| Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army | Date: April 2022 |
|---|---|
| **Appropriation/Budget Activity**<br>2040: *Research, Development, Test & Evaluation, Army* / BA 3: *Advanced Technology Development (ATD)* | **R-1 Program Element (Number/Name)**<br>PE 0603025A / *Army Agile Innovation and Demonstration* |

| COST ($ in Millions) | Prior Years | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total | FY 2024 | FY 2025 | FY 2026 | FY 2027 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Program Element | - | - | 22.231 | 20.900 | - | 20.900 | 23.055 | 24.106 | 32.900 | 30.136 | 0.000 | 153.328 |
| CK8: *Advanced Technology Development and Convergence* | - | - | 22.231 | 15.200 | - | 15.200 | 15.252 | 15.272 | 16.266 | 16.312 | 0.000 | 100.533 |
| DA3: *Army Advanced Innovation* | - | - | - | 5.700 | - | 5.700 | 7.803 | 8.834 | 16.634 | 13.824 | 0.000 | 52.795 |

**A. Mission Description and Budget Item Justification**

This Program Element (PE) funds the Army's goal of accelerating innovative solutions to achieve future force modernization. The Army is developing new ways of doing business to include strategic and "non-traditional" partnerships and working with traditional vendors in novel ways to allow for agile integration of leading-edge technology. Critical technologies that allow for technological superiority are increasingly dual-use or developed in academia-led partnerships that leverage cutting edge innovation. In an era of global competition, technological superiority requires agile and rapid innovation. Cross-cutting modernization initiatives leverage strategic partnerships 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 demonstrate emerging technologies and systems with high payoff potential to address current technology shortfalls or future capability gaps and systems. This PE will also allow for exploration and adaptation of various technologies in the early stages of development enabling cost saving decisions in the procurement life-cycle by using the try, buy, decide model of identifying and investing in proof of technology demonstrations that the army can adapt and integrate. 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 as stand-alone initiatives and as part of broader innovation to programs and technology development. Oversight from a newly created Innovation Board will evaluate internal and external constraints to implementation on the basis of Army modernization needs, Army standards and resources to inform an optimal technology investment strategy.

Research in this PE is closely coordinated with PE 0602002A (Army Agile Innovation and Development-Applied Research).

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 the United States Army Futures Command.

| Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army | Date: April 2022 |
|---|---|
| **Appropriation/Budget Activity**<br>2040: *Research, Development, Test & Evaluation, Army* / BA 3: *Advanced Technology Development (ATD)* | **R-1 Program Element (Number/Name)**<br>PE 0603025A / *Army Agile Innovation and Demonstration* |

| B. Program Change Summary ($ in Millions) | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total |
|---|---|---|---|---|---|
| Previous President's Budget | 0.000 | 22.231 | 0.000 | - | 0.000 |
| Current President's Budget | 0.000 | 22.231 | 20.900 | - | 20.900 |
| Total Adjustments | 0.000 | 0.000 | 20.900 | - | 20.900 |
| • Congressional General Reductions | - | - | | | |
| • Congressional Directed Reductions | - | - | | | |
| • Congressional Rescissions | - | - | | | |
| • Congressional Adds | - | - | | | |
| • Congressional Directed Transfers | - | - | | | |
| • Reprogrammings | - | - | | | |
| • SBIR/STTR Transfer | - | - | | | |
| • Adjustments to Budget Years | - | - | 20.900 | - | 20.900 |

**Change Summary Explanation**

Fiscal Year 2023 (FY23) funding increase reflects the fact that the FY22 President's Budget request did not include out-year funding.

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Army | | | Date: April 2022 |
|---|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 3 | **R-1 Program Element (Number/Name)**<br>PE 0603025A / *Army Agile Innovation and Demonstration* | **Project (Number/Name)**<br>CK8 / *Advanced Technology Development and Convergence* | |

| COST ($ in Millions) | Prior Years | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total | FY 2024 | FY 2025 | FY 2026 | FY 2027 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CK8: *Advanced Technology Development and Convergence* | - | - | 22.231 | 15.200 | - | 15.200 | 15.252 | 15.272 | 16.266 | 16.312 | 0.000 | 100.533 |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |

**A. Mission Description and Budget Item Justification**

This Project aims to accelerate the Army's goal of finding innovative and nontraditional solutions to the most difficult technological problems. Efforts to pair with nontraditional entities, such as industry or the newly established Army Futures Command Software Factory, bring new ways of doing business to demonstrate emerging technologies and systems with high payoff potential to address current technology shortfalls or future capability gaps and systems. Additionally, this project seeks to provide funding for advanced research/technology that has been discovered in "Innovation Days" that are funded across the Research, Development, Test and Evaluation (RDT&E) appropriation.

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 United States (US) Army Futures Command.

Research in this Project supports all Army Modernization Priorities.

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|
| ***Title:*** Advanced Technology Development of Existing Commercial Technology | - | 5.781 | 10.200 |

***Description:*** Advanced commercial development exists when direct investment leads to rapid technology applications and demonstration. The Army identifies existing technology to further develop and modify for Army use. Partnerships with industry both traditional and non-traditional, allow the Army to advance non-military commercial research and development investments through focused engagements resulting in commercial adaption and integration to address Army technology and modernization efforts. Initial nominal Army investment in proof of technology and technology demonstrations will expedite novel technologies shaping their development to meet Army requirements and expedite both component and complete system adaptation and integration.

***FY 2022 Plans:***
The Army enterprise will identify commercial solutions to technology problem areas focused on next generation combat vehicles, dismounted soldier lethality, power generation and storage, network and satellite support, and novel sensors and technologies.

***FY 2023 Plans:***

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Army | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 3 | **R-1 Program Element (Number/Name)**<br>PE 0603025A / *Army Agile Innovation and Demonstration* | **Project (Number/Name)**<br>CK8 / *Advanced Technology Development and Convergence* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|
| The Army enterprise will identify commercial solutions to technology problem areas focused on next generation combat vehicles, dismounted soldier lethality, power generation and storage, infrastructure to enable power generation, data driven human performance and Soldier readiness, AI and robotic enabled small units, network and satellite support, and novel sensors and technologies.<br><br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>In Fiscal Year 2023 (FY23), funding for this effort was realigned from the Sub-System Component and Prototype Convergence task within this effort. | | | |
| ***Title:*** Sub-System Component and Prototype Convergence<br><br>***Description:*** The Army investigates, develops, and integrates non-traditional cutting-edge technology. Sub-system component and prototype convergence seeks to develop or integrate one or more technologies to prove out concepts or to merge smaller subsystems towards a more complex solution. This task informs requirements developers where the state of technologies is at, where it is going and on what timeline confirming viability for incorporation into larger technology programs.<br><br>***FY 2022 Plans:***<br>Will focus on subsystem component development and maturation of autonomous technologies focused on the integration of disjointed systems, remote predictive maintenance, component hardening (against cyber) of IT and communications systems on manned and unmanned vehicles, network and satellite technologies, and Soldier exoskeletons.<br><br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>In FY23 funding for this effort is realigned to the Advanced Technology Development of Existing Commercial Technology task within this effort. | - | 3.854 | - |
| ***Title:*** Experimentation and Development of Commercial Dual Use Technologies<br><br>***Description:*** The Army seeks to connect with industry early in a technology?s commercialization process. Experimentation and development will connect with these non-traditional technologies to determine the feasibility and ability to be leveraged against military applications. Technology development will be conducted concurrently to commercial activities with experimentation used to understand proof-of-concept applicability for further Government initiative. As part of this process strategic partnerships will be cultivated with technology aggregators such as In-Q-Tel to ensure a comprehensive approach to connect and transition technologies to the Army.<br><br>***FY 2022 Plans:*** | - | 4.818 | - |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Army | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 3 | **R-1 Program Element (Number/Name)**<br>PE 0603025A / *Army Agile Innovation and Demonstration* | **Project (Number/Name)**<br>CK8 / *Advanced Technology Development and Convergence* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|
| Will focus experimentation and development on intelligent connectivity between systems and novel sensors and sensor techniques.<br><br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>In FY23 funding in this task is realigned to Project DA3 (Army Advanced Innovation) in this Program Element (PE). | | | |
| ***Title:*** Software Factory Advanced Software Development<br><br>***Description:*** As part of the novel Software Factory stood up by Army Futures Command (AFC), Soldiers will be leveraged to address some of the most challenging software research problems that the Army faces. Soldiers will adopt an Agile Development Process to rapidly mature experimental software for mobile technology, secure authentication procedures, and other software needs for Army-specific hardware platforms.<br><br>***FY 2022 Plans:***<br>Will design, characterize, and mature software supporting Army wide hardware platforms; will develop and demonstrate the ability to quickly route Soldier created software to mobile devices in an iterative fashion; and will integrate Soldier created software into a secure DevOps environment.<br><br>***FY 2023 Plans:***<br>Software Factory will integrate Soldier-created software closer to the tactical edge using secure authentication procedures and field deployable capabilities. In FY23 Software Factory will add two new focus areas for software development supporting Army Modernization that include Lines of Effort Common Operating Environment, Command Post, Modular Open Systems Approach (MOSA), Robotics and Autonomous Systems, Soldier Situational Awareness and Synthetic Training.<br><br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>Funding change reflects planned life cycle of effort. | - | 4.721 | 5.000 |
| ***Title:*** Demonstration and Development of Army Discovered Innovative Technologies<br><br>***Description:*** The Army seeks to develop and demonstrate technology that display unique and innovative potential in a cross-domain fashion. This effort seeks to direct advanced research funding towards technologies that are discovered from Army Innovation events such as Innovation Days funded by PE 0605054A (Emerging Technology Initiatives) / Project FI3 (Rapid Capability Development and Maturation) or the Expeditionary Technology Search effort in PE 0605803A (Technical Information Activities) / Project CC2 (Expeditionary Technologies).<br><br>***FY 2022 Plans:*** | - | 2.246 | - |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Army | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 3 | **R-1 Program Element (Number/Name)**<br>PE 0603025A / *Army Agile Innovation and Demonstration* | **Project (Number/Name)**<br>CK8 / *Advanced Technology Development and Convergence* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|
| Will develop and demonstrate unique solutions to Army wide problems leveraging technology discovered through Army technology search events.<br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>Funding is administratively realigned to Project DA3 (Army Advanced Innovation) within this same PE and also PE 0602002A (Army Agile Innovation and Development- Applied Research) / Project DC4 (Army Applied Innovation). | | | |
| ***Title:*** FY2022 SBIR/STTR Transfer<br>***Description:*** Funding transferred in accordance with Title 15 USC ?638<br>***FY 2022 Plans:***<br>Funding transferred in accordance with Title 15 USC ?638<br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>Funding transferred in accordance with Title 15 USC ?638 | - | 0.811 | - |
| **Accomplishments/Planned Programs Subtotals** | - | 22.231 | 15.200 |

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

N/A

**Remarks**

**D. Acquisition Strategy**

N/A

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Army | | | Date: April 2022 |
|---|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 3 | **R-1 Program Element (Number/Name)**<br>PE 0603025A / *Army Agile Innovation and Demonstration* | **Project (Number/Name)**<br>DA3 / *Army Advanced Innovation* | |

| COST ($ in Millions) | Prior Years | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total | FY 2024 | FY 2025 | FY 2026 | FY 2027 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DA3: *Army Advanced Innovation* | - | - | - | 5.700 | - | 5.700 | 7.803 | 8.834 | 16.634 | 13.824 | 0.000 | 52.795 |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |

**Note**

This is a new start in FY 2023.

In Fiscal Year 2023 (FY23), this Project is a new start.

**A. Mission Description and Budget Item Justification**

This Project funds the Advanced Development 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 with the ability to adapt and integrate multi-disciplinary innovative technologies by bridging the interfaces between internal and external efforts for a holistic entry into the acquisition pipeline at the most appropriate milestone. This Project also seeks to further develop and demonstrate these technologies in support of cross-domain operations, with emphasis on open/modular systems architecture and digital thread/engineering, and provide a pathway for entry into the acquisition process.

This Project is coordinated with PE 0602002A (Army Agile Innovation and Development-Applied Research) / Project DC4 (Army Applied Innovation).

Army Senior Leadership approves Army innovation projects prior to budget year programming based on priority, opportunity, and return on investment for the American taxpayer- ensuring that innovations have a high potential for filling capability gaps and transitioning.

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 United States (US) Army Futures Command.

Research in this Project supports all Army Modernization Priorities.

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|
| ***Title:*** Army Advanced Innovation | - | - | 5.700 |
| ***Description:*** The Army seeks to develop and demonstrate technology that display unique and innovative potential in a cross-domain fashion. This effort will serve as funding to rapidly transition disruptive and groundbreaking capabilities that fall outside of the normal acquisition pipeline. | | | |
| ***FY 2023 Plans:*** | | | |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Army | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 3 | **R-1 Program Element (Number/Name)**<br>PE 0603025A / *Army Agile Innovation and Demonstration* | **Project (Number/Name)**<br>DA3 / *Army Advanced Innovation* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|
| Initiate a competitive process that selects technologies with a high promise of advancing and accelerating capabilities to be investigated in open systems and digital engineering architectures, prior to be transitioned either to further Science and Technology efforts, or Research Development Testing & Evaluation (RDTE) Budget Activity (BA) 6.4 funding, depending on the technology readiness level (TRL) at the end of the effort. The Army Innovation Program will accept multiple new efforts that support Army Modernization, to include cyber, Electronic Warfare, Sensors, Power and Energy, Artificial Intelligence and Autonomy, Communications, Position, Navigation and Timing, advancing Synthetic Training Environments; and Air and Ground Platform integration.<br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>In FY23, this project is a new start. | | | |
| **Accomplishments/Planned Programs Subtotals** | - | - | 5.700 |

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

N/A

**Remarks**

**D. Acquisition Strategy**

N/A