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 0603043A *I Air Platform 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**
Total Program Element	-	13.062	14.165	17.076	-	17.076	35.538	44.013	45.493	45.936	0.000	215.283
CL4: *Air Platform Enabling University Adv Development*	-	1.205	1.367	1.466	-	1.466	1.167	1.168	1.181	1.193	0.000	8.747
CV1: *Control & Autonomy for Tactical Superiority Adv*	-	1.098	1.254	1.257	-	1.257	7.804	13.227	11.713	10.282	0.000	46.635
CV2: *Structures Platform Int Resilience & Efficiency*	-	3.010	3.358	5.148	-	5.148	6.562	5.158	5.214	5.266	0.000	33.716
CX1: *Advanced Rotors Advanced Tech*	-	2.522	2.657	2.689	-	2.689	2.692	2.694	2.723	2.750	0.000	18.727
CX2: *Next Generation Aviation Transmission Adv Tech*	-	0.001	-	-	-	-	-	-	-	-	0.000	0.001
DC3: *HPC For Army Aviation Concepts*	-	5.226	5.529	5.514	-	5.514	7.508	8.735	8.868	9.118	0.000	50.498
DK2: *Air Vehicle Improvement & Adv Tech (AVIATe)*	-	-	-	1.002	-	1.002	9.805	13.031	15.794	17.327	0.000	56.959

Note

In Fiscal Year (FY) 2025, project DK2 / Air Vehicle Improvement & Adv Tech (AVIATe) is a new start within PE 0603043A / Air Platform Advanced Technology.

A. Mission Description and Budget Item Justification

This Program Element (PE) undertakes advanced technology 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 research into advanced technologies is conducted pertinent to 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 0602183A (Air Platform Applied Research).

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

Research in this PE is performed by the University Technology Development Division, Aviation and Missiles Center and Information Technology Laboratory.

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 0603043A *I Air Platform Advanced Technology*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	17.946	14.165	16.126	-	16.126
Current President's Budget	13.062	14.165	17.076	-	17.076
Total Adjustments	-4.884	0.000	0.950	-	0.950
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-4.229	-			
• SBIR/STTR Transfer	-0.655	-			
• Adjustments to Budget Years	-	-	0.950	-	0.950

Change Summary Explanation

Funding increased to support Hybrid-Electric Aviation Technology (HEAT) demonstration and Autonomy 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 0603043A / *Air Platform Advanced Technology*				Project (Number/Name) CL4 / *Air Platform Enabling University Adv Development*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
CL4: *Air Platform Enabling University Adv Development*	-	1.205	1.367	1.466	-	1.466	1.167	1.168	1.181	1.193	0.000	8.747
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project focuses on experimentation and demonstration of advanced technologies 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 mature and integrate advanced 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 effort conducts and demonstrates advanced technology efforts arising from academic research in all 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 and materials, etc., by bringing competitively selected Universities with research and development teams into Technical Alliances. The Project will 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) 0603465A (Future Vertical Lift Advanced Technology), PE 0603119A (Ground Advanced Technology), PE 0602148A (Future Vertical Lift Technology) and PE 0602183A (Air Platform Applied Research).

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 University Technology Development Division.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Vertical Lift Advanced Technologies	1.205	1.367	1.466
Description: Conduct advanced development within academia to mature and integrate Vertical Lift research of promising and emerging technologies.			
FY 2024 Plans: Will continue to mature and integrate rotorcraft emerging technologies through autonomous teaming systems, aeromechanics, advanced VTOL design & concepts, flight dynamics models to extend reach, and agility.			
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 0603043A / *Air Platform Advanced Technology*	**Project (Number/Name)** CL4 / *Air Platform Enabling University Adv Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Will mature and demonstrate 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; mature and demonstrate rotorcraft emerging technologies through aeromechanics, advanced Vertical Takeoff and Landing (VTOL) design & concepts, and develop flight dynamics models to extend reach and agility. The benefit of this effort is it enables future vertical lift capability improvements. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Funding change reflects planned lifecycle of this effort.			
Accomplishments/Planned Programs Subtotals	1.205	1.367	1.466

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 0603043A / *Air Platform Advanced Technology*	Project (Number/Name) CV1 / *Control & Autonomy for Tactical Superiority Adv*	

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
CV1: *Control & Autonomy for Tactical Superiority Adv*	-	1.098	1.254	1.257	-	1.257	7.804	13.227	11.713	10.282	0.000	46.635
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project will deliver advanced flight controls, autonomy technologies, and new handling qualities criteria are implemented and tested in a realistic environment to demonstrate their functionality and increase their technology readiness level (TRL). This Project also delivers demonstrated and matured flight controls and autonomy technologies at TRL 6 to transition partners.

Work in this Project complements Program Element (PE) 0602183A (Air Platform Applied Technology) / Project CU7 (Control & Autonomy for Tactical Superiority 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 2023	FY 2024	FY 2025
Title: Adaptive Tactical Autonomy and Control (ATAC) Technology Demonstration	1.098	1.254	1.257
Description: Mature, integrate, and demonstrate advanced flight control technologies and state-of-the-art autonomy algorithms that provide Future Vertical Lift (FVL) aircraft with enhanced maneuverability and agility, reduced cognitive workload, improved survivability through damage tolerance, and the ability to operate on an autonomy spectrum from piloted to fully autonomous and exploit degraded environments as a force multiplier.			
FY 2024 Plans: Will integrate and demonstrate autonomous obstacle field navigation enhancements, including Risk-Aware Path Planner (RAPP), on Army flying laboratories. Will integrate and demonstrate control laws for active sensing to improve the effectiveness of sensors. Will integrate and demonstrate advanced concepts for ensuring pilot awareness of autonomous system's intent.			
FY 2025 Plans: Will explore pilot-assist/autonomous functions for autorotation such as automatically lowering of collective and configuring the aircraft for best autorotation airspeed; integrate and demonstrate concepts for transition of control between pilot and autonomous system and back.			
FY 2024 to FY 2025 Increase/Decrease Statement:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 3	**R-1 Program Element (Number/Name)** PE 0603043A / *Air Platform Advanced Technology*	**Project (Number/Name)** CV1 / *Control & Autonomy for Tactical Superiority Adv*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Funding increase is an economic adjustment.			
Accomplishments/Planned Programs Subtotals	1.098	1.254	1.257

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 0603043A / *Air Platform Advanced Technology*				Project (Number/Name) CV2 / *Structures Platform Int Resilience & Efficiency*			
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**
CV2: *Structures Platform Int Resilience & Efficiency*	-	3.010	3.358	5.148	-	5.148	6.562	5.158	5.214	5.266	0.000	33.716
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project will ensure a continuous stream of transition-ready critical structures advanced technologies for improvement of performance (via weight efficiency and multifunctionality for parasitic weight avoidance) and resilience (survivability, sustainment, and operational availability).

Work in this Project is fully coordinated with Program element (PE) 0602183A (Air Platform Applied Technology) / Project CU8 (Structures Tech for Enduring Efficient Resilience).

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 2023	FY 2024	FY 2025
Title: Adaptive Resilient Engineered Structures (ARES)	3.010	3.358	5.148
Description: Mature, integrate, and demonstrate advanced structures technologies providing performance, survivability, and sustainment benefits with broad applicability across platform scale and role, enabling mission success for manned/unmanned Future Vertical Lift (FVL) platforms in the contested environment of multi-domain operations.			
FY 2024 Plans: Will further mature, test, and integrate advanced structures technologies, quantifying their contribution to improved efficiency, performance, survivability, and sustainment (reliability and availability). Will use building block testing and analysis to prepare for an integrated demonstration exploiting the synergy of technologies including weight-saving, fatigue-tolerant, affordable, multifunctional, and damage-tolerant configurations for primary and secondary structure.			
FY 2025 Plans: Will mature, through building block testing, advanced structures technologies, quantifying their contribution to improved efficiency, performance, survivability, and sustainment (reliability and availability); leverage building block test results to integrate technologies and begin fabrication for demonstration exploiting the synergy of technologies including weight-saving, fatigue-tolerant, affordable, multifunctional, and damage-tolerant configurations for primary and secondary structure.			
FY 2024 to FY 2025 Increase/Decrease Statement:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 3	**R-1 Program Element (Number/Name)** PE 0603043A / *Air Platform Advanced Technology*	**Project (Number/Name)** CV2 / *Structures Platform Int Resilience & Efficiency*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Funding increase in FY 2025 reflects increased testing and fabrication in preparation for FY 2026 demonstration testing.			
Accomplishments/Planned Programs Subtotals	3.010	3.358	5.148

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 0603043A / *Air Platform Advanced Technology*	Project (Number/Name) CX1 / *Advanced Rotors Advanced 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
CX1: *Advanced Rotors Advanced Tech*	-	2.522	2.657	2.689	-	2.689	2.692	2.694	2.723	2.750	0.000	18.727
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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.

Work in this Project is fully coordinated with PE 0602183A (Air Platform Applied Technology) / Project CW3 (Advanced Rotors Applied 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 Aviation & Missile Center (AvMC).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: High Speed Highly Efficient Rotors ***Description:*** This effort demonstrates full scale, integrated rotor system technologies through the assessment of alternative designs aimed to satisfy future capability needs for aviation and FVL increased system durability, efficiency, speed, range, and payload. Potential technologies include: integrated high speed, low drag rotor technologies for high speed configurations; interactional aerodynamics tailoring between rotor and body & auxiliary lift/ propulsors; light weight, low volume, efficient and high authority electro-mechanical actuators (EMAs); reliable and robust actuators/hubs/controls for Independent Blade Control (IBC)/ swashplateless rotors; active/passive flow control; and automated track and balance.	2.522	-	-
Title: Lightweight Durable Rotor Technologies ***Description:*** This effort matures and demonstrates full scale, integrated durable rotor system technologies to improve rotor blade service lives and reduce maintenance costs aimed to satisfy future capability needs for aviation and FVL increased system durability, efficiency, speed, range, and payload. Potential technologies include lightweight and highly durable blade erosion protection, low power and more reliable blade deicing capability, more reliable rotor system sensors/instrumentation, reliable and durable rotor actuation, low drag/low part count hubs, and improved blade repair methodologies. ***FY 2024 Plans:***	-	2.657	2.689

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 0603043A / *Air Platform Advanced Technology*	**Project (Number/Name)** CX1 / *Advanced Rotors Advanced Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Will test low drag, low part count rotor hub. Will screen initial durable rotor technologies as part of program kickoff planning. ***FY 2025 Plans:*** Will conduct durable rotor trade studies and start rotor system integration conceptual design. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Funding increase is an economic adjustment.			
Accomplishments/Planned Programs Subtotals	2.522	2.657	2.689

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 0603043A / *Air Platform Advanced Technology*	Project (Number/Name) CX2 / *Next Generation Aviation Transmission 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
CX2: *Next Generation Aviation Transmission Adv Tech*	-	0.001	-	-	-	-	-	-	-	-	0.000	0.001
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project develops and ground demonstrates variable-speed advanced transmission technologies that can be matured and integrated into the development of Future Vertical Lift (FVL) platforms and other Army and Department of Defense (DoD) aviation systems.

Work in this Project is fully coordinated with PE 0602183A (Air Platform Applied 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 Aviation & Missile Center (AvMC).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: High Reduction Ratio Transmission (HRT)	0.001	-	-
Description: This effort will mature and demonstrate the technologies necessary for development, design, fabrication, and testing of a high reduction-ratio transmission in two stages or less (60:1 reduction ratio) with high efficiency and improved reliability against corrosion and seal leakage. Technology demonstrations from this effort will be applicable to FVL platforms.			
Accomplishments/Planned Programs Subtotals	0.001	-	-

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 0603043A / *Air Platform Advanced Technology*	Project (Number/Name) DC3 / *HPC For Army Aviation Concepts*	

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
DC3: *HPC For Army Aviation Concepts*	-	5.226	5.529	5.514	-	5.514	7.508	8.735	8.868	9.118	0.000	50.498
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project matures and demonstrates the use of high-fidelity computational fluid dynamics for Future Vertical Lift (FVL) platforms through the utilization of Department of Defense (DoD) High- Performance Computing (HPC) and software tools for cutting-edge modeling and simulation, as well as adding software capabilities for workflow automation and design space exploration. Efforts in this Project are also applicable to the family of FVL and Future Tactical Unmanned Aircraft System (FTUAS) platforms.

Work in this Project complements PE 0602183A (Air Platform Applied Research).

The work cited 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 United States Army Engineer Research and Development Center Information Technology Laboratory.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Engineered Resilient Systems (ERS) for Army Aviation	2.273	-	-
Description: This effort supports Future Vertical Lift by exploiting advancements in physics-based software tools to provide rapid engineering analysis of proposed rotorcraft platforms, providing high-fidelity computational modeling of candidate Future Attack Reconnaissance Aircraft (FARA) platforms during the FARA down-selection, increasing the speed of simulations by automating simulation setup and execution on DoD HPC systems, and maturing and demonstrating the use of advanced machine learning techniques for aviation datasets to inform both the development of FVL systems and current operations.			
Title: Advanced Computational Technologies for Army Aviation	2.953	5.529	3.022
Description: This effort supports FVL by utilizing advanced computational techniques leveraging automated design processes to expand computational testbeds in support of testing and evaluation. Increase high accuracy physics in modeling and simulation to optimize platforms for all operational environments and mission scenarios. Provide multi-fidelity computational models of candidate FLRAA and FTUAS platforms to support acquisition decision-makers.			
FY 2024 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 0603043A / *Air Platform Advanced Technology*	**Project (Number/Name)** DC3 / *HPC For Army Aviation Concepts*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Will mature the Decision Support Tool (DST) for executing combined engineering analysis and mission scenarios. Will demonstrate computational modeling and simulation capabilities for rotorcraft design and analysis on secret high-performance computing assets. Will expand computational modeling frameworks to include multi-fidelity computational models of candidate Future Vertical Lift (FVL) platforms. ***FY 2025 Plans:*** Will demonstrate and provide modeling and simulation capabilities for optimization of candidate future vertical lift platforms and upgrades. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Funding decrease reflects the planned conclusion of this effort.			
Title: Machine-Assisted Design and Evaluation ***Description:*** This effort matures advanced machine-assisted design algorithms to explore design spaces and improve resilience for Future Vertical Lift (FVL). Physics-informed machine learning will improve and augment high-fidelity simulation and expand availability of high-fidelity data for tradespace generation and analysis. Reinforcement learning and other computational exploration methods will improve evaluation of mission effectiveness of FVL platforms. ***FY 2025 Plans:*** Will develop physics informed machine learning to reduce simulation turnaround for rotorcraft. Will explore machine-guided tradespace generation and exploration for machine assisted design. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Funding increase reflects planned initiation of this effort.	-	-	2.492
Accomplishments/Planned Programs Subtotals	5.226	5.529	5.514

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 0603043A / *Air Platform Advanced Technology*				Project (Number/Name) DK2 / *Air Vehicle Improvement & Adv Tech (AVIATe)*			
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**
DK2: *Air Vehicle Improvement & Adv Tech (AVIATe)*	-	-	-	1.002	-	1.002	9.805	13.031	15.794	17.327	0.000	56.959
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Air Vehicle Improvement & Adv Tech (AVIATe) is a new start within the Air Platform Advanced Technology program in FY 2025.

A. Mission Description and Budget Item Justification

This project enhances Army aviation mission capability and address operational energy and environmental challenges. Includes the maturation, system integration, and demonstration 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 up to the aircraft system level.

Work in this Project complements Program Element (PE) 0602183A (Air Platform Applied Technology) / Project DK1 (Air Vehicle Integrated & Alternative Tech (AVIATe)).

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 Aviation & Missile Center (AvMC).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Hybrid-Electric Aviation Technology (HEAT) Demonstration	-	-	1.002
Description: This effort focuses on developing data to assess the viability of meeting future rotorcraft motive and mission equipment power needs through demonstration of hybrid-electric technology up to the aircraft system level. Emphasis will be on analytical tool and technology maturation, identifying hybrid-electric applications through system design and optimization, executing risk mitigation through analysis and test, system integration, and addressing suitability aspects in order to inform and plan future transition into current fleet and FVL aircraft.			
FY 2025 Plans: Will begin scaled hybrid-electric system and integration laboratory efforts as a means to train, expand knowledge base, mitigate technical risk, calibrate models, and integrate and optimize hybrid-electric systems to inform and plan future transition efforts for the Army aviation fleet.			
FY 2024 to FY 2025 Increase/Decrease Statement:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 3	**R-1 Program Element (Number/Name)** PE 0603043A / *Air Platform Advanced Technology*	**Project (Number/Name)** DK2 / *Air Vehicle Improvement & Adv Tech (AVIATe)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
This effort begins in FY25.			
Accomplishments/Planned Programs Subtotals	-	-	1.002

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A