Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army											Date: March 2024	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 3: *Advanced Technology Development (ATD)*					R-1 Program Element (Number/Name) PE 0603040A *I Artificial Intelligence and Machine Learning Advanced Technologies*							
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
Total Program Element	-	6.162	13.187	18.263	-	18.263	16.763	17.376	19.159	19.316	0.000	110.226
CL1: *AI Enhanced Intel Operations Advanced Technologies*	-	1.372	1.359	2.261	-	2.261	2.164	2.204	4.008	4.008	0.000	17.376
CL6: *ATR Using Multiple Cooperative Sensors Adv Tech*	-	1.814	4.909	8.740	-	8.740	7.386	7.394	7.464	7.549	0.000	45.256
CN6: *Predictive Maintenance Advanced Technology*	-	2.227	4.117	4.139	-	4.139	4.086	4.070	4.185	4.227	0.000	27.051
DA7: *AI-Enabled Command and Coordination Adv Tech*	-	0.749	1.396	1.157	-	1.157	1.159	1.664	1.417	1.431	0.000	8.973
DE9: *AI Development Environment Advanced Technology*	-	-	1.406	1.966	-	1.966	1.968	2.044	2.085	2.101	0.000	11.570

A. Mission Description and Budget Item Justification

This Program Element (PE) will mature and demonstrate advanced technologies using artificial intelligence (AI) and machine learning (ML) to improve target recognition/ detection using multiple cooperative autonomous sensors, leader decision-making, and replication of tactical behaviors to enable autonomous capabilities for maneuver, predictive maintenance, talent management, Intel support for Operations, network and cybersecurity and medical support. The Army's Artificial Intelligence Integration Center (AI2C) will provide strategic guidance and coordination of these advanced research efforts in AI/ML across the Army Modernization enterprise.

Research in this PE contributes to the Army Science and Technology (S&T) portfolio and is fully coordinated with efforts in PE 0601601A (Artificial Intelligence and Machine Learning Basic Research) and PE 0602180A (Artificial Intelligence and Machine Learning 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).

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army					Date: March 2024
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 3: *Advanced Technology Development (ATD)*			R-1 Program Element (Number/Name) PE 0603040A *I Artificial Intelligence and Machine Learning Advanced Technologies*		
B. Program Change Summary ($ in Millions)	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**
Previous President's Budget	6.395	13.187	14.412	-	14.412
Current President's Budget	6.162	13.187	18.263	-	18.263
Total Adjustments	-0.233	0.000	3.851	-	3.851
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.001	-			
• SBIR/STTR Transfer	-0.232	-			
• Adjustments to Budget Years	-	-	3.851	-	3.851

Change Summary Explanation

Increased funding for Combat Environment Sustainment (ACES) Demo.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 3	R-1 Program Element (Number/Name) PE 0603040A / *Artificial Intelligence and Machine Learning Advanced Technologies*	Project (Number/Name) CL1 / *AI Enhanced Intel Operations Advanced Technologies*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
CL1: *AI Enhanced Intel Operations Advanced Technologies*	-	1.372	1.359	2.261	-	2.261	2.164	2.204	4.008	4.008	0.000	17.376
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Artificial Intelligence (AI) Enabled Intelligence Fusion for Targeting will address a "multi-INT" fusion problem and mature and demonstrate how AI algorithms can fuse data from various military intelligence systems to support sensor to shooter automation for the strategic, operational, and tactical levels. This effort will mature and demonstrate AI capabilities for support of Long Range Precision Fires, Mission Command, and Maneuver Commanders by exploiting Intelligence Community enterprise investments in sensing, data transport, and Machine Learning (ML) / AI frameworks.

Research in this Project supports the Army Science and Technology Lethality Portfolio and the Chief Digital and Artificial Intelligence Office (CDAO).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: AI Enhancements for Prometheus ***Description:*** AI Enabled Intelligence Fusion for Targeting will mature and demonstrate how AI algorithms can fuse data from various military intelligence systems (multi-INT) to support sensor to shooter automation for the strategic, operational, and tactical levels. This effort will mature and demonstrate AI capabilities for target recognition for support of Long Range Precision Fires, Mission Command, and Maneuver Commanders by leveraging Intelligence Community enterprise investments in sensing, data transport, and ML / AI frameworks.	0.601	-	-
Title: Intelligence Fusion for Targeting ***Description:*** AI Enabled Intelligence Fusion for Targeting will optimize AI algorithms and demonstrate howthey can fuse data from various military intelligence systems (multi-INT) to support sensor to shooter automation for the strategic, operational, and tactical levels. This effort will improve AI capabilities for support of Long Range Precision Fires, Mission Command, and Maneuver Commanders by leveraging Intelligence Community enterprise investments in sensing, data transport, and ML / AI frameworks.	0.771	-	-
Title: AI Enabled Intelligence Fusion for Targeting ***Description:*** AI Enabled Intelligence Fusion for Targeting will mature and demonstrate how AI algorithms can fuse data from various military intelligence systems (multi-INT) to support sensor to shooter automation for the strategic, operational, and tactical levels. This effort will design and develop AI capabilities for support of Long Range Precision Fires, Mission Command, and	-	1.359	1.203

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 3	**R-1 Program Element (Number/Name)** PE 0603040A / *Artificial Intelligence and Machine Learning Advanced Technologies*	**Project (Number/Name)** CL1 / *AI Enhanced Intel Operations Advanced Technologies*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Maneuver Commanders by leveraging Intelligence Community enterprise investments in sensing, data transport, and Machine Learning / AI frameworks. ***FY 2024 Plans:*** AI Enabled Intelligence Fusion for Targeting will provide a system of applications to identify targets of interest. This effort will mature algorithms to predict representation of novel object classes from a small number of novel class samples, improving the AI algorithm learning capability and reducing the need for manual data input. Will investigate the use 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 in order to reduce the time it takes to train AI algorithms. Will demonstrate the ability of the algorithm to fuse data from various military intelligence systems in a simulated test. Will then demonstrate the algorithm performing fusion of real-world intelligence data to show improved target confirmation over what can be provided by any single AI-enabled sensor. Will work with product owners of TITAN and SHOT systems to exploit the fusion algorithm and the required data pipelines. ***FY 2025 Plans:*** AI Enabled Intelligence Fusion for Targeting will continue to provide a system of applications to identify targets of interest. This effort will further mature and optimize algorithms to predict representation of novel object classes from a small number of novel class samples, improving the AI algorithm learning capability and reducing the need for manual data input. Will continue to develop the use of visual, language, signal, and event-based information and semantic relationships to learn additional new objects and relationships and validate knowledge transfer from base classes to novel classes in order to reduce the time it takes to train AI algorithms. Will demonstrate the ability of the algorithm to fuse data from various military intelligence systems in a simulation and then demonstrate the algorithm performing fusion of real-world intelligence data to show improved target confirmation over what can be provided by any single AI enabled-sensor. Will work with PEO C3T and PEO IEWS program managers for JTIC2S and TITAN respectively to exploit the fusion algorithm and the required data pipelines. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Funding decrease is consistent with the planned lifecycle of this effort.			
Title: Foundation for AI Intel Support to Operations ***Description:*** Develop and mature 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:***	-	-	1.058

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 3	**R-1 Program Element (Number/Name)** PE 0603040A / *Artificial Intelligence and Machine Learning Advanced Technologies*	**Project (Number/Name)** CL1 / *AI Enhanced Intel Operations Advanced Technologies*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
In order to inform requirements for Project Linchpin, will continue to mature data frameworks and data pipelines for fusion of intelligence data from multiple military intelligence systems. Will continue to develop and optimize data frameworks and pipelines with infrastructure components that can implement machine learning algorithms across multiple AI domains. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** New effort in FY25.			
Accomplishments/Planned Programs Subtotals	1.372	1.359	2.261

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 3	R-1 Program Element (Number/Name) PE 0603040A / *Artificial Intelligence and Machine Learning Advanced Technologies*	Project (Number/Name) CL6 / *ATR Using Multiple Cooperative Sensors Adv Tech*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
CL6: *ATR Using Multiple Cooperative Sensors Adv Tech*	-	1.814	4.909	8.740	-	8.740	7.386	7.394	7.464	7.549	0.000	45.256
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project will mature and demonstrate a team of air and ground sensors that use Artificial Intelligence (AI) and Machine Learning (ML) 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. This Project also complements and exploits the applied research in Program Element (PE) 0602180A (Artificial Intelligence Technologies) / Project CL7 (ATR Using Multiple Cooperative Sensors App Tech).

The cited research 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 Lethality Portfolio and the Joint Artificial Intelligence Center (JAIC).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Collaborative Target Detection and Tracking	1.316	4.909	8.740
Description: This effort will mature and demonstrate an AI-enabled scalable team of autonomous air and ground vehicles that will cooperatively conduct a zone recon to identify, geolocate, and track threats using on-board electronic intelligence (ELINT) and electro optical-infrared (EO-IR) sensors. ***FY 2024 Plans:*** Will mature the autonomous mobility and threat perception algorithms by updating and improving the Robot Operating System (ROS) to its latest version and will provide enhanced security and faster messaging between subsystems. Will demonstrate the ability to rapidly retrain the AI algorithms using a cloud-based, machine learning pipeline. Will optimize the use of additional sensors on the robotic combat vehicle (RCV) surrogates to more precisely detect and geo-locate targets at longer ranges. Will participate in government-run demonstrations to support technology transition. Will mature the human interfaces to the system, including Android Tactical Assault Kit (ATAK) and the Integrated Visual Augmentation System (IVAS), for faster and more intuitive target validation and shooter pairing. Will mature collaborative reconnaissance algorithms to exploit radio frequency sensor information to improve the search for targets and improve tactical maneuver. ***FY 2025 Plans:*** Provides modular sensor and computer hardware and integrates them onto two transitions platforms. Matures and demonstrates the functionality of low-level vehicle control and drive commands for the Small Multi-purpose Equipment Transport (SMET) and			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 3	**R-1 Program Element (Number/Name)** PE 0603040A / *Artificial Intelligence and Machine Learning Advanced Technologies*	**Project (Number/Name)** CL6 / *ATR Using Multiple Cooperative Sensors Adv Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Remote Control Vechicle (RCV) using the Robotics Technology Kernel (RTK) By-wire-Kit (B-kit). Matures the existing, non-controlled, autonomy stack developed under the previous phases of this project to Robot Operating System (ROS) version 2.0 to ease the transition of autonomy modules to the Army's latest version of its controlled autonomy stack called Robotics Technology Kernel (RTK) that uses ROS 2.0 or selected module. Install and evaluate RTK '23 release (ROS 2.0 version) onto transition platforms. Matures and demonstrates the following capabilities - as functional modules or libraries - within RTK: Aided Target recognition (ATR), perception system including stereo vision, pose estimation system, Android Tactical Assault Kit (ATAK) command & control, zone reconnaissance multi-vehicle collaborative search. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Funding increase reflects the planned lifecycle of this effort.			
Title: COEUS Advanced Technology ***Description:*** Will mature and optimize a cloud native AI model development architecture, mature and validate data integration techniques, and demonstrate and validate an AI model operationalization architecture to cloud or edge endpoints.	0.498	-	-
Accomplishments/Planned Programs Subtotals	1.814	4.909	8.740

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 3	R-1 Program Element (Number/Name) PE 0603040A / *Artificial Intelligence and Machine Learning Advanced Technologies*	Project (Number/Name) CN6 / *Predictive Maintenance Advanced Technology*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
CN6: *Predictive Maintenance Advanced Technology*	-	2.227	4.117	4.139	-	4.139	4.086	4.070	4.185	4.227	0.000	27.051
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project matures and demonstrates artificial intelligence (AI) and machine learning (ML) tools and capabilities to predict and analyze maintenance status for emerging and legacy aviation and ground platforms. Will extract maintenance data from databases and sensors and make inferences of missing data via virtual simulations and improve and provide AI data capture and other AI tools for enterprise maintenance resource planning for military aviation and ground vehicles. Platforms of focus will be prioritized by cost and value to Army missions and include the UH60, AH64, CH47, Stryker, and Abrams. Each platform will be sequentially evaluated both at the component (i.e. engine health) and fleet level. This Project matures and demonstrates the use of predictive maintenance to increase fleet operational readiness through reduced downtime by preventing critical failure during missions to maximize availability to combatant commands. Results from this project will inform requirements and technical architectures for a predicative maintenance platform that will include data engineering, data pipelines, AI development eco-system, and application delivery.

The cited research 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 and the Joint Artificial Intelligence Center (JAIC).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: PMx Platform Data Management and Integrated Environment Refinement	2.227	3.717	4.139
Description: Will mature and optimize a predictive maintenance (PMx) cloud-based environment, mature and validate data collection/aggregation techniques, and demonstrate and validate a data architecture and the data pipelines to a cloud-based environment. ***FY 2024 Plans:*** This project will provide edge/cloud components and AI models and mature and demonstrate a minimum viable product. The PMx platform will be improved and optimized to provide required data, AI models, and visualizations to the local and enterprise network locations necessary for coherent maintenance operations in both autonomous (network denied) and permissive (network connected) conditions. Will improve and optimize AI models for specific use cases in field operations. Will automate common maintenance and supply trackers at the edge and in the enterprise cloud environment across multiple tactical echelons. Will			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 3	**R-1 Program Element (Number/Name)** PE 0603040A / *Artificial Intelligence and Machine Learning Advanced Technologies*	**Project (Number/Name)** CN6 / *Predictive Maintenance Advanced Technology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
develop specific architectural components for edge/cloud data pipelines, artificial intelligence development/data curation platforms (i.e., Coeus), visualization services, and cloud infrastructure nodes ***FY 2025 Plans:*** The project will mature and demonstrate the edge/cloud compute capability to experiment and develop progressive web applications that are able to operate in a Denied, Degraded, Intermittent, and Limited (bandwith) (DDIL) environment. These applications will provide functionality for the tactical unit collocated with the node and any other units connected to that node and will federate with the enterprise when connection is restored. This leverages work in support of the tactical data fabric and the Lower Echelon Analytics Platform Tactical (LTAC). ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Funding increase reflects planned lifecycle of this effort.			
Title: PMx Autonomous Resupply ***Description:*** This effort will develop, mature, and demonstrate AI models and algorithms for an autonomous aviation platform to transport supply stocks to support operations. Emphasis will be on ensuring the airworthiness of an autonomous aviation platform that can move from a rear resupply point forward to a designated location while avoiding basic obstacles and accounting for normal weather conditions. Resupply will occur using human intervention after the autonomous aircraft safely stops in the designated end location. ***FY 2024 Plans:*** Will combine an existing autonomous flight and navigation system with an Army helicopter and/or an unmanned aerial system (UAS) and demonstrate the integrated system's ability to fly without human intervention for the delivery of supplies from a starting location to a simulated forward location. This demonstration will validate procedures to safely demonstrate this technology within the bounds of existing civil and military regulations. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Funding decrease due to completion of this effort.	-	0.400	-
Accomplishments/Planned Programs Subtotals	2.227	4.117	4.139

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 3	**R-1 Program Element (Number/Name)** PE 0603040A / *Artificial Intelligence and Machine Learning Advanced Technologies*	**Project (Number/Name)** CN6 / *Predictive Maintenance Advanced Technology*

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army											Date: March 2024	
Appropriation/Budget Activity 2040 / 3					R-1 Program Element (Number/Name) PE 0603040A / *Artificial Intelligence and Machine Learning Advanced Technologies*				Project (Number/Name) DA7 / *AI-Enabled Command and Coordination Adv Tech*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
DA7: *AI-Enabled Command and Coordination Adv Tech*	-	0.749	1.396	1.157	-	1.157	1.159	1.664	1.417	1.431	0.000	8.973
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project matures and demonstrates solutions for Artificial Intelligence (AI)-enabled Command and Coordination that provide timely understanding and application of the commander's intent. This Project improves sensor-to-shooter and course of action development timelines by developing algorithms, software, and hardware to efficiently capture, transport, process, and convey complex battlefield data into user friendly, streamlined, interfaces. This Project also exploits advances in the application of game theory to explore hypothetical operational scenarios that inform mission planning. These technologies will optimize mission command and network capabilities to fully realize AI on the battlefield.

Work in this Project complements PE 0602180 (Artificial Intelligence and Machine Learning Technologies) / Project DA6 (AI-Enabled Command and Coordination Apl Research)

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

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: AI-Enhanced Battle Damage Assessment ***Description:*** Will mature and demonstrate game theory-based sensor-to-shooter optimization to assign available sensors to assess effects based on target and engagement type (target acquisition to terminal effects) and incorporate the capabilities into aided target recognition algorithms using mobile cooperative autonomous sensors (ATR-MCAS) and Prometheus. ATR-MCAS utilizes data from multiple sensors and artificial intelligence technology to identify threat targets for engagement with various weapons systems. Prometheus is a system that utilizes artificial intelligence (AI) technologies to identify targets of interest from overhead satellite images.	0.749	-	-
Title: AI-Enabled Common Operating Picture and Battle Tracking ***Description:*** This effort will develop and mature AI-enabled tools that allow commanders and staff to prepare for, execute, and assess Army operations to enable decision dominance. Will mature and demonstrate 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 2024 Plans:***	-	1.396	0.501

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 3	**R-1 Program Element (Number/Name)** PE 0603040A / *Artificial Intelligence and Machine Learning Advanced Technologies*	**Project (Number/Name)** DA7 / *AI-Enabled Command and Coordination Adv Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Will develop Geospatial Information Services (GIS) as a Service (GISaaS) capabilities in support of development of AI-Enabled Common Operating Picture (COP). ***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 2024 to FY 2025 Increase/Decrease Statement:*** Funding decrease reflects the planned lifecycle of this effort.			
Title: AI Foundations for Command and Coordination ***Description:*** Matures and optimizes novel foundational models in computer vision, natural language processing/understanding, and temporal/event series analysis 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. ***FY 2025 Plans:*** Will mature and demonstrate 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 2024 to FY 2025 Increase/Decrease Statement:*** New effort in FY25.	-	-	0.406
Title: AI Enhanced Planning for Optimal Operations ***Description:*** Designs and develops AI-enabled systems that link 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. ***FY 2025 Plans:*** Will mature and demonstrate game theory and multi-agent reinforcement learning and other foundational AI models and algorithms to integrate with an available simulation framework to create COAs at the theater echelons. Will optimize scenario criteria needed 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 2024 to FY 2025 Increase/Decrease Statement:***	-	-	0.250

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 3	**R-1 Program Element (Number/Name)** PE 0603040A / *Artificial Intelligence and Machine Learning Advanced Technologies*	**Project (Number/Name)** DA7 / *AI-Enabled Command and Coordination Adv Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
New effort in FY25.			
Accomplishments/Planned Programs Subtotals	0.749	1.396	1.157

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 3	R-1 Program Element (Number/Name) PE 0603040A / *Artificial Intelligence and Machine Learning Advanced Technologies*	Project (Number/Name) DE9 / *AI Development Environment Advanced Technology*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
DE9: *AI Development Environment Advanced Technology*	-	-	1.406	1.966	-	1.966	1.968	2.044	2.085	2.101	0.000	11.570
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project funds the Army lacking a common platform to develop AI/ML. This results in siloed and duplicative work that is inefficient. Many current solutions have narrow application and are proprietary, requiring additional funding, time, and labor for even minor modifications. The AI-enabled Army of the future will require low cost, rapid AI/ML solutions at the edge. This project will mature and demonstrate a set of platform(s), and infrastructure optimized for Army use and ready for rapid employment in enterprise, multi, and hybrid cloud environments to support modular software (cloud native) intended to continuously develop and integrate AI/ML models. It will mature and demonstrate hardware and software technologies, including cloud native applications and infrastructure for globally dispersed AI/ML development collaboration, artifact sharing, automated resource provisioning, and continuous ML Operations. The AI Development Environment will provide the AI-enabled Army of the future with low cost, rapid AI/ML solutions at the edge and accelerated algorithm development for faster delivery to the field.as well as less expensive AI/ML development by leveraging shared resources.

The cited research 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 Network Portfolio and the Chief Digital and Artificial Intelligence Office (CDAO).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Artificial Intelligence Development Environment Advanced Technology Development	-	1.406	1.966
Description: Will mature and optimize a cloud native AI model development architecture, mature and validate data integration techniques, and demonstrate and validate an AI model operationalization architecture to cloud or edge endpoints. ***FY 2024 Plans:*** Will mature and demonstrate an architecture enabling scalable machine learning operations (MLOps) at echelon. Will improve interfaces with external data environments that serve as data lake repositories for incoming data pipelines. Will integrate data analysis software within the development environment to support ongoing model performance assessment. ***FY 2025 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 3	**R-1 Program Element (Number/Name)** PE 0603040A / *Artificial Intelligence and Machine Learning Advanced Technologies*	**Project (Number/Name)** DE9 / *AI Development Environment Advanced Technology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Will mature and demonstrate scalable Machine Learning Operations (MLOps) at echelon. Improve and optimize data interfaces for multi-cloud data lake repositories and data mesh technologies. Demonstrate advanced tools for Artificial Intelligence (AI) test, evaluation, verification and validation, and the security of AI models. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Funding increase reflects the planned lifecycle of this effort.			
Accomplishments/Planned Programs Subtotals	-	1.406	1.966

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A