinetic interceptor capabilities against Group 3 small Unmanned Aircraft Systems (sUAS) that operate at higher altitudes with greater standoff ranges for Multi-Domain Operations (MDO). Designs and develops small, lightweight, and low-cost missile interceptor technologies for increased magazine depth (stowed kills) to enable brigade/maneuver force kinetic defeat of numerous sUAS at short range. Provides deeper magazine against sUAS threats with versatile employment options at a low cost, and maneuver forces increased freedom of movement and protection during large scale combat operations. This project supports Air and Missile Defense Modernization priority efforts.												
Work in this project complements Program Element (PE) 0602141A (Lethality Technology) / Project CJ7 (Future Air and Missile Defense Enabling Technology); PE 0602147A (Long Range Precision Fires Technology / Project AF8 (Affordable Extended Range Precision Technology); and PE 0603464A (Air and Missile Defense Advanced Technology) / Project SU2 (Counter s-UAS Advanced Tech).												
The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.												
Work in this Project is performed by the Aviation & Missile Center (AvMC).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Extended Range C-sUAS (XRC) Tech									-	7.694	-	
Description: This effort investigates concepts, performs trade studies, and provides component technology development to increase range, reduce reaction time, increase lethality, improve reliability, and reduce reload time for C-sUAS kinetic interceptor capabilities for the maneuver forces fixed site and mobile C-sUAS configurations.												
FY 2025 Plans: Will investigate critical component technology to address small form factor C-sUAS missile systems; design and develop novel propulsion concepts through component evaluation and analysis; investigate small form factor seeker technology to meet long												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602150A / Air and Missile Defense Technology	Project (Number/Name) SU1 / Counter Small Unmanned Aircraft Sys (C-sUAS) Tech		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
range missile intercept requirements; design and develop small form factor critical missile components for extended range UAS targets. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects realignment to Program Element (PE) 0602135A (Counter Small Unmanned Aerial Systems (C-SUAS) Applied Research) / Project A31 (Counter Small Unmanned Aircraft Sys (C-sUAS) Tech) as a part of the Department of Defense Capability Based (Agile) Funding pilot, which provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology.				
Accomplishments/Planned Programs Subtotals		-	7.694	-
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army	Date: June 2025
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Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 2: Applied Research	R-1 Program Element (Number/Name) PE 0602180A / Artificial Intelligence and Machine Learning Technologies
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COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
Total Program Element	-	23.702	20.319	13.745	-	13.745	-	-	-	-	-	-
CL2: AI Enhanced Intel Operations Technologies	-	2.453	2.969	2.818	-	2.818	-	-	-	-	-	-
CL7: ATR Using Multiple Cooperative Sensors App Tech	-	7.938	5.696	2.629	-	2.629	-	-	-	-	-	-
CN7: Predictive Maintenance Applied Research	-	5.810	6.071	1.265	-	1.265	-	-	-	-	-	-
DA5: AI Enabled Talent Management Applied Research	-	-	0.307	0.312	-	0.312	-	-	-	-	-	-
DA6: AI-Enabled Command and Coordination Apl Research	-	3.146	3.525	4.976	-	4.976	-	-	-	-	-	-
DB9: Army AI Integration Center Apl Research (CA)	-	3.000	-	-	-	-	-	-	-	-	-	-
DE8: AI Development Environment Applied Research	-	1.355	1.751	-	-	-	-	-	-	-	-	-
DM7: Counter AI App Rsch	-	-	-	1.496	-	1.496	-	-	-	-	-	-
DM8: AI Enabled Contested Logistics Spt Tools App Tech	-	-	-	0.249	-	0.249	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Program Element (PE) investigates artificial intelligence (AI) and machine learning (ML) to support an AI-enabled Multi-Domain Operations (MDO) Force to mature target recognition/detection using multiple cooperative autonomous sensors (MCAS), leader decision-making, replication of tactical behaviors to enable autonomous capabilities for maneuver, predictive maintenance, and intelligence support for operations in support of long-range precision fires. The Army's Artificial Integration Center (AI2C) will provide strategic guidance and coordination of these applied research efforts in AI/ML across the Army Modernization enterprise.

Work in this PE contributes to the Army Science and Technology (S&T) portfolio and is fully coordinated with efforts in PE 0601601A (Artificial Intelligence Basic Research) and PE 0603040A (Artificial Intelligence Advanced Technologies).

The cited research is consistent with the Under Secretary of Defense for Research and Engineering S&T focus areas, the Army Modernization Strategy and the Chief Digital and Artificial Intelligence Office (CDAO).

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army				Date: June 2025	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
2040: Research, Development, Test & Evaluation, Army I BA 2: Applied Research		PE 0602180A I Artificial Intelligence and Machine Learning Technologies			
B. Program Change Summary (\$ in Millions)	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Previous President's Budget	24.142	20.319	19.721	-	19.721
Current President's Budget	23.702	20.319	13.745	-	13.745
Total Adjustments	-0.440	0.000	-5.976	-	-5.976
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	3.000	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-2.477	-			
• SBIR/STTR Transfer	-0.878	-			
• Adjustments to Budget Years	-	-	-5.976	-	-5.976
• FFRDC Transfer	-0.085	-	-	-	-
Congressional Add Details (\$ in Millions, and Includes General Reductions)					
Project: DB9: Army AI Integration Center Apl Research (CA)					
Congressional Add: Automated Battle Damage Assessment and Adjust Fire					
Congressional Add Subtotals for Project: DB9					
Congressional Add Totals for all Projects					
Change Summary Explanation					
Funding decrease In Fiscal Year (FY) 2026 from the previous PB to the current PB reflects realignments to support Army Priorities, and to support acceleration of the technology transition to Program Element (PE) 0603040A (Artificial Intelligence and Machine Learning Advanced Technology).					

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army	Date: June 2025
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Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602180A / Artificial Intelligence and Machine Learning Technologies				Project (Number/Name) CL2 / AI Enhanced Intel Operations Technologies			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CL2: AI Enhanced Intel Operations Technologies	-	2.453	2.969	2.818	-	2.818	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Project will design and develop technologies to augment human intelligence analysts with artificial intelligence (AI) and machine learning (ML)-enabled decision support, workflow automation, and recommendation tools to modernize how the Intelligence Warfighting Function supports Multi-Domain Operations and Joint All Domain Command and Control (JADC2). This Project will mature technologies that will enable intelligence organizations to conduct synchronized, proactive intelligence operations, therefore optimizing team performance.

Work in this project complements Program Element (PE) 0603040A (Artificial Intelligence and Machine Learning Advanced Technologies) / Project CL1 (AI Enhanced Intel Operations Advanced Technologies).

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

Work in this Project is performed by the Artificial Intelligence Integration Center (AI2C).

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

	FY 2024	FY 2025	FY 2026
Title: AI-Enabled Intelligence Decision Support	0.963	0.914	0.669
Description: This effort will investigate the augmentation of Military Intelligence and Operations (Intel/Ops) with artificial intelligence capabilities to leverage Mission, Enemy, Terrain and Weather, Troops, Time Available, and Civilian Considerations (METT-TC) information available to Commanders in support of Intelligence Preparation of the Battlefield (IPB) and the Military Decision Making Process (MDMP). The effort will mature techniques to visualize and animate threat models to support automated AI-enabled enemy courses of action analysis.			
FY 2025 Plans: Design and develop AI agents to employ METT-TC information available to Commanders to generate courses of action for threat formations as well as conduct AI-war gaming in support of Intelligence Preparation of the Operational Environment and the Military Decision Making Process. This effort will conduct experiments of automated real-time strategy war gaming between synthetic agents representing friendly and adversary forces at Corps and above echelons.			
FY 2026 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army			Date: June 2025		
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602180A / <i>Artificial Intelligence and Machine Learning Technologies</i>	Project (Number/Name) CL2 / <i>AI Enhanced Intel Operations Technologies</i>		
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2024	FY 2025	FY 2026
Will apply and experiment with AI agents for logistics and sustainment, medical, and operations in automated real-time strategy war games between synthetic agents at Corps and above echelons to explore possible improving workflow efficiencies in the staff.					
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects realignment to Program Element (PE) 06022180A (Artificial Intelligence and Machine Learning Technologies) / Project DA6 (I-Enabled Command and Coordination Apl Research) to continue Soldier Assistant Language Technologies effort.					
Title: Foundation for AI Intelligence Support to Operations (ARCANE SERIES) Description: Design and develop an AI infrastructure/pipeline for training, integrating, and sustaining AI across multiple AI domains to inform requirements for enterprise production systems and edge systems for the Army Military Intelligence and Operations (Intel/Ops) community. FY 2025 Plans: Will continue to mature data frameworks and data pipelines for fusion of intelligence data from multiple military intelligence systems. Will continue to develop and conduct experiments with infrastructure components that can implement machine learning algorithms across multiple AI domains. FY 2026 Plans: Will validate operational prototype designs to support Army efforts to develop and deploy trusted AI/ML through fusion of intelligence data from multiple military intelligence systems; provide infrastructure components capable of implementing AI/ML algorithms across multiple domains. FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase is an economic adjustment.			0.482	0.802	0.828
Title: Rare Object Generation and Detection Description: This effort will design and develop AI and machine learning (ML) technology to generate and detect objects that are rarely detected and have limited training data sets (rare object generation and detection). Rare object generation and detection is a key ML challenge due to limited amounts of available training data that make it difficult to build high performing AI models to address these challenges.			0.493	-	-
Title: AI-Enabled Intelligence Fusion for Targeting Description: AI Enabled Intelligence Fusion for Targeting will investigate the fusion of different type of intelligence data (multi-INT fusion) and validate AI algorithms that can fuse data from various military intelligence systems to support sensor to shooter automation for the strategic, operational, and tactical levels. This effort will design and develop AI capabilities for support of			0.515	0.802	0.828

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army			Date: June 2025		
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602180A / <i>Artificial Intelligence and Machine Learning Technologies</i>		Project (Number/Name) CL2 / <i>AI Enhanced Intel Operations Technologies</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2024	FY 2025	FY 2026
Long Range Precision Fires, Mission Command, and Maneuver Commanders by leveraging Intelligence Community enterprise investments in sensing, data transport, and Machine Learning / AI frameworks.					
FY 2025 Plans: Will develop and mature a system of applications that utilize AI technologies to identify targets of interest and develop algorithms that use multiple data sources to predict representation for novel object classes from a small number of novel class samples. Will investigate the fusion of visual, language, signal, and event-based information and semantic relationships to learn new objects and relationships and validate knowledge transfer from base classes to novel classes to reduce the time it takes to train AI algorithms.					
FY 2026 Plans: Will develop and design a system of applications that utilize AI technologies to identify targets of interest and develop algorithms that use multiple data sources to predict representation for novel object classes from a small number of novel class samples; investigate the fusion of visual, language, signal, and event-based information and semantic relationships to learn new objects and relationships and validate knowledge transfer from base classes to novel classes to reduce the time it takes to train AI algorithms.					
FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase is an economic adjustment.					
Title: AI-Enabled Social Media Exploitation Description: Artificial Intelligence (AI) Enabled Social Media Exploitation will enhance the social cybersecurity posture for the U.S. Army by developing, maturing, and experimenting with AI-enabled tools for exploiting social media information and other pertinent publicly available information (PAI). This effort investigates how the combination of network science with AI/ML techniques such as natural language processing and low shot learning and enables identification and characterization of adversaries and collection opportunities via cyber-mediated vectors. These capabilities support improved battlefield awareness by allowing operational units to discover and track online, adversarial influence campaigns, in multiple languages across multiple platforms.			-	0.451	0.493
FY 2025 Plans: Will design, develop, and mature an application for the purpose of investigating network science algorithms that apply natural language and low shot learning technologies for the purposes exploiting social media platforms and publicly available information for increased battlefield awareness. Will experiment internally to determine which technical approaches are most effective at achieving the desired effect.					
FY 2026 Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602180A / Artificial Intelligence and Machine Learning Technologies	Project (Number/Name) CL2 / AI Enhanced Intel Operations Technologies		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Will design and develop an application for the purpose of investigating network science algorithms that apply natural language and low shot learning technologies; enable exploitation of social media platforms and publicly available information for increased battlefield awareness. FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase is an economic adjustment.				
Accomplishments/Planned Programs Subtotals		2.453	2.969	2.818
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army	Date: June 2025
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Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602180A / <i>Artificial Intelligence and Machine Learning Technologies</i>				Project (Number/Name) CL7 / <i>ATR Using Multiple Cooperative Sensors App Tech</i>			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CL7: <i>ATR Using Multiple Cooperative Sensors App Tech</i>	-	7.938	5.696	2.629	-	2.629	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Project will design and develop Artificial Intelligence (AI) and Machine Learning (ML) algorithms that leverage a team of air and ground sensors to autonomously navigate and collaborate through shared perception of the optical, thermal, and electromagnetic spectrums to find, identify, geo-locate, and track targets during reconnaissance missions. These technologies will produce prototype implementations of novel autonomy and detection algorithms to be run on teams of air and ground sensors, as well as an appropriate interface to task and observe feedback from autonomous sensors.

Work in this Project complements Program Element (PE) 0603040A (Artificial Intelligence and Machine Learning Advanced Technologies) / Project CL6 (ATR Using Multiple Cooperative Sensors Adv Technologies)

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

Work in this Project is performed by the Artificial Intelligence Integration Center (AI2C).

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

Title: Collaborative Target Detection and Tracking	FY 2024	FY 2025	FY 2026
Description: This effort will design and develop the AI / ML technologies to automatically detect and track targets using electro-optical, thermal, and electromagnetic sensors and constrained computing hardware onboard the air and ground vehicles and share threat perception across the unmanned team.	3.423	2.505	1.330
FY 2025 Plans: Develop and experiment with the means to perform multi-scale detections on static and mobile targets, where initial detections from a wide-angle sensor are further discriminated using a detector that processes images with more pixels of the target provided by a separate pan, tilt, zoom (PTZ) sensor. Develop a cross-platform fusion model that uses the appearance of targets - to include 3D information to determine whether newly detected targets are the same as those previously reported to the common operating picture (COP). Develop and experiment with the means to pre-process imagery from sensors - using machine learning or computer vision - to optimize camera parameters so that high-quality images with more constant exposure, contrast, and color balance are fed into the Aided Target Recognition (AiTR) model. Develop methods for integrating a laser rangefinder with the PTZ unit to reduce target location error. Experiment with improved ATR performance based on the capabilities of faster maneuver,			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602180A / <i>Artificial Intelligence and Machine Learning Technologies</i>	Project (Number/Name) CL7 / <i>ATR Using Multiple Cooperative Sensors App Tech</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
multi-spectral detection for both static and mobile targets, maintain target custody of mobile targets and collaborate ground and air platforms to support these improvements.			
FY 2026 Plans: Will improve algorithms for disambiguation of detected targets across multiple sensors of various modalities and resolutions; develop efficient techniques to adapt detection algorithms to mutable targets in novel environments.			
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects realignment to Program Element (PE) 0602180A (Artificial Intelligence and Machine Learning Technologies) / Project DA6 (AI-Enabled Command and Coordination Apl Research) and PE 0603462A (Next Generation Combat Vehicle Advanced Technology) / Project BF4 (Combat Vehicle Robotics Adv Tech).			
Title: Autonomous and Collaborative Mobility		3.386	2.189
Description: This effort will design and develop mobility algorithms using AI and ML techniques that allow autonomous ground and air vehicles to passively perceive the terrain and self-navigate without active and detectable sensing. Design and develop collaborative teaming techniques for autonomous air and ground vehicles to work together on reconnaissance missions.			
FY 2025 Plans: Develop and mature 3D stereo data self-registration techniques to improve robustness of perception in rough terrain by correcting for pose estimation error. Integrate multi-scale processing techniques (e.g., variable resolution and frame rates) to improve robustness of perception at higher traversal speeds. Develop a module that optionally activates and leverages data from a LiDAR sensor when the threat of detection is minimal. Develop and demonstrate autonomous operation without using or dependency on a global prior cost map. Develop terrain awareness for autonomous UAS's - using pre-loaded or referenced elevation data - so that UAS's avoid hazardous terrain features and can self-identify exclusion areas. Develop payloads on ground robotic vehicles that capable of storing, transporting, and autonomously launching small UASs.			
FY 2026 Plans: Will develop improvements to algorithms used for teaming and information sharing between air and ground sensors with a focus on environments with low and intermittent network connectivity; develop adaptable autonomous behaviors for different mission areas, environments, or targets; improve autonomy algorithms to improve collaborative behaviors between air and ground vehicles.			
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease supports completion of algorithms used in this approach to conducting air and ground autonomy and collaboration. Funding realigned to Program Element (PE) 0603462A / Project BF4 (Combat Vehicle Robotics Adv Tech).			
Title: Intuitive Mission Command Interfaces		1.129	1.002
			0.950

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602180A / <i>Artificial Intelligence and Machine Learning Technologies</i>	Project (Number/Name) CL7 / <i>ATR Using Multiple Cooperative Sensors App Tech</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p>Description: Design and develop the capability for warfighters to quickly and intuitively convey reconnaissance guidance, confirm or deny detected targets, and take recommended action through common mission command tools, including Tactical Assault Kit (TAK) and Integrated Visual Augmentation System (IVAS).</p> <p>FY 2025 Plans: Mature the User Interface/User Experience (UI/UX) to develop an updated messaging solution that supports interoperability to the dismounted, mounted and fires community as an improved Android Tactical Assault Kit (ATAK) plug-in across multiple WfF. The UI/UX would define critical command and control messages for the air and ground robots to ensure the protocol specification includes the automatic acknowledgement and retransmission of these messages that communicate to the Tactical Operations Center. Develop algorithms to reside on the robots and verify whether missions received from ATAK are valid (e.g., whether on area designated for reconnaissance is feasible based on platform range or battery life). Integrate joystick commands received from ATAK so that designated robots can be tele-operated on-demand until autonomy operations are employed. Develop UAS controls inside ATAK to operate UAS as a ground control station via a plug-in supported in multiple formations. Develop relevant real-time sensor data from robots to ATAK, to include state information and status health status robots, progress on mission execution, snapshots, or video from sensors, etc. Develop the ability for robots to send high-quality picture images, to include the option of panoramic images, on-demand from ATAK. Experiment with the features and enhancements to ATAK and verify full functionality in degraded wireless networks.</p> <p>FY 2026 Plans: Will develop efficient techniques, interfaces, information display, and user feedback to allow a single user to appropriately task many air and ground sensors; develop improved system feedback mechanisms to the operator; develop the ability for multiple users to split and hand off control of sensors as mission dictates; improve the user experience to allow full control and tasking ability of air and ground sensors throughout a mission, to include robust fault identification and user feedback for recovery.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects realignment to Program Element (PE) 0603462A (Next Generation Combat Vehicle Advanced Technology) / Project BF4 (Combat Vehicle Robotics Adv Tech)</p>			
Accomplishments/Planned Programs Subtotals		7.938	5.696
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602180A / Artificial Intelligence and Machine Learning Technologies	Project (Number/Name) CL7 / ATR Using Multiple Cooperative Sensors App Tech
D. Acquisition Strategy N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602180A / Artificial Intelligence and Machine Learning Technologies				Project (Number/Name) CN7 / Predictive Maintenance Applied Research			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CN7: Predictive Maintenance Applied Research	-	5.810	6.071	1.265	-	1.265	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Project designs and develops artificial intelligence (AI) and machine learning (ML) tools and capabilities to predict and analyze maintenance status for emerging and legacy aviation and ground platforms. Investigates techniques to extract data from maintenance databases and platform sensors and make inferences of missing data via virtual simulations. Will investigate maintenance concepts that employ AI data capture and integrate AI tools into enterprise resource planning for military aviation and ground vehicles. Will determine platforms of focus and prioritize by cost and value to Army missions. Each platform will be sequentially investigated at the appropriate component (i.e. engine health) and fleet level. Will determine appropriate technologies and capabilities needed to construct a robust Army-wide predictive maintenance platform that will accelerate the pace of innovation for this problem set. Will validate and inform requirements and technical architectures for modernization efforts of next generation aviation and ground systems both manned and unmanned. These technologies will produce concepts for a digitized maintenance environment that provides real-time decision-making support tools to maintainers and commanders by producing a warfighter optimized front end with an enterprise aggregated back end.

Work in this project complements Program Element (PE) 0603040A (Artificial Intelligence and Machine Learning Advanced Technologies) / Project CN6 (Predictive Maintenance Advanced Technology).

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

Work in this Project is performed by the Artificial Intelligence Integration Center (AI2C).

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

	FY 2024	FY 2025	FY 2026
Title: Predictive Maintenance	5.810	6.071	1.265
Description: This Project designs and develops artificial intelligence (AI) and machine learning (ML) tools and capabilities to predict and analyze maintenance status for emerging and legacy aviation and ground platforms. Investigates techniques to extract data from maintenance databases and platform sensors and make inferences to address missing data. Will investigate maintenance concepts that employ AI data capture and integrate AI tools into enterprise resource planning for military aviation and ground vehicles. Will determine platforms of focus and prioritize by cost and value to Army missions. Each platform will be sequentially investigated at the appropriate component (i.e. engine health) and fleet level. Will determine appropriate technologies and capabilities needed to construct a robust Army-wide predictive maintenance platform that will accelerate the pace of innovation for this problem set. Will validate and inform requirements and technical architectures for modernization efforts of next generation aviation and ground systems both manned and unmanned.			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602180A / <i>Artificial Intelligence and Machine Learning Technologies</i>	Project (Number/Name) CN7 / <i>Predictive Maintenance Applied Research</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
<i>FY 2025 Plans:</i> Designs and develops models for serialized component level analysis that are enhanced with non-serialized component information based off fault write-ups associated with a particular sub-component. Matures the model development and deployment pipeline to provide the ability to train, retrain, or update the component model and redeploy to the flight line in mission relevant time for predictive analytics. Predictive maintenance modeling will be expanded to proper maintenance management to allow for battalion maintenance officers to properly manage their unit's maintenance program and forecast upcoming scheduled and unscheduled maintenance.				
<i>FY 2026 Plans:</i> Will capitalize on component level analysis by developing models to predict part replacements based on training cycles and major maintenance inspections; utilize the model development pipeline, predictive capabilities will be expanded across the force to identify when equipment will be down and when it will be fixed based on the maintenance, operations, and personnel landscape within a unit.				
<i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> Funding decrease reflects administrative realignment to Program Element (PE) 0603040A (Artificial Intelligence and Machine Learning Advanced Technologies) / Project CN6, (Predictive Maintenance Advanced Technologies) to continue the maturation of advanced communications components and to PE 0602180A (Artificial Intelligence and Machine Learning Advanced Technologies) / Project NS43 (Counter AI App Rsch).				
Accomplishments/Planned Programs Subtotals		5.810	6.071	1.265
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army	Date: June 2025
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Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602180A / Artificial Intelligence and Machine Learning Technologies				Project (Number/Name) DA5 / AI Enabled Talent Management Applied Research			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
DA5: AI Enabled Talent Management Applied Research	-	-	0.307	0.312	-	0.312	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Project designs, develops, and validates applied behavioral and social science research to enhance the Soldier Lifecycle (e.g., selection, assignment, training, and leader development) and human relations (e.g., unit cohesion). This Project will design and develop new personnel measures and methods that more fully assess potential and predict performance, behavior, attitudes, and resilience. These technologies also provide innovative and effective Force Integration methods to optimize individual and team performance to ensure the Army can meet mission requirements in uncertain and complex environments. This Project designs and develops new performance measures and metrics for individuals and units, designs innovative training methods, and conducts scientific assessments to inform Human Capital policy and programs. This Project will also investigate non-materiel solutions to help the Army adjust to changes in force size and structure, a variety of mission demands and contexts, challenges in human relations, and budgetary constraints. These technologies will produce tools that can measure and assess the skills of individual Soldiers and units' readiness to meet mission requirements.

Work in this Project complements Program Element (PE) 0603007A (Manpower, Personnel and Training Advanced Technology) / Project 792 (Personnel Performance & Training).

The cited work is consistent with Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy. Research in this Project supports the Army Science and Technology Ground Portfolio.

Work in this Project is performed by the Artificial Intelligence Integration Center (AI2C).

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

	FY 2024	FY 2025	FY 2026
Title: Artificial Intelligence (AI)-Enabled Skill Identification for Job Matching and Team Building	-	0.307	0.312
Description: This effort will develop AI techniques to create an analytical suite that can measure skills required by job postings and skills possessed by soldiers and officers. This will permit the Army to "put the right person in the right job" and determine how to combine individuals to optimize team performance.			
FY 2025 Plans: Will investigate the scalability of the application to enterprise-level requirements. This will include, but not limited to, identifying various datasets of interest that are relevant to various skill sets, education, training, and expertise of candidates, investigating and analyses of these datasets by using natural language processing, large language models and other means. This project will			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602180A / <i>Artificial Intelligence and Machine Learning Technologies</i>	Project (Number/Name) DA5 / <i>AI Enabled Talent Management Applied Research</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p>design and develop algorithms to identify complementary team members and recommend individual substitutions, along with the retention of individuals to improve and maintain team performance.</p> <p><i>FY 2026 Plans:</i> Will develop the data pipeline from accessions through initial military training to assess Soldier performance; validate models to identify future Soldiers and increase the quantity and quality of Soldiers entering the accessions process; validate models which can predict Soldier graduation rates through initial military training; model individual and collective unit mission essential tasks to analyze and predict mission readiness.</p> <p><i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> Funding increase reflects an economic adjustment for non-pay and non-fuel purchases.</p>			
Accomplishments/Planned Programs Subtotals		-	0.307
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602180A / Artificial Intelligence and Machine Learning Technologies				Project (Number/Name) DA6 / AI-Enabled Command and Coordination Apl Research			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
DA6: AI-Enabled Command and Coordination Apl Research	-	3.146	3.525	4.976	-	4.976	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Project designs and develops solutions that enable Artificial Intelligence (AI)-Enabled Command and Coordination. Additionally, project investigates and matures technologies required to enable commanders and their staff to synchronize and converge all elements of available combat power to achieve multi-domain effects. Technology maturation includes the development and testing of algorithms, models, software, hardware, and interfaces required to support the command of Army forces, coordination of Army operations, execution of the operations process, and establishing necessary Command and Control (C2) systems.

Work in this Project complements Program Element (PE) 0603040A (Artificial Intelligence and Machine Learning Advanced Technologies) / Project DA7 (AI-Enabled Command and Coordination Adv Tech).

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

Work in this Project is performed by the Artificial Intelligence Integration Center (AI2C).

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

	FY 2024	FY 2025	FY 2026
Title: AI-Enhanced Planning for Optimal Operations	1.927	1.002	0.755
Description: This effort designs and develops AI-enabled components for associating people, processes, networks, and command posts in support of command and control. Develops and trains models that analyze, understand, and optimize AI-operations across Army Battle Command Systems and data fabrics. Establishes access to fused multitudinous data sources in support of AI-based analytics capabilities. This effort will provide tool for Commanders and staffs at Echelons Above Brigade to explore hypothetical situations in support of the operations process and Army planning to achieve decision dominance.			
FY 2025 Plans: Will design and develop game theory and multi-agent reinforcement learning and other foundational AI models and algorithms to integrate with an available simulation framework to create courses of action (COAs) at the theater echelons. Investigate and determine scenario criteria need for the algorithm to function, design and develop learning strategies and utility functions, and integrate the AI system into an available simulation suite to enable model training.			
FY 2026 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602180A / Artificial Intelligence and Machine Learning Technologies	Project (Number/Name) DA6 / AI-Enabled Command and Coordination Apl Research		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Will conduct experiments with game theory and multi-agent reinforcement learning models and algorithms, integrating them with an available simulation framework to create courses of action (COAs) at the theater echelons; focus on refining and enhancing capabilities that support command and control, fires, and sustainment to ensure algorithm effectiveness in generating COAs. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects realignment to Soldier Assistant Language Technologies within this Project.				
Title: AI Command and Coordination Environment Description: This effort designs and develops AI-enabled systems that link people, processes, networks, and command posts in support of command and coordination. Develops and trains models that analyze, understand, and optimize AI-operations across Army Battle Command Systems and data fabrics. Establishes access to fused multitudinous data sources in support of AI-based analytics capabilities.		1.219	-	-
Title: AI-Enabled Common Operating Picture and Battle Tracking Description: This effort develops and matures AI-enabled tools that allow commanders and staff to prepare for, execute, and assess Army operations to enable decision dominance. Matures and investigate human-machine interfaces that take input of commanders' intent and plans and provides computer-based battle tracking to identify risk to mission and force and AI-optimized direction to Army forces and unified action partners. FY 2025 Plans: Develop AI-enabled common operating picture that surfaces ML/AI insights from the Sustainment, Intelligence, Fires, Protection, Movement and Maneuver, and Information Advantage warfighting functions. FY 2026 Plans: Will conduct prototyping and experimentation with the integration of generative artificial intelligence capabilities to explore the effectiveness of achieving decision dominance by improving staff workflows in maintaining running estimates and improving situational awareness. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects realignment to Soldier Assistant Language Technologies within this Project.		-	1.020	0.722
Title: Distributed Artificial Intelligence Description: Designs and develops a distributed AI architecture that will be able to autonomously search for and discover heterogeneous data sources; optimizes AI processing across dynamic and opportunistic resources; and fuses AI capabilities between the enterprise, the edge, and AI-infused sensors and systems embedded on-platform.		-	0.501	0.500

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army			Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602180A / Artificial Intelligence and Machine Learning Technologies	Project (Number/Name) DA6 / AI-Enabled Command and Coordination Apl Research		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
FY 2025 Plans: Will design and develop a distributed AI framework, algorithm(s), abstraction layer, and human-distributed AI interface developed around All-Domain CONOPs. Will investigate the advances in algorithms, autonomy, and artificial intelligence and several key research areas to accelerate the capabilities and impact of Distributed AI capabilities for the US Army.				
FY 2026 Plans: Will conduct experiments with the distributed AI framework that investigates the interoperability between generative AI models at the edge, cloud hosted models, and software based at the enterprise to inform emerging requirements in the command and control space.				
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects an economic adjustment.				
Title: AI Foundations for Command and Coordination Description: Develops, trains, and fine tunes novel foundational models in computer vision, natural language processing/ understanding, and temporal/event series analysis that analyze, understand, and optimize enhance AI-operations across Army Battle Command Systems and data fabrics. Establishes access to fused multitudinous data sources in support of AI-based analytics capabilities.		-	1.002	1.004
FY 2025 Plans: Design and develop advanced algorithms for use by wider force and Operational Data Science Teams (ODSTs) to build and support emerging artificial intelligence enabled mission command information applications for the command post. Validates emerging lower echelon analytic platform tactical data fabric.				
FY 2026 Plans: Will conduct experiments to refine algorithms which will inform infrastructure and platform requirements for future artificial intelligence capabilities in support of mission command in command posts across all echelons.				
FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects an economic adjustment.				
Title: Soldier Assistant Language Technologies Description: This effort will investigate and mature application of cutting-edge language technologies onto warfighter systems in order to increase network effectiveness and resilience, reduce personnel requirements, and increase Solder situational awareness. Exploitation of semantic understanding, machine translation, natural language processing, automated speech recognition and other emerging language-based technologies and techniques enable decisions at machine speed, expanding the		-	-	1.995

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025				
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602180A / Artificial Intelligence and Machine Learning Technologies	Project (Number/Name) DA6 / AI-Enabled Command and Coordination Apl Research			
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024			FY 2025	FY 2026
scope of useful da. Tools such as large language and multi-modal models, artificial intelligence agents, and audio denoisers will streamline staff processes and empower forces at all echelons to operate and make sense of information in ways not previously possible.						
FY 2026 Plans: Will develop and validate appropriate application(s) or system(s) leveraging emerging language-based AI technologies for mission command of operational forces.						
FY 2025 to FY 2026 Increase/Decrease Statement: In Fiscal Year (FY) 2026, this effort is a New Start. Funding increase reflects realignment from within this Project and from Program Element (PE) 0602180A (Artificial Intelligence and Machine Learning Technologies) / Project DE8 (AI Development Environment Applied Research), and Project CN7 (Predictive Maintenance Applied Research).						
Accomplishments/Planned Programs Subtotals		3.146			3.525	4.976
C. Other Program Funding Summary (\$ in Millions)						
N/A						
Remarks						
D. Acquisition Strategy						
N/A						

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602180A / Artificial Intelligence and Machine Learning Technologies				Project (Number/Name) DB9 / Army AI Integration Center Apl Research (CA)			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
DB9: Army AI Integration Center Apl Research (CA)	-	3.000	-	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

Congressional Interest Item funding provided for Army AI Integration Center Applied Research.

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

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2024	FY 2025
Congressional Add: Automated Battle Damage Assessment and Adjust Fire	3.000	-
FY 2024 Accomplishments: Congressional Interest Item funding provided for Automated Battle Damage Assessment and Adjust Fire		
Congressional Adds Subtotals	3.000	-

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

N/A

Remarks

D. Acquisition Strategy

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602180A / Artificial Intelligence and Machine Learning Technologies				Project (Number/Name) DE8 / AI Development Environment Applied Research			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
DE8: AI Development Environment Applied Research	-	1.355	1.751	-	-	-	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
<p>This effort investigates cloud-native architectures, orchestration technologies, and collaboration techniques to support current and future Artificial Intelligence (AI) model development and machine learning operations (MLOps) tasks across a globally distributed workforce. Research will increase the effectiveness and efficiency of development platforms, decrease model development costs, optimize shared resources, and reduce the time required to integrate new AI capabilities into software products. This effort will provide the AI enabled Army of the future with low cost, rapid analytic and AI/ML solutions at the edge and enable accelerated algorithm development for faster delivery to the field. Less expensive AI/ML development by leveraging shared resources. These technologies will mature software components to improve the speed of development of AI models.</p> <p>Work in this project complements Program Element (PE) 0603040A (Artificial Intelligence and Machine Learning Advanced Technologies) / Project DE9 (AI Development Environment Advanced Technology).</p> <p>The cited work is consistent with Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.</p> <p>Work in this Project is performed by the Artificial Intelligence Integration Center (AI2C).</p>												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Artificial Intelligence Environment Applied Research									1.355	1.751	-	
Description: This effort investigates cloud and cloud-native architectures, orchestration technologies, and collaboration techniques to support current and future AI model development and machine learning operations (MLOps) tasks across a globally distributed workforce. Research will increase efficiency of development platforms, decrease model development costs, and reduce the time required to integrate new AI capabilities into software products.												
FY 2025 Plans:												
Will investigate cloud-native architectures to support MLOps from the cloud to tactical edge. Investigate technologies to assess and instrument optimal compute, storage, and network design decisions. Integrate advanced tools for increased efficiency of AI test, evaluation, validation and verification, and the security of AI models and data intensive products.												
FY 2025 to FY 2026 Increase/Decrease Statement:												
Funding decrease reflects completion of this effort and realignment to Program Element (PE) 0603040A (Artificial Intelligence and Machine Learning Advanced Technologies) / Project DE9 (AI Development Environment Advanced Technology) and PE												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602180A / Artificial Intelligence and Machine Learning Technologies	Project (Number/Name) DE8 / AI Development Environment Applied Research		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
0602180A (Artificial Intelligence and Machine Learning Technologies) / Project DA6 (AI-Enabled Command and Coordination Apl Research).				
Accomplishments/Planned Programs Subtotals		1.355	1.751	-
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602180A / Artificial Intelligence and Machine Learning Technologies				Project (Number/Name) DM7 / Counter AI App Rsch			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
DM7: Counter AI App Rsch	-	-	-	1.496	-	1.496	-	-	-	-	-	-

Note

Counter AI App Rsch is a new start within the Artificial Intelligence and Machine Learning Technologies program in FY 2026.

In Fiscal Year (FY) 2026, this Project is a New Start.

A. Mission Description and Budget Item Justification

This Project designs and develops mechanisms for the implementation of trusted artificial intelligence and machine learning (AI/ML) for processing, detecting, identifying, and reacting to potentially adverse effects on AI/ML capabilities. It provides recommendations for countering adversarial AI/ML, improving algorithms, and ensuring resilience in complex and contested environments. Effective use of Counter-AI to secure response mechanisms for the identification and detection of adversarial AI/ML is critical to address threats in a rapidly evolving environment. These technologies will produce an AI solution that rapidly adjusts AI/ML algorithms to disregard and stop malicious attempts to corrupt Army AI/ML tools.

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

Work in this Project is performed by the Artificial Intelligence Integration Center (AI2C).

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

Title: Counter AI ML Model Applied Research	FY 2024	FY 2025	FY 2026
Description: This Effort will research capabilities to identify, detect, prevent, protect, and react to exploitation of AI/ML model vulnerabilities. The exploitation of AI/ML models can adversely affect the performance of the underlying systems. This Effort will provide tools to verify and validate techniques capable of detecting the potential presence of malicious adversarial inputs and/or inaccurate AI/ML model performance.	-	-	1.496
FY 2026 Plans: Will design and develop novel algorithms to detect malicious data actions and deep fakes in computer vision applications and develop tools for the self-testing and evaluation of AI/ML models for robustness against adversarial activities.			
FY 2025 to FY 2026 Increase/Decrease Statement:			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602180A / Artificial Intelligence and Machine Learning Technologies	Project (Number/Name) DM7 / Counter AI App Rsch		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Funding increased due to being realigned from Program Element (PE) 0602180A (Artificial Intelligence and Machine Learning Technologies) / Projects CN7 (Predictive Maintenance Applied Research) and CL7 (ATR Using Multiple Cooperative Sensors App Tech).				
Accomplishments/Planned Programs Subtotals		-	-	1.496
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602180A / Artificial Intelligence and Machine Learning Technologies				Project (Number/Name) DM8 / AI Enabled Contested Logistics Spt Tools App Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
DM8: AI Enabled Contested Logistics Spt Tools App Tech	-	-	-	0.249	-	0.249	-	-	-	-	-	-
Note Funding realigned from Program Element (PE) 0602180A (Artificial Intelligence and Machine Learning Technologies) / Project DA6 (AI-Enabled Command and Coordination Apl Research).												
A. Mission Description and Budget Item Justification This Project designs and develops AI-enabled contested logistics tools for warfighters using all platforms (legacy and future) at all echelons, from the maintenance area to the lowest tactical level. This project investigates data from programs of record and determines additional data streams required to build a complete picture of logistics operations in a contested environment. Contested logistics data will investigate the required maintenance data, operations information, and personnel data to increase unit readiness and reduce decision making timelines and predict unit readiness based on historical operations. These technologies will design a suite of applications uniquely tailored to the end-user that will actively expand machine learning capabilities across the force with regards to the contested logistics domain. Work in this project complements Program Element (PE) 0603040A / Artificial Intelligence and Machine Learning Advanced Technologies / CN6 / Predictive Maintenance Advanced Technology. The cited work is consistent with Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy. Work in this Project is performed by the Artificial Intelligence Integration Center (AI2C).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Federated Predictive Logistics Applied Research									-	-	0.249	
Description: This effort investigates the required predictive logistics analytics by validating the collection and input of structured, quality data from the warfighter and networked sensors; developing validated and verified algorithms; and by developing machine learning models for use by warfighters, to identify and quantify risk, effectively allocate and prioritize resources, and assess future courses of action in support of logistics and sustainment operations in a contested environment.												
FY 2026 Plans:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602180A / Artificial Intelligence and Machine Learning Technologies	Project (Number/Name) DM8 / AI Enabled Contested Logistics Spt Tools App Tech		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Will investigate maintenance data to include the full spectrum of information necessary to integrate multiple programs of record including data streams for operations, personnel, and maintenance; validates different predictive modeling techniques which increase decision making capabilities for the warfighter.				
FY 2025 to FY 2026 Increase/Decrease Statement: Funding realigned from Program Element (PE) 0602180A (Artificial Intelligence and Machine Learning Technologies) / Project DA6 (AI-Enabled Command and Coordination Apl Research).				
Accomplishments/Planned Programs Subtotals		-	-	0.249
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army **Date:** June 2025

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 2: Applied Research</i>					R-1 Program Element (Number/Name) PE 0602181A / <i>All Domain Convergence Applied Research</i>							
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
Total Program Element	-	13.775	12.269	-	-	0.000	-	-	-	-	-	-
CM7: <i>Collaborative Convergence Applied Research</i>	-	13.775	12.269	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

The Program Element (PE) executes research as part of a campaign of learning to assess feasibility of technologies in an operational environment, learning from early failure and re-scope research to improve speed of response, scalability, interoperability, and range of engagement. This PE will investigate technologies that will enable sensor to shooter applications, from tactical to strategic level, taking a system design approach in support of Army experimentation events and Department of Defense (DoD) Combined Joint All-Domain Command and Control (CJADC2). The research will enable optimal lethal and non-lethal effects across all domains using artificial intelligence and machine learning to improve how we recognize threats, augment and enhance leader decision-making, and replicate tactical behaviors to enable autonomous capabilities.

Work in this PE complements PE 0602145A (Next Generation Combat Vehicle Technology), PE 0602146A (Network C3I Technology) and PE 0603463 (Network C3I Advanced Technology).

The cited work is consistent with the Under Secretary of Defense for Research and Engineering Priority focus areas and the Army Modernization Strategy.

Work in this program is performed by the Army Research Laboratory (ARL).

B. Program Change Summary (\$ in Millions)	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Previous President's Budget	14.297	12.269	10.155	-	10.155
Current President's Budget	13.775	12.269	0.000	-	0.000
Total Adjustments	-0.522	0.000	-10.155	-	-10.155
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.522	-			
• Adjustments to Budget Years	-	-	-10.155	-	-10.155

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 2: Applied Research	R-1 Program Element (Number/Name) PE 0602181A / All Domain Convergence Applied Research	
<p>Change Summary Explanation</p> <p>Funding decrease in In Fiscal Year (FY) 2026 from the previous PB to the current PB reflects the net effect of realignments to Program Element (PE) 0602184A (Soldier Applied Research) to support experimentation strategies and synchronization, and PE 0602146A (Network C3I Technology) to develop foundation models for different modalities, develop change detection algorithms, and learning agents for Command and Control (C2).</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025			
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602181A / All Domain Convergence Applied Research				Project (Number/Name) CM7 / Collaborative Convergence Applied Research				
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost	
CM7: Collaborative Convergence Applied Research	-	13.775	12.269	-	-	-	-	-	-	-	-	-	
Note In Fiscal Year (FY) 2026, this Project is terminated.													
A. Mission Description and Budget Item Justification This Project supports research required to oppose adversary technologies in the threat based early operational environment. Focus is on those technologies that will aid in reducing the sensors to shooters timelines. This is accomplished using Artificial Intelligence (AI) algorithm decision agent design architectures, advanced methods for processing data, and improved AI performance. Additionally, this Project will research technologies and solutions necessary to enable mission command in multi-domain operations. The project will accelerate emerging research to achieve sensor to shooter dominance. Work in this Project complements Program Element (PE) 0603041A (All Domain Convergence Advanced Technology), PE 0602146A (Network C3I Technology) and PE 0603463 (Network C3I Advanced Technology). The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy. Work in this Project is performed by the Army Research Laboratory (ARL).													
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026		
Title: AI-Enabled Decision Support in Distributed Networks									3.508	3.665	-		
Description: This effort research techniques to understand and model complex multi-platform tactical networks in Multi-Domain Operational environments to develop training data sets for AI-enabled tactical decision support capabilities. This effort leverages Army research informed by Army Doctrine on data value, consensus, uncertainty, human-agent teaming and network science to optimize decision support training data production. Supports AI-enabled decision support capabilities for Next Generation Combat Vehicle, Network, Future Vertical Lift, and Long-Range Precision Fires Army Modernization Priorities.													
FY 2025 Plans: Will research methods to identify tactical Windows of Opportunity across distributed network domains using models such as Spatio-Temporal Graph Neural Networks for novel adaptive sampling in the time domain with accelerated model-hardware codesign; investigate techniques for information synthesis with multi-modal analytics (imagery, video, Synthetic Aperture Radar (SAR), acoustic); research algorithms for human-robot distributed decision making with multi-agent reinforcement learning; investigate explainability features and methods to insert knowledge mechanisms (update rules-base) into "Neuro-Symbolic AI"													

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army			Date: June 2025		
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602181A / <i>All Domain Convergence A</i> <i>plied Research</i>		Project (Number/Name) CM7 / <i>Collaborative Convergence Applied</i> <i>Research</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2024	FY 2025	FY 2026
agents (the combination of artificial neural networks and data-driven deep learning with knowledge representation and reasoning approaches).					
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects completion of this effort. Funding realigned to support the creation of Predictive Analytics and Information Saliency for Tactical Decision Making in Program Element (PE) 0602146A (Network C3I Technology) / Project CU6 (Adaptive Information Mediation and Analytics).					
Title: Synthetic Data for AI-Enabled Decision Support Description: This effort research approaches to incorporate synthetic data to augment Army training data sets and optimize AI performance for uncommon Multi-Domain Operations (MDO) targets and environments. This effort investigates efficacy and optimal application of synthetic training data developed using multiple technical methods, including physics-based models and generative adversarial techniques. This effort will experiment with artificially augmented data sets to enable classification of rare targets and cost-effective enterprise-level training data generation. Supports AI-enabled decision support capabilities for Next Generation Combat Vehicle, Network, Future Vertical Lift, and Long-Range Precision Fires Army Modernization Priorities. FY 2025 Plans: Will investigate methods for domain adaptation with focus on AiTR pipelines for Army domains to include synthetic-to-real shift and experiments with mixed data to learn 3D mesh representations for multimodal view-invariant action recognition; develop methods to integrate synthesis and machine learning to enable continual (lifelong) learning for increased robustness and adaptation; investigate machine learning paradigms based on large pre-trained models that leverage self-supervised latent spaces for computer and robot vision tasks and reduce the need for large quantities of custom training data; study methods for modifying attributes of own assets (e.g., their textures and shape) to defend against adversarial AI attacks. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects completion of this effort. Funding realigned to Program Element (PE) 0602184A (Soldier Applied Research) / Project CK9 (Advancing Concepts and Technology Forecasting Tech) and PE 0602146 (Network C3I Technology) / Project CU6 (Adaptive Information Mediation and Analytics).			5.756	4.263	-
Title: Data Characterization for AI-Enabled Decision Support Description: This effort will investigate techniques for data management, characterization, curation, labeling, and classification to enable repeatable, robust performance of trained AI-enabled decision support capabilities for complex, multi-platform tactical networks in varied tactical Multi-Domain Operations (MDO) environments. Supports AI-enabled decision support capabilities for Next Generation Combat Vehicle, Network, Future Vertical Lift, and Long-Range Precision Fires Army Modernization Priorities. FY 2025 Plans:			4.511	4.341	-

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602181A / All Domain Convergence A plied Research		Project (Number/Name) CM7 / Collaborative Convergence Applied Research
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Will investigate data mesh connectivity across Department of Defense data sources to enable seamless access to data for continuous AI algorithm improvement; develop processes and methods to rapidly and securely transition basic and applied research to laboratory experimentation on mission relevant data; enable government research algorithms to inform mission requirement decision makers.				
<i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> Funding decrease reflects completion of this effort. Funding realigned to Program Element (PE) 0602184A (Soldier Applied Research) / Project CK9 (Advancing Concepts and Technology Forecasting Tech) and PE 0602146 (Network C3I Technology) / Project CU6 (Adaptive Information Mediation and Analytics).				
Accomplishments/Planned Programs Subtotals		13.775	12.269	-
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 2: Applied Research					R-1 Program Element (Number/Name) PE 0602182A / C3I Applied Research							
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
Total Program Element	-	31.635	25.839	22.317	-	22.317	-	-	-	-	-	-
CN4: Network Enabling University Applied Research	-	2.577	2.526	2.261	-	2.261	-	-	-	-	-	-
CN5: Network Vuln/ Effectiveness Assess Methods (N-VEAM)	-	4.378	4.487	0.002	-	0.002	-	-	-	-	-	-
CT4: C3I Applied Research (CA)	-	2.000	-	-	-	-	-	-	-	-	-	-
CW2: Exploitation of Atmospheric Impacts across Domains	-	1.459	-	-	-	-	-	-	-	-	-	-
CX3: Intelligent Env Battlefield Awareness Apl Tech	-	2.121	1.619	2.553	-	2.553	-	-	-	-	-	-
CX4: Persistent Geophysical Sensing-Infrasound Apl Tech	-	2.482	2.085	3.133	-	3.133	-	-	-	-	-	-
CX5: Sensing in Contested Environments Technologies	-	0.990	0.517	-	-	-	-	-	-	-	-	-
CX6: Subterranean Detection and Monitoring Apl Tech	-	1.626	1.536	1.132	-	1.132	-	-	-	-	-	-
CZ6: Assured PNT Enabling Applied Technology	-	3.225	2.324	1.672	-	1.672	-	-	-	-	-	-
CZ7: Convergent CEMA Technical Effects	-	5.272	5.584	-	-	-	-	-	-	-	-	-
DA8: Quantum PNT & Radio Frequency Sensing	-	2.517	3.664	5.228	-	5.228	-	-	-	-	-	-
DB4: Enabling Long Standoff 3D (ELS3D) Tech	-	1.983	1.092	0.492	-	0.492	-	-	-	-	-	-
DE6: Understanding Environment as a Threat Tech	-	1.005	0.405	-	-	-	-	-	-	-	-	-

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army										Date: June 2025			
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army I BA 2: Applied Research					R-1 Program Element (Number/Name) PE 0602182A I C3I Applied Research								
DM9: Distributed Multi-Agent Reasoning and Data Fusion	-	-	-	5.844	-	5.844	-	-	-	-	-	-	
Note In FY 2026, Project CX5 Sensing in Contested Environments Technologies is terminated. In FY 2026, Project DE6 Understanding Environment as a Threat Tech is completed and terminated. In FY 2026, Project DM9 Distributed Multi-Agent Reasoning and Data Fusion is a New Start. A. Mission Description and Budget Item Justification This Program Element (PE) investigates, designs, validates, and conducts experimentation to establish technical solutions for creating integrated future equipment and systems that improve resiliency, survivability, operational effectiveness, mobility, sustainability, and readiness of ground forces. This PE provides mid-to-long term tactical Command, Control, Communications and Intelligence (C3I) capabilities (e.g., networking, cyber, electronic warfare, Positioning, Navigation and Timing (PNT), space, persistent surveillance) based upon promising technologies that address emerging and future threats and includes research critical and unique to the Army and DoD (e.g., atmospheric modeling and meteorological technologies). Applied research investments focus on the design and investigation of materials, processes, technologies, methodologies, and models to establish architectures, systems, and interfaces that enhance and optimize performance on the future battlefield. The outputs of these efforts inform and transition to advanced research efforts that demonstrate improved C3I capabilities. The cited research is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy. The FY 2026 request was reduced by \$1.039 million for Advisory and Assistance Services to promote efficiencies and advance the policies of the Administration in alignment with Executive Order 14222, "Implementing the President's Department of Government Efficiency Cost Efficiency Initiative." The FY 2026 request was reduced by \$0.023 million for civilian personnel to optimize the workforce in compliance with Executive Order 14210, "Implementing the President's Department of Government Efficiency Workforce Optimization Initiative."													

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army				Date: June 2025		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army I BA 2: Applied Research		R-1 Program Element (Number/Name) PE 0602182A I C3I Applied Research				
B. Program Change Summary (\$ in Millions)		FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Previous President's Budget		30.659	25.839	27.893	-	27.893
Current President's Budget		31.635	25.839	22.317	-	22.317
Total Adjustments		0.976	0.000	-5.576	-	-5.576
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		2.000	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-	-			
• SBIR/STTR Transfer		-1.024	-			
• Adjustments to Budget Years		-	-	-5.576	-	-5.576
Congressional Add Details (\$ in Millions, and Includes General Reductions)						
Project: CT4: C3I Applied Research (CA)						
Congressional Add: Sensor development for detection of chemical and biological threats						
Congressional Add Subtotals for Project: CT4						
Congressional Add Totals for all Projects						
Change Summary Explanation						
Funding increase for additional research in quantum-enhanced sensing and PNT, and maturation of multi-domain operations for wide area reconnaissance.						

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025			
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602182A / C3I Applied Research				Project (Number/Name) CN4 / Network Enabling University Applied Research				
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost	
CN4: Network Enabling University Applied Research	-	2.577	2.526	2.261	-	2.261	-	-	-	-	-	-	

A. Mission Description and Budget Item Justification

The Project leverages applied research from academia, in the focus areas of intelligent networks, self-sensing/self-healing networks, network security, air and ground vehicle teaming and alternatives to Global Positioning System (GPS). This Project will focus on research that supports mid-to-long term tactical Command, Control, Communications and Intelligence (C3I) capabilities (e.g. networking, cyber, electronic warfare, Positioning, Navigation and Timing (PNT), Predictive Intelligence Networks (PIN), space, persistent surveillance). This Project also focuses on bringing competitively selected Universities with research and development teams into Technical Alliances that will investigate and develop technologies originating from applied research in academia pertaining to intelligent networks, self-sensing/self-healing networks, and network security and artificial intelligence/machine (AI/ML) learning as applied to C3I, and other innovative communication as well as alternatives to GPS, leading to potential emerging technologies in areas of strategic importance to the Army in secure and intelligent communication and networking.

Work in this Project complements Program Element (PE) 0603042A (C3I Advanced Technology) / Project CN3 (Network Enabling University Adv Development).

The work cited is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.

Work in this Project is performed by the Army Research Laboratory (ARL).

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2024	FY 2025	FY 2026
Title: Intelligent, Secure and Self-Sensing/Self-Healing Networks Applied Technology	1.243	1.344	1.069
Description: Investigate and design fused networks and decision-making architecture into intelligent networks to provide the actionable autonomous intelligence while denying corruption, and/or attack and to execute operational missions securely and reliably.			
FY 2025 Plans: Will fund research to investigate the next generation artificial intelligence(AI)-trained predictive intelligent network Agent, incorporating continually enhanced field training of Adversarial/Network Traffic agents; fund research to investigate artificial intelligence/machine learning (ML) emerging technologies for Network solutions, distributed hybrid ML at various scales, adaptable network systems, unified framework for joint sensing, Radio Frequency (RF)-based deceptive tactical networks, and to improve cyber defense systems through secure and reliable ML and network localization to enable a more intelligent and robust communications network.			
FY 2026 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602182A / C3I Applied Research	Project (Number/Name) CN4 / Network Enabling University Applied Research		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Will fund research from the academic innovation ecosystem to capture and mature intelligent communication systems and associated technologies through their existing body of research that has the potential for dual-use capability to advance military applications; continue to investigate artificial intelligence/machine learning (ML) emerging technologies for network solutions, and distributed hybrid ML at various scales; investigate disruptive network architectures for validation in an Army setting. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects a reduction in next generation artificial intelligence-trained predictive intelligent network Agents.				
Title: Real-Time Tactical Networks Applied Research Description: Investigate and design an intelligent information network that will resiliently support information pathways for sensing, computing, and control in cyber-physical systems, to improve continuity of service. Design a network to adapt and maintain connectivity if critical components become disconnected or fail. FY 2025 Plans: Will investigate and develop a resilient information system that can support pathways to generate information products, including sensor fusion applications, for situational awareness, command and control, communication, and computation degradation, as well as an integration of a variety of sensors and compute capabilities for situational awareness and resource optimization. Research emerging intelligent tactical networks to enable a resilient tactical network with reduced bandwidth requirements. FY 2026 Plans: Will fund research from the academic innovation ecosystem to capture and mature resilient information systems and associated technologies through their existing body of research that has the potential for dual-use capability to advance military applications; further investigate and develop systems that can support pathways to generate information products, as well as further integration of a variety of compute capabilities for situational awareness and resource optimization. FY 2025 to FY 2026 Increase/Decrease Statement: FY 2026 funding decrease due to revised economic assumptions.		0.592	0.640	0.634
Title: Alternatives to GPS Applied Research Description: Research emerging technologies for performance and assurance improvements to position, navigation and timing (PNT) both with and without GPS to improve weapons accuracy, manned and unmanned autonomous maneuver, force tracking, and other tactical functions. Investigate emerging alternate PNT technologies through academia that may be applied to dual use or military applications, for increased capability or use in GPS denied environments. FY 2025 Plans:		0.742	0.542	0.558

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602182A / C3I Applied Research	Project (Number/Name) CN4 / Network Enabling University Applied Research	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p>Will research novel techniques and technologies for position, navigation, and timing (PNT) and alternatives to GPS, including performance and assurance improvements that can provide PNT technology to users in disrupted, degraded or denied GPS environments.</p> <p>FY 2026 Plans: Will fund research from the academic innovation ecosystem to capture and mature alternatives to GPS and associated technologies through their existing body of research that has the potential for dual-use capability to advance military applications; continue to research novel techniques and technologies for position, navigation, and timing (PNT) and alternatives to GPS, including performance and assurance improvements that can provide PNT technology to users in disrupted, degraded, or denied GPS environments.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: FY 2026 funding increase due to revised economic assumptions.</p>			
Accomplishments/Planned Programs Subtotals		2.577	2.526
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602182A / C3I Applied Research				Project (Number/Name) CN5 / Network Vuln/Effectiveness Assess Methods (N-VEAM)			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CN5: Network Vuln/Effectiveness Assess Methods (N-VEAM)	-	4.378	4.487	0.002	-	0.002	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project develops analytical methodologies and capabilities to characterize hardware and software that enable Electromagnetic Warfare (EW) and Cyber capabilities to assess operations of Army Network and communication platforms and dismounts, while maintaining freedom to maneuver, communicate, and sense. This Project also develops a holistic cross-domain analysis and assessment methodology for network and communication technologies faced with advanced Cyber Electromagnetic Activity (CEMA). These investigations are critical to identifying vulnerabilities of United States systems and technologies so that network and network-enabled systems can be hardened as early as possible in development cycle.												
Work in this Project complements Program Element (PE) 0602146A (Network C3I Technology) / Project AN3 (Non- Traditional Waveforms Technology), PE 0602213A (C3I Applied Cyber) / Project 2CY (Information Trust Technology), PE 0602213A (C3I Applied Cyber) / Project CY6 (Autonomous Cyber Technology), PE, 0602146A (Network C3I Technology) / Project CI3 (Mobile and Survivable Command Post (MASCP) Tech), PE 0603457A (C3I Cyber Advanced Development) / Project 8CY (Information Trust Advanced Technology), PE 0603463A (Network C3I Advanced Technology) / Project AN4 (Non-Traditional Waveforms Advanced Technology), PE 0603457A (C3I Cyber Advanced Development) / Project 6CY (Autonomous Cyber Advanced Technology), PE 0603463A (Network C3I Advanced Technology) / Project AM7 (Modular RF Communications Advanced Technology), and PE 0603463A (Network C3I Advanced Technology) / Project CI7 (Mobile and Survivable Command Post (MASCP) Adv Tech).												
The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.												
Work in this Project is performed by Combat Capabilities Development Command (DEVCOM) Analysis Center (DAC).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Understanding, Protecting, and Enabling CEMA Effects									2.191	2.256	0.002	
Description: This effort develops and continually improves methodology and approaches for estimating and predicting CEMA effects on networks and network-enabled systems during complex multi-domain operations when significant cross-domain effects can be expected. Methods include drawing upon past research concerning the interaction of cyber and Electromagnetic Warfare threats on operational networks; laboratory operations, over-the-air anechoic chamber experimentation, and open-air field experimentation; and first principles Modeling and Simulation (M&S) and engineering analysis. Abstracting, generalizing, and automating multi-domain CEMA operations will enable the development of analysis and assessment of capabilities to anticipate												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602182A / C3I Applied Research	Project (Number/Name) CN5 / Network Vuln/Effectiveness Assess Methods (N-VEAM)	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
the impact of future threats. Live, virtual, and simulated environments will be developed to estimate the potential operational impact of threat CEMA technologies on friendly systems.			
<p>FY 2025 Plans: Will mature and validate the performance of analytic tools and methodologies for the assessment of emerging network technologies using EW and Cyber effects on network systems at the system and component level; investigate analytic techniques for EW and Cyber effects on Integrated Tactical Network technologies; research early developmental network technologies to gain knowledge and understanding of advanced tools and methodologies.</p> <p>FY 2026 Plans: Will realign economic assumptions to provide enhanced capabilities by foster innovation and accelerate deployment of promising technology</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects realignment to Program Element (PE) 0602275A (Electronic Warfare Applied Research) / Project A71 (Network Vuln/Effectiveness Assess Methods (N-VEAM)) as a part of the Department of Defense Capability Based (Agile) Funding pilot, which provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology.</p>			
<p>Title: Vulnerability Analysis Methodology for CEMA Threats</p> <p>Description: This effort investigates threat/target interactions to develop experimental and analytical methodology for separate and cross-domain cyber and electromagnetic threat attack so that assessed vulnerabilities in a multi-domain complex environment can be reduced or eliminated before fielding new networks and network-enabled systems. Experimental and analysis methodologies will be developed to investigate vulnerabilities of specific configurations of complex future networks with multiple communications modalities, advanced deception techniques in the cyber and electromagnetic areas, and advanced Positioning, Navigation, and Timing (PNT) systems.</p> <p>FY 2025 Plans: Will conduct experiments to mature and validate assessment tools, and methodologies (e.g. Low Probability of Detection/ Low Probability of Intercept (LPD/LPI) Angle of Arrival, optical communications, assured PNT, testbeds) for network systems performance in threat representative congested and contested environments; develop metrics that are repeatable and can be used to accurately quantify and assess Integrated Tactical Network technologies and communication systems; conduct research to determine and develop emerging Cyber and electromagnetic environment threat representation capabilities; conduct research on emerging threats required for assessing future Army capabilities.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement:</p>		2.187	2.231
			-

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602182A / C3I Applied Research	Project (Number/Name) CN5 / Network Vuln/Effectiveness Assess Methods (N-VEAM)		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Funding decrease reflects realignment to Program Element (PE) 0602275A (Electronic Warfare Applied Research) / Project A71 (Network Vuln/Effectiveness Assess Methods (N-VEAM)) as a part of the Department of Defense Capability Based (Agile) Funding pilot, which provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology.				
Accomplishments/Planned Programs Subtotals		4.378	4.487	0.002
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602182A / C3I Applied Research				Project (Number/Name) CT4 / C3I Applied Research (CA)			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CT4: C3I Applied Research (CA)	-	2.000	-	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification
 Congressional Interest Item funding provided for C3I Applied Research.

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

<u>B. Accomplishments/Planned Programs (\$ in Millions)</u>	FY 2024	FY 2025
<i>Congressional Add:</i> Sensor development for detection of chemical and biological threats	2.000	-
<i>FY 2024 Accomplishments:</i> Congressional Interest Item funding provided for Sensor development for detection of chemical and biological threats		
Congressional Adds Subtotals	2.000	-

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

Remarks

D. Acquisition Strategy
 N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602182A / C3I Applied Research				Project (Number/Name) CW2 / Exploitation of Atmospheric Impacts across Domains			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CW2: Exploitation of Atmospheric Impacts across Domains	-	1.459	-	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Project enables identification and exploitation of how atmospheric phenomena impact windows of superiority for Army capabilities by developing technologies that characterize, predict, and efficiently express atmospheric impacts in future operating environments. New sensing technologies and algorithms enable heterogeneous sensor networks to extract critical environmental information optimizing performance and reducing the need for dedicated meteorological sensors. Novel physics-based models, empirical parameterizations, and machine learning applications extrapolate this environmental information both spatially and temporally. Uncertainty-aware decision support tools leverage this situational awareness to efficiently express atmospheric effects on friendly and threat weapons systems, sensors, and operations at the point of need and across multiple domains. This information can be exploited by autonomous and human decision makers for mission planning and execution; battlefield visualization; reconnaissance, surveillance, and target acquisition; route planning to maximize stealth and efficiency; long-range precision fires; and modeling of environmental impacts for combat simulations and war games.

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.

Work in this Project is performed by the Army Research Laboratory (ARL).

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2024	FY 2025	FY 2026
Title: Atmospheric Impacts	1.459	-	-
Description: This effort develops environmental exploitation capabilities though coupled sensing, numerical prediction, and decision support technologies for data-sparse, computationally-limited, and network-constrained domains.			
Accomplishments/Planned Programs Subtotals	1.459	-	-

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

Remarks

D. Acquisition Strategy
N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602182A / C3I Applied Research				Project (Number/Name) CX3 / Intelligent Env Battlefield Awareness Apl Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CX3: Intelligent Env Battlefield Awareness Apl Tech	-	2.121	1.619	2.553	-	2.553	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project investigates, develops, and designs technologies to allow Soldiers to maneuver faster in dynamic environments as informed by physical, geological, and biological constraints. This Project enhances visualization tools for mission planning through delivering web modules/software tools which contain crucial geochemical resources and advanced knowledge of geo-environmental infrastructure for mission planners. These technologies provide situational awareness for multi-source intelligence, particularly in anti-access/area denied (A2/AD) operational environments.												
Work in this Project complements Program Element (PE) 0603042A (C3I Advanced Technology (Adv Tech)) / Project CX7 (Intelligent Env Battlefield Awareness Adv Tech).												
The work cited is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.												
Work in this Project is performed at the United States Army Engineer Research and Development Center Environmental Laboratory, Geospatial Research Laboratory, Information Technology Laboratory, Cold Regions Research and Engineering Laboratory, Construction Research Engineering Laboratory, and Geotechnical and Structures Laboratory.												
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2024	FY 2025	FY 2026
Title: Hydrology Mapping										0.654	-	-
Description: This effort provides data tools and models to support high-fidelity battlefield overlay maps that accurately show hydrologic/soil moisture threats (soil, hydrology, and snow/ice) not captured by current terrain mapping capabilities.												
Title: Predictive Geographic Information System (GIS) Mapping (physical)										0.973	-	-
Description: This effort develops a comprehensive GIS tool that integrates predictive models of soil, vegetation, hydrology, and permafrost conditions in Outside Continental United States (OCONUS) dark sites from the statistical analysis of known datasets and the application of geophysical principles.												
Title: Vegetation Property Mapping Tech										0.252	-	0.599
Description: This effort investigates and develops the required data to build geospatial overlays that describe vegetation group and type, as well as determines attributes such as stem height, overstory/understory density, community type, as well as other												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602182A / C3I Applied Research	Project (Number/Name) CX3 / Intelligent Env Battlefield Awareness Apl Tech		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
complex, multi-canopy vegetation structural characteristics as it relates to all warfighting functions, with emphasis on movement & maneuver (mobility).				
FY 2026 Plans: Will investigate model parameters necessary for global vegetation predictions and validate outputs in selected areas within the northern hemisphere.				
FY 2025 to FY 2026 Increase/Decrease Statement: FY25 was a skip year. Funding increase reflects the planned milestones for development of vegetation modeling and assigning attributes as it relates to all warfighting functions.				
Title: Extreme Environments Environmental Effects on Operations Tech		0.242	0.617	0.511
Description: This effort designs and develops modeling of natural terrain following extreme disturbances that impact operational environments such as wildfires, flash floods, earthquakes and landscape changes induced by high intensity military conflict.				
FY 2025 Plans: Will develop and deploy training data sets for machine learning algorithms for extreme event post disturbance detection.				
FY 2026 Plans: Will validate algorithms for extreme event post disturbance detection through test cases and reduce model uncertainty.				
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects adjustments to planned milestones and Army reduction.				
Title: Terrestrial Ice Operations		-	1.002	1.443
Description: This effort will design and develop a capability to effectively utilize frozen inland water bodies, specifically located in complex Arctic and sub-Arctic environments, in the projection of forces and materials in support of homeland defense, humanitarian assistance and disaster relief. The incorporation of wide area to localized remote sensing assets for the determination of ice thickness, continuity, and strength will inform the development of tactical scale geospatial overlays. Data maturation and algorithm refinement will result in a near real time level-of-risk assessment for the safe and effective performance of on ice operations.				
FY 2025 Plans:				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025			
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602182A / C3I Applied Research	Project (Number/Name) CX3 / Intelligent Env Battlefield Awareness Apl Tech		
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2024	FY 2025	FY 2026
Will investigate primary variables needed for the determination of ice thickness, continuity, and strength. Will investigate applicable stand-off technologies to assist with desktop ice characterization, and the ice properties that control quality of the stand-off acquisitions.					
FY 2026 Plans: Will investigate ability of existing algorithms to predict lake ice load bearing capacity and identify environmental factors that cause anomalies in model accuracy. Downselect of applicable stand-off technologies comparable with desktop ice systems and their characterization accuracy.					
FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects planned increase of workflows to mature model and system comparison testing required for characterization accuracy of ice thickness.					
Accomplishments/Planned Programs Subtotals			2.121	1.619	2.553
C. Other Program Funding Summary (\$ in Millions)					
N/A					
Remarks					
D. Acquisition Strategy					
N/A					

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army	Date: June 2025
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Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602182A / C3I Applied Research				Project (Number/Name) CX4 / Persistent Geophysical Sensing-Infrasound Apl Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CX4: Persistent Geophysical Sensing-Infrasound Apl Tech	-	2.482	2.085	3.133	-	3.133	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Project designs and develops algorithms, hardware, and software components to provide passive, persistent, non-line-of-sight, multi-modal sensing capable of providing fused battlefield intelligence for increased situational awareness in a dynamic operational environment. These technologies provide near-real-time data collection, processing, and alerting on evolving cross-domain threats including strategic and tactical fires, air and ground platforms, as well as critical transportation infrastructure (bridges) and explosive events with applications for deep sensing.

Work in this Project complements Program Element (PE) 0603042A (C3I Advanced Technology) / Project CX8 (Persistent Geophysical Sensing-Infrasound Adv Tech).

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

Work is performed by the United States Army Engineer Research and Development Center Geotechnical and Structures Laboratory, Coastal and Hydraulics Laboratory, Construction Engineering Research Laboratory, Cold Regions Research and Engineering Laboratory, Environmental Laboratory, and Information Technology Laboratory.

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

	FY 2024	FY 2025	FY 2026
Title: Battlefield Intelligence by Geophysical Sensing (BIGS) Description: This effort develops a suite of geophysical and geo-sensing technologies to persistently assess battlefield elements to include infrastructure and additional sources of interest such as explosive and fires events and various air platforms; refines terrain, topography, and meteorological models related to acoustic propagation detected by the employed sensor suite as well as detection and classification signal processing algorithms for a broader range of sources and/or threats. Technologies provide Commander's situational awareness for multi-modal intelligence, particularly in anti-access/area denied (A2/AD) operational environments.	2.482	-	-
Title: Multi-Domain Operations for Adaptable Wide Area Reconnaissance (MDO AWARE) Description: This effort develops an easily emplaced, rapidly deployable, multi-modal geophysical tactical array for persistent, wide area, remote, non-line-of-sight monitoring for potential deep sensing to extend monitoring ranges and investigate new processing techniques to allow for the battlespace awareness needed in Multi-Domain Operations in both Competition and Armed Conflict phases. FY 2025 Plans:	-	2.085	3.133

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602182A / C3I Applied Research	Project (Number/Name) CX4 / Persistent Geophysical Sensing-Infrasound Apl Tech		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Will investigate edge computing methods and hardware applicability to tactical deployments while maintaining ability to detect, classify, and localize sources of interest such as explosive and fires events and various air platforms. Will design fielding support tools for the geophysical tactical array to enable optimized employment. FY 2026 Plans: Will develop expanded processing algorithms for critical assets of interest to enable tactical array implementation and edge processing hardware and methods. FY 2025 to FY 2026 Increase/Decrease Statement: FY 2026 funding increase due to planned changes in milestones.				
Accomplishments/Planned Programs Subtotals		2.482	2.085	3.133
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602182A / C3I Applied Research				Project (Number/Name) CX5 / Sensing in Contested Environments Technologies			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CX5: Sensing in Contested Environments Technologies	-	0.990	0.517	-	-	-	-	-	-	-	-	-
Note In Fiscal Year FY 2026, this Project is terminated.												
A. Mission Description and Budget Item Justification This Project characterizes through direct or inferential methods the identification of non-weaponized biological hazards posed to Soldiers in operational environments by advancing sensor technologies and software modules that will detect and characterize hazards within confined environments. This research provides Soldiers the capability to understand biological hazards present in subterranean environments and take necessary steps to mitigate or avoid these threats. Work in this Project complements Program Element (PE) 0603042A (C3I Advanced Technology) / Project CX9 (Sensing in Contested Environments Advanced (Adv) Technologies). The work cited is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy. Work in this Project is performed at the United States Army Engineer Research and Development Center Environmental Laboratory.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Non-traditional Threat Detection in Contested Environments Tech									0.990	0.517	-	
Description: This effort identifies, examines and prioritizes previously developed sensor packages as well as commercial of the shelf (COTS) capabilities from multiple sources that can accurately detect biological hazards relevant to operations in subterranean environments from point of ingress/egress to evaluate exposure potential and effects. FY 2025 Plans: Will determine the ability of trained users to successfully complete microbiological analyses using selected sensor packages and developed protocols that accurately detect biological hazards. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects planned conclusion of this effort.												
Accomplishments/Planned Programs Subtotals									0.990	0.517	-	

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602182A / C3I Applied Research	Project (Number/Name) CX5 / Sensing in Contested Environments Technologies
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
D. Acquisition Strategy N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602182A / C3I Applied Research				Project (Number/Name) CX6 / Subterranean Detection and Monitoring Apl Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CX6: Subterranean Detection and Monitoring Apl Tech	-	1.626	1.536	1.132	-	1.132	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project designs and develops an integrated suite of tunnel detection, subterranean monitoring solutions, and vulnerability assessment technologies to detect, identify, and monitor subterranean threat activities in urban environments through advanced sensing and rapid analysis capabilities. This Project also develops and investigates enhanced technologies to detect tunnels and tunneling activity in complex and varied environments. This research is critical to provide greater situational awareness of the subterranean domain and enhanced survivability for the Soldier.												
Work in this Project complements Program Element (PE) 0603042A (C3I Advanced Technology) / Project CZ5 (Subterranean Detection and Monitoring Adv Tech).												
The work cited is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.												
Work in this Project is performed by the United States Army Engineer Research and Development Center Geotechnical and Structures Laboratory, Construction Engineering Research Laboratory, Coastal and Hydraulics Laboratory and Cold Regions Research and Engineering Laboratory.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Cavity Assessment in Variable Environments-Subterranean (CAVES)									1.626	1.536	1.132	
Description: This effort will extend current tunnel detection and perimeter security systems beyond austere environments for application in variable terrain, and complex geologic environments, such as mountains, and hard rock geology common in the western pacific.												
FY 2025 Plans: Will mature selected hardware components and detection algorithms of subsystem components for subterranean detection in hard rock.												
FY 2026 Plans: Will validate hardware components and detection algorithms utilizing novel processing methods and field experiments for hard rock environments.												
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects adjustments to planned milestones and Army reduction.												
Accomplishments/Planned Programs Subtotals									1.626	1.536	1.132	

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602182A / C3I Applied Research	Project (Number/Name) CX6 / Subterranean Detection and Monitoring Apl Tech
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
D. Acquisition Strategy N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602182A / C3I Applied Research				Project (Number/Name) CZ6 / Assured PNT Enabling Applied Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CZ6: Assured PNT Enabling Applied Technology	-	3.225	2.324	1.672	-	1.672	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
Assured Positioning Navigation and Timing (APNT) Enabling Technologies project investigates and develops technologies for Space-enabled, Deep Sensing, Counter Surveillance and Reconnaissance (C-SR) and High Altitude applications for Army tactical ground forces. Focus areas include but are not limited to modeling and simulation for C-SR and Deep Sensing technologies, investigate the utilization of space data for Army tactical applications, and developing actionable PNT situational awareness information.												
Work in this Project complements Program Element (PE) 0603463A (Network C3I Advanced Technology) / Project CJ8 (Assured PNT Communications Advanced Tech).												
The research cited is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.												
Work in this Project is performed by the United States Army Space and Missile Defense Technical Center.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Assured PNT Enabling Applied Technology									3.225	2.324	1.672	
Description: This effort supports development of hardware and software components, models and simulations to further Space-enabled, HA, C-SR and Deep Sensing capabilities.												
FY 2025 Plans: Will mature initial Global Positioning System (GPS) Interference database efforts that will support actionable PNT situational awareness information. Investigate innovative techniques to utilize space-based data for Army Applications.												
FY 2026 Plans: Begin to investigate innovative techniques for advanced Army space control applications. Continue to investigate innovative techniques to utilize space-based data for Army Applications.												
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects the efforts to foster innovation and increase efficiencies..												
Accomplishments/Planned Programs Subtotals									3.225	2.324	1.672	

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602182A / C3I Applied Research	Project (Number/Name) CZ6 / Assured PNT Enabling Applied Technology
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
D. Acquisition Strategy N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602182A / C3I Applied Research				Project (Number/Name) CZ7 / Convergent CEMA Technical Effects			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CZ7: Convergent CEMA Technical Effects	-	5.272	5.584	-	-	-	-	-	-	-	-	-

Note

The Convergent Networking and CEMA Effects effort terminated in FY2026.

A. Mission Description and Budget Item Justification

This Project investigates, designs, and develops hardware and software to enable cyber and radio frequency (RF) technical effects along with inconspicuous Cyber Electromagnetic Activity (CEMA) and network operations of Army platforms and dismounts, while maintaining freedom to maneuver, communicate, and sense. This research will investigate and develop methods to protect blue platforms from adversarial detection and attack. This research is critical to counter near-peer adversary ability to geo-locate and put indirect fires onto blue force positions.

Work in this Project complements Program Element (PE) 0602146A (Network C3I Technology) / Project AM6 (Non Modular RF Communications Technology) and Project AN3 (Non Traditional Waveforms Technology), Program Element (PE) 0602213A (C3I Applied Cyber) / Project CI6 (Network Obscuration and Deception Tech) and Project CY6 (Autonomous Cyber Technology), Program Element (PE) 0603457A (C3I Cyber Advanced Development) / Project 6CY (Autonomous Cyber Advanced Technology), and Program Element (PE) 0603463A (Network C3I Advanced Technology) / Project AM7 (Modular RF Communications Advanced Technology) and Project AN4 (Non Traditional Waveforms Advanced Technology).

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.

Work in this Project is performed by the Army Research Laboratory (ARL).

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

Title: RF-Enabled CEMA Sensing and Technical Effects

Description: This effort develops technologies to avoid geolocation of blue force RF emissions by peer/near- peer adversaries. Research will focus on developing low probability of detection (LPD) communications and RF transceivers to increase freedom of maneuver while maintaining effective communications.

FY 2025 Plans:

Will develop antenna architecture to include higher frequencies by integrating pixel antenna into base wideband antenna; investigate reconfigurable wideband power dividers that can be integrated into wideband antenna; validate advanced RF emulator techniques in operationally realistic environments; investigate antenna integration to enhance performance in accordance with

FY 2024	FY 2025	FY 2026
3.213	3.457	-

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602182A / C3I Applied Research	Project (Number/Name) CZ7 / Convergent CEMA Technical Effects	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
RF emulator requirements; validate effectiveness of converged cyber and RF emulation and proximal access techniques; validate performance of non-RF integrated breadboard communication demonstrator and alternate communication pathways. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects efforts to foster innovation and accelerate deployment of promising technology in support of alignment with congressional priorities.			
Title: Convergent Networking and CEMA Effects Description: This effort investigates techniques and develops methods for combining the physical (Radio Frequency) and network (cyber) layers for enhanced effects when coupled with electromagnetic technical effects. Research also investigates methods of adaptive networking using unconventional communication channels and active tactical cyber defense methods to anticipate adversarial activities and effective responses. FY 2025 Plans: Will investigate techniques for low probability of detection in partial and uncertain information/defense scenarios based on adversary understanding; integrate cyber misrepresentation decision-making system suitable for the tactical environment, including monitoring and redirection network agents, dynamic honeynet infrastructure, and rapid/automatic content customization encompassing the RF spectrum; investigate the relation between dynamic games and normal games on randomly determined attack graphs to leverage reinforcement learning for deceptive strategies and artificial intelligence (AI)-enabled cyber deception. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects efforts to foster innovation and accelerate deployment of promising technology in support of alignment with congressional priorities.		2.059	2.127
Accomplishments/Planned Programs Subtotals		5.272	5.584
C. Other Program Funding Summary (\$ in Millions) N/A Remarks D. Acquisition Strategy N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602182A / C3I Applied Research				Project (Number/Name) DA8 / Quantum PNT & Radio Frequency Sensing			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
DA8: Quantum PNT & Radio Frequency Sensing	-	2.517	3.664	5.228	-	5.228	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project will investigate quantum sensing approaches for positioning, navigation, timing (PNT), and field sensing. The focus is to improve the accuracy and resiliency of both Army PNT capabilities independent of Global Positioning System (GPS) to include situational awareness, for electromagnetic signals across the entire frequency spectrum. The payoff of this work will be the development of sensing capabilities and approaches that are beyond classical limits enabling a new paradigm of systems that are more secure, resilient, and precise.												
Work in this Project complements Program Element (PE) 0603463A (Network C3I Advanced Technology) / Project AW6 (Modular GPS Independent Sensors Advanced Tech) and Program Element (PE) 0602146A (Network C3I Technology) / Project AW5 (Modular GPS Independent Sensors Technology).												
The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.												
Work in this Project is performed by Army Research Laboratory (ARL).												
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2024	FY 2025	FY 2026
Title: Quantum-Enhanced Sensing and PNT										2.517	3.664	5.228
Description: This effort will investigate quantum sensors based on atoms and atom-like color centers in solid state hosts for use as clocks and electromagnetic field sensors. Reducing the size, weight, and power (SWAP) is a primary objective as most quantum devices are still large laboratory-grade experiments. This work will investigate paths to transportable quantum devices that can be tested outside of lab environments and still maintain their high-accuracy performance. The benefits of this effort are more compact quantum sensing components that can be further integrated into systems while preserving quantum enhancements.												
FY 2025 Plans: Will develop and mature sensor architectures based on solid-state defects; investigate trade-offs between nitrogen vacancies (NV) in diamond and silicon vacancies, within silicon carbide (SiC), for sensing characteristics; model and design ruggedized magnetometry and high-precision PNT sensors; develop fiber-coupled Rydberg electric field sensor head for future assessment; build portable Rydberg electronics capability for future assessment.												
FY 2026 Plans:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602182A / C3I Applied Research	Project (Number/Name) DA8 / Quantum PNT & Radio Frequency Sensing	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
Will analyze and refine Rydberg electric field sensors for comparison with conventional receiver antennas; will conduct laboratory simulation and bench-top experiments on fiber-coupled Rydberg receiver technologies; will assess total complete system size, weight, and power (SWaP) of Rydberg sensor and analyze options for further SWaP reduction in transportable Rydberg electric field sensor with out-of-lab performance capabilities; will develop clock operating methodologies using nitrogen vacancies (NV) in diamond; will develop ruggedized magnetometry components and high-precision PNT sensors for future laboratory validation. FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects additional research in laboratory experimentation activities in Rydberg receiver technologies and solid-state technologies.			
Accomplishments/Planned Programs Subtotals		2.517	3.664
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602182A / C3I Applied Research				Project (Number/Name) DB4 / Enabling Long Standoff 3D (ELS3D) Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
DB4: Enabling Long Standoff 3D (ELS3D) Tech	-	1.983	1.092	0.492	-	0.492	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project investigates and develops a low size, weight, and power (SWAP) laser transmitter, processing algorithms and calibration models tailored for higher resolution 3D data collections over larger areas from longer stand-off for mapping, Intelligence Surveillance and Reconnaissance (ISR) and targeting. Long standoff airborne collection of high-resolution quick turnaround 3D data is vital for mission planning, target detection and identification, fire control, autonomous navigation, kinetic targeting, and battle damage assessment. Existing light detection and ranging (LIDAR) systems are limited to short standoff and/or near-nadir collection, limiting their use against near-peer adversaries and restricting the provision of 3D data. The payoff will enable long standoff airborne collection of high-resolution quick turnaround 3D data through the development LIDAR subsystems and processing algorithms.												
Work in this Project complements Program Element (PE) 0603042A (C3I Advanced Technology) / Project DB5 (Enabling Long Standoff 3D Adv Tech).												
The work cited is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.												
Work in this Project is performed by the United States Army Engineer Research and Development Center Geospatial Research Laboratory, and Geotechnical and Structures Laboratory.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Signal Processing for Forward Looking Mapping Systems									1.983	1.092	-	
Description: This effort will design and develop hardware and software to enable long standoff airborne collection of high-resolution quick turnaround 3-Dimensional Data to provide advanced Geospatial Engineering capabilities that generate timely, more accurate, mission relevant digital information and sharable knowledge products across the Army Common Operating Environment.												
FY 2025 Plans:												
Will validate advanced signal processing algorithms and calibration models tailored for higher resolution 3D data collections over larger areas from longer stand-off for mapping, ISR and targeting.												
FY 2025 to FY 2026 Increase/Decrease Statement:												
Funding decrease reflects planned conclusion of this effort and transition to Program Element 0603042A (C3I Advanced Technology)/Project DB5 (Enabling Long Standoff 3D (ELS3D) Adv Tech).												
Title: Large Format GmAPD Camera									-	-	0.492	

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602182A / C3I Applied Research	Project (Number/Name) DB4 / Enabling Long Standoff 3D (ELS3D) Tech	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p>Description: This effort will develop a sensor for 3D data collection from long standoff. The sensor will achieve resolution sufficient for high confidence target identification, operate at night, and be able to collect wide area mapping data for geospatial foundation. Sensor will be ruggedized for operation at very high altitudes (~60kft) for collection of high-resolution 3D data from the stratosphere. This long standoff collection will meet Army needs for mapping, ISR, and targeting, and be of a sufficient SWAP to be integrated onto Army platforms such as High-Altitude Balloons (HABs).</p> <p>FY 2026 Plans: Will Investigate the use of an environmentally survivable Geiger-mode avalanche photodiode (GmAPD) camera in an operational prototype high altitude lidar sensor.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects planned initiation of this effort.</p>			
Accomplishments/Planned Programs Subtotals		1.983	1.092
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025																										
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602182A / C3I Applied Research				Project (Number/Name) DE6 / Understanding Environment as a Threat Tech																											
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost																								
DE6: <i>Understanding Environment as a Threat Tech</i>	-	1.005	0.405	-	-	-	-	-	-	-	-	-																								
<p>Note In Fiscal Year FY2026 Project DE6 Understanding Environment as a Threat Tech is completed and terminated.</p> <p>A. Mission Description and Budget Item Justification This Project designs and advances mission planning software enabling the Soldier to identify, track, and plan for industrial or commercial chemical/environmental threats. Software modules will increase capability of mission based planning technologies providing new operational routing options for mission execution with environmental threat overlays.</p> <p>Work in this Project complements Program Element (PE) 0603042A (C3I Advanced Technology) / Project DE7 (Understanding the Environment as a Threat Adv Tech).</p> <p>The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy. Work in this Project is performed by the United States Army Engineer Research and Development Center Environmental Laboratory, Geospatial Research Laboratory, and Information Technology Laboratory.</p> <p>B. Accomplishments/Planned Programs (\$ in Millions)</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td></td> <td align="center">FY 2024</td> <td align="center">FY 2025</td> <td align="center">FY 2026</td> </tr> <tr> <td>Title: Subsurface Forensics</td> <td align="center">1.005</td> <td align="center">0.405</td> <td align="center">-</td> </tr> <tr> <td colspan="4"> Description: This effort will prepare Soldiers for the risks of deliberate or accidental release of toxic industrial chemicals and materials by investigating and developing methods to collect data to characterize and predict the fate and transport of hazards of concern. </td> </tr> <tr> <td colspan="4"> FY 2025 Plans: Will validate techniques for ultra-low detection levels of explosive constituents, non-weaponized hazards for reverse-point sourcing threats in dense urban and subterranean environments. </td> </tr> <tr> <td colspan="4"> FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects planned conclusion of this effort. </td> </tr> <tr> <td align="right" colspan="2">Accomplishments/Planned Programs Subtotals</td> <td align="center">1.005</td> <td align="center">0.405</td> </tr> </table> <p>C. Other Program Funding Summary (\$ in Millions) N/A</p>														FY 2024	FY 2025	FY 2026	Title: Subsurface Forensics	1.005	0.405	-	Description: This effort will prepare Soldiers for the risks of deliberate or accidental release of toxic industrial chemicals and materials by investigating and developing methods to collect data to characterize and predict the fate and transport of hazards of concern.				FY 2025 Plans: Will validate techniques for ultra-low detection levels of explosive constituents, non-weaponized hazards for reverse-point sourcing threats in dense urban and subterranean environments.				FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects planned conclusion of this effort.				Accomplishments/Planned Programs Subtotals		1.005	0.405
	FY 2024	FY 2025	FY 2026																																	
Title: Subsurface Forensics	1.005	0.405	-																																	
Description: This effort will prepare Soldiers for the risks of deliberate or accidental release of toxic industrial chemicals and materials by investigating and developing methods to collect data to characterize and predict the fate and transport of hazards of concern.																																				
FY 2025 Plans: Will validate techniques for ultra-low detection levels of explosive constituents, non-weaponized hazards for reverse-point sourcing threats in dense urban and subterranean environments.																																				
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects planned conclusion of this effort.																																				
Accomplishments/Planned Programs Subtotals		1.005	0.405																																	

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602182A / C3I Applied Research	Project (Number/Name) DE6 / Understanding Environment as a Threat Tech
C. Other Program Funding Summary (\$ in Millions)		
Remarks		
D. Acquisition Strategy		
N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602182A / C3I Applied Research				Project (Number/Name) DM9 / Distributed Multi-Agent Reasoning and Data Fusion			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
DM9: Distributed Multi-Agent Reasoning and Data Fusion	-	-	-	5.844	-	5.844	-	-	-	-	-	-
Note Distributed Multi-Agent Reasoning and Data Fusion is a new start within the C3I Applied Research program in FY 2026.												
A. Mission Description and Budget Item Justification This Project supports research on distributed Artificial Intelligence (AI) reasoning networks and data fusion techniques to provide an overall assessment of multi-domain tactical Windows of Opportunities to assess if windows are opening-closing-degrading-enhancing for tactical operations. This effort will research the properties of Windows of Opportunity such as scope, resilience, uncertainties, vulnerabilities, and superiority in order to enable air and ground agents to autonomously identify and assess multi-domain Windows of Opportunity for fast exploitation while being resilient to adversarial disruptions and deceptions. Work in this Project complements Program Element (PE) 0603463A (Network C3I Advanced Technology) / Project AQ8 (High Tempo Data Driven Decision Tools Adv Tech), PE 0603463A (Network C3I Advanced Technology) / Project AM7 (Modular RF Communication Advanced Technology), and PE 0603457 (C3I Cyber Advanced Development) / Project 6CY (Autonomous Cyber Advanced Technology). The cited research is consistent with Under Secretary of Defense for Research and Engineering Science and Technology priority focus areas and the Army Modernization Strategy. Work in this Project is performed by the Army Research Laboratory (ARL).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Modeling and Fusion for Composite Windows of Opportunity for Resilient Autonomous Agents									-	-	1.204	
Description: This effort will research distributed reasoning, data fusion techniques, and AI to provide an overall assessment of multiple-domain Windows of Opportunity (WoO) composed from single domain WoO to assess if windows are opening-closing-degrading-enhancing. Single domain WoO may be separated or overlapping in time and space. Research includes modeling of pertinent WoO domains used to understand key indicators of multi-domain WoO; advanced reasoning to detect and track complex multi-domain events; uncertainty quantification multi-domain fusion; and jointly designed reasoning-fusion-networking algorithms for improved multi-domain reasoning.												
FY 2026 Plans:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602182A / C3I Applied Research	Project (Number/Name) DM9 / Distributed Multi-Agent Reasoning and Data Fusion	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
Will research fusion of operationally relevant data within single-domain WoO and approaches to cross-domain fusion for detection and tracking events; investigate methods for extending reinforcement learning models to detect and characterize combinations of WoO across multiple domains.			
FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects planned creation of this effort. Funding realigned from Data Characterization for AI-Enabled Decision Support in PE 0602181A (All Domain Convergence Applied Research) / Project CM7 (Collaborative Convergence Applied Research) and Heterogeneous Computing Computational Sciences in PE 0602145A (Next Generation Combat Vehicle Technology) / Project BF8 (Artificial Intelligence & Machine Learning Tech).			
Title: Distributed Multi-Agent Reasoning Networks for Resilient Autonomous Agents		-	-
Description: This effort will research distributed reasoning network that jointly considers AI, fusion, and networking for improved performance and resilience. Develop networking that is AI-aware, AI-enabled, and resilient by jointly adapting AI and computational/communications resources to meet multi-agent autonomous mission goals. Research includes hybrid learning to exploit expert knowledge; computationally efficient distributed data fusion; characterization of AI processing variants; and algorithms for dynamical, computationally efficient switching AI processing variants to adapt to dynamics to increase reasoning capacity, enhance resilience, and improve performance. This effort will research hybrid AI that learns and fuses multi-modal inputs with limited training data while providing explanations to prepare information for decision makers.			4.640
FY 2026 Plans: Will research AI that learns from limited operational training data and expert knowledge from the Army War College and Combat Training Centers; research computationally efficient AI algorithms for experimentation on autonomous systems at the Combat Training Centers; characterize machine learning models and strategies for performance-resource tradeoffs in adaptive, distributed reasoning networks; create techniques to generate AI models optimized for increased performance and robustness by jointly adapting computational and communication resources.			
FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects planned creation of this effort. Funding realigned from Data Characterization for AI-Enabled Decision Support in PE 0602181A (All Domain Convergence Applied Research) / Project CM7 (Collaborative Convergence Applied Research) and Convergent Networking and CEMA Effects in PE 0602182A (C3I Applied Research) / Project CZ7 (Convergent CEMA Technical Effects).			
Accomplishments/Planned Programs Subtotals		-	-
C. Other Program Funding Summary (\$ in Millions) N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602182A / C3I Applied Research	Project (Number/Name) DM9 / Distributed Multi-Agent Reasoning and Data Fusion
C. Other Program Funding Summary (\$ in Millions)		
Remarks		
D. Acquisition Strategy		
N/A		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 2: Applied Research					R-1 Program Element (Number/Name) PE 0602183A / Air Platform Applied Research							
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
Total Program Element	-	53.611	48.854	53.305	-	53.305	-	-	-	-	-	-
CL5: Air Platform Enabling University Applied Research	-	0.507	0.959	-	-	-	-	-	-	-	-	-
CL8: Aviation Teaming Autonomy Concepts & Technologies	-	3.090	3.337	-	-	-	-	-	-	-	-	-
CN1: Disruptive Countermeasure Concepts for Aviation	-	8.980	6.718	7.146	-	7.146	-	-	-	-	-	-
CT5: Air Platform Applied Research (CA)	-	6.500	-	-	-	-	-	-	-	-	-	-
CU7: Control & Autonomy for Tactical Superiority Tech	-	4.621	5.783	8.298	-	8.298	-	-	-	-	-	-
CU8: Structures Tech for Enduring Efficient Resilience	-	1.620	1.048	1.494	-	1.494	-	-	-	-	-	-
CU9: Systems Design Technology	-	3.020	4.435	7.180	-	7.180	-	-	-	-	-	-
CW3: Advanced Rotors Applied Technology	-	2.519	2.015	1.548	-	1.548	-	-	-	-	-	-
CW4: Air Vehicle Structures and Dynamics Tech	-	2.931	3.078	4.082	-	4.082	-	-	-	-	-	-
CW5: Experimental and Computational Aeromechanics Tech	-	6.586	6.918	10.301	-	10.301	-	-	-	-	-	-
CW6: Future UAS Propulsion Technology	-	3.430	-	-	-	-	-	-	-	-	-	-
CW7: High Speed and Efficient VTOL Vehicle Tech	-	1.522	3.583	1.572	-	1.572	-	-	-	-	-	-

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army										Date: June 2025			
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army I BA 2: Applied Research					R-1 Program Element (Number/Name) PE 0602183A I Air Platform Applied Research								
CW8: Next Generation Aviation Transmission Apl Tech	-	1.456	-	-	-	-	-	-	-	-	-	-	
DC2: High Performance Computing for Rotorcraft Apl Tech	-	1.246	1.309	1.405	-	1.405	-	-	-	-	-	-	
DE2: Airborne Threat Defeat	-	5.583	6.673	1.879	-	1.879	-	-	-	-	-	-	
DK1: Air Vehicle Integrated & Alternative Tech (AVIA Te)	-	-	2.998	8.400	-	8.400	-	-	-	-	-	-	

A. Mission Description and Budget Item Justification

This Program Element (PE) undertakes applied research efforts that support and enable the overall Army Aviation portfolio in general, and the Army's modernization priority for future vertical lift (FVL). Vital and enduring applied research is conducted in the air portfolio that supports mid-to-long term requirements in contested operational environments and technologies that have broad application to FVL modernization, as well as overall Army and specific Department of Defense (DoD) aviation needs.

Research in this PE contributes to the Army Science and Technology (S&T) air systems portfolio and is fully coordinated with efforts in PE 0602148A (Future Vertical Lift Technology), PE 0603465A (Future Vertical Lift Advanced Technology) and PE 0603043A (Air Platform Advanced Technology).

The cited research is consistent with the Under Secretary of Defense for Research and Engineering S&T focus areas and the Army Modernization Strategy.

The FY 2026 request was reduced by \$0.592 million for Advisory and Assistance Services to promote efficiencies and advance the policies of the Administration in alignment with Executive Order 14222, "Implementing the President's Department of Government Efficiency Cost Efficiency Initiative."

The FY 2026 request was reduced by \$0.264 million for civilian personnel to optimize the workforce in compliance with Executive Order 14210, "Implementing the President's Department of Government Efficiency Workforce Optimization Initiative."

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army				Date: June 2025	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
2040: Research, Development, Test & Evaluation, Army I BA 2: Applied Research		PE 0602183A I Air Platform Applied Research			
B. Program Change Summary (\$ in Millions)	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Previous President's Budget	48.163	53.206	59.078	-	59.078
Current President's Budget	53.611	48.854	53.305	-	53.305
Total Adjustments	5.448	-4.352	-5.773	-	-5.773
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-3.602			
• Congressional Rescissions	-	-			
• Congressional Adds	6.500	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.417	-			
• SBIR/STTR Transfer	-1.469	-			
• Adjustments to Budget Years	-	-0.750	-5.773	-	-5.773
Congressional Add Details (\$ in Millions, and Includes General Reductions)				FY 2024	FY 2025
Project: CT5: Air Platform Applied Research (CA)					
Congressional Add: Manufacturing technology for reverse engineering				5.000	-
Congressional Add: Multispectral sensors for unmanned aerial systems				1.500	-
Congressional Add Subtotals for Project: CT5				6.500	-
Congressional Add Totals for all Projects				6.500	-
Change Summary Explanation					
Increase accounts for creating adaptive air vehicle structures and control, creating intelligent aerial teaming behaviors, and initiating autonomy for combat environment sustainment.					

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025			
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602183A / Air Platform Applied Research				Project (Number/Name) CL5 / Air Platform Enabling University Applied Research				
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost	
CL5: Air Platform Enabling University Applied Research	-	0.507	0.959	-	-	-	-	-	-	-	-	-	
Note In Fiscal Year (FY) 2026, this Project is completed.													
A. Mission Description and Budget Item Justification This Project focuses on applied research originating from extramural applied research in academia pertaining to navigation/routing, autonomous robotic vehicles, artificial intelligence and machine learning as applied to aerial mobility and maneuver, holistic survivability, teaming, integrated mission systems, air-launched effects, and other innovative air enabling applied research technologies that will accelerate the Army modernization in next generation aerial vehicles. This Project will perform discovery research efforts to focus more on mid to far-term Army modernization priorities while also maintaining delivery of near-term technologies fundamental to the modernization priorities. This Project conducts applied research and development leading to all the potential emerging technologies in areas of strategic importance to Army Aviation in artificial intelligence / machine learning (AI/ML), autonomous teaming systems, survivability, aeromechanics, advanced vertical take-off and landing(VTOL) design & concepts, flight dynamics, vibration & noise control, propulsion, human factor engineering and structures & materials, etc., by bringing competitively selected Universities with research and development teams into Technical Alliances. The Project will also continuously experiment with methods to identify, demonstrate and transition novel technology from entities that might not otherwise collaborate with the Department of Defense (DoD), with the end goal of accelerating the adoption of cutting-edge applied research technology for the warfighter in the Army aviation portfolio. Work in this Project complements Program Element (PE) 0602148A (Future Vertical Lift Technology), PE 0603465A (Future Vertical Lift Advanced Technology Development), PE 0603043A (Air Platform Advanced Technology) and PE 0602144A (Ground Technology). The work cited is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy. Work in this Project is performed by the Army Research Laboratory (ARL).													
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026		
Title: Vertical Lift Applied Research									0.507	0.959	-		
Description: Conduct applied research in academia to elevate Vertical Lift research and continue to investigate promising and emerging technologies													
FY 2025 Plans: Will fund research to develop capabilities to enable the coordination of multiple land and air vehicles participating in an unmanned long-term reconnaissance operation using distributed command/control architecture despite communication delays and/or failures;													

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602183A / Air Platform Applied Research	Project (Number/Name) CL5 / Air Platform Enabling University Applied Research		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
fund research to conduct academic applied research in rotorcraft emerging technologies through autonomous teaming systems, aeromechanics, advanced Vertical Takeoff and Landing (VTOL) design & concepts, flight dynamics models to extend reach, and agility. The benefit of this effort is it enables future vertical lift capability improvements. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects completion of this effort. Funding realigned to Program Element 0602002A (Army Agile Innovation and Development-Applied Research) / Project DC4 (Army Applied Innovation).				
Accomplishments/Planned Programs Subtotals		0.507	0.959	-
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602183A / Air Platform Applied Research				Project (Number/Name) CL8 / Aviation Teaming Autonomy Concepts & Technologies			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CL8: Aviation Teaming Autonomy Concepts & Technologies	-	3.090	3.337	-	-	-	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
<p>This Project establishes multi-level simulations, physics-based models, and artificial intelligence/machine learning (AI/ML) algorithms and methods to inform and advance capabilities for heterogeneous advanced teaming concepts to support operations in complex and peer contested environments. This Project focuses on advancing innovations to enable concepts and technology for deep sensing and effects, complex mobility and maneuver for Unmanned Aircraft Systems (UAS) (and small UAS), and adaptive behaviors to optimize formation performance. Innovative solutions, knowledge, and understanding generated from this effort informs Program Element (PE) 0602148A Future Vertical Lift Technology / Project AK9 (Adv Teaming for Tactical Aviation Operations Tech).</p> <p>Work in this Project is fully coordinated with PE 0602148A (Future Vertical Lift Technology) and PE 0603465A (Future Vertical Lift Advanced Technology Development) / Project AL1 (Adv Teaming for Tactical Aviation Oper Adv Tech).</p> <p>The cited work is consistent with the Under Secretary of Defense for Research and Engineering Science and Technology focus areas and the Army modernization strategy.</p> <p>Work in this Project is performed by Army Research Laboratory (ARL).</p>												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Intelligent Unmanned Aerial System Teaming Technologies									3.090	3.337	-	
Description: Enables the establishment of component technologies to support resilient, multi-modal, survivable Unmanned Aircraft System (UAS) teams that can plan and act on time-scales beyond human capability and have a robust shared understanding of contested and dynamic environments to support effective tactical engagement. Specific topics include 1) novel artificial-intelligence algorithms and methods for adaptive team composition and control, 2) increased team knowledge base and understanding of local and global world models, 3) hierarchical, composable, and adaptive learning methods for increased mission resilience, and 4) understanding interaction and scalability between, amongst, and across heterogeneous team members and the environment.												
FY 2025 Plans:												
Will validate multi-agent seek and strike on defended radio frequency (RF) emitting targets in field experiments deploying small unmanned aerial systems (UAS); validate collaborative and deceptive behaviors to penetrate adversary defenses; assess the relative performance of analytically derived and machined-learned algorithms; refine development of multi-agent tactics for												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602183A / Air Platform Applied Research		Project (Number/Name) CL8 / Aviation Teaming Autonomy Concepts & Technologies
B. Accomplishments/Planned Programs (\$ in Millions) autonomous teams of unmanned air vehicles to autonomously detect, identify, locate, and report RF signals of opportunity; implement wind and terrain awareness into coordinated UAS - unmanned ground vehicle (UGV) landing and recharge maneuvers; study persistent teaming by combining classical control and generative approaches. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects realignment to Program Element (PE) 0602345A (Unmanned Aerial Systems Launched Effects Applied Research) / Project A43 (Aviation Teaming Autonomy Concepts & Technologies) as a part of the Department of Defense Capability Based (Agile) Funding pilot, which provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology and realignment to PE 0602183A (Air Platform Applied Research) / Project CW4 (Air Vehicle Structures and Dynamics Tech).		FY 2024	FY 2025	FY 2026
Accomplishments/Planned Programs Subtotals		3.090	3.337	-
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army	Date: June 2025
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Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602183A / Air Platform Applied Research				Project (Number/Name) CN1 / Disruptive Countermeasure Concepts for Aviation			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CN1: <i>Disruptive Countermeasure Concepts for Aviation</i>	-	8.980	6.718	7.146	-	7.146	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Project investigates advanced technologies to reduce Future Vertical Lift (FVL) platform susceptibility and vulnerability to damage from guided and unguided threats, as well as technologies to defeat small arms, rocket, and missile threats. This Project performs research and develops innovative detect and defeat technologies against next -generation threats to the FVL. Areas of research include new laser materials and designs for in-band, low size, weight, power, and cost (SWaP-C) precision laser soft-kill countermeasures operating in the mid- and long-wave infrared, lethality effects of ultrashort pulsed lasers, and sensitive radio frequency (SeRF) detection modality for use as aircraft survivability equipment (ASE). In addition, this Project will also perform research and development on the use of remotely-deployed, passive multi-modal sensors to localize threat ground vehicles and discriminate decoys.

Research in this Project is fully coordinated with Program Element (PE) 0602146A (Network C3I Technology) / Project AN7 (COE - Every Receiver is a Sensor Technology), PE 0602148A (Future Vertical Lift Technology) / Project CH3 (Holistic Team Survivability Technology), PE 0603463A (Network C3I Advanced Technology) / Project AN8 (COE - Every Receiver is a Sensor Advanced Tech), and PE 0603465A (Future Vertical Lift Advanced Technology) / Project AL1 (Adv Teaming for Tactical Aviation Oper Adv Tech).

The cited research is consistent with the Under Secretary of Defense for Research and Engineering Science and Technology focus areas and the Army modernization strategy.

Work in this Project is performed by Army Research Laboratory (ARL).

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2024	FY 2025	FY 2026
Title: Cognitive Countermeasures Technology Development Description: This effort investigates and matures novel materials, components, and techniques to counter legacy and emerging threats to FVL platforms. Emphasis will be placed on technologies and approaches to enable a robust, holistic countermeasure capability for target defeat, regardless of threat characteristics or guidance mode. FY 2025 Plans: Will design and develop tandem-pumped, high energy pulsed mid-wave infrared (MWIR) laser sources optimized for pulse-burst regime to further minimize laser system SWAP; design and develop direct-diode-pumped, ultra-low SWAP, MWIR laser sources optimized for pulse-burst regime with advanced phase-change cooling; mature wavelength conversion materials and techniques for longwave infrared (LWIR) sources; validate ultra-short pulse lasers (USPL) non-optical effects measurements, such as radio	2.077	2.109	1.657

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602183A / Air Platform Applied Research	Project (Number/Name) CN1 / Disruptive Countermeasure Concepts for Aviation	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
frequency (RF) generation and damage at multiple wavelengths; advance highly sensitive RF detection components conforming to an ultra-low SWaP-C architecture through the incorporation of thin film materials.			
FY 2026 Plans: Will investigate and validate mid-wave infrared (MWIR) single-crystalline and glass gain materials with emissions bandwidth appropriate for direct generation of ultrashort pulse outputs with transform limited pulse durations; identify the best femtosecond (fs) pulse amplification strategy to the application-meaningful energy level; conduct open-air ultra-short pulse lasers (USPL) propagation experiments to study effects at range.			
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects reduction in wavelength conversion materials and techniques for LWIR sources.			
Title: Deep Autonomous Sensing		5.403	4.609
Description: This effort investigates the ability to localize and recognize the formation of threat ground vehicles deep in the battlefield in support of the FVL platform. Emphasis will be placed on developing novel, passive multi-modal sensors on aerial, ground, and re-locatable platforms to enable high fidelity, low false alarm target recognition and counter concealment and camouflage with decoy discrimination.			5.489
FY 2025 Plans: Will develop novel, multi-modal sensor fusion algorithms to detect, locate, and track formations of mechanized vehicles for a small subset of variables; advance cross modal sensing algorithms to enhance classification confidence and detect anomalies; assess autonomy in teaming between unmanned ground sensors and unmanned ground and aerial vehicles in collaboration with Aviation and Missile Center (AvMC); validate the implementation of algorithms on low-size, weight, power, and cost (SWAP-C) sensor platforms for targeting threat vehicles.			
FY 2026 Plans: Will implement low-cost, size, weight, and power (C-SWAP) multi-modal algorithms to classify and discriminate real versus decoy threat vehicles from both unmanned ground and airborne platforms with focus on new sensing modalities such as passive radio frequency (RF) to increase target detection and classification confidence of vehicles; assess air deployment of ground and relocatable sensors from unmanned fixed wing platforms; coordinate with Army Center partners to exfiltrate target information using long-haul communications; research and implement autonomous integration with launched effect for 'at-the-edge' processing of threat targets; conduct experiments to assess sensor-to-shooter capability.			
FY 2025 to FY 2026 Increase/Decrease Statement:			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602183A / Air Platform Applied Research	Project (Number/Name) CN1 / Disruptive Countermeasure Concepts for Aviation		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Funding increase reflects additional research in autonomous integration with launched effect for 'at-the-edge' processing of threat targets.				
Title: Advanced Power Sensing and Processing (APSP) for Improved Energy Awareness, Measurements and Validation		1.500	-	-
Description: This effort will develop the Mobile Unattended Ground Sensor system, relevant hardware, and data processing software to provide analysis and assessment of electric power systems.				
Accomplishments/Planned Programs Subtotals		8.980	6.718	7.146
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602183A / Air Platform Applied Research				Project (Number/Name) CT5 / Air Platform Applied Research (CA)			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CT5: Air Platform Applied Research (CA)	-	6.500	-	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

Congressional Interest Item funding provided for Air Platform Applied Research

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.

<u>B. Accomplishments/Planned Programs (\$ in Millions)</u>	FY 2024	FY 2025
<i>Congressional Add:</i> Manufacturing technology for reverse engineering	5.000	-
<i>FY 2024 Accomplishments:</i> Congressional Interest Item funding provided for Manufacturing technology for reverse engineering		
<i>Congressional Add:</i> Multispectral sensors for unmanned aerial systems	1.500	-
<i>FY 2024 Accomplishments:</i> Congressional Interest Item funding provided for Multispectral sensors for unmanned aerial systems		
Congressional Adds Subtotals	6.500	-

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

N/A

Remarks

D. Acquisition Strategy

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602183A / Air Platform Applied Research				Project (Number/Name) CU7 / Control & Autonomy for Tactical Superiority Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CU7: Control & Autonomy for Tactical Superiority Tech	-	4.621	5.783	8.298	-	8.298	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project will develop and flight-validate new approaches and tools applicable to advanced high-speed configurations being considered for Future Vertical Lift (FVL) and transition to industry to ensure that FVL aircraft meet Army requirements. Work in this Project may also address and be applied to the needs of other Army and specific Department of Defense (DoD) aviation systems.												
Research in this Project is fully coordinated with Program Element (PE) 0603043A (Air Platform Advanced Technology) / Project CV1 (Control & Autonomy for Tactical Superiority Adv).												
The cited research is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.												
Work in this Project is performed by Aviation & Missile Center (AvMC).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Adaptive Tactical Autonomy and Control (ATAC) Tech									4.621	5.422	6.245	
Description: Develop advanced vehicle management, flight control, and autonomy technologies that enable FVL aircraft to achieve superior maneuverability and agility at all speeds, effectively exploit extreme/degraded environmental conditions as a force multiplier, fight and win in presence of failure or damage, and operate on a cognitive-loading-spectrum from piloted to fully autonomous.												
FY 2025 Plans: Will update AvMCs high-fidelity flight-dynamics modeling tool to run in real time with selectable levels of fidelity. Will develop methods for using estimation to compensate for failed sensors to enable graceful degradation. Will continue developing handling qualities requirements for high-speed flight.												
FY 2026 Plans: Will add external load modeling capability to AvMC's high-fidelity flight-dynamics modeling tool; develop Explicit Model Following (EMF) baseline control laws for AvMC's RASCAL-X flying laboratory to allow it to mimic flight characteristics of other helicopters; implement AvMC's autonomy algorithms on Tactical Resupply Vehicle family of UAVs.												
FY 2025 to FY 2026 Increase/Decrease Statement:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602183A / Air Platform Applied Research	Project (Number/Name) CU7 / Control & Autonomy for Tactical Superiority Tech	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
Funding increase supports implementation of AvMC's technologies on UAVs and Launched Effects (LE).			FY 2026
Title: Perception Enhanced Autonomous Control (PEAC) Description: Develop autonomous systems that maintain real time representation of flight environment and use AI- and ML-based perception to "understand" the environment, detect and identify threats, and take action based on aircraft state to enhance survivability. FY 2025 Plans: Will conduct research into sensor range, field of view, and performance needed for high-speed flight. Will start evaluating non-emitting sensors for position determination and autonomous navigation. FY 2026 Plans: Will add autonomous Ground Collision Avoidance System (Auto-GCAS) to AvMC's suite of autonomy algorithms; enhance AvMC's autonomy algorithms to use perception to act on critical information not encoded in sensor data. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease is an economic adjustment		-	0.361
Title: Autonomy for Combat Environment Sustainment (ACES) Description: Develop an autonomy framework that leverages, integrates, and matures autonomous technologies and capabilities from across the enterprise and is adaptable to both optionally piloted requirements of FVL and enduring fleet autonomy applications for combat environment sustainment. FY 2026 Plans: Will configure AvMC's autonomy algorithms for implementation on AvMC's UH-60Mx flying laboratory; develop interfaces needed to integrate AvMC's autonomy algorithms with the existing flight control system of AvMC's UH-60Mx flying laboratory. FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects initiation of Autonomy for Combat Environment Sustainment (ACES).		-	1.695
Accomplishments/Planned Programs Subtotals		4.621	8.298
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602183A / Air Platform Applied Research	Project (Number/Name) CU7 / Control & Autonomy for Tactical Superiority Tech
D. Acquisition Strategy N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602183A / Air Platform Applied Research				Project (Number/Name) CU8 / Structures Tech for Enduring Efficient Resilience			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CU8: Structures Tech for Enduring Efficient Resilience	-	1.620	1.048	1.494	-	1.494	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project will ensure critical structures technologies providing improved weight efficiency, fatigue tolerance, parasitic weight avoidance, and integration / synergy opportunities will transition to Advanced Technology Development tasks to later provide Future Vertical Lift (FVL) Project Management Offices and Original Equipment Manufacturers mission performance benefit in terms of range/payload, survivability, sustainment, and operational availability. Research in this Project may also address and be applied to the needs of other Army and specific DoD aviation systems.												
Research in this Project is fully coordinated with Program Element (PE) 0603043A (Air Platform Advanced Technology) / Project CV2 (Structures Platform Int Resilience & Efficiency).												
The cited research is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.												
Work in this Project is performed by Aviation & Missile Center (AvMC).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Multifunctional Advanced Structural Concepts (MASC)									1.620	1.048	-	
Description: Develop innovative, critical, highly weight-optimized, durable, fatigue-resistant, damage-tolerant structural concepts exploiting multifunctionality for weight savings and broad multi-scale FVL benefit impact.												
FY 2025 Plans:												
Will develop optimized structural concepts with innovative internal stiffening and health monitoring for UAS and other platform applications. Will develop innovative composite structure manufacturing technologies and FVL-relevant fabricate proof-of-concept component.												
FY 2025 to FY 2026 Increase/Decrease Statement:												
Funding decrease reflects conclusion of this effort. Funding realigned to Structural Concepts Advancing Mission Performance (SCAMP) within this Project.												
Title: Structural Concepts Advancing Mission Performance (SCAMP)									-	-	1.494	
Description: Development of technologies for affordable aviation structural design and fabrication. Innovative processes to use advanced composite architectures, material processing, manufacturing, curing, and assembly will be researched and matured. Computational modeling and simulation tools will be developed to more accurately predict critical load cases such as												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602183A / Air Platform Applied Research	Project (Number/Name) CU8 / Structures Tech for Enduring Efficient Resilience		
B. Accomplishments/Planned Programs (\$ in Millions) fatigue damage and aeroelastic stability to ensure structures are mass efficient. Multifunctional structures will be developed that investigate integration of structure with other vehicle subsystems to improve vehicle weight efficiency or provide added capability. <i>FY 2026 Plans:</i> Will develop materials and methods to improve composite interlaminar damage tolerance properties, with efforts conducting analysis and experiments to mature structural concepts; fund research in enhanced analysis, improved fabrication techniques, and manufacture methods of structural composites that perform under challenging load conditions representative of rotorcraft environments. <i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> Funding increase reflects initiation of Structural Concepts Advancing Mission Performance (SCAMP) with funding realigned from Multifunctional Advanced Structural Concepts (MASC) within this Project and from Program Element (PE) 0603465A (Future Vertical Lift Advanced Technology) / Project AL9 (Holistic Sit Awareness and Dec Making Adv Tech).		FY 2024	FY 2025	FY 2026
Accomplishments/Planned Programs Subtotals		1.620	1.048	1.494
C. Other Program Funding Summary (\$ in Millions) N/A Remarks D. Acquisition Strategy N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602183A / Air Platform Applied Research				Project (Number/Name) CU9 / Systems Design Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CU9: Systems Design Technology	-	3.020	4.435	7.180	-	7.180	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project will leverage large datasets and advances in multi-disciplinary optimization techniques, incorporate higher fidelity analysis, and machine learning techniques to improve predictions of emerging aviation requirements and system complexity.												
Research in this Project is fully coordinated with Program Element (PE) 0603043A (Air Platform Advanced Technology).												
The cited research is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.												
Work in this Project is performed by Aviation & Missile Center (AvMC).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Concept Design and Optimization Methods									3.020	4.435	5.196	
Description: Expand scope of design and assessment support across Future Vertical Lift (FVL) lines of effort (LOEs) and the science and technology portfolio. Incorporate method enhancements to improve timeliness, accuracy, and detail of conceptual design (performance, weight, and cost).												
FY 2025 Plans: Will further develop tools and methods for rotorcraft design and optimization methods. Will continue to develop advanced component and cost models for rotary wing and fixed wing aircraft. Will apply tool sets to future air vehicle trade studies to support Future Vertical Lift (FVL), electric Vertical Take Off and Landing (eVTOL) and hybrid-electric concepts and will explore concepts for contested logistics.												
FY 2026 Plans: Will further develop and integrate tools and methods to improve rotorcraft design and optimization methods; apply to future trade studies to explore rotorcraft concepts in support of Future Vertical Lift, UAS, Contested Logistics, and other emerging concepts including hybrid-electric and electric concepts.												
FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects continued support to Future Vertical Lift Technology exploration, support additional trades studies for hybrid-electric and allow for additional concept exploration to support contested logistics and modernization of enduring fleet.												
Title: Aerodynamics, structural dynamics & flight control simulations of Advanced Configurations									-	-	0.992	

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602183A / Air Platform Applied Research	Project (Number/Name) CU9 / Systems Design Technology		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
<p>Description: Collaborate among Industry and Academia design studies to support FVL requirements trades and S&T planning and include advanced design method development to increase breadth and depth of analysis.</p> <p>FY 2026 Plans: Will apply high-fidelity coupled aeromechanics and flight mechanics analyses over the entire flight envelope, including extreme, high-speed maneuvers, to accurately predict interactional aerodynamic effects on rotor and control loads; develop validated algorithms & models for analyzing complex hub geometries, rotor/propeller-wing interactions, and high-speed rotor stability, and explore application of three-dimensional structural dynamics analysis to advanced FVL-relevant rotor/propeller blades.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects initiation of Aerodynamics, structural dynamics & flight control simulations of Advanced Configurations. Funding realigned from Program Element (PE) 0603465A (Future Vertical Lift Advanced Technology) / Project AL1 (Adv Teaming for Tactical Aviation Oper Adv Tech).</p>				
<p>Title: Advanced measurements & diagnostic techniques for high-quality validation data</p> <p>Description: Deliver new experimental techniques developed to collect highly accurate, repeatable and reliable experimental data necessary to validate high-fidelity simulation models.</p> <p>FY 2026 Plans: Will develop novel experimental techniques to collect highly accurate, repeatable, and reliable experimental data necessary to validate simulation models over the entire life cycle to increase confidence in analysis for airworthiness qualification; develop and validate analysis methods for material characterization with static & fatigue test data in conditions required for qualification and explore experimentally validated damage tolerance analysis for rotating components.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects initiation of Advanced measurements & diagnostic techniques for high-quality validation data. Funding realigned from Program Element (PE) 0603465A (Future Vertical Lift Advanced Technology) / Project AL1 (Adv Teaming for Tactical Aviation Oper Adv Tech).</p>		-	-	0.496
<p>Title: Development of control laws, handling qualities, and flying qualities for emerging configurations</p> <p>Description: Deliver new comprehensive analysis of emerging configurations for handling qualities to inform future requirements and military standards.</p> <p>FY 2026 Plans:</p>		-	-	0.496

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602183A / <i>Air Platform Applied Research</i>	Project (Number/Name) CU9 / <i>Systems Design Technology</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
Will develop & refine comprehensive mission task elements (MTEs) for emerging configurations & future missions such as high-speed transition, maneuvers, and precision tasks, to provide to inform handling qualities requirements through comprehensive analysis & piloted simulation; explore the use of novel computational algorithms, parallel processing and leverage commercial libraries to improve autonomous operations by reducing resource requirements and improving safety considerations. <i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> Funding increase reflects initiation of Development of control laws, handling qualities, and flying qualities for emerging configurations. Funding realigned from Program Element (PE) 0603465A (Future Vertical Lift Advanced Technology) / Project AL1 (Adv Teaming for Tactical Aviation Oper Adv Tech).			
Accomplishments/Planned Programs Subtotals		3.020	4.435
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602183A / Air Platform Applied Research				Project (Number/Name) CW3 / Advanced Rotors Applied Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CW3: Advanced Rotors Applied Technology	-	2.519	2.015	1.548	-	1.548	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project investigates Future Vertical Lift (FVL) and other Army and Department of Defense (DoD) aviation systems technologies that mature high speed and highly efficient rotor and hub system designs.												
Research in this Project is fully coordinated with PE 0603043A (Air Platform Advanced Technology) / Project CX1 (Advanced Rotors Advanced Tech).												
The cited research is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.												
Work in this Project is performed by Aviation & Missile Center (AvMC).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Advanced Hubs Tech									2.519	-	-	
Description: Investigate advanced rotor system and hub technologies to support goals of increased speed and lift by developing configurations and technologies that reduce drag and enable more efficient rotor system performance.												
Title: Innovative Rotor Blade Manufacturing Processes									-	2.015	1.548	
Description: Develop more automated processes such as automated fiber placement, additive manufacturing, lower cost and fabrication time.												
FY 2025 Plans: Will conduct initial rotor blade manufacturing technology screening and down select. Start component test planning.												
FY 2026 Plans: Will commence rotor blade component fabrication and conduct a manufacturing trial to show cost and time benefits.												
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects an economic adjustment.												
Accomplishments/Planned Programs Subtotals									2.519	2.015	1.548	

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602183A / Air Platform Applied Research	Project (Number/Name) CW3 / Advanced Rotors Applied Technology
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
D. Acquisition Strategy N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602183A / Air Platform Applied Research				Project (Number/Name) CW4 / Air Vehicle Structures and Dynamics Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CW4: Air Vehicle Structures and Dynamics Tech	-	2.931	3.078	4.082	-	4.082	-	-	-	-	-	-
A. Mission Description and Budget Item Justification <p>This Project develops modeling tools, methodologies, and experimental platforms needed to research aircraft including small uncrewed systems, traditional crewed Future Vertical Lift (FVL) platforms, and Launched Effects (LE). Research in this project focuses on low noise and aero elastically stable rotor technologies, reconfigurable and multi-mission aircraft, simulation, and advanced flight controls. This research enables high speed flight, longer range and endurance, increased maneuverability, and lower noise signatures from handheld to full-scale crewed platforms. Research in this project is also applicable to the family of FVL manned and unmanned platforms.</p> <p>Research in this Project is fully coordinated with Program Element (PE) 0603465A (Future Vertical Lift Advanced Technology Development).</p> <p>The cited research is consistent with the Under Secretary of Defense for Research and Engineering Science and Technology focus areas and the Army modernization strategy.</p> <p>Research in this Project is performed by Army Research Laboratory (ARL).</p>												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Air Vehicle Structures and Dynamics Technologies									2.931	3.078	1.059	
Description: Establish improved experimentally validated modeling tools and methodologies that can be used to understand the physics of aeroelastic stability and design in next generation rotorcraft platform configurations for FVL platforms. This involves the development of an experimental capability, the Tiltrotor Aeroelastic Stability Test (TRAST), which will be used to generate novel experimental data. This data will be used to increase fundamental understanding of the whirl flutter instability, which currently limits the high speed performance of tiltrotor rotorcraft. This effort will inform FVL requirement definition and technology maturation. This effort also establishes low noise rotor concepts and investigates the intersection of artificial intelligence and classical mechanics to enable novel mechanics and new approaches in structural dynamics for FVL applications to enable higher Operating Tempo (OPTEMPO) operations.												
FY 2025 Plans: Will investigate aeroelastic stability and vibratory loads of a hinge less tiltrotor utilizing the Tiltrotor Aeroelastic Stability Test (TRAST) wind tunnel capability; investigate the effectiveness of the Generalized Predictive Control (GPC) on the control and reduction of the hinge less tiltrotor's vibratory loads; conduct TRAST wind tunnel assessments in the Transonic Dynamics Tunnel (TDT) to explore the effects of wing extension on tiltrotor performance and aeroelastic stability; document the design of the lift-												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army			Date: June 2025		
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602183A / Air Platform Applied Research		Project (Number/Name) CW4 / Air Vehicle Structures and Dynamics Tech	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2024	FY 2025	FY 2026
offset coaxial rotor aeroelastic stability assessment bed; develop a machine learning model to provide fast and accurate airfoil/rotor aerodynamic loads for a wide range of airfoil/rotor configurations; investigate novel rotor concepts with the potential for quiet operation and improve accuracy and range of acoustic modeling capabilities; enable Air Launch Effects and other platforms to reject atmospheric disturbances as well as navigate within the wake of air or ground platforms for launch and recovery.					
FY 2026 Plans: Will research novel rotor concepts with the potential for improved accuracy, quiet operation, and range of acoustic modeling capabilities; mature machine learning model to provide fast and accurate airfoil/rotor aerodynamic loads for a wide range of airfoil/rotor configurations.					
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease due to realignment within Project to support Adaptive Structures and Control for Precise Complex Effects and to Program Element (PE) 0603464A (Long Range Precision Fires Advanced Technology) / Project CZ8 PrSM (Modular Payload Advanced Development).					
Title: Adaptive Structures and Control for Precise Complex Effects			-	-	3.023
Description: This effort focuses on the understanding of novel uncrewed aerial systems (UAS) which push past the current fixed-wing and quad-rotor state-of-the-art technologies. This effort leverages machine learning-based techniques for operations in complex environments, potential benefits of active and passive reflexive structures, and optimization of morphing techniques from a fundamental perspective and with engineering constraints. Research will focus on multi-role, multi-payload, and multi-capability UAS, with a focus on smaller platforms. Efforts include the development of design and simulation tools and component and flight assessments. This effort will inform UAS programs across the Army enterprise.					
FY 2026 Plans: Will develop new techniques leveraging machine learning (ML)-based control systems which can fuse many diverse inputs including vision, pressure measurements, vehicle pose, and actuator loads to study small uncrewed aerial systems (sUAS) operation in unsteady flow environments; integrate the outputs of ML-based controllers targeted at high-degree of freedom flexible airframes capable of rejecting or leveraging gusts in a bio-inspired manner; design novel, resilient UAS platforms with increased range and maneuver capabilities to enable elusive behaviors and endurance (time and distance) to ensure access, and collaborative precision action; explore simulation and design of physically flexible platforms with integrated sensing and effect technologies.					
FY 2025 to FY 2026 Increase/Decrease Statement:					

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602183A / Air Platform Applied Research	Project (Number/Name) CW4 / Air Vehicle Structures and Dynamics Tech		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Funding increase reflects realignment from within this Project and from Program Element 0602183A (Air Platform Applied Research) / Project CL8 (Aviation Teaming Autonomy Concepts & Technologies).				
Accomplishments/Planned Programs Subtotals		2.931	3.078	4.082
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602183A / Air Platform Applied Research				Project (Number/Name) CW5 / Experimental and Computational Aeromechanics Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CW5: Experimental and Computational Aeromechanics Tech	-	6.586	6.918	10.301	-	10.301	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project investigates new high fidelity computational methods to simulate aerodynamic effects and test methods of emerging rotorcraft lift technologies that could be incorporated into Future Vertical Lift (FVL) designs and other Army and Department of Defense (DoD) aviation systems.												
Research in this Project is fully coordinated with PE 0603043A (Air Platform Advanced Technology).												
The cited research is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.												
Work in this Project is performed by Aviation & Missile Center (AvMC).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Experimental Aeromechanics									4.207	4.463	7.765	
Description: Develop and explore new methods to simulate aerodynamic effects for aircraft and other future FVL configurations.												
FY 2025 Plans:												
Will mature advanced high speed compound rotorcraft wing designs to provide improved hover and forward flight performance; conduct tests to investigate methods of rotorcraft hub drag reduction; investigate state of the art measurement & data analysis techniques for rotorcraft to provide new or improved data sets for computational tool validation; investigate passive and active methods for rotor performance improvements.												
FY 2026 Plans:												
Will investigate technologies to improve high speed rotorcraft hover and forward flight performance; conduct experiments to determine and validate promising technologies and advanced rotorcraft designs; investigate state of the art measurement & data analysis techniques for rotorcraft to provide new or improved data sets for computational tool validation; design and develop rotorcraft vibration experiments to provide validation data for computational tool validation.												
FY 2025 to FY 2026 Increase/Decrease Statement:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602183A / <i>Air Platform Applied Research</i>	Project (Number/Name) CW5 / <i>Experimental and Computational Aeromechanics Tech</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
Funding increases to purchase wind tunnel test time, develop vibration experiment hardware, and additional personnel. Funding realigned from Program Element (PE) 0603465A (Future Vertical Lift Advanced Technology) / Project AK8 (Air Launched Effects Advanced Technology).			
Title: Computational Aeromechanics Description: Verify, validate and apply high-fidelity modeling and simulation software tools for rotorcraft aeromechanics. FY 2025 Plans: Will test and validate the higher-order computational models for FVL and FTUAS configurations for improved accuracy. Will perform validation of permeable-surface formulation for acoustics predictions for FVL configurations. Will conduct a performance evaluation of the GPU version of rotorcraft computational model for Future Vertical Lift (FVL) configurations. FY 2026 Plans: Will test and validate the integrated ANOPP2/AARON Helios simulations for acoustic predictions of FVL configurations; test the integrated flight control interface for maneuver simulations to support FVL; verify and validate the fuselage airframe model in RCAS/Helios to improve the accuracy of vibration predictions. FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase due to realignment from Program Element (PE) 0603465A (Future Vertical Lift Advanced Technology) / Project AK8 (Air Launched Effects Advanced Technology).		2.379	2.455
Accomplishments/Planned Programs Subtotals		6.586	10.301
C. Other Program Funding Summary (\$ in Millions) N/A			
Remarks			
D. Acquisition Strategy N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602183A / Air Platform Applied Research				Project (Number/Name) CW6 / Future UAS Propulsion Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CW6: Future UAS Propulsion Technology	-	3.430	-	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Project designs and assesses advanced engine and power system component technologies to support the goals of multi-fuel capability, reduced fuel consumption, and reduced engine size, weight, and cost in current and Future Unmanned Aircraft Systems (FUAS).

Work in this Project is fully coordinated with Program Element (PE) 0602148A (Future Vertical Lift Technology) / Project CH4 (Power & Thermal Management for FVL Tech).

The cited work is consistent with the Under Secretary of Defense for Research and Engineering Science and Technology focus areas and the Army Modernization Strategy.

Work in this Project is performed by Army Research Laboratory (ARL).

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2024	FY 2025	FY 2026
Title: Multi-Fuel Capable Hybrid Electric Propulsion Description: Applied research to enable intelligent and robust propulsion performance and noise signature reduction via multi-fuel and optimized hybrid electric capability for small engines (20kW to 150kW) powering future aircraft systems. The research focuses on the establishment of concepts to enable reduced fuel consumption, engine size, weight, and cost as well as improved group three and four FUAS reliability, survivability, and maintainability.	3.430	-	-
Accomplishments/Planned Programs Subtotals	3.430	-	-

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

Remarks

D. Acquisition Strategy
N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602183A / Air Platform Applied Research				Project (Number/Name) CW7 / High Speed and Efficient VTOL Vehicle Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CW7: High Speed and Efficient VTOL Vehicle Tech	-	1.522	3.583	1.572	-	1.572	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project designs and develops material component technologies and dynamic models to enable future generation capabilities for Future Vertical Lift (FVL) platforms. This Project is focused on improving range, payload, and endurance performance as well as reliability and maintainability metrics. The outcomes from the efforts within this Project will be applicable to the Family of Future Vertical Lift manned and unmanned platforms.												
Work in this Project is fully coordinated with Program Element (PE) 0602183A (Air Platform Applied Research) / Project CW8 (Next Generation Aviation Transmission Apl Tech).												
The cited work is consistent with the Under Secretary of Defense for Research and Engineering Science and Technology focus areas and the Army Modernization Strategy.												
Work in this Project is performed by Army Research Laboratory (ARL).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: High Speed Efficient Vertical Take-Off and Landing (VTOL)Vehicle Technologies									1.522	3.583	1.572	
Description: This effort establishes propulsion concepts for vertical take-off and landing to enable improved, efficient hover and high-speed cruise at longer range without added weight.												
FY 2025 Plans: Compare and validate data-driven condition indicators from simulated data with experimental rig and field system data; expand fault models to second fault type/location for training artificial intelligence towards a fully computational implementation; conduct parametric study to exercise models of conventional and non-conventional transmissions to determine fault sensitivity and detection method optimization (damage location, sensor types, and sensor location). Characterize novel additive manufactured air-cooled engine under real world conditions in an altitude chamber; advance design of a compact generator that can deliver 2X onboard power and 3X power density compared to the current state-of-the-art technologies; experimentally measure the thermal management requirement for compact lightweight air-cooled generator; assess structural integrity of compact lightweight air-cooled generator to withstand 10-g vibration.												
FY 2026 Plans:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602183A / <i>Air Platform Applied Research</i>	Project (Number/Name) CW7 / <i>High Speed and Efficient VTOL Vehicle Tech</i>		
B. Accomplishments/Planned Programs (\$ in Millions) Will assess the performance of novel ceramic and metal composite coatings in full-scale transmissions; investigate the acoustic emission characteristics of seeded faults on gear pairs under high speed loads; investigate the operational characteristics of a novel gearbox including transmission efficiency, thermal behaviors, vibration, and gear wear. <i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> Funding decrease reflects reduction in fault sensitivity and detection method optimization research. Funding realigned to Program Element (PE) 0601104A (University and Industry Research Centers) / Project AB7 (Army Collaborative Research and Tech Alliances).		FY 2024	FY 2025	FY 2026
Accomplishments/Planned Programs Subtotals		1.522	3.583	1.572
C. Other Program Funding Summary (\$ in Millions) N/A Remarks D. Acquisition Strategy N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025																		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602183A / Air Platform Applied Research				Project (Number/Name) CW8 / Next Generation Aviation Transmission Apl Tech																			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost																
CW8: Next Generation Aviation Transmission Apl Tech	-	1.456	-	-	-	-	-	-	-	-	-	-																
<p>Note In FY25 this Project is restructured to Program Element (PE) 0602183A (Air Platform Applied Research), Project DK1 (Air Vehicle Integrated & Alternative Tech (AVIArTe)).</p> <p>A. Mission Description and Budget Item Justification This Project investigates Future Vertical Lift (FVL) and other Army and Department of Defense (DoD) advanced drive train technologies that increase performance and double current drivetrain life cycles while improving their reliability and maintainability.</p> <p>Research in this Project is fully coordinated with PE 0603043A (Air Platform Advanced Technology).</p> <p>The cited research is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.</p> <p>Work in this Project is performed by Aviation & Missile Center (AvMC).</p> <p>B. Accomplishments/Planned Programs (\$ in Millions)</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td></td> <td align="center">FY 2024</td> <td align="center">FY 2025</td> <td align="center">FY 2026</td> </tr> <tr> <td>Title: High Reduction Ratio Transmission (HRT) Components</td> <td align="center">1.456</td> <td align="center">-</td> <td align="center">-</td> </tr> <tr> <td>Description: Effort investigates advanced materials and component designs that allow a 60:1 reduction ratio two-stage gearbox design that provides significant weight and volume reduction for extended range and component life for manned and unmanned applications.</td> <td></td> <td></td> <td></td> </tr> <tr> <td align="right">Accomplishments/Planned Programs Subtotals</td> <td align="center">1.456</td> <td align="center">-</td> <td align="center">-</td> </tr> </table> <p>C. Other Program Funding Summary (\$ in Millions) N/A</p> <p>Remarks</p> <p>D. Acquisition Strategy N/A</p>														FY 2024	FY 2025	FY 2026	Title: High Reduction Ratio Transmission (HRT) Components	1.456	-	-	Description: Effort investigates advanced materials and component designs that allow a 60:1 reduction ratio two-stage gearbox design that provides significant weight and volume reduction for extended range and component life for manned and unmanned applications.				Accomplishments/Planned Programs Subtotals	1.456	-	-
	FY 2024	FY 2025	FY 2026																									
Title: High Reduction Ratio Transmission (HRT) Components	1.456	-	-																									
Description: Effort investigates advanced materials and component designs that allow a 60:1 reduction ratio two-stage gearbox design that provides significant weight and volume reduction for extended range and component life for manned and unmanned applications.																												
Accomplishments/Planned Programs Subtotals	1.456	-	-																									

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602183A / Air Platform Applied Research				Project (Number/Name) DC2 / High Performance Computing for Rotorcraft Appl Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
DC2: High Performance Computing for Rotorcraft Appl Tech	-	1.246	1.309	1.405	-	1.405	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project investigates and validates aeromechanics modeling and simulation tools for Future Vertical Lift (FVL) and other Army and DoD aviation systems and platforms. Research efforts in this Project are also applicable to the family of FVL manned and unmanned platforms.												
Work in this Project is fully coordinated with Program Element (PE) 0603043A (Air Platform Advanced Technology) / Project DC3 (HPC for Army Aviation Concepts).												
The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.												
Work in this Project is performed by Aviation & Missile Center (AvMC).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: High Performance Computing for Aviation Applications									1.246	1.309	1.405	
Description: Develop automated, high-fidelity computational tools for rotorcraft analysis and design.												
FY 2025 Plans:												
Will develop and validate a GPU performance portable version of rotorcraft computational model to reduce the simulation time for FVL configurations from weeks to days. Will ensure that the new models run efficiently on the new state-of-the-art high-performance computing systems.												
FY 2026 Plans:												
Will develop and validate wall modeled Large Eddy Simulation (LES) capability and Graphical Processing Unit (GPU) strand near-body solver to enable automated grid generation in GPU version for novel and existing FVL-relevant aircraft.; ensure that the new models run efficiently on the new state-of-the-art high-performance computing systems.												
FY 2025 to FY 2026 Increase/Decrease Statement:												
Funding increase is due to an economic adjustment.												
Accomplishments/Planned Programs Subtotals									1.246	1.309	1.405	
C. Other Program Funding Summary (\$ in Millions)												
N/A												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602183A / Air Platform Applied Resea rch	Project (Number/Name) DC2 / High Performance Computing for Rotorcraft Apl Tech
C. Other Program Funding Summary (\$ in Millions)		
Remarks		
D. Acquisition Strategy		
N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602183A / Air Platform Applied Research				Project (Number/Name) DE2 / Airborne Threat Defeat			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
DE2: Airborne Threat Defeat	-	5.583	6.673	1.879	-	1.879	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
Airborne Threat Defeat addresses the need to engage and disorient guided threats.												
Work in this Project complements Program Element (PE) 0603465A (Future Vertical Lift Advanced Technology) / Project CA8 (Adv Rotocraft Armaments Protection Sys).												
The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.												
Work in this Project is performed by the Armaments Center (AC).												
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2024	FY 2025	FY 2026
Title: Airborne Threat Defeat Tech										5.583	6.673	-
Description: This effort develops novel weapon, munition and fire control system technology required to increase standoff distance and engagement time to decoy or defeat guided threats.												
FY 2025 Plans:												
Investigate combined electro-chemical-mechanical payloads and targeting concepts for decoy and defeat of current and emerging aerial threats; design and develop armament components and systems to decoy and defeat aerial threats through algorithms and conceptualization techniques.												
FY 2025 to FY 2026 Increase/Decrease Statement:												
Funding decrease reflects the completion of initial design and development stages of armament components and systems to decoy and defeat aerial threats and realignment within this Project.												
Title: Holistic Airborne Defeat Applied Research										-	-	1.879
Description: This effort develops novel weapon, munition and fire control system technology required to increase standoff distance and engagement time to decoy or defeat guided threats.												
FY 2026 Plans:												
Will continue investigation of system concepts for decoy and defeat of current and emerging aerial threats.												
FY 2025 to FY 2026 Increase/Decrease Statement:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602183A / Air Platform Applied Research	Project (Number/Name) DE2 / Airborne Threat Defeat		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
This is not a new start. Funding realigned from within this Project.				
Accomplishments/Planned Programs Subtotals		5.583	6.673	1.879
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602183A / Air Platform Applied Research				Project (Number/Name) DK1 / Air Vehicle Integrated & Alternative Tech (AVIAre)			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
DK1: Air Vehicle Integrated & Alternative Tech (AVIAre)	-	-	2.998	8.400	-	8.400	-	-	-	-	-	-
A. Mission Description and Budget Item Justification This project enhances Army aviation mission capability and addresses operational energy and environmental challenges. Includes the development, maturation, and system design of technologies including advanced engines, hybrid and electric systems, power and control allocation, propulsive power delivery, electric actuation, structures, and other technologies that enhance performance, efficiency or are critical to implementation. Work in this Project is fully coordinated with Program Element (PE) 0603043A (Air Platform Advanced Technology) / Project DK2 (Air Vehicle Improvements & Advanced Tech (AVIAre)). The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy. Work in this Project is performed by the Aviation & Missile Center (AvMC).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Hybrid-Electric Aviation Technology (HEAT) Description: This effort focuses on building a knowledge base within Army aviation to assess the viability of meeting future rotorcraft motive and mission equipment power needs through design, architecture, system alternatives and technology trade studies, investigating and developing hybrid-electric component and sub-system technologies. Emphasis is on knowledge building, analytical tools, performance improvement, and to address Army unique technology gaps. FY 2025 Plans: Will perform system architecture and hybrid electric technology trade studies to address Army aviation unique gaps. FY 2026 Plans: Will begin development activity to mature critical TRL 3/4 hybrid-electric system enabling technologies; funded agreements with Industry are anticipated to conduct highly specialized development efforts for components within a hybrid-electric vertical take-off and landing (VTOL) system; conduct in-house testing of components to investigate architectures and system integration. FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects the shift from in-house work to partnerships with technology developers in Industry.									-	1.796	5.006	
Title: Supplemental Power Efficient Engines and Drives (SPEED)									-	1.202	3.394	

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602183A / <i>Air Platform Applied Research</i>	Project (Number/Name) DK1 / <i>Air Vehicle Integrated & Alternative Tech (AVIA Te)</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p>Description: This effort develops supplemental power, engine, and drives systems component technologies to improve power-to-weight ratio, efficiency, and provide improved mission capability for Army aircraft systems. Technology will be validated through component level test.</p> <p>FY 2025 Plans: Will perform design of propulsion and power component technology to consist of advanced supplementary power, engines, and/or drive system technology for application to Future Vertical Lift aircraft.</p> <p>FY 2026 Plans: Will continue design of propulsion and power component technology to consist of advanced supplementary power, engines, and/or drive system technology for application to Future Vertical Lift aircraft; funded agreements with industry are anticipated to conduct highly specialized development efforts; conduct in-house research to identify future architectures and system integration requirements.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase supports design of propulsion and power component technology and initiate component technology development to progress towards demonstration testing. Funding realigned from Program Element (PE) 0603465A (Future Vertical Lift Advanced Technology) / Project AL1 (Adv Teaming for Tactical Aviation Oper Adv Tech).</p>			
Accomplishments/Planned Programs Subtotals		-	2.998
C. Other Program Funding Summary (\$ in Millions) N/A Remarks D. Acquisition Strategy N/A			

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army **Date:** June 2025

Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 2: Applied Research	R-1 Program Element (Number/Name) PE 0602184A / Soldier Applied Research
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COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
Total Program Element	-	17.622	14.131	27.597	-	27.597	-	-	-	-	-	-
CK9: Advancing Concepts and Technology Forecasting Tech	-	2.575	2.577	3.027	-	3.027	-	-	-	-	-	-
CN2: Intelligent Weapons Concepts and Technologies	-	4.409	4.484	4.452	-	4.452	-	-	-	-	-	-
CN9: Soldier Enabling University Applied Research	-	0.018	0.229	-	-	-	-	-	-	-	-	-
CO1: Soldier Power And Energy Concepts and Technologies	-	4.350	-	-	-	-	-	-	-	-	-	-
CV9: Technical-SAVVY Soldier Applied Research	-	2.772	3.165	3.744	-	3.744	-	-	-	-	-	-
CW9: Syn Bio for Reactive-Resp Matls-Soldiers & Sys	-	3.498	3.676	6.023	-	6.023	-	-	-	-	-	-
DN1: Directed Energy Biological Effects	-	-	-	0.659	-	0.659	-	-	-	-	-	-
DN2: Joint Service Small Arms Enabling Tech	-	-	-	7.692	-	7.692	-	-	-	-	-	-
DO1: Modernized Composites & Manufacturing	-	-	-	2.000	-	2.000	-	-	-	-	-	-

Note

Project DN1 Directed Energy Biological Effects is a new start within PE 0602184A Soldier Applied Research in FY 2026

A. Mission Description and Budget Item Justification

This Program Element (PE) investigates, designs, and performs research focused on technologies necessary for capability enhancements for the Soldier and Squad over the long-term well beyond those technologies planned within the Soldier Lethality Cross- Functional Team. Applied research projects investigate nascent and enduring science and technology areas that are applicable to the individual Soldier and Squads of Soldiers needs with emphasis on maximizing Soldier and Squad performance, lethality, mobility and survivability. This PE also designs and validates technologies that are necessary and foundational for future capabilities with far-reaching impact on mission success. The outputs of these efforts transition to advanced research efforts that mature and demonstrate potential opportunities to realize improved Soldier performance and inform technical requirements for future Soldier systems.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army				Date: June 2025		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army I BA 2: Applied Research		R-1 Program Element (Number/Name) PE 0602184A I Soldier Applied Research				
The PE will fund civilian salaries for in-house researchers/scientists and program managers collaborating with external subject matter experts in academia and industry who are leaders in these technology research areas. This PE is coordinated with PE 0602143A (Soldier Lethality Technology), 0602785A (Manpower, Personnel and Training Technology), 0603007A (Manpower, Personnel and Training Advanced Tech), 0603044A (Soldier Advanced Technology), and 0603118A (Soldier Lethality Advanced Technology).						
The cited research is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.						
The FY 2026 request was reduced by \$0.226 million for Advisory and Assistance Services to promote efficiencies and advance the policies of the Administration in alignment with Executive Order 14222, "Implementing the President's Department of Government Efficiency Cost Efficiency Initiative."						
The FY 2026 request was reduced by \$0.101 million for civilian personnel to optimize the workforce in compliance with Executive Order 14210, "Implementing the President's Department of Government Efficiency Workforce Optimization Initiative."						
B. Program Change Summary (\$ in Millions)		FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Previous President's Budget		18.986	21.069	29.231	-	29.231
Current President's Budget		17.622	14.131	27.597	-	27.597
Total Adjustments		-1.364	-6.938	-1.634	-	-1.634
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-4.492			
• Congressional Rescissions		-	-			
• Congressional Adds		-	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-0.923	-			
• SBIR/STTR Transfer		-0.441	-			
• Adjustments to Budget Years		-	-2.446	-1.634	-	-1.634
Change Summary Explanation						
Increases in funding accounts for increased effort to integrate Artificial Intelligence/Machine Learning into manufacturing efforts utilizing novel contract and collaborative approaches to accelerate transitions for university programs and enables broad applications in extreme future operating environments.						

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602184A / Soldier Applied Research				Project (Number/Name) CK9 / Advancing Concepts and Technology Forecasting Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CK9: Advancing Concepts and Technology Forecasting Tech	-	2.575	2.577	3.027	-	3.027	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Project works across the Army Futures Command Combat Capabilities Development Command (DEVCOM), with the Futures & Concepts Center (FCC), and the Directorate of Intelligence and Security to explore current and future emerging and disruptive applied scientific research to translate, integrate, and ingrain applied research outcomes with the Army.

Warfighting Concepts to describe how the Army will fight in the mid and far-term future while the Future Operational Environment contextualizes projected applied research outcomes in the deep future. Applied research outcomes describe the projected future operational effects of science in the context of Army concepts and probable operational capabilities to mitigate risk for future Army capabilities and enable informed decision making across the Army Modernization Enterprise. This Project ensures Army Concepts are grounded by recent and anticipated advances in applied scientific research, Army applied research is capability use-inspired to deliver the right future capability identified in the Army Concepts, and learning opportunities are created to advance Army Concepts and operationalize science for transformational overmatch.

This Project also performs long-range technology forecasts and trend analysis, informed by the threat and the predicted future state of technology, of Army-relevant applied research topics to enable informed decision making for the near-, mid-, and far-terms.

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.

Research in this Project is performed by the Army Research Laboratory (ARL).

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

	FY 2024	FY 2025	FY 2026
Title: Advancing Concepts and Technology Forecasting	2.575	2.577	2.381
Description: Advancing Concepts and Technology Forecasting identifies and translates emerging and disruptive applied scientific research current and future outcomes in order to integrate and ingrain applied scientific data and knowledge with Army Warfighting Concepts which describe how the Army will fight in the mid- and far-term future. This effort also provides long-range, scientifically grounded technology forecasts and trend analysis, informed by the threat and future predicted state of technology, of applied research topics to enable informed decision-making for the near-, mid-, and far-terms.			
FY 2025 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602184A / <i>Soldier Applied Research</i>	Project (Number/Name) CK9 / <i>Advancing Concepts and Technology Forecasting Tech</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p>Will integrate mid- and far-term Army Concept priorities, including offensive and defense fires and platform survivability, to guide applied scientific research program development; participate in warfighting assessments to inform Army operability within continental environments of varying density and terrain.</p> <p>FY 2026 Plans: Will identify and support the integration of research outcomes to facilitate scientific advancement informed by the Army Warfighting Concept; explore and lead learning events that span multiple communities to identify opportunities to shape Army applied research and progress concepts toward future capabilities; provide objective estimates of anticipated applied research advances in emerging scientific areas with high relevance to the Army, including human performance enhancement, quantum, and cybersecurity.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects an economic adjustment.</p>			
<p>Title: Experimentation and Soldier Engagement</p> <p>Description: Experimentation and Solider Engagement develops strategies and implementation plans to validate technical assumptions and research ideas in operationally relevant experimentation environments to accelerate the delivery of capabilities to the Solider. This effort will synchronize and investigate experimentation and soldier engagement efforts to maximize fundamental understanding of operational needs and to deliver scientific value.</p> <p>FY 2026 Plans: Will develop strategies and Experimentation and Soldier Engagement Strategy; coordinate participation in current year experimentation activities to explore integration of scientific advancement to address current operational user needs.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase due to a realignment from Program Element (PE) 0602181A (All Domain Convergence Applied Research) / Project CM7 (Collaborative Convergence Applied Reasearch) to continue Tactical Hardening for Quantum effort support. The execution and implementation of the Experimentation and Greening Strategies, provides experimentation support to Integrated Learning LOE3, and provides DEVCOM/FCC/AFC/Joint/International experimentation synchronization support.</p>		-	-
		0.646	
Accomplishments/Planned Programs Subtotals		2.575	2.577
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602184A / Soldier Applied Research	Project (Number/Name) CK9 / Advancing Concepts and Technology Forecasting Tech
D. Acquisition Strategy N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602184A / Soldier Applied Research				Project (Number/Name) CN2 / Intelligent Weapons Concepts and Technologies			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CN2: Intelligent Weapons Concepts and Technologies	-	4.409	4.484	4.452	-	4.452	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Project focuses on far-term, overarching lethality technologies by investigating techniques for Soldiers to guide the in-field adaptation of intelligent small arms technologies to respond to changing mission requirements, novel environments, and adversarial actions. Research areas include cognition-centric displays to ensure Soldiers maintain appropriate situational awareness in augmented reality (AR) environments, opportunistic shooter sensing, and interactive machine learning techniques to ensure small arms technologies can adapt to changing situations quickly and with reduced data requirements as compared to non-human guided machine learning and Artificial Intelligence (AI). The results of this Project will enhance operational performance of individuals and teams of Soldiers in the future operational environment through novel weapon and human-agent interaction technologies.

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.

Work in this Project is performed by the Army Research Laboratory (ARL).

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

	FY 2024	FY 2025	FY 2026
Title: Human-Agent Interactions for Intelligent Squad Weapons	4.409	-	-
Description: This effort investigates enhanced target acquisition, situational awareness, and shooting performance through Soldier-centered integration of intelligent technologies and distributed information in augmented squad weapons. Enhances operational performance of individuals and teams of Soldiers through novel weapon and human-agent interaction technologies.			
Title: Distributed Information for Enhanced Squad Lethality	-	4.484	4.452
Description: This effort investigates how multimodal data from heterogenous small units of Soldiers and systems can be combined and leveraged to provide actionable information for squad lethality and survivability, including enhanced target acquisition and engagement, situational awareness, tactical maneuver, and decision-making performance. Enhances operational performance at scale and complexity through novel human-agent interaction techniques over distributed formations of Soldier technologies.			
FY 2025 Plans: Will design and develop algorithms for fusion of opportunistically sensed data, including weapon data and gaze direction, from dismounted Soldier-systems to expand situational awareness capabilities; quantify relationships between heterogenous human-autonomy squad behaviors and cross-platform small-arms target detection and prioritization approaches to inform learning techniques; design and develop algorithms for fusion of opportunistically sensed data for small unit Soldier-systems to inform			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602184A / Soldier Applied Research	Project (Number/Name) CN2 / Intelligent Weapons Concepts and Technologies		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
tactical options; investigate approaches for leveraging contextualized squad state data to expand autonomous learning across formations. FY 2026 Plans: Will mature algorithms for the fusion of opportunistically sensed data from dismounted Soldier-systems to expand situational awareness capabilities and inform tactical options across heterogenous human-autonomy teams, including mounted assets; conduct experiments applying attentional deployment models to inform autonomous systems for enhanced target detection and prioritization; mature algorithms for predicting squad maneuvers for optimal threat coverage using multi-dimensional Soldier and weapon data; validate experimental approaches for joint adaptation between Soldier and autonomy in small unit threat scenarios using inferred individual and team behaviors. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects an economic adjustment.				
Accomplishments/Planned Programs Subtotals		4.409	4.484	4.452
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army									Date: June 2025			
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602184A / <i>Soldier Applied Research</i>				Project (Number/Name) CN9 / <i>Soldier Enabling University Applied Research</i>			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CN9: <i>Soldier Enabling University Applied Research</i>	-	0.018	0.229	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Project investigates technologies from academia that will improve capabilities and systems to advance Soldier and Squad lethality-overmatch and Soldier performance. This Project funds collaborative, enduring applied extramural university-based research and brings together competitively selected universities with Army research teams into Technical Alliances. This Project will determine discovery solutions and inform capabilities development for mid- to far-term Army modernization priorities while also maintaining delivery of near-term technologies fundamental to the modernization priorities. The technical scope of this Project includes the investigation and design of overarching Soldier-centric technologies including, human systems integration, robotics, synthetic environments for training, advanced materials, power management, energy, Warfighter endurance, and computational technologies. This Project conducts applied research for potential emerging technologies in areas of strategic importance to the Army in Soldier capabilities related to increased protection, performance, agility, situational awareness, and lethality. This Project will also continuously strive to engage and collaborate with entities that might not otherwise collaborate with the Department of Defense (DoD) to identify and determine novel Soldier-centric technologies for accelerating the adoption of emerging technologies for the Warfighter in the Army Soldier portfolio.

Work in this Project complements Program Element (PE) 0603044A (Soldier Advanced Technology) / Project CN8 (Soldier Enabling University Advanced Development)

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

Work in this Project is performed by the Army Research Laboratory (ARL).

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

	FY 2024	FY 2025	FY 2026
Title: Soldier Training and Performance	0.018	0.229	-
Description: Collaboratively investigate technologies for Soldier capabilities related to increased protection, performance, agility, situational awareness, training, and lethality.			
FY 2025 Plans: Will fund research that enables the capture, warehousing, and manipulation of synthetic training data to support Commanders in making training and operational readiness decisions; investigate emergent technologies to monitor health, cognitive state and readiness of Warfighters through digital biosensor/biomarkers and their wireless charging capabilities; fund academic applied research in emerging Soldier related technologies related to increased protection, performance, agility, situational awareness,			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602184A / Soldier Applied Research		Project (Number/Name) CN9 / Soldier Enabling University Applied Research
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
training, and lethality. The benefit of this effort is improved realistic training for decision making and improved understanding of a Soldier's cognitive load.				
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects completion of this effort. Funding realigned to Program Element 0602002A (Army Agile Innovation and Development-Applied Research) / Project DC4 (Army Applied Innovation).				
Accomplishments/Planned Programs Subtotals		0.018	0.229	-
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602184A / <i>Soldier Applied Research</i>				Project (Number/Name) CO1 / <i>Soldier Power And Energy Concepts and Technologies</i>			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CO1: <i>Soldier Power And Energy Concepts and Technologies</i>	-	4.350	-	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Project conducts applied research to improve safe, compact, efficient, rugged, lightweight, and energy dense power sources for increased capabilities for the mounted and dismounted force. This Project also investigates materials, processes, and component level energy storage and conversion technologies that enable tactical overmatch and reduce the physical and cognitive burden on Soldiers. Research will focus on safe electrochemical energy storage, high specific energy storage and conversion, novel materials and processing for energy and power, and new cell designs that address the power needs of future capabilities including advanced sensors, communications systems, and electronic Warfighting capabilities. Enabling and emerging technologies are supported in this Project to address future Soldier power needs necessary for increased lethality, increased mobility, and longer mission durations at reduced physical burden to the Soldier in the future operating environment.

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.

Research in this Project is performed by the Army Research Laboratory (ARL).

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2024	FY 2025	FY 2026
Title: Tactical Energy Sources and Energy Materials Description: This effort conducts overarching power and energy research to determine and design alternative energy capabilities to replace current energy systems. Research focuses on new materials and processing techniques as well as energy storage technologies that support advanced sensors, communications systems, and electronic Warfighting capabilities.	2.391	-	-
Title: Materials and Technologies for Electrochemical Alternative Power Description: This effort investigates materials for electrolyzers and alternative power sources for small unit energy and power needs. Research is focused on materials and technologies that will reduce the dependence on fossil fuels while diversifying the energy sources for soldier platforms.	1.959	-	-
Accomplishments/Planned Programs Subtotals	4.350	-	-

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

Remarks

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602184A / Soldier Applied Research	Project (Number/Name) CO1 / Soldier Power And Energy Concepts and Technologies
D. Acquisition Strategy N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602184A / Soldier Applied Research				Project (Number/Name) CV9 / Technical-SAVVY Soldier Applied Research			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CV9: Technical-SAVVY Soldier Applied Research	-	2.772	3.165	3.744	-	3.744	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Project conducts applied research a technologically fluent force. This research will develop models of technological fluency (TF) (TF Modeling), methods and measures to assess and develop the technological fluency of Soldiers across a career (TF Personnel Assessments), and technologies to maximize technological fluency resilience and performance in Soldiers and units (Maximizing TF). TF is defined as the ability of Soldiers and units to use and rapidly adapt new and intelligent technologies without formal training on these technologies, and it will be a decisive factor in a future operating environment in which Soldiers and squads are teamed with increasingly sophisticated and evolving technologies. Soldiers and leaders in specialty areas (e.g., Cyber and Emerging Tech) and General Purpose Forces will require increased technological aptitudes and skills to adapt emerging technologies to evolving mission sets and avoid being overmatched by Artificial Intelligence (AI)-enabled "smart" technologies.

This Project supports key Army needs and will coordinate with and/or leverage findings of several Program Elements (PEs) to include PE 0602785A (Manpower, Personnel and Training Technology), 0602143A (Soldier Lethality Technology), and 0602145A (Next Generation Combat Vehicle Technology).

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.

Work in this Project is performed by the Army Research Laboratory (ARL) and the Army Research Institute (ARI) for Behavioral and Social Sciences.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2024	FY 2025	FY 2026
Title: Soldier Technical Enhancement Applied Research - ARL	1.514	1.856	2.339
Description: This effort enables TF through three areas of focus: TF Modeling through the creation and utilization of novel future-focused laboratory experimental test-beds; TF Personnel Assessments through methodologies and technologies for "opportunistic" (no Soldier burden) sensing and TF interpretation; and Maximizing TF through creating TF training approaches and in-field performance aids.			
FY 2025 Plans: Will conduct validation experiments on technological fluency (TF) models using human-system interaction test-beds; investigate approaches to opportunistically sense measures of TF that can be extracted from in-field sources without creating additional operational burden.			
FY 2026 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602184A / <i>Soldier Applied Research</i>	Project (Number/Name) CV9 / <i>Technical-SAVVY Soldier Applied Research</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
Will investigate training approaches to enhance individual technological fluency (TF); develop approaches to integrate opportunistically sensed measures of TF field data with personnel testing data to enable dynamic assessment of TF across time.			
FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects additional research in training approaches to enhance individual technological fluency.			
Title: Soldier Technical Enhancement Applied Research - ARI			
Description: This effort enables TF through three areas of focus: TF Modeling by identifying and understanding the critical human knowledge, skills, abilities, and characteristics that enable TF in Soldiers and teams; TF Personnel Assessments by developing and validating personnel tests to assess knowledge, skills, and abilities, and characteristics to promote TF for talent management; and Maximizing TF by creating and validating TF training approaches to improve TF at both the individual and team levels of performance.			
FY 2025 Plans: Will develop and validate a competency model of Technological Fluency (TF) that identifies the critical knowledge, skills, abilities, and characteristics that enable TF; will develop proof-of-concept training methods for maximizing TF competencies; will develop personnel testing requirements and test blueprints to measure identified TF competencies.			
FY 2026 Plans: Will refine a competency model of Technological Fluency (TF) that identifies the critical knowledge, skills, abilities, and characteristics that enable TF; will develop prototype training methods for maximizing TF competencies.			
FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase is reflected in FY26 plans (2nd bullet).			
Accomplishments/Planned Programs Subtotals		1.258	1.309
			1.405
		2.772	3.744
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602184A / Soldier Applied Research				Project (Number/Name) CW9 / Syn Bio for Reactive-Resp Matls-Soldiers & Sys			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CW9: Syn Bio for Reactive-Resp Matls-Soldiers & Sys	-	3.498	3.676	6.023	-	6.023	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Project designs and investigates materials through the application of biotechnology and synthetic biology advances to develop material capabilities that respond and/or can adapt to a wide range of external stimuli and biological processes. Research into innovative materials that are capable of sensing, responding, and adapting to a broad spectrum of environmental variables will be conducted. This Project will explore new biology-based methods for controlled synthesis and assembly to create multi-functional materials and advanced composites as well as develop materials that are able to self-monitor, self-heal, and self-sustain. This Project also focuses on developing models, materials characterization techniques, non-destructive testing methods, and advanced fabrication and processing methodologies as well as the identification of unique material properties.

The cited research is consistent with the Undersecretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.

Research in this Project is performed by the Army Research Laboratory (ARL).

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

	FY 2024	FY 2025	FY 2026
Title: Biological Bio-Composite Materials and Processes	3.498	3.676	2.281
Description: This effort conducts applied research through the application of biotechnology advances to develop materials with capabilities to respond and adapt to a wide range of external stimuli and biological processes. Research will explore new biology-based methods for controlled synthesis and assembly to create materials with precise chemistries, microstructures, properties, and responsive functionalities through controlled molecular placement, spatial architectures, and interfacial structures. Investment in bio-enabled materials research allows for the design of materials that are capable of sensing and responding, as well as adapting to a broad spectrum of environmental variables with the ability to self-monitor, self-heal, self-sustain, and self-degrade. Investments in this area could lead to future applications in Soldier performance, situational awareness, protection, and sustainment.			
FY 2025 Plans: Will use synthetic biology to develop sense-and-respond cascades, and investigate addressable and potentially specific interactions for composite assembly relevant to electro-optical/electromagnetic (EO/EM) materials; tie aforementioned capabilities back to traditional material science structure-property relationships; mature novel biomaterials for advanced composites and protective coatings; mature understanding of how biological interfaces can be leveraged for military platforms (i.e., coatings,			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602184A / Soldier Applied Research	Project (Number/Name) CW9 / Syn Bio for Reactive-Resp Matls-Soldiers & Sys		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
textiles, and metals), and use synthetic biology to tune signal output for advanced sensing, reporting, and protection; develop novel synthetic biology enabled bio-capabilities for material manipulation and tune for desired capabilities. FY 2026 Plans: Will use synthetic biology to design and develop protective materials and additives across the electro-optical/electromagnetic (EO/EM) spectrum; investigate biomaterials as precursors and components towards energetics; mature biomaterial post-processing and their integration into advanced composites, coatings, and systems. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease due to a realignment to Program Element (PE) 0603464A (Long Range Precision Fires Advanced Technology) / Project CZ8 (PrSM Modular Payload Advanced Development) to support continued Sensor Fuzed Weapon Development.				
Title: Bio-Reactive Surfaces and Adaptive Protection Technology Description: This effort investigates the application of synthetic biology and integrated technology solutions to develop self-powered living biological systems that sense, adapt, and respond to the environment. These living systems will respond to a wide range of external stimuli, produce signal compatibility with a variety of stand-off detection modalities, and persist in military relevant environments. This effort designs and develops new methods of sensing and reporting for multimodal inputs through genetic circuitry and other triggers, pushing the development of novel biologically based reporting systems to stand-off interface with Soldier-borne assets. Res. This project investigates biology's ability to self-sustain, environmentally monitor, and respond to external stimuli. This effort funds research in these areas that lead to future applications in Soldier environmental susceptibility monitoring, situational awareness, protection, maneuver, and sustainment. FY 2026 Plans: Will investigate synthetic biology to engineer organisms from military environments for multi-stimuli input sensing and situational awareness to support Soldier maneuver and protection; design and develop a multimodal self-sustained biological sensor (e.g. chemical, light, radiation, mechanical) with an initial focus on persistence in a military relevant environment; investigate temporal and spatial reporting in the context of different environmental parameters; use synthetic biology, molecular biology, and predictive modeling to design and develop novel reporting mechanisms capable of interfacing with Soldier-borne platforms. FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects initiation of Bio-Reactive Surfaces and Adaptive Protection Technology.		-	-	3.742
Accomplishments/Planned Programs Subtotals		3.498	3.676	6.023

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602184A / Soldier Applied Research	Project (Number/Name) CW9 / Syn Bio for Reactive-Resp Matls- Soldiers & Sys
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
D. Acquisition Strategy N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602184A / Soldier Applied Research				Project (Number/Name) DN1 / Directed Energy Biological Effects			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
DN1: Directed Energy Biological Effects	-	-	-	0.659	-	0.659	-	-	-	-	-	-
Note Directed Energy Biological Effects is a new start within the Soldier Applied Research program in FY 2026. In Fiscal Year (FY) 2026, this Project is a New Start. A. Mission Description and Budget Item Justification This Project is a multi-disciplinary effort to investigate, determine characterize, mitigate, and validate emerging anti-personnel energy field threats. This Project designs and develops sensors, sources, and instrumentation to understand the molecular to organismal level of energy field impacts that produce neurocognitive and motor deficits. This effort will also investigate vulnerabilities and exploitable biophysical mechanisms which can be used to design, construct, and characterize tunable sources for laboratory use and future transition. Work in this Project complements Program Element (PE) 0601102A (Defense Research Sciences) / Project AA5 (Biotechnology and Systems Biology). The cited research is consistent with Under Secretary of Defense for Research and Engineering Science and Technology priority focus areas and the Army modernization strategy. Work in this Project is performed by Army Research Laboratory (ARL). B. Accomplishments/Planned Programs (\$ in Millions)												
									FY 2024	FY 2025	FY 2026	
Title: Directed Energy Bio Effects									-	-	0.659	
Description: This is multi-disciplinary effort to investigate and characterize emerging energy field biological effects to address the need to design and develop a mechanistic understanding of how energy field effects can produce biological effects. This effort will investigate transformational mechanisms by which energy fields affect biological function or structure, via experimentation, modeling, and simulation. This effort will integrate physical and biological models with validation to understand energy propagation, coupling, and effects on biological materials and systems.												
FY 2026 Plans: Will investigate and validate candidate waveforms for interaction with biological structures.												
FY 2025 to FY 2026 Increase/Decrease Statement:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602184A / Soldier Applied Research	Project (Number/Name) DN1 / Directed Energy Biological Effects		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
In Fiscal Year (FY) 2026, this Project is a New Start. Funding realigned from Soldier Lethality Technologies in PE 0602143A (Soldier Lethality Technology) / Project AY6 (Soldier Squad Small Arms Armaments Technology).				
Accomplishments/Planned Programs Subtotals		-	-	0.659
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602184A / Soldier Applied Research				Project (Number/Name) DN2 / Joint Service Small Arms Enabling Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
DN2: Joint Service Small Arms Enabling Tech	-	-	-	7.692	-	7.692	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project investigates individual and crew-served armament component design (weapon, munition, and fire control) and technologies that enable increased lethality and survivability of the dismounted Warfighter across all the Joint Services. This Project investigates and designs engineering solutions to reduce the blast overpressure field for the M3 Carl Gustaf.												
Work in this Project complements Program Element (PE) 0603044A (Soldier Advanced Technology) / Project DN4 (Joint Service Small Arms Adv Tech).												
The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.												
Work in this Project is completed by the Armaments Center (AC).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Joint Small Arms Research (JSAR)									-	-	7.692	
Description: This effort designs and develops small arms weapon, ammunition, and enabler component technologies that will maintain decisive lethal overmatch capabilities to the Joint Warfighter. This effort investigates and matures small arms weapon component designs in support of Joint Warfighter's capability needs.												
FY 2026 Plans:												
Will design concepts to study small arms characterization techniques and metrics; design and develop machine gun component technology for increased volume fire effectiveness; investigate algorithms and models used for advanced ballistics and holistic weapon signature system analysis; investigate fire control components and methodologies to improve future small arms system performance and emission reduction; investigate weapon operation for increased lethality.												
FY 2025 to FY 2026 Increase/Decrease Statement:												
Funding restructured from Program Element (PE) 0603118A (Soldier Lethality Advanced Technology) / Project AY5 (Soldier Squad Small Arms Armaments Advanced Tech) and PE 0602143A (Soldier Lethality Technology) / Project AY6 (Soldier Squad Small Arms Armaments Technology).												
Accomplishments/Planned Programs Subtotals									-	-	7.692	

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602184A / Soldier Applied Research	Project (Number/Name) DN2 / Joint Service Small Arms Enabling Tech
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
D. Acquisition Strategy N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602184A / Soldier Applied Research				Project (Number/Name) DO1 / Modernized Composites & Manufacturing			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
DO1: Modernized Composites & Manufacturing	-	-	-	2.000	-	2.000	-	-	-	-	-	-
Note Modernized Composites & Manufacturing is a new start within the Soldier Applied Research program in FY 2026.												
A. Mission Description and Budget Item Justification This Project investigates manufacturing sciences and advanced automation through additive, subtractive, and digital manufacturing sciences of novel composite materials for use in both existing and future DoD-wide systems. This Project develops novel composite materials to deliver advanced structural materials with improved durability, functionality and performance, to support broad applications across the future operational environment and DoD. Focus will be on properties required for understanding operation in contested environments. The Project will use unique contract and collaborative approaches to accelerate transitions into and from university programs. Work in this Project complements Program Element (PE) 0603044A (Soldier Advanced Technology) / Project DO2 (Modernized Composites & Manufacturing Adv Dev). The cited work is consistent with the Under Secretary of Defense for Research and Engineering Advanced Materials Critical Technology Area and the Army Modernization Strategy. Work in this Project is performed by DEVCOM Soldier Center.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Institute for Advanced Composites Engineering - Applied Research									-	-	2.000	
Description: This effort focuses on advanced materials and manufacturing technologies to support the unique needs of the Army in future operating environments, to include the challenges associated with sustaining distribution operations. This research program will be enhanced by the incorporation of machine-learning algorithms into structural systems and advanced composite research, the leveraging of existing foundational university investments, and partnership with the National Manufacturing Innovation Institutes.												
FY 2026 Plans: Will competitively award the UARC via cooperative agreement or contract vehicle and establish technical objectives; investigate additive manufacturing research and develop program plan.												
FY 2025 to FY 2026 Increase/Decrease Statement:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602184A / Soldier Applied Research	Project (Number/Name) DO1 / Modernized Composites & Manufacturing		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
In Fiscal Year (FY) 2026, this effort is a New Start. Funding realigned from Program Element 0602002A (Army Agile Innovation and Development-Applied Research) / Project DC4 (Army Applied Innovation) and PE 0602184A (Soldier Applied Research) / Project CN9 (Soldier Enabling University Applied Research).				
Accomplishments/Planned Programs Subtotals		-	-	2.000
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army	Date: June 2025
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Appropriation/Budget Activity	R-1 Program Element (Number/Name)											
2040: <i>Research, Development, Test & Evaluation, Army / BA 2: Applied Research</i>	PE 0602213A / C3I Applied Cyber											
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
Total Program Element	-	20.664	28.656	4.716	-	4.716	-	-	-	-	-	-
2CY: <i>Information Trust Technology</i>	-	6.026	7.838	4.716	-	4.716	-	-	-	-	-	-
3CY: <i>Network Access and Effects Technology</i>	-	8.538	12.550	-	-	-	-	-	-	-	-	-
CY6: <i>Autonomous Cyber Technology</i>	-	6.100	8.268	-	-	-	-	-	-	-	-	-

Note

2CY / Information Trust Technology (Tactical Zero Trust) - Funding is realigned from Program Element (PE) 0602213A (C3I Applied Cyber) / Project CY6 (Autonomous Cyber Technology), and PE 0603457A (C3I Cyber Advanced Development) / Project 6CY (Autonomous Cyber Advanced Technology).

A. Mission Description and Budget Item Justification

This Program element (PE) investigates, designs, and develops cyber architectures, software, tools, and techniques to enable Cyber Electromagnetic Activities (CEMA) to counter adversary communications and harden the Army's tactical communications networks against cyber attacks. For offensive cyber effort against adversary communications, efforts investigate capabilities to identify and capture data traversing targeted networks for detection, identification, exploitation, direction finding, geolocation, and denial of service. Defensive cyber efforts in this PE focus on hardening the Army's tactical network by investigating and applying robust cyber security technologies and techniques to advance software, algorithms and protocols utilized within tactical networks, to protect against nation state level cyber-attacks and maintain Warfighter confidence in network information by hardening the blue force attack surface.

The cited research is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization priorities.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army				Date: June 2025	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
2040: Research, Development, Test & Evaluation, Army / BA 2: Applied Research		PE 0602213A / C3I Applied Cyber			
B. Program Change Summary (\$ in Millions)	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Previous President's Budget	22.714	28.656	24.273	-	24.273
Current President's Budget	20.664	28.656	4.716	-	4.716
Total Adjustments	-2.050	0.000	-19.557	-	-19.557
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-2.050	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-19.557	-	-19.557
Change Summary Explanation					
Funding decrease in Fiscal Year (FY) 2026 from the previous PB to the current PB reflects realignment to Program Element (PE) 0602146A (Network C3I Technology) and PE 0603463A (Network C3I Advanced Technology) in support of Army priorities in Electronic Warfare.					

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602213A / C3I Applied Cyber				Project (Number/Name) 2CY / Information Trust Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
2CY: Information Trust Technology	-	6.026	7.838	4.716	-	4.716	-	-	-	-	-	-
Note 2CY / Information Trust Technology (Tactical Zero Trust) - Funding is realigned from Program Element (PE) 0602213A (C3I Applied Cyber) / Project CY6 (Autonomous Cyber Technology), and PE 0603457A (C3I Cyber Advanced Development) / Project 6CY (Autonomous Cyber Advanced Technology).												
A. Mission Description and Budget Item Justification This Project develops defensive cyber technology to ensure that data traversing the network remains verified and has not been modified through unauthorized means. Project enhances system access without affecting personnel authentication processes, enhances awareness of user actions and intent within the network, and maintains information provenance from originator to consumer. It will also integrate zero trust principles where access to resources is granted based on continuous risk assessments. Work in this Project complements Program Element (PE) 0603457A (C3I Cyber Advanced Development) / Project 8CY (Information Trust Advanced Technology). The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy. Work in this Project is performed by Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance, and Reconnaissance (C5ISR) Center.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: PKI-Modernization & Dynamic Access Control for Tactical (DAC-T) Technology Description: This effort will investigate cryptographic algorithms that address Program Manager (PM) Mission Command gap of native ability to support PKI digital signature and Online Certificate Status Protocol (OCSP) certificate validation for the Variable Message Format (VMF) standard MIL-STD-2045-47001D in Disconnected, Interrupted, and Low-bandwidth (DIL) Networks. Furthermore, this effort will investigate methods to enhance, speed up and automate account provisioning and access for people and Non-Person entities (NPE) (e.g. sensors, devices, web services, etc.). This will significantly reduce the workload/ burden for the soldier and improve the networks security posture by enforcing least privilege & just-in-time network access.									3.054	-	-	
Title: Tactical Zero Trust Description: Investigate concepts of Zero Trust that can be adapted to tactical network architectures. Extend concepts developed under current Dynamic Access Control - Tactical (DAC-T) to include non-person entities (NPE) (e.g., systems, applications, devices, robotic process automation (RPA) & services). Create an efficient data-in-use service to limit decryption and exfiltration of high value information. Include graceful degradation of capability for Person/NPE access based on Indicators of Compromise									2.972	7.838	4.716	

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602213A / C3I Applied Cyber	Project (Number/Name) 2CY / Information Trust Technology	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p>(IoC). Investigate open standard methods to create playbooks while assuring safe parallel execution of such playbooks. Effort will mature a capability that performs adversarial assessments on machine learning models to make them more robust to adversarial manipulation.</p> <p>FY 2025 Plans: Will investigate novel methods and techniques for uniquely identifying non-personnel entities (NPE's) (e.g., systems, applications, devices, robotic process automation (RPA) & services) where Public Key Infrastructure (PKI) certificates are not feasible, (ie. Physical Unclonable Functions (PUF's), Fast Identity Online (FIDO2), etc.) and provide the ability to map them to the Master Device Record (MDR); investigate novel methods and techniques for providing protections of Data in Use; investigate advanced ways to provide graceful, degraded access of resources based on indicators of compromise; research and investigate novel adversarial machine learning methods and techniques.</p> <p>FY 2026 Plans: Will design and develop techniques for protecting data-in-use; will continue to develop solution for uniquely identifying NPE's; will continue to design and develop solutions utilizing risk adaptive access control approach to adjust for graceful degradation of access based on Indicators of Compromise (IoC's); will continue to design and develop suitable adversarial machine learning techniques.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease due to resources realigned to 1) Program Element (PE) PE 0603457A / (C3I Cyber Advanced Development) / Project 8CY (Information Trust Advanced Technology) to continue advanced technology development and reduce applied research activities and 2) PE0603457A (C3I Cyber Advanced Development) / Project 6CY (Autonomous Cyber Advanced Technology) to dynamically adjust responses to cyber-attacks.</p>			
Accomplishments/Planned Programs Subtotals		6.026	7.838
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602213A / C3I Applied Cyber				Project (Number/Name) 3CY / Network Access and Effects Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
3CY: Network Access and Effects Technology	-	8.538	12.550	-	-	-	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
<p>This Project investigates computer assisted/automated methodologies to expedite technology development for Offensive Cyber Operations (OCO)/Radio Frequency (RF) Enabled operations. This includes identification of non-traditional access and effect vectors across diverse and evolving adversary targets of interest to enable the commander freedom of maneuver and non-kinetic firing options. This Project will expedite OCO/RF enabled operational developers, planners and operators time to readiness when navigating the complexity of near-peer engagements.</p> <p>This Project investigates the application of machine learning technologies to assist in capability development and mission execution processes with respect to Offensive Cyber Operations (OCO)/Radio Frequency (RF) Enabled capabilities.</p> <p>Work in this Project complements Program Element (PE) 0603457A (C3I Cyber Advanced Development) / Project 9CY (Network Access and Effects Advanced Technology).</p> <p>The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.</p> <p>Work in this Project is performed by Command, Control, Computer, Communications, Cyber, Intelligence, Surveillance, and Reconnaissance (C5ISR) Center.</p>												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Network Exploitation Research and Development (NERD) Technology									8.538	12.550	-	
Description: This effort investigates computer assisted/automated methodologies and tools to reduce the timelines associated with the exploitation of emerging and validated targets of interest, the development of courses of action, and the execution of offensive attack capabilities in the cyber and radio frequency domains at the pace of a near-peer engagement on a highly complex battlefield of ever evolving cyberspace threats.												
FY 2025 Plans:												
Will investigate non-traditional access and effect vectors against emerging targets of interest that account for and circumvent traditional computer security practices. Will investigate software component designs that expedite the characterization of vulnerabilities with an increased likelihood of holding targets of interest at risk. Will determine necessary data enrichment from Offensive Cyber and RF platforms to identify the ideal non-kinetic firing options for increased target effectiveness.												
FY 2025 to FY 2026 Increase/Decrease Statement:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602213A / C3I Applied Cyber	Project (Number/Name) 3CY I Network Access and Effects Technology		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Funding decrease represents completion of component design and maturation efforts and movement into less expensive software development. Funding decrease reflects realignment to Program Element (PE) 0602275A (Electronic Warfare Cyber Applied Research) / Project A79 (Autonomous Cyber Technology) as a part of the Department of Defense Capability Based (Agile) Funding pilot, which provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology.				
Accomplishments/Planned Programs Subtotals		8.538	12.550	-
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602213A / C3I Applied Cyber				Project (Number/Name) CY6 / Autonomous Cyber Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
CY6: Autonomous Cyber Technology	-	6.100	8.268	-	-	-	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This Project investigates and applies robust cyber security techniques and applications to advanced communications and networking devices, software, algorithms and protocols utilized within wireless tactical networks to protect against nation state level cyber effects and maintain Warfighter confidence in network information, resources, identities and mission partners by hardening the blue force attack surface.												
Work in this Project complements Program Element (PE) 0603457A (C3I Cyber Advanced Development) / Project 6CY (Autonomous Cyber Advanced Technology).												
The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.												
Work in this Project is performed by the Army Research Laboratory (ARL) and Command, Control, Computer, Communications, Cyber, Intelligence, Surveillance, and Reconnaissance (C5ISR) Center.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Predictive Intelligent Networking (PIN)									1.733	3.833	-	
Description: Investigate and develop various design patterns of Network Micro-segmentation given constraint of tactical network, conduct various experiments to determine the lowest viable level of Micro-segmentation for the tactical network, as there are different levels of fidelity of Micro-segmentation, and provide an implementation in support of advanced zero trust concepts. This project researches methods to enable the tactical network to autonomously identify, learn, predict, and react to changes in network operating conditions and network threats to ensure end-to-end network resiliency against adversarial AI-driven electronic attacks (EA), electronic warfare (EW), and cyberattacks.												
FY 2025 Plans:												
Will conduct experiments with various network micro-segmentation solutions, based on the current Department of Defense (DOD) Zero Trust Reference Architecture, to define logical network enclaves at the lowest levels that support the visibility and dynamic adaptations necessary to support security and trust while continuing to provide optimum network traffic flow and services at the tactical level.												
FY 2025 to FY 2026 Increase/Decrease Statement:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602213A / C3I Applied Cyber	Project (Number/Name) CY6 / Autonomous Cyber Technology	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p>Funding decrease reflects realignment to Program Element (PE) 0602276A (Electronic Warfare Cyber Applied Research) / Project CY6 (Autonomous Cyber Technology) as a part of the Department of Defense Capability Based (Agile) Funding pilot, which provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology.</p> <p>Title: Proactive Cyber Defense</p> <p>Description: This effort designs and characterizes software for the protection of information and networks in wireless tactical environments. The goal is to develop software algorithms that detect and defeat malicious activities of adversaries in bandwidth and highly resource constrained tactical networks and maintain agile, adaptive cyber maneuver. This research provides automated active defense (e.g., machine learning, anomaly detection, and decision aids) and adversarial resilient techniques to maintain cyber superiority (e.g., improved attack detection, advanced network traffic analysis, and predictive decision aids) against a large attack surface at the edge.</p> <p>FY 2025 Plans: Will investigate semi-supervised and self-supervised learning techniques for network intrusion detection that are resilient to adversarial attacks, do not require large amounts of labeled training data, and operate on resource constrained devices; investigate the use of cyber agility and misrepresentation algorithms and methodologies; investigate additional evasion defensive algorithms to make tactical and enterprise systems resistant to attacks on machine learning, which is heavily used by cyber defenses; develop machine learning based algorithms and methodologies to mitigate adversarial poisoning attempts on critical systems; develop high interaction honeynets/pots to misrepresent current networks and systems in tactical environments.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects realignment to Program Element (PE) 0602276A (Electronic Warfare Cyber Applied Research) / Project CY6 (Autonomous Cyber Technology) as a part of the Department of Defense Capability Based (Agile) Funding pilot, which provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology.</p>		4.367	4.435
Accomplishments/Planned Programs Subtotals		6.100	8.268
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army	Date: June 2025
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Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 2: Applied Research</i>	R-1 Program Element (Number/Name) PE 0602275A / <i>Electronic Warfare Applied Research</i>
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COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
Total Program Element	-	-	-	45.415	-	45.415	-	-	-	-	-	-
A63: <i>Sensor to Shooter (STS) Applied Research</i>	-	-	-	7.022	-	7.022	-	-	-	-	-	-
A64: <i>Autonomous Navigation Technology</i>	-	-	-	2.832	-	2.832	-	-	-	-	-	-
A65: <i>Modular GPS Independent Sensors Technology</i>	-	-	-	6.807	-	6.807	-	-	-	-	-	-
A66: <i>CEMA Sensing Technology</i>	-	-	-	2.097	-	2.097	-	-	-	-	-	-
A67: <i>Electronic Warfare Technology</i>	-	-	-	8.633	-	8.633	-	-	-	-	-	-
A68: <i>EW Techniques Technology</i>	-	-	-	5.192	-	5.192	-	-	-	-	-	-
A69: <i>EW Tech for Protection Against Advanced Threats</i>	-	-	-	7.109	-	7.109	-	-	-	-	-	-
A70: <i>Sensor Electronic Support Tech</i>	-	-	-	1.266	-	1.266	-	-	-	-	-	-
A71: <i>Network Vuln/Effectiveness Assess Methods (N-VEAM)</i>	-	-	-	4.457	-	4.457	-	-	-	-	-	-

Note

This is not a new start. Electronic Warfare Applied Research is a part of the Department of Defense Capability Based (Agile) Funding pilot, which provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology.

This funding is not a new start and is a realignment from:

- (1) Program Element (PE) 0602141A (Lethality Technology) / Project CIB (Sensor to Shooter (STS) Applied Research)
- (2) PE 0602146A (Network C3I Technology) / Project AN3 (Non Traditional Waveforms Technology)
- (3) PE 0602146A (Network C3I Technology) / Project AN7 (COE - Every Receiver is a Sensor Technology)
- (4) PE 0602146A (Network C3I Technology) / Project AN9 (UNT - Every Receiver is a Sensor Technology)
- (5) PE 0602146A (Network C3I Technology) / Project AP5 (Electronic Warfare Technology)
- (6) PE 0602146A (Network C3I Technology) / Project AQ2 (EW Techniques Technology)
- (7) PE 0602146A (Network C3I Technology) / Project AW1 (Autonomous Navigation Technology)

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army	Date: June 2025
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Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 2: Applied Research</i>	R-1 Program Element (Number/Name) PE 0602275A / <i>Electronic Warfare Applied Research</i>
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- (8) PE 0602146A (Network C3I Technology) / Project AW5 (Modular GPS Independent Sensors Technology)
- (9) PE 0602148A (Future Verticle Lift Technology) / Project CH3 (Holistic Team Survivability Technology)
- (10) PE 0602150A (Air and Missile Defense Technology) / Project DA9 (Radar Survivability through Dis Sensing Tech)
- (11) PE 0602182A (C3I Applied Research) / Project CN5 (Network Vuln/Effectiveness Assess Methods (N-VEAM))
- (12) PE 0602182A (C3I Applied Research) / Project CZ7 (Convergent CEMA Technical Effects)

A. Mission Description and Budget Item Justification

This Program Element (PE) focuses on investigating and developing advanced Electromagnetic Warfare (EW) capabilities for modern, multi-domain military operations. It researches and develops cutting-edge technologies - including architectures, infrastructure, tools, and techniques - across the spectrum of EW activities: Electronic Attack (EA) to disrupt enemy Command, Control, Computing, Communications, Cyber, Intelligence, Surveillance, and Targeting (C-C5ISR&T) systems and ensure non-kinetic survivability; Electronic Support (ES) for precise detection, identification, and geolocation of enemy RF emissions to enable effective fires; network and RADAR Electronic Protection (EP) with intelligent resource orchestration to bolster resilience and robustness against increasingly sophisticated electronic attacks; battle management tools for intelligent planning, targeting, and execution of effects across the entire electromagnetic spectrum; and position, navigation, and timing techniques to enable coordination of electronic attacks.

This PE aims to provide a comprehensive and integrated EW suite that not only ensures our forces maintain a decisive advantage in the contested electromagnetic environment, but also creates novel opportunities for operational advantage, increasing unit survivability, maneuverability, and the effective employment of non-kinetic effects in highly contested and congested spaces.

Work in this PE complements PE 0603275A (Electronic Warfare Advanced Technology).

The cited research is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.

<u>B. Program Change Summary (\$ in Millions)</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026 Base</u>	<u>FY 2026 OOC</u>	<u>FY 2026 Total</u>
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	45.415	-	45.415
Total Adjustments	0.000	0.000	45.415	-	45.415
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	45.415	-	45.415

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 2: Applied Research	R-1 Program Element (Number/Name) PE 0602275A / Electronic Warfare Applied Research	
<p>Change Summary Explanation</p> <p>This is not a new start. Electronic Warfare Applied Research is a part of the Department of Defense Capability Based (Agile) Funding pilot, which provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology. Funding increase in FY 2026 reflects realignments from Program Element (PE) 0602141A (Lethality Technology) / Project CIB (Sensor to Shooter (STS) Applied Research), PE 0602146A (Network C3I Technology) / Project AN3 (Non Traditional Waveforms Technology), PE 0602146A (Network C3I Technology) / Project AN7 (COE - Every Receiver is a Sensor Technology), PE 0602146A (Network C3I Technology) / Project AN9 (UNT - Every Receiver is a Sensor Technology), PE 0602146A (Network C3I Technology) / Project AP5 (Electronic Warfare Technology), PE 0602146A (Network C3I Technology) / Project AQ2 (EW Techniques Technology), PE 0602146A (Network C3I Technology) / Project AW1 (Autonomous Navigation Technology), PE 0602146A (Network C3I Technology) / Project AW5 (Modular GPS Independent Sensors Technology), PE 0602148A (Future Verticle Lift Technology) / Project CH3 (Holistic Team Survivability Technology), PE 0602150A (Air and Missile Defense Technology) / Project DA9 (Radar Survivability through Dis Sensing Tech), PE 0602182A (C3I Applied Research) / Project CN5 (Network Vuln/Effectiveness Assess Methods (N-VEAM)), and PE 0602182A (C3I Applied Research) / Project CZ7 (Convergent CEMA Technical Effects).</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602275A / <i>Electronic Warfare Applied Research</i>				Project (Number/Name) <i>A63 / Sensor to Shooter (STS) Applied Research</i>			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
A63: <i>Sensor to Shooter (STS) Applied Research</i>	-	-	-	7.022	-	7.022	-	-	-	-	-	-
Note This is not a new start and is a realignment from Program Element (PE) 0602141A (Lethality Technology) / Project CIB (Sensor to Shooter (STS) Applied Research).												
A. Mission Description and Budget Item Justification This project designs and develops advanced algorithms and architectures for armaments fire control systems for C-sUAS engagements. These capabilities will provide C-sUAS mobility, increased stowed kills vs sUAS threats, and increased protection for maneuver units. This project develops unit common C-sUAS capabilities for maneuver formations. Work in this project complements PE 0603275A (Electronic Warfare Advanced Technology) / A72 (Sensor to Shooter (STS) Advanced Technology). The cited work is consistent with Secretary of Defense Memorandum, Army Transformation and Acquisition reform. Work in this project supports Air and Missile Defense, Soldier Lethality, and Long-Range Precision Fires Army Modernization Priorities. Work in this project is performed by the Armaments Center, Command, Control, Communication, Computers, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center, and United States Army Space and Missile Defense Technical Center.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Lethal Effects Architecture for Decision Synchronization Technology									-	-	5.130	
Description: This effort designs and develops advanced fire control algorithms and architectures for offensive and defensive fires and On the Move (OTM) Counter small Unmanned Aerial Systems (C-sUAS) engagements. These enhanced fire control capabilities will provide increased stowed kills vs sUAS threats, increase survivability, reduce burden on the warfighter, and increase mobility while maximizing affordability.												
FY 2026 Plans: Will design and develop intelligent, distributed lethality fire control capabilities with autonomy-enabled architecture to support Counter-small Unmanned Aerial Systems (C- sUAS) engagements; design advanced fire control algorithms, targeting and engagement solutions for C-sUAS Fire engagements.												
FY 2025 to FY 2026 Increase/Decrease Statement:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602275A / <i>Electronic Warfare Applied Research</i>	Project (Number/Name) A63 / <i>Sensor to Shooter (STS) Applied Research</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p>This is not a new start. FY 2026 funding transferred from 0602141A (Lethality Technology) / Project CIB (Sensor to Shooter (STS) Applied Research).</p> <p>FY 2026 funding decrease reflects reduction in research on advanced algorithms.</p>			
<p>Title: C-SR QC2</p> <p>Description: Investigates, designs, and develops a counter-surveillance and reconnaissance solution to generate cueing data on tactically relevant timelines and determine optimal threat engagement in support of Large-Scale Combat Operations in a joint all-domain command and control environment.</p> <p>FY 2026 Plans: Expand the EW/C-UAS technology baseline. Will refine modeling and simulation of notional counter-surveillance and reconnaissance (CSR) solution to further inform design and performance requirements. Mature the concept of operations for CSR engagement of adversary capabilities. Initiate laboratory prototyping and mature detection algorithms.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: This is not a new start. FY 2026 funding transferred from 0602141A (Lethality Technology) / Project CIB (Sensor to Shooter (STS) Applied Research). FY 2026 funding increase represents the planned efforts to further refine the M&S products.</p>		-	-
Accomplishments/Planned Programs Subtotals		-	7.022
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602275A / <i>Electronic Warfare Applied Research</i>				Project (Number/Name) A64 / <i>Autonomous Navigation Technology</i>			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
A64: <i>Autonomous Navigation Technology</i>	-	-	-	2.832	-	2.832	-	-	-	-	-	-
Note This is not a new start and is a realignment from Program Element (PE) 0602146A (Network C3I Technology) / Project AW1 (Autonomous Navigation Technology).												
A. Mission Description and Budget Item Justification This project seeks to develop innovative and adaptive Navigation Warfare (NAVWAR) electromagnetic attack (EA) capabilities to deny adversaries the ability to utilize Global Navigation Satellite System (GNSS) receivers. This project will leverage software defined EA hardware to agilely deny an increasingly evolving threat's ability to geolocate and navigate, greatly reducing the mission effectiveness of adversary autonomous and manned platforms. These cooperative NAVWAR EA systems and platforms can defeat advanced Global Navigation Satellite System (GNSS) and platform-based capabilities. Work in this project complements Program Element (PE) 0603275A (Electronic Warfare Advanced Technology) / Project A74 (Navigation Warfare (NAVWAR) Advanced Technology). The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy. Work in this project is performed by the United States Army Space and Missile Defense Technical Center and Command, Control, Computer, Communications, Cyber, Intelligence, Surveillance, and Reconnaissance (C5ISR) Center.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Positioning, Navigation and Timing (PNT) Defeat Techniques									-	-	1.833	
Description: This effort enables simultaneous execution of Electronic Warfare (EW) and PNT defeat missions with more efficient use of available EW/Cyber and Electromagnetic Activities/PNT (EW/CEMA/PNT) resources. This multi-functional, flexible approach leveraging software-defined EA hardware will provide a unique approach to rapidly develop new waveforms and techniques defeat adversary systems utilizing NAVWAR Attack as an embedded mode in EW systems.												
FY 2026 Plans: Will validate current and novel NAVWAR attack techniques in a modeling and simulation environment; conduct lab experiments on NAVWAR Attack techniques using existing EW systems to identify system requirements and the most promising attack vectors and techniques for development.												
FY 2025 to FY 2026 Increase/Decrease Statement:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602275A / <i>Electronic Warfare Applied Research</i>	Project (Number/Name) A64 / <i>Autonomous Navigation Technology</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
This is not a new start. FY 2026 funding transferred from PE 0602146A (Network C3I Technology) / Project AW1 (Autonomous Navigation Technology). FY 2026 funding increase reflects experimentation and validation of NAVWAR Attack technology.				
Title: Resilient NAVWAR Defeat Description: This effort provides dynamic and resilient NAVWAR electronic attack through employing cooperative platforms to deny the adversaries use of GNSS, decrease the adversary's operational effectiveness, and increase blue-force maneuver space. FY 2026 Plans: Will investigate the initial parameters for critical enabling technologies and conduct high fidelity modeling and simulation experiments to validate study results; mature NAVWAR EA technique support to develop Modeling, Simulation, and Analysis (MS&A) products; continue development of Command and Control, EA, and electronic support functions for a distributed, ad-hoc connected payload system. FY 2025 to FY 2026 Increase/Decrease Statement: This is not a new start. FY 2026 funding transferred from PE 0602146A (Network C3I Technology) / Project AW1 (Autonomous Navigation Technology). FY 2026 funding increase represents the planned efforts to further refine the study results and to deliver MS&A products.		-	-	0.999
Accomplishments/Planned Programs Subtotals		-	-	2.832
C. Other Program Funding Summary (\$ in Millions) N/A Remarks				
D. Acquisition Strategy N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602275A / <i>Electronic Warfare Applied Research</i>				Project (Number/Name) <i>A65 / Modular GPS Independent Sensors Technology</i>			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
A65: <i>Modular GPS Independent Sensors Technology</i>	-	-	-	6.807	-	6.807	-	-	-	-	-	-
Note This is not a new start and is a realignment from PE 0602146A (Network C3I Technology) / Project AW5 (Modular GPS Independent Sensors Technology).												
A. Mission Description and Budget Item Justification This project investigates and develops Assured and Resilient Position, Navigation and Timing (PNT) technologies that mitigate the impacts of adversary Electromagnetic Warfare attacks. This Project performs research and development of Electromagnetic Protection (EP) to Global Positioning System (GPS)-independent sensors using open architectures, sensor fusion, plug-and-play sensor modules that can be tailored for any platform based on mission needs and requirements. This Project will develop modular PNT sensor and fusion capabilities to enable the Army to continuously transform in contact, adding new PNT modalities, signals and EP, maintaining the critical ability of Soldiers and platforms to navigate in a rapidly evolving threat space. The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy. Work in this project is performed by the Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance, and Reconnaissance (C5ISR) Center.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Frequency Independent Localization and Time for Enhanced Resiliency (FILTER)									-	-	2.981	
Description: This effort increases the resilience of Position, Navigation and Timing (PNT) systems by enabling them to take advantage of additional, non-Global Navigation Satellite Systems (GNSS) Radio Frequency (RF) sources. This effort investigates the design of a single PNT receiver that integrates a diverse set of commercial and military signal sources to provide a PNT solution that enables operation in contested environments, with the ability to rapidly integrate new signals over time.												
FY 2026 Plans: Will continue to investigate alternative RF signal to be used as PNT sources; determine most complementary signal sources and validate position and timing accuracies; mature sensor fusion algorithms; investigate and determine RF components necessary to receive PNT-relevant RF signals.												
FY 2025 to FY 2026 Increase/Decrease Statement: This is not a new start. FY 2026 funding transferred from PE 0602146A (Network C3I Technology) / Project AW5 (Modular GPS Independent Sensors Technology).												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602275A / <i>Electronic Warfare Applied Research</i>	Project (Number/Name) A65 / <i>Modular GPS Independent Sensors Technology</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
FY 2026 funding increase reflects progression of investigation and experimentation as this effort proceeds in advancements towards novel solutions.			
Title: Techniques and Algorithms for Cooperative Assured Position, Navigation and Timing (PNT) Description: This effort develops techniques for precision time transfer across Army platforms (Soldier, Ground Vehicles, Aviation) to ensure accurate timing down to the most disadvantaged user, which is critical to distributed and network-enabled operations. It will enable provision of cooperative PNT between multiple Army platforms and Soldiers as a core enabler of many warfighter capabilities (Electronic Warfare, Radar, etc.). Effort increases resilience of PNT systems through usage of additional RF sources reducing the effectiveness of outside interference of congested and contested environments. FY 2026 Plans: Will continue investigation of novel time transfer techniques/methodologies to determine the most advantageous use cases for relevant Army platforms; conduct experiments to validate the required relative timing and RF ranging precision for relevant Army platforms that execute cooperative sensing and countermeasures; mature concepts for cooperative PNT at needed RF ranging and time transfer precision levels within each selected focus area FY 2025 to FY 2026 Increase/Decrease Statement: This is not a new start. FY 2026 funding transferred from PE 0602146A (Network C3I Technology) / Project AW5 (Modular GPS Independent Sensors Technology). FY 2026 funding increase reflects planned growth of this effort as it advances past the first year and builds from early investigation efforts into validation of technologies.		-	-
Accomplishments/Planned Programs Subtotals		-	-
C. Other Program Funding Summary (\$ in Millions) N/A			
Remarks			
D. Acquisition Strategy N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602275A / <i>Electronic Warfare Applied Research</i>				Project (Number/Name) A66 / <i>CEMA Sensing Technology</i>			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
A66: <i>CEMA Sensing Technology</i>	-	-	-	2.097	-	2.097	-	-	-	-	-	-
Note This is not a new start and is a realignment from 0602146A (Network C3I Technology) / Project AN9 (UNT - Every Receiver is a Sensor Technology).												
A. Mission Description and Budget Item Justification This project develops algorithms, techniques, and methodologies to passively and actively sense the electromagnetic spectrum (EMS) associated with all types of adversarial cyber and electromagnetic activities (CEMA) to gain situational awareness, detect threats, and enable effective response. This project investigates resource management approaches to enable simultaneous RF operations within resource constrained environments. It extends the Army's deep sensing capability by improving simultaneous functionality, leveraging all potential sensing assets within the area of operations and supporting real time feedback of mission effectiveness. Work in this project complements Program Element (PE) 0603275A (Electronic Warfare Advanced Technology) / Project A76 (CEMA Sensing Advanced Technology) The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy. Work in this project is performed by the Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance, and Reconnaissance (C5ISR) Center.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Multi-Function Resourcing for CEMA Technologies									-	-	2.097	
Description: This effort investigates optimization of radio frequency transmit and receive resources to conduct simultaneous electronic warfare (EW), signals intelligence (SIGINT) and offensive cyber missions. Efforts will investigate Joint-Service & coalition interfaces to automate collection capabilities on multifunction systems and novel resource scheduling characteristics to execute Cyber and ElectroMagnetic Activities (CEMA) and support real-time feedback such as Battle Damage Assessment (BDA) and adaptive Electronic Attack (EA).												
FY 2026 Plans: Will investigate algorithms for automated resource allocation of distributed multi-function sensors for coincidence/cooperative Electronic Warfare and electronic Battle Damage Assessment (eBDA); validate component technology within a C5ISR Modular Open Suite of Standards aligned card for use in a multifunction sensor chassis.												
FY 2025 to FY 2026 Increase/Decrease Statement: This is not a new start. FY 2026 funding transferred from PE 0602146A (Network C3I Technology) / Project AN9 (UNT - Every Receiver is a Sensor Technology).												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602275A / <i>Electronic Warfare Applied Research</i>	Project (Number/Name) A66 / <i>CEMA Sensing Technology</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
FY 2026 funding decrease due to prioritization of efforts.				
Accomplishments/Planned Programs Subtotals		-	-	2.097
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602275A / <i>Electronic Warfare Applied Research</i>				Project (Number/Name) A67 / <i>Electronic Warfare Technology</i>			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
A67: <i>Electronic Warfare Technology</i>	-	-	-	8.633	-	8.633	-	-	-	-	-	-
Note This is not a new start and is a realignment from: (1) Program Element (PE) PE 0602146A (Network C3I Technology) / Project AN3 (Non Traditional Waveforms Technology) (2) PE 0602146A (Network C3I Technology) / Project AN7 (COE - Every Receiver is a Sensor Technology) (3) PE 0602146A (Network C3I Technology) / Project AP5 (Electronic Warfare Technology) (4) PE 0602182A (C3I Applied Research) / Project CZ7 (Convergent CEMA Technical Effects) A. Mission Description and Budget Item Justification This project investigates and develops cutting-edge technologies for Electronic Warfare (EW) applications, non-kinetic survivability/lethality, and emerging concepts of employment in the increasingly contested and congested electromagnetic environment. The goal is to enhance the survivability/lethality of Army platforms through Electronic Attack (EA), Electronic Support (ES), and Electronic Protection (EP) with high operational realism for current and future operational environments. Work in this project complements Program Element (PE) 0603275A (Electronic Warfare Advanced Technology) / Project A77 (EW for Maneuver Operations (EMO) Adv Tech). The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy. Work in this project is performed by the Army Research Laboratory (ARL) and Data and Analysis Center (DAC). B. Accomplishments/Planned Programs (\$ in Millions)												
									FY 2024	FY 2025	FY 2026	
Title: Electronic Warfare Assessment Technologies									-	-	0.690	
Description: This effort investigates emerging technologies related to EW applications (e.g., digital RF memory, software defined radios, cognitive radars) and electromagnetic-enabled cyberspace operations in the increasingly contested and congested environment. Research is focused on near-peer and future threats to enhance survivability/lethality and discover critical vulnerabilities of Army technologies and systems through cyber and electromagnetic activities (CEMA).												
FY 2026 Plans: Will design and develop emulations of emerging complex threats related to cognitive radars; mature EW threat emulation capabilities and determine the effects of emerging threats on radar systems including cognitive and artificial intelligence (AI)/												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602275A / <i>Electronic Warfare Applied Research</i>	Project (Number/Name) A67 / <i>Electronic Warfare Technology</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
machine learning (ML) threats; develop innovative threat tools that can transition from laboratory to field experiments; provide initial performance assessment framework for cognitive systems. FY 2025 to FY 2026 Increase/Decrease Statement: This is not a new start. FY 2026 funding transferred from PE 0602146A (Network C3I Technology) / Project AP5 (Electronic Warfare Technology). FY 2026 funding remains at FY 2025 level.				
Title: Combined and Distributed Electromagnetic Warfare (CDEW) Description: This research investigates emerging Electromagnetic Warfare (EW) technologies and novel approaches to apply distributed nodal and combined/coordinated electromagnetic spectrum warfare effects to counter a broad class of threats, with a goal of adequately degrading threat performance, increasing standoff distance to target, and increasing the survivability of US assets. Research includes design of a tailorable sensing and effecting payload ecosystem for small scale aerial autonomy for combined effects with conformal apertures, coordinated and distributed EW waveforms, and multi-platform cross-queueing. Research focuses on smaller arrays and alternative frequencies for smaller, more agile counter-command, control, communication, computers, and cyber (C5) capabilities. FY 2026 Plans: Will mature existing electronic attack transceiver hardware by adding a distributed, emitter direction-finding mode; utilize machine-learning/neural network techniques to enhance direction-finding accuracy; conduct research into new countermeasure modalities to increase survivability for aerial autonomous platforms FY 2025 to FY 2026 Increase/Decrease Statement: This is not a new start. FY 2026 funding transferred from PE 0602146A (Network C3I Technology) / Project AP5 (Electronic Warfare Technology). FY 2026 funding increase will increase research into new countermeasure modalities to increase survivability for aerial autonomous platforms.		-	-	3.051
Title: Common Compact Electronic Warfare Description: This effort researches methods for compact and scalable radio frequency (RF) architectures for small unmanned aircraft systems (UAS) to munitions-scale distributed and coordinated delivery. The effort develops methods for tailorable sensing and effecting payloads in small UAS for combined effects with conformal apertures, coordinated and distributed EW waveforms and multi-platform cross-queueing. Compact payloads will enable deep sensing/targeting and EW effects and protection in extreme and/or anti-access/area denial (A2AD) environments. FY 2026 Plans:		-	-	1.019

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602275A / <i>Electronic Warfare Applied Research</i>	Project (Number/Name) A67 / <i>Electronic Warfare Technology</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
Will investigate different artificial intelligence hardware schemes for suitability for integration with current EW methodologies; design and develop a new scalable compact RF EW baseline breadboard concept for future incorporation with Army platforms. FY 2025 to FY 2026 Increase/Decrease Statement: FY 2026 funding transferred from PE 0602146A (Network C3I Technology) / Project AP5 (Electronic Warfare Technology). FY 2026 funding increase to create new task to investigate compact payloads that will enable deep sensing/targeting and EW effects and protection in extreme and/or A2AD environments.			
Title: RF-Enabled CEMA Sensing and Effects Description: This effort develops technologies to avoid geolocation of blue force radio frequency (RF) emissions by peer/near-peer adversaries. Research will focus on developing low probability of detection (LPD) communications and RF transceivers to increase freedom of maneuver while maintaining effective communications. FY 2026 Plans: Will mature antenna architecture to optimize performance in field and integrate reconfigurable wideband power dividers; develop the capability to double the number of switchable states supported by the reconfigurable antennas; validate antenna architecture operation in field relevant conditions and on unmanned aircraft systems (UAS) and ground platforms. FY 2025 to FY 2026 Increase/Decrease Statement: This is not a new start. FY 2026 funding transferred from PE 0602182A (C3I Applied Research) / Project CZ7 (Convergent CEMA Technical Effects). FY 2026 funding decrease reflects realignment to Common Compact Electronic Warfare within this project.		-	-
			1.863
Title: Deep Operational Electro-Magnetic Sensing Technology Description: This effort investigates the detection of threat electromagnetic signals within deep operational and maneuver environments. This includes the investigation into the viability of small form factor expendable unattended ground sensors that deliver timely and accurate detection, identification and location of Radio Frequency (RF) emissions that require short stand-in sensing distances in signal dense environments FY 2026 Plans: Will develop modeling and simulation environment to investigate the trade space between size, cost, and capability for identifying specific emitters, performing geolocation, and comparing data backhaul architectures; develop orchestration software to dynamically manage RF emissions with emphasis on proof of concept of command and control and incorporating feedback from vendor commercial off the shelf hardware; demonstrate minimum viable product over the air. FY 2025 to FY 2026 Increase/Decrease Statement:		-	-
			0.496

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602275A / <i>Electronic Warfare Applied Research</i>	Project (Number/Name) A67 / <i>Electronic Warfare Technology</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
FY 2026 funding transferred from PE 0602146A (Network C3I Technology) / Project AN7 (COE - Every Receiver is a Sensor Technology). FY 2026 funding increase due to initiation of this effort.			FY 2026
Title: Spectrum Superstorm Tech Description: This effort investigates the use of obfuscation and technical effects in the radio frequency spectrum using distributed and dispersed techniques to coordinate signal effects against adversaries from distant transmitters. This effort enables Army emitters to operate free from adversary geolocation attempts through technical effect applications. FY 2026 Plans: Will develop orchestration software to dynamically manage RF emissions with emphasis on proof of concept of command and control and incorporating feedback from vendor commercial off the shelf hardware; demonstrate minimum viable product over the air. FY 2025 to FY 2026 Increase/Decrease Statement: This is not a new start. FY 2026 funding transferred from PE 0602146A (Network C3I Technology) / Project AN3 (Non Traditional Waveforms Technology). FY 2026 funding decrease based on emerging concept of operations and advances in commercially available hardware.		-	1.514
Accomplishments/Planned Programs Subtotals		-	8.633
C. Other Program Funding Summary (\$ in Millions) N/A Remarks D. Acquisition Strategy N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602275A / <i>Electronic Warfare Applied Research</i>				Project (Number/Name) A68 / <i>EW Techniques Technology</i>			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
A68: <i>EW Techniques Technology</i>	-	-	-	5.192	-	5.192	-	-	-	-	-	-

Note

This is not a new start and is a realignment from PE 0602146A (Network C3I Technology) / Project AQ2 (EW Techniques Technology).

A. Mission Description and Budget Item Justification

This project develops countermeasures against adversarial counter-fire systems that obscure and create distractive blue force locations. This project will research and develop distributed, coordinated electromagnetic warfare (EW) capabilities designed to extend effective range, reduce blue transmitter susceptibility to localization, and introduce errors in adversary intelligence, surveillance and reconnaissance (ISR) systems to facilitate maneuver within multi-domain operations (MDO).

Work in this project complements Program Element (PE) 0603275A (Electronic Warfare Advanced Technology) / Project A77 (EW for Maneuver Operations (EMO) Adv Tech).

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.

Work in this project is performed by the Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance, and Reconnaissance (C5ISR) Center.

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

	FY 2024	FY 2025	FY 2026
Title: Counter Adversarial ISR and Counter Fire Network Technology	-	-	5.192
Description: This effort will fund research in Electronic Warfare (EW) to impair and/or degrade the adversary's ability to leverage advanced target development, tracking, and kinetic engagement capabilities, offering friendly forces more protection from detection, location, and kinetic engagement. This effort will investigate and mature highly synchronized techniques to simultaneously produce advanced effects against adversarial RF systems capable of degrading Army countermeasures (camouflage, concealment, tactics, and other EW capabilities) forcing them to fall back into less capable systems that friendly forces can overcome. The hardware and software capabilities developed will provide opportunistic, multiplatform delivery of electromagnetic warfare capabilities that are more challenging for adversaries to mitigate.			
FY 2026 Plans: Will continue to conduct experiments and validate hardware and software elements being developed as part of the ARL Combined & Distributed Electromagnetic Warfare (CDEW) program; conduct threat- specific analysis informed from recent intelligence to ensure that resulting technologies are supportive of mission needs and Senior Leader priorities (target categories, frequency ranges, stand-off distances); investigate and conduct experiments to counter advanced adversarial detection, localization, and			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602275A / <i>Electronic Warfare Applied Research</i>	Project (Number/Name) A68 / <i>EW Techniques Technology</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
tracking technologies; assess technical performance as a measure of improved blue system survivability via degraded accuracy, delayed detection, or a combination of the two from the perspective of the adversarial sensing network.			
<i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> This is not a new start. FY 2026 funding transferred from PE 0602146A (Network C3I Technology) / Project AQ2 (EW Techniques Technology). FY 2026 funding increase due to increased experimentation in capabilities for counter adversarial ISR.			
Accomplishments/Planned Programs Subtotals		-	5.192
C. Other Program Funding Summary (\$ in Millions) N/A			
Remarks			
D. Acquisition Strategy N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602275A / Electronic Warfare Applied Research				Project (Number/Name) A69 / EW Tech for Protection Against Advanced Threats			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
A69: EW Tech for Protection Against Advanced Threats	-	-	-	7.109	-	7.109	-	-	-	-	-	-
Note This is not a new start and is a realignment from Program Element (PE) 0602148A (Future Verticle Lift Technology) / Project CH3 (Holistic Team Survivability Technology).												
A. Mission Description and Budget Item Justification This project will investigate and design advanced survivability technologies to develop a team-based solution that delivers advanced sensing and electronic warfare (EW) effects across a family of aircraft to optimally penetrate and survive in the anti-access/area denial (A2AD) environment. This project will take an integrated team-based system of systems survivability approach through a purpose-driven mix of improved survivability situational awareness, signature management, vulnerability reduction, enhanced platform survivability against directed energy munitions, route and maneuver optimization, expendables, advanced sensors, and electro-optics (EO) & radio frequency (RF) jamming for existing and future air platforms. This Project will also provide advanced teaming algorithms for survivability. This Project develops and evaluates multi layered survivability concepts and supporting technologies for increased survivability of Future Vertical Lift (FVL) Family of Systems (FoS) in an advanced and evolving integrated air defense systems environment. The cited research is consistent with the Under Secretary of Defense for Research and Engineering Science and Technology focus areas and the Army modernization strategy. Work in this project is performed by Aviation & Missile Center (AvMC) and Command, Control, Communication, Computers, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Distributed Electronic Warfare Effects									-	-	7.109	
Description: This effort investigates and develops critical EW components and techniques to enable the FVL capability to operate and survive in A2/AD environments. It provides scalable low size, weight, power, and cost (SWaP-C) signal processing components and decision-making algorithms that adapt and counter the characteristics of advanced and emerging threats.												
FY 2026 Plans:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602275A / <i>Electronic Warfare Applied Research</i>	Project (Number/Name) A69 / <i>EW Tech for Protection Against Advanced Threats</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
Will develop EW techniques that address advanced threat features and high threat complexity; increase adaptability of coordinated EW nodes to dynamic changes in environment and threat behavior; determine performance of novel approaches in simulation against threat models. <i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> This is not a new start. FY 2026 funding transferred from PE 0602148A (Future Verticle Lift Technology) / Project CH3 (Holistic Team Survivability Technology). FY 2026 funding decrease reflects decrease in EW technique assessment.			
Accomplishments/Planned Programs Subtotals		-	-
C. Other Program Funding Summary (\$ in Millions) N/A Remarks D. Acquisition Strategy N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025																						
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602275A / <i>Electronic Warfare Applied Research</i>				Project (Number/Name) A70 / <i>Sensor Electronic Support Tech</i>																							
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost																				
A70: <i>Sensor Electronic Support Tech</i>	-	-	-	1.266	-	1.266	-	-	-	-	-	-																				
<div>Note</div> <div>This is not a new start and is a realignment from Program Element (PE) 0602150A (Air and Missile Defense Technology) / Project DA9 (Radar Survivability through Dis Sensing Tech).</div> <div>A. Mission Description and Budget Item Justification</div> <div>This project investigates and develops critical radar capability enhancements to defeat advanced Air and Missile threats and protect Army maneuver forces and critical assets. Radar enhancements are required for advanced Electronic Protection (EP) techniques against advanced jammers, electronic Combat Identification (CID), and resource optimization across the threat spectrum while retaining 360 degree coverage capability.</div> <div>This research complements Program Element (PE) 0601275A (Electronic Warfare Basic Research) / Project A61 (Sensing and Electromagnetics) and PE 0603275A (Electronic Warfare Advanced Technology) / Project A78 (Radar Survivability through Dis Sensing Adv Tech).</div> <div>The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.</div> <div>Work in this project is performed by the Aviation & Missile Center (AvMC).</div> <div>B. Accomplishments/Planned Programs (\$ in Millions)</div> <table><tr><td></td><td>FY 2024</td><td>FY 2025</td><td>FY 2026</td></tr><tr><td>Title: Radar Survivability through Distributed Sensing (RSDS) Tech</td><td>-</td><td>-</td><td>1.266</td></tr><tr><td>Description: Investigates and develops critical radar capability enhancements to defeat advanced Air and Missile threats and protect Army maneuver forces and critical assets.</td><td></td><td></td><td></td></tr><tr><td>FY 2026 Plans: Will complete development of the multi-static CONOPS to inform future requirements for Lower Tier Air and Missile Defense Sensor (LTAMDS); complete strategy and framework to integrate multi-static awareness in the Integrated Air and Missile Defense Battle Command System (IBCS) and finish technical report outlining the strategy.</td><td></td><td></td><td></td></tr><tr><td>FY 2025 to FY 2026 Increase/Decrease Statement: This is not a new start. FY 2026 funding transferred from PE 0602150A (Air and Missile Defense Technology) / Project DA9 (Radar Survivability through Dis Sensing Tech).</td><td></td><td></td><td></td></tr></table>														FY 2024	FY 2025	FY 2026	Title: Radar Survivability through Distributed Sensing (RSDS) Tech	-	-	1.266	Description: Investigates and develops critical radar capability enhancements to defeat advanced Air and Missile threats and protect Army maneuver forces and critical assets.				FY 2026 Plans: Will complete development of the multi-static CONOPS to inform future requirements for Lower Tier Air and Missile Defense Sensor (LTAMDS); complete strategy and framework to integrate multi-static awareness in the Integrated Air and Missile Defense Battle Command System (IBCS) and finish technical report outlining the strategy.				FY 2025 to FY 2026 Increase/Decrease Statement: This is not a new start. FY 2026 funding transferred from PE 0602150A (Air and Missile Defense Technology) / Project DA9 (Radar Survivability through Dis Sensing Tech).			
	FY 2024	FY 2025	FY 2026																													
Title: Radar Survivability through Distributed Sensing (RSDS) Tech	-	-	1.266																													
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FY 2025 to FY 2026 Increase/Decrease Statement: This is not a new start. FY 2026 funding transferred from PE 0602150A (Air and Missile Defense Technology) / Project DA9 (Radar Survivability through Dis Sensing Tech).																																

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602275A / <i>Electronic Warfare Applied Research</i>	Project (Number/Name) A70 / <i>Sensor Electronic Support Tech</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
FY 2026 funding decrease due to CONOPS development efforts ramping down.				
Accomplishments/Planned Programs Subtotals		-	-	1.266
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602275A / <i>Electronic Warfare Applied Research</i>				Project (Number/Name) A71 / <i>Network Vuln/Effectiveness Assess Methods (N-VEAM)</i>			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
A71: <i>Network Vuln/Effectiveness Assess Methods (N-VEAM)</i>	-	-	-	4.457	-	4.457	-	-	-	-	-	-
Note This is not a new start and is a realignment from Program Element (PE) 0602182A (C3I Applied Research) / Project CN5 (Network Vuln/Effectiveness Assess Methods (N-VEAM)).												
A. Mission Description and Budget Item Justification This project develops analytical methodologies and tools to characterize hardware and software that enable Electromagnetic Warfare (EW) and Cyber capabilities to assess operations of Army Network and communication platforms and dismounts, while maintaining freedom to maneuver, communicate, and sense. This Project also develops a holistic cross-domain analysis and assessment methodology for network and communication technologies faced with advanced Cyber Electromagnetic Activity (CEMA). These investigations are critical to identifying vulnerabilities of United States systems and technologies so that network and network- enabled systems can be hardened as early as possible in development cycle. Work in this project complements Program Element (PE) 0602276A (Electronic Warfare Cyber Applied Research) / Project A79 (Autonomous Cyber Technology) and PE 0603276A (Electronic Warfare Cyber Advanced Technology) / Project A80 (Autonomous Cyber Advanced Technology), The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy. Work in this project is performed by Combat Capabilities Development Command (DEVCOM) Analysis Center (DAC).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Understanding, Protecting, and Enabling CEMA Effects									-	-	2.223	
Description: This effort develops and continually improves methodology and approaches for estimating and predicting CEMA effects on networks and network-enabled systems during complex multi-domain operations when significant cross-domain effects can be expected. Methods include drawing upon past research concerning the interaction of cyber and Electromagnetic Warfare threats on operational networks; laboratory operations, over-the-air anechoic chamber experimentation, and open-air field experimentation; and first principles Modeling and Simulation (M&S) and engineering analysis. Abstracting, generalizing, and automating multi-domain CEMA operations will enable the development of analysis and assessment of methods and tools to anticipate the impact of future threats. Live, virtual, and simulated environments will be developed to estimate the potential operational impact of threat CEMA technologies on friendly systems.												
FY 2026 Plans:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602275A / <i>Electronic Warfare Applied Research</i>	Project (Number/Name) A71 / <i>Network Vuln/Effectiveness Assess Methods (N-VEAM)</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
Will mature analytic techniques for characterization of EW and Cyber effects on Network Baseline technologies; build-on early developmental network technologies to gain understanding, knowledge, and design of advanced tools and methodologies for EW and cyber vulnerabilities assessments; identify vulnerabilities of Army network technologies in early stages of development; investigate effects CEMA attack vector(s) on emerging 5G technologies and other wireless technologies, including applied Artificial Intelligence (AI) and cognitive systems CEMA effects.			
FY 2025 to FY 2026 Increase/Decrease Statement: This is not a new start. FY 2026 funding transferred from PE 0602182A (C3I Applied Research) / Project CN5 (Network Vuln/ Effectiveness Assess Methods (N-VEAM)). FY 2026 funding decrease due to rescaling of scope of work.			
Title: Vulnerability Analysis Methodology for CEMA Threats		-	-
Description: This effort investigates threat/target interactions to develop experimental and analytical methodology for separate and cross-domain cyber and electromagnetic threat attack so that assessed vulnerabilities in a multi-domain complex environment can be reduced or eliminated before fielding new networks and network-enabled systems. Experimental and analysis methodologies will be developed to investigate vulnerabilities of specific configurations of complex future networks with multiple communications modalities, advanced deception techniques in the cyber and electromagnetic areas, and advanced Positioning, Navigation, and Timing (PNT) systems.			2.234
FY 2026 Plans: Will develop tools to quantify performance of Army network systems and technologies (e.g. 5G, AI cognitive systems, Quantum-based PNT, UAS and other network technologies); investigate emerging EW threats to characterize degradation of network technology performance in contested and congested environments; investigate threat techniques that target Army networks and will architect emerging threats to use in network analyses and characterization; mature the analytical framework to represent emerging CEMA threats; investigate machine learning techniques to analyze data collected from heterogenous clients on the network for cyber- attacks			
FY 2025 to FY 2026 Increase/Decrease Statement: This is not a new start. FY 2026 funding transferred from PE 0602182A (C3I Applied Research) / Project CN5 (Network Vuln/ Effectiveness Assess Methods (N-VEAM)). FY 2026 funding increase due to revised economic assumptions.			
Accomplishments/Planned Programs Subtotals		-	-
C. Other Program Funding Summary (\$ in Millions) N/A			4.457

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602275A / <i>Electronic Warfare Applied Research</i>	Project (Number/Name) A71 / <i>Network Vuln/Effectiveness Assess Methods (N-VEAM)</i>
C. Other Program Funding Summary (\$ in Millions)		
Remarks		
D. Acquisition Strategy		
N/A		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army **Date:** June 2025

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 2: Applied Research</i>					R-1 Program Element (Number/Name) PE 0602276A / <i>Electronic Warfare Cyber Applied Research</i>							
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
Total Program Element	-	-	-	17.102	-	17.102	-	-	-	-	-	-
A79: <i>Autonomous Cyber Technology</i>	-	-	-	17.102	-	17.102	-	-	-	-	-	-

Note

This is not a new start. Electronic Warfare Cyber Applied Research is a part of the Department of Defense Capability Based (Agile) Funding pilot, which provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology.

This funding is not a new start and is a realignment from:

- (1) Program Element (PE) 0602213A (C3I Applied Cyber) / Project 3CY (Network Access and Effects Technology)
- (2) PE 0602213A (C3I Applied Cyber) / Project CY6 (Autonomous Cyber Technology)

A. Mission Description and Budget Item Justification

This Program Element (PE) investigates and develops architectures, technologies, techniques, components, and tools to enhance Cyber and Electromagnetic Activities (CEMA) for Multi-Domain Joint Operations in tactical environments. These efforts aim to counter the adversary's Command, Control, Computing, Communications, Cyber, Intelligence, Surveillance, and Targeting (C-C5ISR&T) capabilities and plan, target, execute Cyber effects through the employment of non-traditional access and effect vectors against adversarial systems, communication networks, and decision centers to reduce the adversary's ability to execute command and control of its forces. Additionally, these efforts will protect tactical wired and wireless networks against modern cyber-attacks, focusing on configuration, operation, monitoring, data integrity, and defense in bandwidth constrained tactical environments while reducing the operator workload required to conduct these functions.

This PE will investigate key technologies that create windows of opportunity to provide significant operational advantage over adversaries. It will increase unit survivability and maneuverability and enhance the employment of non-kinetic effects in highly contested and congested electromagnetic environments.

Work in this PE complements PE 0603276A (Electronic Warfare Cyber Advance Technology).

The cited research is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army				Date: June 2025	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
2040: Research, Development, Test & Evaluation, Army I BA 2: Applied Research		PE 0602276A I Electronic Warfare Cyber Applied Research			
B. Program Change Summary (\$ in Millions)	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	17.102	-	17.102
Total Adjustments	0.000	0.000	17.102	-	17.102
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	17.102	-	17.102
Change Summary Explanation					
This is not a new start. Electronic Warfare Cyber Applied Research is a part of the Department of Defense Capability Based (Agile) Funding pilot, which provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology. Funding increase in FY 2026 reflects realignment from Program Element (PE) 0602213A (C3I Applied Cyber) / Project 3CY (Network Access and Effects Technology) and CY6 (Autonomous Cyber Technology).					

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602276A / <i>Electronic Warfare Cyber Applied Research</i>				Project (Number/Name) <i>A79 / Autonomous Cyber Technology</i>			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
A79: <i>Autonomous Cyber Technology</i>	-	-	-	17.102	-	17.102	-	-	-	-	-	-
Note This is not a new start and is a realignment from Program Element (PE) 0602213A (C3I Applied Cyber) / Project 3CY (Network Access and Effects Technology) and CY6 (Autonomous Cyber Technology).												
A. Mission Description and Budget Item Justification This project investigates and applies robust cyber security techniques and applications to advanced communications and networking devices, software, algorithms and protocols utilized within wireless tactical networks to protect against nation state level Cyber and Electromagnetic Activities (CEMA) and maintain Warfighter confidence in network information, resources, identities and mission partners by hardening the blue force attack surface. This project investigates RF-enabled cyber approaches to Disrupt, Deny, Degrade, Destroy and Manipulate (D4M) adversary C2ISR systems and capabilities. Furthermore, in full alignment with ARCYBER "reprogrammability" efforts, this project will also focus on establishing new methodologies for the development of EW / OCO effects that are more readily implemented, upgradable and portable across different Army platforms. Work in this project complements Program Element (PE) 0603276A (Electronic Warfare Cyber Advanced Technology) / Project A80 (Autonomous Cyber Advanced Technology). The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy. Work in this project is performed by the Army Research Laboratory (ARL) and Command, Control, Computer, Communications, Cyber, Intelligence, Surveillance, and Reconnaissance (C5ISR) Center.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Predictive Intelligent Networking (PIN) Description: Investigate and develop various design patterns of Network Micro-segmentation to determine the lowest viable level of segmentation for the tactical network. Investigate and develop implementations in support of advanced zero trust concepts. This effort researches methods to enable the tactical network to autonomously identify, learn, predict, and react to changes in network operating conditions and network threats to ensure end-to-end network resiliency against adversarial AI-driven electronic attacks (EA) and cyberattacks. FY 2026 Plans:									-	-	2.577	

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602276A / <i>Electronic Warfare Cyber Applied Research</i>	Project (Number/Name) A79 / <i>Autonomous Cyber Technology</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Will design, develop and conducts experiments with network design principals that can define logical network enclaves to support the dynamic adaptations necessary to enhance security and trust while continuing to provide optimum network traffic flow and services at the tactical level; design and develop suitable predictive algorithms that autonomously identify, learn, and react to changes in network/cyber threats to ensure end-to-end network communications resiliency against adversarial AI-driven cyberattacks; conduct experiments to integrate artificial intelligence/ machine learning (AI/ML) techniques with micro-segmentation solutions to enable dynamic adjustment of micro-segmentation in response to cyber activities to harden and protect tactical networks. FY 2025 to FY 2026 Increase/Decrease Statement: This is not a new start. FY 2026 funding transferred from PE 0602213A (C3I Applied Cyber) / Project CY6 (Autonomous Cyber Technology). Funding decrease reflects planned lifecycle of applied research activities and transition to advanced development efforts.				
Title: RF Enabled Offensive Effects Technology Description: This effort investigates new methodologies for Disrupt, Deny, Degrade, Destroy and Manipulate (D4M) RF enabled cyber effects from Army tactical systems that are in RF proximity to adversary threat C2ISR capabilities. Research also focuses on novel EW technique approaches to keep pace with new threats and provide greater portability across all applicable Army systems. The effort will investigate new methodologies to counter adversary Intelligence Surveillance and Reconnaissance (ISR) capabilities across multiple modalities. FY 2026 Plans: Will research non-traditional access and effect vectors against emerging targets of interest based on joint prioritization with Operational stakeholders; develop new EW technique methodologies that expedite the development of new capabilities and allow for greater portability across different hardware architectures; conduct research leveraging synthetic data enrichment allowing for improved counter ISR model generation and effectiveness. FY 2025 to FY 2026 Increase/Decrease Statement: This is not a new start. FY 2026 funding transferred from PE 0602213A (C3I Applied Cyber) / Project 3CY (Network Access and Effects Technology). Funding decrease represents completion of component design and maturation efforts and movement into less expensive software development.		-	-	10.168
Title: Proactive Cyber Defense Description: This effort designs and characterizes software for the protection of information and networks in wireless tactical environments. The goal is to develop software algorithms that detect and defeat malicious activities of adversaries in bandwidth		-	-	4.357

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602276A / <i>Electronic Warfare Cyber A plied Research</i>	Project (Number/Name) A79 / <i>Autonomous Cyber Technology</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p>and highly resource constrained tactical networks and maintain agile, adaptive cyber maneuver. This research provides automated active defense (e.g., machine learning, anomaly detection, and decision aids) and adversarial resilient techniques to maintain cyber superiority (e.g., improved attack detection, advanced network traffic analysis, and predictive decision aids) against a large attack surface at the edge.</p> <p><i>FY 2026 Plans:</i> Will design and develop adversarial resilient Artificial Intelligence/Machine Learning (AI/ML) methods for cyber defense that will be resistant to poisoning attacks; investigate nested ensemble defenses composed of gradient boosted classifiers that reduce the effects of clean label attacks where the attacker does not control the labeling process; investigate transfer of machine learning methods for network traffic detection between different machine learning environments; investigate novel AI/ML algorithms and methodologies for operations in contested and constrained environments; investigate resilience of various novel network traffic classifiers against poisoning.</p> <p><i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> This is not a new start. FY 2026 funding transferred from PE 0602213A (C3I Applied Cyber) / Project CY6 (Autonomous Cyber Technology). Funding decrease is due to an economic adjustment.</p>			
Accomplishments/Planned Programs Subtotals		-	-
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army **Date:** June 2025

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army I BA 2: Applied Research</i>					R-1 Program Element (Number/Name) PE 0602345A / <i>Unmanned Aerial Systems Launched Effects Applied Research</i>							
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
Total Program Element	-	-	-	18.408	-	18.408	-	-	-	-	-	-
A41: <i>Adv Teaming for Tactical Aviation Operations Tech</i>	-	-	-	11.996	-	11.996	-	-	-	-	-	-
A42: <i>Air Launched Effects Technology</i>	-	-	-	3.677	-	3.677	-	-	-	-	-	-
A43: <i>Aviation Teaming Autonomy Concepts & Technologies</i>	-	-	-	2.735	-	2.735	-	-	-	-	-	-

Note

This is not a new start.

A. Mission Description and Budget Item Justification

This Program Element (PE) conducts uncrewed air vehicle and mission system component design, fabrication, and evaluation to enable unmanned aerial system modernization. Emphasis is on developing aviation platform and mission system technologies to enhance uncrewed air vehicle combat and combat support operations for attack, reconnaissance, air assault, survivability, logistics, and command and control missions. The PE will fund civilian salaries for in-house researchers/scientists and program managers.

Work in this PE contributes to the Army Science and Technology (S&T) air systems portfolio and is fully coordinated with efforts in PE 0603465A (Future Vertical Lift Advanced Technology), 0603043A (Air Platform Advanced Technology), and 0603345A (Unmanned Aerial Systems Launched Effects Advanced Technology Development).

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army				Date: June 2025	
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 2: Applied Research		R-1 Program Element (Number/Name) PE 0602345A / Unmanned Aerial Systems Launched Effects Applied Research			
B. Program Change Summary (\$ in Millions)	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	18.408	-	18.408
Total Adjustments	0.000	0.000	18.408	-	18.408
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	18.408	-	18.408
Change Summary Explanation					
This is not a new start. Unmanned Aerial Systems Launched Effects Applied Research is a part of the Department of Defense Capability Based (Agile) Funding pilot, which provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology. Funding increase in Fiscal Year (FY) 2026 from the previous PB to the current PB reflects realignment from Program Element (PE) 0602148A (Future Verticle Lift Technology) / Project AK9 (Adv Teaming for Tactical Aviation Operations Tech), Project CH2 (Air Launched Effects Technology), and PE 0602183A (Air Platform Applied Research) / Project CL8 (Aviation Teaming Autonomy Concepts & Technologies).					

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025			
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602345A / Unmanned Aerial Systems Launched Effects Applied Research				Project (Number/Name) A41 / Adv Teaming for Tactical Aviation Operations Tech				
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost	
A41: Adv Teaming for Tactical Aviation Operations Tech	-	-	-	11.996	-	11.996	-	-	-	-	-	-	
Note This is not a new start.													
A. Mission Description and Budget Item Justification This Project investigates and develops subsystem and component level technologies that enable advanced teaming behaviors for mixed platform formations in combined arms operations. Primary component technologies to develop are in the areas of resilient autonomy algorithms, team-based communications and situational awareness management, decision aiding for weapons systems engagement, autonomous terrain and collision avoidance, and human autonomy interface design. The cited work is consistent with the Under Secretary of Defense for Research and Engineering Science and Technology focus areas and the Army modernization strategy. Work in this Project is performed by the Aviation & Missile Center (AvMC), and the Command, Control, Communication, Computers, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center.													
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026		
Title: Advanced Teaming Concepts									-	-	6.110		
Description: Investigates and develops subsystem and component level technologies that enable advanced manned and unmanned teaming behaviors for mixed air and ground platform formations in combined arms operations.													
FY 2026 Plans: Will further develop and enhance technologies that enable UAS team-of-teams ecosystem operations in contested, complex urban / fringe and littoral environments with degraded networks, including intra and extra team communications management, tactical navigation, and comprehensive learning-based mission planning with dynamic risk-informed adaptability for prolonged teamed operations in contested environments.													
FY 2025 to FY 2026 Increase/Decrease Statement: This is not a new start. Advanced Teaming Concepts is a part of the Department of Defense Capability Based (Agile) Funding pilot, which provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology. Funding													

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602345A / <i>Unmanned Aerial Systems Launched Effects Applied Research</i>	Project (Number/Name) A41 / <i>Adv Teaming for Tactical Aviation Operations Tech</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
increase reflects realignment from Program Element (PE) 0602148A (Future Verticle Lift Technology) / Project AK9 (Adv Teaming for Tactical Aviation Operations Tech).			
Title: Enhanced Optics for Long Range Targeting Description: This effort will deliver affordable low size, weight, and power (SWaP) electro-optic infrared (EOIR) payload technologies enabling attritable Unmanned Air Systems (UAS) for launched effects and one-way attack munitions. This work enhances effective teaming with multi-modal sensors and modular designs enable government owned optical designs to be integrated into commercial payloads with industry partners ensuring solutions provide Intelligence, Surveillance, and Reconnaissance (ISR) task capability with necessary pixels on target across mission sets. FY 2026 Plans: Will experiment with infrared optics designs and materials to increase range performance and overcome packaging limitations for low SWaP UAS platforms; demonstrate enhanced manned unmanned team mission execution through application of novel sensors; deliver payload components for gimbal integration and technology transition. FY 2025 to FY 2026 Increase/Decrease Statement: This is not a new start. Enhanced Optics for Long Range Targeting is a part of the Department of Defense Capability Based (Agile) Funding pilot, which provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology. Funding increase reflects realignment from Program Element (PE) 0602148A (Future Verticle Lift Technology) / Project AK9 (Adv Teaming for Tactical Aviation Operations Tech).		-	-
			5.886
Accomplishments/Planned Programs Subtotals		-	11.996
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602345A / Unmanned Aerial Systems Launched Effects Applied Research				Project (Number/Name) A42 / Air Launched Effects Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
A42: Air Launched Effects Technology	-	-	-	3.677	-	3.677	-	-	-	-	-	-
Note This is not a new start.												
A. Mission Description and Budget Item Justification This Project utilizes improved analytic modeling to investigate the effects that potential unmanned system capabilities could have on air vehicle design considerations and operational concepts. This Project improves government capability to design and assess novel Unmanned Aircraft System (UAS) concepts. This Project also develops and investigates the ability to launch a UAS from Army manned or unmanned aircraft at tactical altitudes and from manned or unmanned ground platforms and to control the same after launch from nearby air and ground assets, as well as development of the associated payloads (recon, battle damage assessment, targeting, comms, decoy). This Project will assess the enabled capabilities and determine their relevance to current Army Aviation engagement and survivability portfolios. Work in this Project is fully coordinated with Program Element (PE) 0603345A (Unmanned Aerial Systems Launched Effects Advanced Technology Development) / Project A45 (Air Launched Effects Advanced Technology). The cited work is consistent with the Under Secretary of Defense for Research and Engineering Science and Technology focus areas and the Army modernization strategy. Work in this Project is performed by Aviation and Missile Center (AvMC).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Versatile Launched Effects (VLE) Concepts									-	-	3.677	
Description: Conducts configuration trades analysis studies and develops technologies that support air and ground launched effects operations in complex, contested environments including urban / fringe and littoral. Matures individual technologies and design concepts that shape investment for Versatile Air Launched Effects Demonstration and inform the System Specifications for the LE Program of Record.												
FY 2026 Plans: Will develop and conduct analysis of modular air vehicle concepts, including mission systems and payload interfaces, that enable air and ground launched effects operations in long-range littoral and urban-fringe missions.												
FY 2025 to FY 2026 Increase/Decrease Statement:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602345A / Unmanned Aerial Systems Launched Effects Applied Research	Project (Number/Name) A42 / Air Launched Effects Technology		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
This is not a new start. Versatile Launched Effects (VLE) Concepts is a part of the Department of Defense Capability Based (Agile) Funding pilot, which provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology. Funding increase reflects realignment from Program Element (PE) 0602148A (Future Verticle Lift Technology) / Project CH2 (Air Launched Effects Technology).				
Accomplishments/Planned Programs Subtotals		-	-	3.677
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602345A / Unmanned Aerial Systems Launched Effects Applied Research				Project (Number/Name) A43 / Aviation Teaming Autonomy Concepts & Technologies			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
A43: Aviation Teaming Autonomy Concepts & Technologies	-	-	-	2.735	-	2.735	-	-	-	-	-	-
Note This is not a new start.												
A. Mission Description and Budget Item Justification This Project establishes agile research in multi-level simulations, physics-based models, and artificial intelligence/machine learning (AI/ML) algorithms and methods to inform and advance capabilities for heterogeneous advanced teaming concepts to support operations in complex and peer contested environments. This Project focuses on advancing innovations to enable concepts and technology for deep sensing and effects, complex mobility and maneuver for Unmanned Aircraft Systems (UAS) (and small UAS), and adaptive behaviors to optimize formation performance. This Project focuses on agile and adaptable reconfiguration of teams of multiple autonomous assets for strategic maneuvering, targeting, striking, and long-range precision navigation efforts in adversarial environments. Work in this Project is fully coordinated with PE 0602345A (Unmanned Aerial Systems Launched Effects Applied Research) / Project A41 (Adv Teaming for Tactical Aviation Operations Tech). The cited work is consistent with the Under Secretary of Defense for Research and Engineering Science and Technology focus areas and the Army modernization strategy. Work in this Project is performed by Army Research Laboratory (ARL).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Intelligent Unmanned Aerial System Teaming Technologies									-	-	1.339	
Description: Enables the establishment of component technologies to support resilient, multi-modal, survivable Unmanned Aircraft System (UAS) teams that can plan and act on time-scales beyond human capability and have a robust shared understanding of contested and dynamic environments to support effective tactical engagement. Specific topics include 1) novel artificial-intelligence algorithms and methods for adaptive team composition and control, 2) increased team knowledge base and understanding of local and global world models, 3) hierarchical, composable, and adaptive learning methods for increased mission resilience, and 4) understanding interaction and scalability between, amongst, and across heterogeneous team members and the environment.												
FY 2026 Plans:												

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602345A / <i>Unmanned Aerial Systems Launched Effects Applied Research</i>	Project (Number/Name) A43 / <i>Aviation Teaming Autonomy Concepts & Technologies</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p>Will investigate incorporating multiple agents, payloads, and environmental effects into high-fidelity simulation environment to support autonomy and teaming development; explore simulation developed data set to support Artificial Intelligence (AI)-based high-fidelity models for advanced teaming.</p> <p><i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> This is not a new start. Intelligent Unmanned Aerial System Teaming Technologies is a part of the Department of Defense Capability Based (Agile) Funding pilot, which provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology. Funding increase reflects realignment from Program Element (PE) 0602183A (Air Platform Applied Research) / Project CL8 (Aviation Teaming Autonomy Concepts & Technologies).</p>			
<p><i>Title:</i> Intelligent Aerial Teaming Behaviors for Precise Complex Effects</p> <p><i>Description:</i> This effort will develop capabilities to equip Unmanned Aerial System (UAS) platforms with novel range and maneuver capabilities to enable elusive behaviors, endurance (time and distance) to ensure access, and collaborative precision action. This effort will generate deliverables to enable flexible platforms with distributed sense and effect and complex closed loop precision effects. Research will impact the development of lightweight and low-cost platform and payload components and focus on high value technical advances to provide critical capabilities for launched effects and high dynamic UAS maneuverability for long-range missions.</p> <p><i>FY 2026 Plans:</i> Will design and develop experiments focused on reconfigurable teams of autonomous assets performing various targeting tasks; create and assess multi-agent coordinated behaviors towards stimulation and strike scenarios with heterogeneous assets capable of long-range precision navigation.</p> <p><i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> This is not a new start. Intelligent Aerial Teaming Behaviors for Precise Complex Effects is a part of the Department of Defense Capability Based (Agile) Funding pilot, which provides enhanced capabilities by fostering innovation and accelerated deployment of promising technology. Funding increase reflects realignment from Program Element (PE) 0602183A (Air Platform Applied Research) / Project CL8 (Aviation Teaming Autonomy Concepts & Technologies).</p>		-	-
		1.396	
Accomplishments/Planned Programs Subtotals		-	2.735
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602345A / Unmanned Aerial Systems Launched Effects Applied Research	Project (Number/Name) A43 / Aviation Teaming Autonomy Concepts & Technologies

D. Acquisition Strategy N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army **Date:** June 2025

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 2: Applied Research</i>					R-1 Program Element (Number/Name) PE 0602386A / <i>Biotechnology for Materials - Applied Research</i>							
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COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
Total Program Element	-	16.060	11.780	8.209	-	8.209	-	-	-	-	-	-
CP6: <i>Foundational Biotechnology Design and Dev</i>	-	16.060	10.814	7.203	-	7.203	-	-	-	-	-	-
SM1: <i>Scale-Up Microbial Products for Biomanufacturing</i>	-	-	0.966	1.006	-	1.006	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Program Element (PE) investigates, designs, and performs research focused on novel biotechnological methods, techniques, and materials to increase the resiliency of the military supply chain. The Army is responsible for centrally managing funding for Tri-Service Biotechnology for a Resilient Supply Chain (T-BRSC) efforts. T-BRSC leverages bio-industrial manufacturing to ensure critical domestic supply chain resilience for defense needs through domestic production of raw materials and critical products. Efforts under this PE collaborate with sister Services and select allied partners to create a cohesive biotechnology architecture to enable defense needs. Applied research projects investigate and design bio-engineered materials to ensure domestic sourcing for critical supply chain resiliency. This PE designs and validates technologies to enable rapid prototyping and evaluating of bio-engineered and bio-manufactured materials. Also under this PE are efforts determine and validate a digital architecture to secure biotech data and create computer aided design software to support the safe design and enhanced biosecurity of biotechnology products and applications.

Research in this PE is coordinated with PE 0603386A (Biotechnology for Materials - Advanced Research).

The cited research is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.

The FY 2026 request was reduced by \$0.037 million for civilian personnel to optimize the workforce in compliance with Executive Order 14210, "Implementing the President's Department of Government Efficiency Workforce Optimization Initiative."

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army				Date: June 2025	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
2040: Research, Development, Test & Evaluation, Army I BA 2: Applied Research		PE 0602386A I Biotechnology for Materials - Applied Research			
B. Program Change Summary (\$ in Millions)	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Previous President's Budget	16.736	11.780	8.269	-	8.269
Current President's Budget	16.060	11.780	8.209	-	8.209
Total Adjustments	-0.676	0.000	-0.060	-	-0.060
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.608	-			
• Adjustments to Budget Years	-	-	-0.060	-	-0.060
• FFRDC Transfer	-0.068	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025			
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602386A / <i>Biotechnology for Materials - Applied Research</i>				Project (Number/Name) CP6 / <i>Foundational Biotechnology Design and Dev</i>				
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost	
CP6: <i>Foundational Biotechnology Design and Dev</i>	-	16.060	10.814	7.203	-	7.203	-	-	-	-	-	-	
A. Mission Description and Budget Item Justification													
This Project works collaboratively with Joint Service partners to investigate and determine novel biotechnology methods and processes to establish a domestic resilient supply chain for defense needs. Applied research designs and conducts experiments on bio-derived, bio-functionalized, and bio-manufactured materials and biosynthetic precursors. Efforts under this Project investigate and validate models for design of defense applications. Areas of focus may include reclamation or sequestration of rare Earth/critical elements in the defense supply chain and drop-in replacements for currently employed military materials.													
Work in this Project compliments Program Element (PE) 0603386A (Biotechnology for Materials - Advanced Research) / CP7 (Biotechnology Demonstration and Evaluation).													
The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.													
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2024	FY 2025	FY 2026	
Title: Biotechnology Safety by Design for Defense										16.060	10.814	7.203	
Description: This task designs and investigates novel and emerging biotechnologies related to bio-engineered or bio-manufactured materials and their precursors to address vulnerabilities in the critical material supply chain for military needs.													
FY 2025 Plans: Will fund research to determine feasibility of biotechnology use in military munitions, fuel & lubricants to reduce the logistics burden by investigating the point-of-need manufacturing; design and develop biotechnology derived ceramics and composite materials to enhance the capability of DoD systems and structures in hypersonic an/or high temperature environments; research biotechnology materials to increase the signature management capability of military fabrics; continue to exploit biotechnologies to recover rare earth elements (REE) necessary for critical defense components and advanced technologies; continue to mature software pipelines for data ingestion, data homogenization across bioindustrial manufacturing DoD/industry community allowing the interoperability and collaboration within the biotechnology ecosystem.													
FY 2026 Plans: Will continue research to determine feasibility of biotechnology use in military munitions, energetics, fuel and lubricants to reduce the logistics burden, and shaping biomanufacturing by investigating the point-of-need research; design and developing biotechnology derived ceramics and composite materials to enhance the capability of DoD systems and structures in hypersonic and high temperature environments; research biotechnology materials to increase the signature management and fire-retardant													

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602386A / <i>Biotechnology for Materials - Applied Research</i>	Project (Number/Name) CP6 / <i>Foundational Biotechnology Design and Dev</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
capability of military fabrics; continue to exploit biotechnologies to recover rare earth elements necessary for critical defense components and advanced technologies; continue to mature software pipelines for Bioindustrial manufacturing data ingestion and data homogenization amongst DoD and industry community allowing the interoperability and collaboration within the biotechnology ecosystem. <i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> Funding decrease reflects planned maturation of workflows with work continuing in PE 0603386A (Biotechnology for Materials - Advanced Research) / Project CP7 (Biotechnology Demonstration and Evaluation) and begin work in PE 0604386A (Biotechnology for Materials - Dem/Val) / Project CQ9 (Biotechnology for Materials - Dem/Val).			
Accomplishments/Planned Programs Subtotals		16.060	10.814
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602386A / Biotechnology for Materials - Applied Research				Project (Number/Name) SM1 / Scale-Up Microbial Products for Biomanufacturing			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
SM1: Scale-Up Microbial Products for Biomanufacturing	-	-	0.966	1.006	-	1.006	-	-	-	-	-	-
A. Mission Description and Budget Item Justification												
This project develops biomanufacturing capabilities of mission-critical materials for military use. This project enables the Army to achieve Multi-Domain Operations by securing the supply chain and bridging the gap between laboratory-scale material production and large-scale manufacturing for mission-critical materials.												
This cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.												
Work in this Project is performed by the Chemical Biological Center (CBC).												
Project SM1/Scale-Up Microbial Products for Biomanufacturing is a new start in FY 2025 within PE 0602386A / Biotechnology for Materials - Applied Research.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2024	FY 2025	FY 2026	
Title: Scale-Up Microbial Products for Bio Manufacturing of Mission Critical Materials									-	0.966	1.006	
Description: This effort investigates the methodologies for the generation of chemicals and/or proteins for use by other Department of Defense research and development organizations. This effort delivers materials from the laboratory-scale (less than 100 gram) to manufacturing prototype levels (between 100 gram and 1 kilogram) as well as large-scale production (greater than 1 kilogram) of mission-critical materials for military use. Products include foods, fabrics, fuels, firepower, resins, coatings, adhesives, and lubricants.												
FY 2025 Plans:												
Will develop and deliver 100-gram to multi-kilogram purified materials via biomanufacturing that will be ready for incorporation into existing prototypes and programs either as drop-in replacements or new solutions.												
FY 2026 Plans:												
Will continue to develop and deliver 100-gram to multi-kilogram purified materials via biomanufacturing that will be ready for incorporation into existing prototypes and programs either as drop-in replacements or new solutions.												
FY 2025 to FY 2026 Increase/Decrease Statement:												
Increase in FY 2026 funding from the previous PB to the current PB due to revised economic assumptions.												
Accomplishments/Planned Programs Subtotals									-	0.966	1.006	

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602386A / <i>Biotechnology for Materials</i> - <i>Applied Research</i>	Project (Number/Name) SM1 / <i>Scale-Up Microbial Products for</i> <i>Biomanufacturing</i>
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
D. Acquisition Strategy N/A		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army	Date: June 2025
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Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 2: Applied Research</i>					R-1 Program Element (Number/Name) PE 0602785A / <i>Manpower/Personnel/Training Technology</i>							
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
Total Program Element	-	19.667	19.795	17.191	-	17.191	-	-	-	-	-	-
790: <i>Personnel Performance & Training Technology</i>	-	19.667	19.795	17.191	-	17.191	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Program Element (PE) designs and validates applied behavioral and social science research to enhance the Soldier Lifecycle (e.g., selection, assignment, training, and leader development) and human relations (e.g., unit cohesion). This PE develops new personnel measures and methods that more fully assess potential and predict performance, behavior, attitudes, and resilience. These technologies also provide innovative and effective Talent Management methods to optimize individual and team performance to ensure the Army can meet mission requirements in uncertain and complex environments. This PE develops new performance measures and metrics for individuals and units, designs innovative training methods, and conducts scientific assessments to inform Human Capital policy and programs. Research in this PE will result in effective non-materiel solutions to help the Army adjust to changes in force size and structure, a variety of mission demands and contexts, challenges in human relations, and budgetary constraints.

Research in this PE complements PE 0603007A (Manpower, Personnel and Training Advanced Technology).

The cited research is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas, the Army Vision, the Army's Talent Management Strategy, and the Army Modernization Strategy.

Research is performed by the Army Research Institute (ARI) for the Behavioral and Social Sciences at Fort Belvoir, VA.

The FY 2026 request was reduced by \$0.14 million for Advisory and Assistance Services to promote efficiencies and advance the policies of the Administration in alignment with Executive Order 14222, "Implementing the President's Department of Government Efficiency Cost Efficiency Initiative."

The FY 2026 request was reduced by \$0.118 million for civilian personnel to optimize the workforce in compliance with Executive Order 14210, "Implementing the President's Department of Government Efficiency Workforce Optimization Initiative."

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army				Date: June 2025	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
2040: Research, Development, Test & Evaluation, Army I BA 2: Applied Research		PE 0602785A I Manpower/Personnel/Training Technology			
B. Program Change Summary (\$ in Millions)	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Previous President's Budget	19.969	19.795	19.426	-	19.426
Current President's Budget	19.667	19.795	17.191	-	17.191
Total Adjustments	-0.302	0.000	-2.235	-	-2.235
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.302	-			
• Adjustments to Budget Years	-	-	-2.235	-	-2.235
Change Summary Explanation					
Funding increase to enable acceleration of automated test creation methods using natural language technologies.					

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602785A / Manpower/Personnel/Training Technology				Project (Number/Name) 790 / Personnel Performance & Training Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
790: Personnel Performance & Training Technology	-	19.667	19.795	17.191	-	17.191	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Project conducts applied behavioral and social science research to enhance the Soldier Lifecycle (e.g., selection, assignment, training, leader development) and human relations (e.g., unit cohesion). This Project develops new personnel measures and methods that more fully assess potential and predict performance, behavior, attitudes, and resilience. These technologies also provide innovative and effective Talent Management methods to optimize individual and team performance to ensure the Army can meet mission requirements in uncertain and complex environments. This Project develops new performance measures and metrics for individuals and units, designs innovative training methods, and conducts scientific assessments to inform Human Capital policy and programs. Research in this Project will result in effective non-materiel solutions to help the Army adjust to changes in force size and structure, a variety of mission demands and contexts, challenges in human relations, and budgetary constraints.

Work in this Project complements PE 0603007A (Personnel Performance & Training).

The cited research is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas, the Army Vision, the Army People Strategy, the Army's Talent Management Strategy, Army Human Capital Strategy, and the Army Modernization Strategy.

Research is performed by the United States Army Research Institute (ARI) for the Behavioral and Social Sciences in Fort Belvoir, VA.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2024	FY 2025	FY 2026
Title: Talent Assessment and Development	19.667	19.795	17.191
Description: This effort conducts applied research that provides the Army with innovative approaches to personnel assessment, improved prediction and modeling of personnel outcomes (e.g., attrition, retention) and an improved capability to improve prediction and modeling (e.g., potential performance, behaviors, attitudes, and resilience of Soldiers). Conducts applied research to provide the Army with effective leader assessment and development methods to measure, develop, and sustain individual/ leader competencies and performance across the Soldier life cycle. Conducts research to create scientifically valid models, tools and techniques for team assignment and development to optimize team effectiveness in-garrison and future operational environments.			
FY 2025 Plans: Will develop proof-of-concept in-service assessments to improve enlisted personnel assignment; will develop predictive models of career trajectories and retention; will design innovative methods to generate job analysis content; will develop leader competency			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025			
Appropriation/Budget Activity 2040 / 2		R-1 Program Element (Number/Name) PE 0602785A / Manpower/Personnel/Training Technology	Project (Number/Name) 790 / Personnel Performance & Training Technology		
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2024	FY 2025	FY 2026
assessments for junior officers and senior NCOs; will analyze composition frameworks for team-based personnel assignment; will develop measures for small unit performance. FY 2026 Plans: Will evaluate in-service assessments to improve enlisted personnel assignment; will conduct research to identify leader attributes needed for 2040; will continue to develop predictive models of career trajectories and retention; will develop methods for automatically generating items for assessments of multiple talent attributes; will progress leader competency assessments; will assess composition frameworks for team-based personnel assignment; will develop unobtrusive measures for small unit performance. FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects a realignment of funding from 633007/792 to enable acceleration of automated test creation methods using natural language technologies.					
Accomplishments/Planned Programs Subtotals			19.667	19.795	17.191
C. Other Program Funding Summary (\$ in Millions)					
N/A					
Remarks					
D. Acquisition Strategy					
N/A					

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army	Date: June 2025
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Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 2: Applied Research</i>	R-1 Program Element (Number/Name) PE 0602787A / <i>Medical Technology</i>											
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
Total Program Element	-	139.515	68.481	143.293	-	143.293	-	-	-	-	-	-
BS7: <i>Medical Technology (CA)</i>	-	75.234	-	-	-	-	-	-	-	-	-	-
MK4: <i>Warfighter Health Applied Rsch Technology</i>	-	62.391	67.250	141.755	-	141.755	-	-	-	-	-	-
MM4: <i>Cbt Casualty Care Applied Rsch Technology</i>	-	1.770	1.112	1.538	-	1.538	-	-	-	-	-	-
MM6: <i>Medical Technologies to Support Dispersed Ops Tech</i>	-	0.120	0.119	-	-	-	-	-	-	-	-	-

Note

In FY 2026, funds are realigned within PE 0602787A / Medical Technology from Project MM6 / Medical Technologies to Support Dispersed Ops Tech to Project MM4 / Cbt Casualty Care Applied Rsch Technology.

A. Mission Description and Budget Item Justification

This Program Element (PE) supports application of knowledge gained through basic research to optimize drugs, medical devices, medical practices/procedures, and other preventive measures to include injury predictive strategies and tools essential to the protection and sustainment of Warfighter health and performance. Projects are coordinated with the Defense Health Agency.

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

All medical applied research is conducted in compliance with Food and Drug Administration (FDA) or Environmental Protection Agency (EPA) regulations. The FDA requires thorough testing in animals (preclinical testing) to ensure safety and, where possible, effectiveness prior to evaluation in controlled human clinical trials (upon transition to Advanced Technology Development). This PE focuses on research and refinement of technologies such as product formulation and purification and laboratory test refinement with the aim of identifying candidate solutions. This work often involves testing in animal models. The EPA also requires thorough testing of products, such as sterilants, disinfectants, repellents, and insecticides to ensure the environment is adequately protected before these products are licensed for use. Program refinement and execution is externally peer-reviewed and fully coordinated with all Services as well as other agencies through the Joint Technology Coordinating Groups of the Biomedical Community of Interest. The Biomedical Community of Interest, formed under the authority of the Assistant Secretary of Defense for Research and Engineering, serves to facilitate coordination and prevent unnecessary duplication of effort within the Department of Defense (DoD) biomedical research community, as well as their associated enabling research areas.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army				Date: June 2025		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army I BA 2: Applied Research		R-1 Program Element (Number/Name) PE 0602787A I Medical Technology				
The FY 2026 request was reduced by \$2.082 million for Advisory and Assistance Services to promote efficiencies and advance the policies of the Administration in alignment with Executive Order 14222, "Implementing the President's Department of Government Efficiency Cost Efficiency Initiative."						
The FY 2026 request was reduced by \$0.116 million for civilian personnel to optimize the workforce in compliance with Executive Order 14210, "Implementing the President's Department of Government Efficiency Workforce Optimization Initiative."						
B. Program Change Summary (\$ in Millions)		FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total
Previous President's Budget		66.266	68.481	19.897	-	19.897
Current President's Budget		139.515	68.481	143.293	-	143.293
Total Adjustments		73.249	0.000	123.396	-	123.396
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		75.234	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-	-			
• SBIR/STTR Transfer		-1.985	-			
• Adjustments to Budget Years		-	-	123.396	-	123.396
Congressional Add Details (\$ in Millions, and Includes General Reductions)						
Project: BS7: Medical Technology (CA)						
Congressional Add: Human performance optimization						
Congressional Add: Nutrition impacts on military health and performance						
Congressional Add: Bioelectronic device program						
Congressional Add: Biomaterials for combat wound care						
Congressional Add: Biomedical research for the improvement of cartilage healing						
Congressional Add: Development of combat-ready antimicrobial hemostatic wound dressing						
Congressional Add: Multiplexed assay for immune responses to infectious diseases						
Congressional Add: Musculoskeletal health and performance research						
Congressional Add: Nanomaterials for bone regeneration						
Congressional Add: Trauma immunology						
Congressional Add: Physiological study of female warfighters to improve training						

FY 2024	FY 2025
15.000	-
5.000	-
5.000	-
3.000	-
1.000	-
5.000	-
2.000	-
2.500	-
5.000	-
10.000	-
15.000	-

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Exhibit R-2, RDT&E Budget Item Justification: PB 2026 Army		Date: June 2025	
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army I BA 2: Applied Research		R-1 Program Element (Number/Name) PE 0602787A I Medical Technology	
Congressional Add Details (\$ in Millions, and Includes General Reductions)		FY 2024	FY 2025
Congressional Add: RNA therapeutics for infectious disease threats		4.000	-
Congressional Add: Treatment research for osseointegrated implants		2.734	-
Congressional Add Subtotals for Project: BS7		75.234	-
Congressional Add Totals for all Projects		75.234	-
Change Summary Explanation Funding increase in FY26 from the previous PB is to support additional research in the area of Energy Field Biological Effects and Mechanisms.			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602787A / Medical Technology				Project (Number/Name) BS7 / Medical Technology (CA)			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
BS7: Medical Technology (CA)	-	75.234	-	-	-	-	-	-	-	-	-	-
Note Congressional Interest Item funding provided for Medical Technology.												
A. Mission Description and Budget Item Justification Congressional Interest Item funding provided for Medical Technology. The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2024	FY 2025			
Congressional Add: Human performance optimization								15.000	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for Human performance optimization												
Congressional Add: Nutrition impacts on military health and performance								5.000	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for Nutrition impacts on military health and performance												
Congressional Add: Bioelectronic device program								5.000	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for Bioelectronic device program												
Congressional Add: Biomaterials for combat wound care								3.000	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for Biomaterials for combat wound care												
Congressional Add: Biomedical research for the improvement of cartilage healing								1.000	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for Biomedical research for the improvement of cartilage healing												
Congressional Add: Development of combat-ready antimicrobial hemostatic wound dressing								5.000	-			
FY 2024 Accomplishments: Congressional Interest Item funding provided for Development of combat-ready antimicrobial hemostatic wound dressing												
Congressional Add: Multiplexed assay for immune responses to infectious diseases								2.000	-			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025																																													
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602787A / Medical Technology	Project (Number/Name) BS7 / Medical Technology (CA)																																													
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Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602787A / Medical Technology				Project (Number/Name) MK4 / Warfigher Health Applied Rsch Technology				
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost	
MK4: Warfigher Health Applied Rsch Technology	-	62.391	67.250	141.755	-	141.755	-	-	-	-	-	-	

A. Mission Description and Budget Item Justification

This Project conducts research to prevent and protect Warfighters from training and operational injuries; refine mechanisms for detection of physiological (human physical and biochemical function) and psychological (mental) health problems; reduce the effects of trauma and promote rapid recovery from acute stress in far forward operational environments; evaluate hazards to head, neck, spine, eyes, and ears; set the standards for rapid return to duty; and determine new methods to sustain and enhance performance and readiness across the operational spectrum. This research provides medical information important to the design and operational use of military systems, and this work forms the basis for behavioral, training, and nutritional interventions.

The four main areas of study are:

- (1) Physiological Health and Performance
- (2) Environmental Health and Protection
- (3) Injury Prevention and Reduction
- (4) Psychological Health and Resilience

Research in this Project is coordinated with and complimentary to work done in Program Element (PE) 0602143A (Soldier Lethality Technology) and PE 0603118A (Soldier Lethality Advanced Technology).

The cited research is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army modernization strategy.

Work in this Project is performed by the United States Army Medical Research and Development Command (USAMRDC) and Army Research Laboratory (ARL).

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2024	FY 2025	FY 2026
Title: Operational Risk Planning Tools for Battlefield Environmental Threats	1.239	1.820	1.428
Description: This effort investigates and incorporates mechanisms for health risks of heat, cold, and altitude injuries to develop guidelines and advise countermeasure development for operations in extreme environments. Investigates health risks from industrial chemicals and pollutants found in dense urban and subterranean (SubT) environments in which Soldiers operate.			
FY 2025 Plans: Determine the influences of long-acting reversible contraceptives on physiological responses to extreme environments in			

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2024	FY 2025	FY 2026
women. Provide knowledge to optimize Soldier performance in Arctic Environments. Determine the influence of race and dietary supplementation on skin perfusion in the cold.					
FY 2026 Plans: Evaluate translational countermeasures to mitigate medical risk and augment performance for Soldier operations in extreme environments.					
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects completion of research and the delivery of knowledge product on race and dietary supplementation on skin perfusion in the cold to the 11th Airborne Division Surgeon.					
Title: Prevention of Soldier Performance Degradation in Extreme Environments			3.231	3.413	2.967
Description: This effort develops and matures non-invasive technologies, decision-aid tools, and other countermeasure to prevent and enhance Soldier performance in extreme environments of heat, cold, altitude, dense urban and SubT environments. This effort includes validation of approved pharmaceuticals as well as provides improved sensors and predictive algorithms models.					
FY 2025 Plans: Determine physiological and biochemical markers of exertional heat stroke (EHS) and non -EHS responses to high-risk events. Identify genomic and transcriptomic signature for predicting exertional heat stroke/illness. Determine sex differences in the physiological and metabolic response to strenuous military training in the cold. Develop an early warning hypoxia monitoring tool for use at high altitude.					
FY 2026 Plans: Evaluate interventions (therapeutics and supplements) for high altitude & cold.					
FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects planned milestones for physiological and biochemical indicators of heat illness as well as countermeasures for altitude sickness.					
Title: Leader Decision Aid to Manage Blast Head Injury in All Settings			1.101	1.162	0.838
Description: Develop injury risk assessment/guidance/criteria that will inform the development of technologies (i.e., personal protection equipment, vehicles) and strategies (i.e., health hazard assessments) to protect the Soldier against current and emerging operational threats (i.e., blast, blunt, ballistic, and accelerative).					
FY 2025 Plans:					

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Enhance and optimize methodology for head injury risk assessment. FY 2026 Plans: Develop brain injury thresholds and acute blast exposure limits to mitigate Warfighters' performance degradation in all military operational environments against firing next generation weapon systems. Determine the repetitive head impact exposure profile in military training courses and correlate repetitive head impact exposure profile and neurophysiological effects. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects delay in research linking non-injurious human data to non-human primate data to predict inertial traumatic brain injury in Soldiers and termination of final year of study on the brain health effects of repeated low-level head impacts.				
Title: Physical Fitness Standards to Prevent Musculoskeletal Injuries Description: Develops validated standards and strategies to optimize Soldier readiness and performance through mitigation of musculoskeletal injury (MSKI), facilitate quick return to combat effectiveness after MSKI, and decrease risk of re-injury once cleared to return to duty. FY 2025 Plans: Investigate biomechanical differences during the ACFT deadlift; continue to determine risk factors for re-injury following a musculoskeletal injury to provide recommendations for preventing subsequent injuries. FY 2026 Plans: Field studies and research that aim to refine physical fitness-based musculoskeletal injury risk mitigation interventions and/or programs; mitigate short-term, long-term, and/or cumulative effects of risk factors for musculoskeletal injury in Soldiers. FY 2025 to FY 2026 Increase/Decrease Statement: Funding increase reflects defining of additional risk factors related to mitigation of MSKI.		1.220	0.954	1.134
Title: Leader Tools to Reduce Musculoskeletal Injury In All Settings Description: Enhances the Army's understanding of the physiological mechanisms underlying musculoskeletal injuries and identifies countermeasures to mitigate injury risk to reduce musculoskeletal injuries in new recruits, thereby directly improving readiness and lethality of the force. FY 2025 Plans:		2.025	2.827	2.283

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Quantify the role of physiological factors, such as fiber type and metabolic elements, contributing to the development of muscle fatigue and decreased performance and risk and mitigation interventions; continue to determine the extent to which sleep extension reduces musculoskeletal injury; continue to identify non-physical factors contributing to injury, and potential interventions to reduce those factors' influence. FY 2026 Plans: Continue efforts identifying recommendations to assist in the prevention and rehabilitation of MSKI; provide guidance to impact potential policy changes on supplements to mitigate bone stress injuries. FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects planned lifecycle of this effort.				
Title: Forward Neuro-Muscular Skeletal Injury Assessment Description: Focus on developing portable imaging technologies to identify soft tissue musculoskeletal injury severity in the field and generate capabilities to guide musculoskeletal injury management to inform appropriate evacuation vs. return to duty (RTD) decisions.		0.288	-	-
Title: Biomedical Performance Enhancement Description: This effort evaluates strategies and technologies that enhance Soldier physical and mental performance in multi-Domain operations. Additional efforts concentrate on characterization of physiological and genetic factors that contribute to physiological resilience to military stressors. FY 2025 Plans: Initiate investigation of machine learning and artificial intelligence analysis to predict individual Soldier and echelon-based medical readiness and impact on physical and mental performance. FY 2026 Plans: Will continue conducting research on analysis of effects of transcranial electrical stimulation-boosted daytime sleep on aviators' flight performance and cognitive performance. Continued research on analysis of Soldier physiology, performance and readiness with metabolic biomarkers, machine learning and artificial intelligence to inform prediction of military performance and medical readiness under repeated operational stress. FY 2025 to FY 2026 Increase/Decrease Statement:		4.862	5.990	3.989

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025	FY 2026
Funding decrease reflects reduction to planned study of transcranial electrical stimulation on sleep and flight performance and completion of existing work related to dismounted Soldier neurostimulation.				
<p>Title: Expeditionary Force Nutrition to Improve Performance</p> <p>Description: Characterizes and refines field fueling and garrison practices to sustain Medical readiness, military performance and recovery from military operations. Evaluates combat ration components to sustain Medical Readiness and performance in deployed, disaggregated and dispersed operations.</p> <p>FY 2025 Plans: Inform the development of targeted nutritional countermeasures for mitigating MSKI-mediated atrophy and accelerate recovery.</p> <p>FY 2026 Plans: Will continue the development of targeted nutritional countermeasures for mitigating MSKI-mediated atrophy to inform recovery.</p> <p>Will also initiate studies to optimize fiber content of military rations to sustain readiness and performance, while reducing the likelihood of unwanted side effects.</p> <p>FY 2025 to FY 2026 Increase/Decrease Statement: Funding decrease reflects planned continuation of this effort.</p>		1.675	1.484	1.126
<p>Title: Energy Field Biological Effects and Mechanisms</p> <p>Description: Investigate the area of emerging directed energy threat mechanisms and biological effects. Conduct research to support the Department of Defense and US Government's threat mitigation strategy.</p> <p>FY 2025 Plans: Will establish comprehensive understanding of biophysical mechanisms (cellular to system level) of adverse bioeffects discovered in prior years; perform characterization of toxicity for new threat mechanisms prioritized from modeling and simulation and intelligence community inputs; continue thorough biophysical theoretical and computational analyses on identified threat mechanisms (acoustic and electromagnetic); establish high-throughput biological effects assessment platforms to accelerate threat characterization; mature threat proxy energy field source technologies for laboratory testing including high frequencies; develop integrated multi-scale (molecular to organismal) modeling and simulation techniques for enhanced biophysical understanding; integrate the component technologies necessary to complete laboratory research identified in FY24; derive and start the validation of methods to optimize directed energy coupling, penetration, and absorption in surrogate structures and at relevant protocol levels; investigate electromagnetic bioeffects; validate directed energy biological effect modeling and simulation tools based on laboratory results; conduct research to compare biological effects theories, models and laboratory data against real world data; identify pre-clinical diagnostics methods (imaging, functional testing, biomarkers) for detecting exposure</p>		46.750	49.600	127.990

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
to pathological energy fields; transition information and parameters related to validated energy field threat sources to the DoD community for medical and materiel (sensors/detectors, shielding material) countermeasure development; continue to collaborate with the intelligence community to drive research objectives, support threat assessments, transition bioeffects data, and mitigate technological surprise; continue to transition data on biological mechanisms and effects to DoD community to support research and development efforts for directed energy detection and protection as well as induced injury prevention and treatment.			
FY 2026 Plans: Will expand high-throughput biological effects assessment platforms at multiple scales to accelerate threat characterization; continue building on research within this program and accelerate efforts towards a detailed understanding of biophysical mechanisms (cellular to system level) of adverse bioeffects discovered in prior years; expand efforts studying biophysical theoretical and computational analyses on identified threat mechanisms; continue research on previously developed integrated multi-scale (molecular to organismal) modeling and simulation techniques for enhanced biophysical understanding; assess and document progress and discoveries through the investigation of electromagnetic bioeffects; investigate multiple next generation energy field source technologies for laboratory testing; compare multiple next generation energy field source technologies as components in laboratory experiments to modeling and simulation results; continue to validate expanded efforts in directed energy biological effect modeling and simulation tools based on laboratory results; characterize multiple next generation energy field source technologies as components in outdoor environment; integrate the component technologies necessary to complete laboratory research identified in FY 2025; conduct research in the theory of energy penetration, absorption, coupling through physical structures to identify new physical mechanisms and parameters of interest; evaluate results and execute the validated methods to optimize directed energy coupling, penetration, and absorption in multiple surrogate structures and at relevant protocol levels; continue and expand research to compare biological effects theories, models and laboratory data against real world data; investigate pre-clinical diagnostics methods (imaging, functional testing, biomarkers) for detecting exposure to pathological energy fields; continue to transition information and parameters related to validated energy field threat sources to the DoD community for medical and materiel (sensors/detectors, shielding material) countermeasure development; continue to collaborate with the intelligence community to drive research objectives, support threat assessments, and mitigate technological surprise; continue to transition data on biological mechanisms and effects to DoD community to support research and development efforts for directed energy detection and protection as well as induced injury prevention and treatment.			
FY 2025 to FY 2026 Increase/Decrease Statement: Funding increased to support additional research in the area of Energy Field Biological Effects and Mechanisms.			
Accomplishments/Planned Programs Subtotals		62.391	67.250
			141.755
C. Other Program Funding Summary (\$ in Millions)			
N/A			

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C. Other Program Funding Summary (\$ in Millions)		
Remarks		
D. Acquisition Strategy		
N/A		

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Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602787A / Medical Technology				Project (Number/Name) MM4 / Cbt Casualty Care Applied Rsch Technology			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
MM4: Cbt Casualty Care Applied Rsch Technology	-	1.770	1.112	1.538	-	1.538	-	-	-	-	-	-

Note

In FY 2026, funds are realigned within PE 0602787A / Medical Technology from Project MM6 / Medical Technologies to Support Dispersed Ops Tech to Project MM4 / Cbt Casualty Care Applied Rsch Technology.

A. Mission Description and Budget Item Justification

This Project refines and assesses concepts, techniques, and materiel that improve survivability and treatment outcomes for Warfighters wounded during combat operations and treated under austere field conditions, including prolonged field care, and during medical evacuation, and maintains laboratory capability to perform these functions. Combat casualty care research addresses control of severe bleeding; resuscitation and stabilization; advanced automated life support systems suitable for use in forward areas, treatment of severe orthopedic injuries, treatment of severe burns, and combat-related brain injury.

Promising efforts identified in this Project are further matured under Program Element (PE) 0603002A (Medical Advanced Technology).

The cited research is consistent with the Under Secretary of Defense (Research and Engineering) science and technology focus areas and the Army Modernization Strategy.

Research in this Project is performed by the United States Army Medical Research and Development Command (USAMRDC), Fort Detrick, MD.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2024	FY 2025	FY 2026
Title: Future En Route Casualty Care Sustainment System Cap Set	1.770	1.112	1.538
Description: This effort performs applied research to support development of technologies that will increase capability and capacity to provide combat casualty care from point of injury to final point of care.			
FY 2025 Plans: Evaluate new exoskeleton technologies designed to reduce the rate of acute or chronic injury experienced by litter bearers and dramatically improve the speed and distance of extended litter transport. Assess the benefit on patient outcome of providing tier 2 responder training to nonmedical MEDEVAC crewmembers. Continue evaluation of patient-specific medical device alarms used during multi-patient helicopter medical evacuation scenarios. Completion of a final technical report detailing positive findings			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army		Date: June 2025	
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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
<p>from operational effectiveness, performance, and biomechanics comparisons of unassisted and assistive devices utilized during several dismounted field transport scenarios.</p> <p><i>FY 2026 Plans:</i> Continue to evaluate efficacy of new exoskeleton technologies to reduce rate of injury experienced by litter bearers and dramatically improve the speed and distance of extended litter transport. Continue study of patient-specific in-helmet medical device alarms to determine reaction time and patient outcome during multi-patient medical evacuation scenarios. Continue studying the benefit on patient outcome of providing tier 2 responder training to nonmedical MEDEVAC crewmembers. Evaluate the effect of sleep deprivation on medical provider performance in the prolonged care environment; evaluate efficacy of pharmaceutical performance sustainment methods, previously approved for aircrew (e.g., modafinil), at maintaining flight medic performance during a simulated MEDEVAC mission.</p> <p><i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> Funding increase reflects realignment of funds from Project MM6 / Medical Technologies to Support Dispersed Ops Tech to Project MM4 / Cbt Casualty Care Applied Rsch Technology to further support development of technologies on providing combat casualty care.</p>			
Accomplishments/Planned Programs Subtotals		1.770	1.112
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2026 Army										Date: June 2025		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602787A / Medical Technology				Project (Number/Name) MM6 / Medical Technologies to Support Dispersed Ops Tech			
COST (\$ in Millions)	Prior Years	FY 2024	FY 2025	FY 2026 Base	FY 2026 OOC	FY 2026 Total	FY 2027	FY 2028	FY 2029	FY 2030	Cost To Complete	Total Cost
MM6: Medical Technologies to Support Dispersed Ops Tech	-	0.120	0.119	-	-	-	-	-	-	-	-	-

Note

In FY 2026, funds are realigned within PE 0602787A / Medical Technology from Project MM6 / Medical Technologies to Support Dispersed Ops Tech to Project MM4 / Cbt Casualty Care Applied Rsch Technology.

A. Mission Description and Budget Item Justification

This Project supports applied research in two task areas: 1) Medical Robotic and Autonomous Systems (Med-RAS) - will a) leverage emerging technologies in biomedical engineering, robotics, autonomy, unmanned systems, and assured position navigation and timing, to improve capabilities and expand capacity to deliver prolonged care, perform evacuation, delivery emergency resupply of medical material supplies (Class VIII), such as blood products, by ground or air, in dispersed and Multi-Domain Operations and b) establish medical performance criteria to ensure Soldiers are able to effectively perform manned-unmanned teaming tasks; and, 2) Virtual Health - will leverage emerging technologies in information science, artificial intelligence, telecommunications network engineering, and cyber security to enable prolonged care, remote telemonitoring, automated decision support, and telementoring between providers in Role of Care 3 and 4 to patients in Role of Care 1 and 2. Promising work in this Project will be further matured in PE 0603002A (Medical Advanced Technology) / Project MM7 (Enabling Med Cap to Support Dispersed OPS Adv Tech).

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy. Work in this Project is performed by the United States Army Medical Research and Development Command (USAMRDC), Fort Detrick, MD.

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

	FY 2024	FY 2025	FY 2026
Title: Medical Robotic and Autonomous Systems	0.120	0.119	-
Description: Research, design, and validate autonomous and unmanned capabilities to deliver high quality combat casualty care in dispersed operations with limited or absent medical care personnel, and future medical robotic systems capable of providing autonomous combat casualty care while optimizing the medical logistic footprint in far-forward and dispersed geographic environments in support of the Army Multi-Domain Operations (MDO) concept and the Army Force 2025 and Beyond vision documents.			
FY 2025 Plans: Utilizing selected en route care technologies to provide patient management during UAS (Unmanned Aerial Systems) missions, will continue design validation for integration of autonomous critical casualty care and management systems with unmanned aerial			

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2024	FY 2025
system platforms. Will advance interoperable data systems and conduct ground-based and in-flight testing. Will integrate decision support to aid ground personnel preparing for UAS patient transport. <i>FY 2025 to FY 2026 Increase/Decrease Statement:</i> Funding decrease reflects realignment of funds from Project MM6 / Medical Technologies to Support Dispersed Ops Tech to Project MM4 / Cbt Casualty Care Applied Rsch Technology to further support the "Future En Route Casualty Care Sustainment System Cap Set" effort.			
Accomplishments/Planned Programs Subtotals		0.120	0.119
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			