| Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army | | | | | | | | | | | Date: April 2022 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Appropriation/Budget Activity<br>2040: *Research, Development, Test & Evaluation, Army I* BA 4: *Advanced Component Development & Prototypes (ACD&P)* | | | | | R-1 Program Element (Number/Name)<br>PE 0603801A *I Aviation - Adv Dev* | | | | | | | |
| **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 | - | 694.296 | 1,178.460 | 1,162.344 | - | 1,162.344 | 1,221.900 | 1,738.159 | 1,490.745 | 1,843.447 | Continuing | Continuing |
| B47: *Future Vertical Lift* | - | 213.538 | 521.412 | 210.194 | - | 210.194 | 1,023.681 | 1,030.448 | 689.392 | 738.781 | Continuing | Continuing |
| CK7: *FARA Ecosystem* | - | - | 21.986 | 28.794 | - | 28.794 | 29.767 | 30.631 | 31.564 | 31.871 | 0.000 | 174.613 |
| CS7: *FLRAA MTA* | - | - | - | 483.441 | - | 483.441 | 16.885 | 6.880 | - | - | 0.000 | 507.206 |
| F12: *Future Attack Reconnaissance Aircraft* | - | 480.758 | 635.062 | 439.915 | - | 439.915 | 151.567 | 670.200 | 769.789 | 1,072.795 | Continuing | Continuing |

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

This Funding Line directly aligns to the Future Vertical Lift (FVL) Army Modernization Priority. Future Vertical Lift (FVL) is an initiative to develop a family of vertical lift aircraft for the United States Armed Forces. The Department of Defense (DOD) established FVL to focus vertical lift capabilities and technology development as well as retain long-term industrial base capabilities. The Deputy Secretary of Defense issued the FVL Strategic Plan in 2012 to outline a joint approach for the next generation vertical lift aircraft for all military services. The Strategic Plan provided a foundation for replacing the current fleet with advanced capability by shaping the development of vertical lift aircraft for the next 25 to 40 years. In Fiscal Year (FY) 2017, the Army identified FVL as one of the Army's six modernization priorities, and established the FVL Cross Functional Team. The FVL objectives are increased vertical lift maneuverability, range, speed, payload, survivability, and reliability while reducing the logistics footprint. This capability will provide critical vertical lift aviation capability in multi-domain operations to the joint warfighter and maneuver force.

The Future Long Range Assault Aircraft (FLRAA) program pursues FVL Capability Set 3 (CS3) and provides Combatant Commanders with deterrence, power projection, and tactical capabilities at operational and strategic distances. The Army plans to competitively award the weapon system development contract in FY 2022, using a hybrid acquisition approach. The FY 2022 contract award initiates Rapid Prototyping effort to execute a preliminary design and development of FLRAA Virtual Prototype, using Middle Tier Acquisition (MTA) authorities.

The total cost of the FLRAA Middle Tier of Acquisition effort is $617.10 million RDT&E from FY22 to FY25. FLRAA MTA is fully funded across the Future Years Defense Program.

The Future Attack Reconnaissance Aircraft (FARA) Capability Set 1 (CS1) is a critical Army Aviation priority and will restore attack/reconnaissance dominance by mitigating enemy long range capabilities by creating lethal effects from outside enemy sensor/weapons range and allowing joint force commanders to maneuver from relative sanctuary.

Both FLRAA and FARA variants will integrate advanced technologies, using a modular open systems approach, and design configurations with appropriate trades to ensure affordability.

This resourcing funds both FLRAA and FARA.

| Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army | Date: April 2022 |
|---|---|
| **Appropriation/Budget Activity**<br>2040: *Research, Development, Test & Evaluation, Army I* BA 4: *Advanced Component Development & Prototypes (ACD&P)* | **R-1 Program Element (Number/Name)**<br>PE 0603801A *I Aviation - Adv Dev* |

| B. Program Change Summary ($ in Millions) | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total |
|---|---|---|---|---|---|
| Previous President's Budget | 694.296 | 1,125.641 | 0.000 | - | 0.000 |
| Current President's Budget | 694.296 | 1,178.460 | 1,162.344 | - | 1,162.344 |
| Total Adjustments | 0.000 | 52.819 | 1,162.344 | - | 1,162.344 |
| • Congressional General Reductions | - | - | | | |
| • Congressional Directed Reductions | - | -29.681 | | | |
| • Congressional Rescissions | - | - | | | |
| • Congressional Adds | - | 82.500 | | | |
| • Congressional Directed Transfers | - | - | | | |
| • Reprogrammings | - | - | | | |
| • SBIR/STTR Transfer | - | - | | | |
| • Adjustments to Budget Years | - | - | 1,162.344 | - | 1,162.344 |

| Congressional Add Details ($ in Millions, and Includes General Reductions) | FY 2021 | FY 2022 |
|---|---|---|
| **Project:** B47: *Future Vertical Lift* | | |
| Congressional Add: *Competitive Demonstration Risk Reduction* | 90.500 | - |
| Congressional Add: *University Partnership and Model Based System Engineering* | 5.000 | - |
| Congressional Add: *FLRAA Program Increase* | - | 77.500 |
| Congressional Add Subtotals for Project: B47 | 95.500 | 77.500 |
| **Project:** F12: *Future Attack Reconnaissance Aircraft* | | |
| Congressional Add: *FARA All Electrical Flight Controls* | - | 5.000 |
| Congressional Add Subtotals for Project: F12 | - | 5.000 |
| Congressional Add Totals for all Projects | 95.500 | 82.500 |

**Change Summary Explanation**

FY 2023 funding increase reflects the fact that the FY 2022 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 / 4 | R-1 Program Element (Number/Name)<br>PE 0603801A / *Aviation - Adv Dev* | Project (Number/Name)<br>B47 / *Future Vertical Lift* | |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B47: *Future Vertical Lift* | - | 213.538 | 521.412 | 210.194 | - | 210.194 | 1,023.681 | 1,030.448 | 689.392 | 738.781 | Continuing | Continuing |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |

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

The Future Vertical Lift (FVL) Project's funding provides for the development of a Future Long Range Assault Aircraft (FLRAA) Capability Set Three weapon system within the FVL family of systems. FLRAA will conduct air assault, urban assault/security, maritime interdiction, medical evacuation, humanitarian assistance/disaster relief, tactical resupply, direct action, noncombatant evacuation operation, and combat search and rescue operations. FLRAA will support the Army, including Special Operations Command (USSOCOM) and the Joint Force, in a contested, near peer threat environment. The FLRAA weapon system will retain the Army's ability to project combat power with transformational increases in range, speed, mobility, and payload over current Army and USSOCOM aircraft.

FLRAA achieved a Materiel Development Decision approval in October 2016 and the Office of Secretary of Defense granted a sufficiency determination of the Analysis of Alternatives (AoA) in July 2019.

The Fiscal Year (FY) 2023 budget request funds the initiation of the of the FLRAA weapon system detailed design to include development of a digital backbone architected to meet Modular Open System Architecture (MOSA) objectives, procurement of prototype long lead materiel, and the initiation of developmental prototype assembly and integration for qualification and test.

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|
| ***Title:*** Engineering Services / Research Studies | 109.941 | 365.709 | 21.349 |
| ***Description:*** Provide engineering research, planning, modeling, and analysis. Perform Competitive Demonstration and Risk Reduction (CD&RR), Model Based System Engineering (MBSE) and design reviews. Document and review analysis supporting the FLRAA acquisition program. Continue effort to support enterprise data modeling to include MBSE, and MOSA efforts such as Key Interface Logical Architecture (KILA) updates. Continue to process updates for safety and cyber initiatives. Support development of Milestone B documentation. | | | |
| ***FY 2022 Plans:***<br>Continue MOSA efforts, complete CD&RR Phase II effort; support the SSEB, and award the Weapon Systems Development contract. | | | |
| ***FY 2023 Plans:***<br>Support engineering changes associated with refined requirements, continue studies and analyses to refine MOSA architectures, further enable MBSE in the Digital Environment, and develop Milestone B documentation. | | | |
| ***FY 2022 to FY 2023 Increase/Decrease Statement:*** | | | |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Army | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603801A / *Aviation - Adv Dev* | **Project (Number/Name)**<br>B47 / *Future Vertical Lift* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|
| Funding decreased from FY22 to FY23 due to the completion of the CD&RR efforts with two Project Agreement Holders (PAHs) currently accounted for in Engineering Services/Research Studies. Efforts will transition to the execution of the Weapons System Development Contract in 4QFY22 down selecting to one vendor. MTA-related efforts are accounted for in the Middle Tier Acquisition (MTA) Preliminary Design and Virtual Prototype Rapid Prototyping FY22 accomplishment, realigned to a separate Project CS7 in FY23. | | | |
| ***Title:*** Program Management<br>***Description:*** Oversight and Management of the FLRAA acquisition program. Program analysis of affordability, program performance, and schedule to ensure support of the Army mission. Guide, direct and manage program efforts through development phases of the lifecycle.<br>***FY 2022 Plans:***<br>Continue efforts to refine affordability, execute CD&RR Phase II effort, execute and complete SSEB, and award the Weapon Systems Development contract.<br>***FY 2023 Plans:***<br>Manage the execution of the Weapon System Development Contract and support efforts to achieve Milestone B Decision.<br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>Funding increase supports the overall program growth and provides for necessary oversight and support requirements associated with the preparation, planning, management analysis and reviews needed to achieve a Milestone B decision. | 4.780 | 11.783 | 12.172 |
| ***Title:*** Supportability Analysis and Acquisition Support<br>***Description:*** Acquisition and supportability research, planning, modeling, analysis, documentation and reviews supporting the FLRAA acquisition program. Early design influence analysis to assess operational durability; emphasizing digital data thread, active health state awareness in Condition Based Maintenance (CBM+), and optimized human system interface for ease of operations and maintenance.<br>***FY 2022 Plans:***<br>Integrate supportability within Model-Based Systems Engineering design process and the modeling/simulations to influence requirements. Continue to expand the robustness of government baseline models; merging with both Model Base System Engineering (MBSE) and the Program Office Estimate (POE) / Independent Government Cost Estimate (IGCE) , and comparative evaluation of system design and support alternatives.<br>***FY 2023 Plans:*** | 3.317 | 4.048 | 3.929 |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Army | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603801A / *Aviation - Adv Dev* | **Project (Number/Name)**<br>B47 / *Future Vertical Lift* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|
| Continue integration of supportability modeling and analysis in direct support of Weapon System Development execution and supporting Milestone B decision, and operationalize the sustainment vision using a digital thread across the life cycle including design, build, and maintenance phases of the weapons system life cycle.<br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>Funding decrease from FY22 to FY23 to adjusting support for Weapon System Development efforts | | | |
| ***Title:*** Middle Tier Acquisition (MTA) Preliminary Design and Virtual Prototype Rapid Prototyping<br>***Description:*** The Preliminary Design and MTA Virtual Prototype Rapid Prototyping effort is executed under the Weapon System Development Base contract scoped to complete the system preliminary design and develop two FLRAA virtual prototypes consisting of a FLRAA Vehicle Dynamics Model (VDM) and a FLRAA Portable Crewstation (FPC) to support system and subsystem analysis and testing.<br>***FY 2022 Plans:***<br>Initiate the preliminary design and virtual prototype efforts of the Weapon Systems Development contract.<br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>Funding decrease from FY22 to FY23 reflects the transition of the FLRAA MTA efforts to Project CS7. | - | 16.970 | - |
| ***Title:*** Prototype Material and Manufacturing Development<br>***Description:*** Purchasing of materials required to meet EMD prototype delivery schedules and detailed design in support of Critical Design Review.<br>***FY 2022 Plans:***<br>Initiate material buy<br>***FY 2023 Plans:***<br>Support material acquisition for FLRAA EMD prototypes three through six, begin detailed design development engineering efforts, and begin integrating the first two FLRAA prototypes in support of developmental testing.<br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>Increased material purchasing to support additional prototype aircraft builds and initiating Weapon System Development detailed design work. | - | 29.199 | 172.744 |
| ***Title:*** Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR)<br>***Description:*** SBIR/STTR amount in accordance with Title 15 USC 638.<br>***FY 2022 Plans:*** | - | 16.203 | - |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Army | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603801A / *Aviation - Adv Dev* | **Project (Number/Name)**<br>B47 / *Future Vertical Lift* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|
| SBIR/STTR amount in accordance with Title 15 USC 638.<br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>SBIR/STTR amount in accordance with Title 15 USC 638. | | | |
| **Accomplishments/Planned Programs Subtotals** | 118.038 | 443.912 | 210.194 |

| | FY 2021 | FY 2022 |
|---|---|---|
| ***Congressional Add:*** Competitive Demonstration Risk Reduction<br>***FY 2021 Accomplishments:*** Support execution of Competitive Demonstration Risk Reduction and MOSA efforts. | 90.500 | - |
| ***Congressional Add:*** University Partnership and Model Based System Engineering<br>***FY 2021 Accomplishments:*** Support Model Based System Engineering | 5.000 | - |
| ***Congressional Add:*** FLRAA Program Increase<br>***FY 2022 Plans:*** Increase supports extension of Competitive Demonstration Risk Reduction (CDRR) efforts. Additional risk reduction activities mitigate preliminary design risks to include subsystem and component-level risk reduction, MOSA architecture implementation; and cybersecurity. Increase supports mission systems Government Furnished Equipment (GFE) required for Weapon System Development (WSD) contract efforts aimed to mitigate schedule risk. | - | 77.500 |
| **Congressional Adds Subtotals** | 95.500 | 77.500 |

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

| Line Item | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| • A12002: *Future Long Range Assault Aircraft (FLRAA)* | - | - | 0.000 | - | 0.000 | - | - | 224.993 | 849.391 | Continuing | Continuing |
| • CS7: *FLRAA MTA* | - | - | 483.441 | - | 483.441 | 16.885 | 6.880 | - | - | 0.000 | 507.206 |

**Remarks**

Program Element 0603465A Future Vertical Lift Advanced Technology includes Joint Multi-Role Technology Demonstration (JMR-TD); supported flying demonstrator activities providing knowledge transfer from flight test, data analysis, Soldier touch points, and risk reduction activities to the FLRAA program.

Project CS7 includes all FLRAA MTA efforts from FY 2023 and beyond, which was initiated as a planned accomplishment under Project B47 in FY 2022.

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Army | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603801A / *Aviation - Adv Dev* | **Project (Number/Name)**<br>B47 / *Future Vertical Lift* |

**D. Acquisition Strategy**

The Army is executing a hybrid acquisition approach to design, develop, and deliver the FLRAA weapons system. In order to support the Army's modernization strategy and concept for multi-domain operations, the FLRAA program will deliver a first unit equipped in FY 2030. This hybrid approach builds on the JMR-TD efforts (ongoing since 2013); the Army's AoA (completed in July 2019); and multiple ongoing risk mitigation efforts.

The Army's risk mitigation activities ahead of the Weapon System Development include: (1) additional conceptual design and flight envelope expansion tasks on the existing JMR-TD TIA; (2) MOSA, FVL Architecture Collaboration Working Group (with participation from industry and academia) to establish a common architecture requirements framework for FLRAA and FARA system development; and (3) a CD&RR effort, awarded to two PAHs, using an Aviation Missile and Technology Consortium (AMTC) Other Transaction Authority (OTA) agreements to provide substantiating technical documentation on weapon system designs, requirements decompositions, trade-studies, and requirements feasibility for the FLRAA Weapon System Development.

These risk reduction activities have maintained industry engagement and momentum from the JMR-TD S&T program, inform capabilities and system requirements, and provided initial trade assessments for the final operational requirements. They also informed the final acquisition strategy, mature the Government's architecture requirements development, and transition appropriate S&T data and technologies to the PoR. CD&RR Phase II incorporates efforts leading to preliminary design using a digital engineering environment. In FY 2022, the Army plans to competitively award the Weapon System Development contract to one vendor with a hybrid acquisition approach. This approach includes the opportunity to employ new DoDI 5000.80 (Operation of the Middle Tier Acquisition (MTA)) authorities along with a tailored DoDI 5000.85 (Major Capability Acquisition) acquisition strategy.

Finally, the Army is also addressing life cycle affordability, sustainability, and maintainability early in the program. The FLRAA program is employing multiple strategies including: should cost reduction opportunities, use of a digital thread from design through sustainment, and stochastic sustainment modeling. Additionally, FLRAA is one of the Army's pilot programs for life cycle intellectual property and data strategy development.

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603801A / *Aviation - Adv Dev* | **Project (Number/Name)**<br>B47 / *Future Vertical Lift* |

**Management Services ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Program Management | Various | Various : Redstone Arsenal, AL | 8.609 | 4.780 | Dec 2020 | 11.783 | Dec 2021 | 1.784 | Dec 2022 | - | | 1.784 | Continuing | Continuing | Continuing |
| Program Management-Consolidated Support Contract | C/TBD | TBD : Redstone Arsenal, AL | - | - | | - | | 5.916 | Mar 2023 | - | | 5.916 | Continuing | Continuing | - |
| Program Management-Services Support | Various | Various : Redstone Arsenal, AL | - | - | | - | | 4.472 | May 2023 | - | | 4.472 | Continuing | Continuing | - |
| FY 2022 SBIR/STTR Transfer | TBD | Various : Various | - | - | | 16.203 | | - | | - | | - | 0.000 | 16.203 | - |
| | | **Subtotal** | 8.609 | 4.780 | | 27.986 | | 12.172 | | - | | 12.172 | Continuing | Continuing | N/A |

**Product Development ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Preliminary Design and Virtual Prototype Rapid Prototyping | C/TBD | TBD : TBD | - | - | | 16.970 | Aug 2022 | - | | - | | - | 0.000 | 16.970 | - |
| Prototype Material and Manufacturing Development | C/TBD | Various : Various | - | - | | 45.707 | Aug 2022 | 172.744 | Nov 2022 | - | | 172.744 | Continuing | Continuing | - |
| | | **Subtotal** | - | - | | 62.677 | | 172.744 | | - | | 172.744 | Continuing | Continuing | N/A |

**Support ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Acquisition and Supportability Analysis | C/Various | Army Materiel Command / Army Contracting Command/Army Future Command : Redstone Arsenal, AL | 6.266 | 3.317 | Nov 2020 | 4.048 | Nov 2021 | 3.929 | Nov 2022 | - | | 3.929 | Continuing | Continuing | Continuing |

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>2040 / 4 | R-1 Program Element (Number/Name)<br>PE 0603801A / *Aviation - Adv Dev* | Project (Number/Name)<br>B47 / *Future Vertical Lift* | |

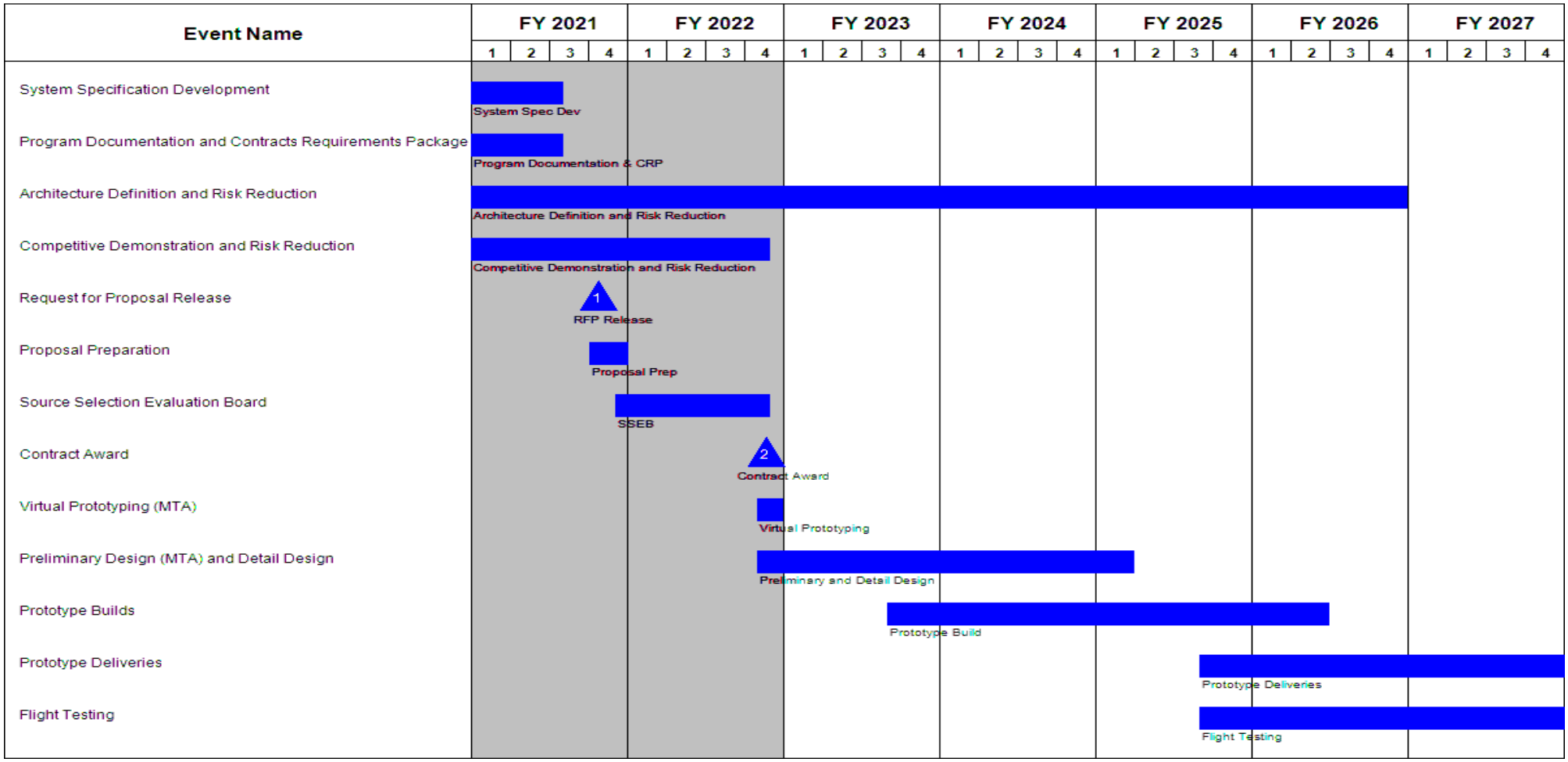
**Support ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| University Partnership / Model Based System Engineering (MBSE) | C/Various | Various : Various | 5.000 | 5.000 | Mar 2021 | - | | - | | - | | - | 0.000 | 10.000 | - |
| Engineering Services/ Competitive Demonstration Risk Reduction - Other | C/CS | Advanced Technology International;Sikorsky Aircraft Corp; Bell Textron Inc : Summerville, SC; Stratford, CT; Fort Worth, TX | 75.600 | 174.265 | Mar 2021 | 365.219 | Nov 2021 | - | | - | | - | 0.000 | 615.084 | - |
| Engineering Services / Research Studies - Other | Various | Various : Huntsville, AL | 0.512 | 23.908 | Mar 2021 | 8.173 | Nov 2021 | 8.242 | Nov 2022 | - | | 8.242 | Continuing | Continuing | Continuing |
| Engineering Services / Research Studies - Organic | MIPR | Various : Redstone Arsenal, AL | 10.375 | 2.268 | Feb 2021 | 5.910 | Mar 2022 | - | | - | | - | Continuing | Continuing | Continuing |
| Engineering Services / Research Studies - Other | C/Various | Various : Various | 13.908 | - | | 47.399 | Dec 2021 | - | | - | | - | Continuing | Continuing | Continuing |
| Engineering Services / Research Studies - Collaborative Efforts | MIPR | Aviation Missile Command : Huntsville, AL | - | - | | - | | 5.435 | Jan 2023 | - | | 5.435 | 0.000 | 5.435 | - |
| FY 2023 FLRAA PoR SBIR/STTR Transfer | TBD | Various : Various | - | - | | - | | 7.672 | Oct 2022 | - | | 7.672 | 0.000 | 7.672 | - |
| | | **Subtotal** | 111.661 | 208.758 | | 430.749 | | 25.278 | | - | | 25.278 | Continuing | Continuing | N/A |

| | Prior Years | FY 2021 | | FY 2022 | | FY 2023 Base | | FY 2023 OCO | | FY 2023 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Project Cost Totals** | 120.270 | 213.538 | | 521.412 | | 210.194 | | - | | 210.194 | Continuing | Continuing | N/A |

**Remarks**

| Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603801A / *Aviation - Adv Dev* | **Project (Number/Name)**<br>B47 / *Future Vertical Lift* |



| Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603801A / *Aviation - Adv Dev* | **Project (Number/Name)**<br>B47 / *Future Vertical Lift* |

## Schedule Details

| | Start | | End | |
|---|---|---|---|---|
| **Events** | **Quarter** | **Year** | **Quarter** | **Year** |
| Materiel Development Decision | 1 | 2017 | 1 | 2017 |
| Analysis of Alternatives | 3 | 2017 | 4 | 2019 |
| System Specification Development | 2 | 2019 | 3 | 2021 |
| Program Documentation and Contracts Requirements Package | 2 | 2019 | 3 | 2021 |
| Architecture Definition and Risk Reduction | 3 | 2019 | 4 | 2026 |
| Competitive Demonstration and Risk Reduction | 2 | 2020 | 4 | 2022 |
| Request for Proposal Release | 4 | 2021 | 4 | 2021 |
| Proposal Preparation | 4 | 2021 | 4 | 2021 |
| Source Selection Evaluation Board | 4 | 2021 | 4 | 2022 |
| Contract Award | 4 | 2022 | 4 | 2022 |
| Virtual Prototyping (MTA) | 4 | 2022 | 4 | 2022 |
| Preliminary Design (MTA) and Detail Design | 4 | 2022 | 1 | 2025 |
| Prototype Builds | 3 | 2023 | 2 | 2026 |
| Prototype Deliveries | 3 | 2025 | 2 | 2028 |
| Flight Testing | 3 | 2025 | 4 | 2029 |

**Note**

Virtual Prototyping Middle Tier Acquisition (MTA) is funded in B47 for FY 2022 and realigns to Project CS7 in FY 2023.

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Army | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>2040 / 4 | R-1 Program Element (Number/Name)<br>PE 0603801A / *Aviation - Adv Dev* | Project (Number/Name)<br>CK7 / *FARA Ecosystem* | |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CK7: *FARA Ecosystem* | - | - | 21.986 | 28.794 | - | 28.794 | 29.767 | 30.631 | 31.564 | 31.871 | 0.000 | 174.613 |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |

**Note**

This effort was previously funded under the Future Attack Reconnaissance Aircraft (FARA) Project F12 and has been restructured to a unique Project to better support the cross-cutting capabilities demonstrated within this Project and provide transparency in modernization efforts.

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

The Future Vertical Lift (FVL) Project's funding builds upon prior demonstrations and provides for early opportunities to validate technologies and requirement concepts and to off-ramp, maintain, or accelerate investments, which enable modernization at the speed of relevance.

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|
| ***Title:*** FARA Ecosystems | - | 21.183 | 28.794 |
| ***Description:*** Funding for FARA Ecosystem supports prototyping demonstration with relevant technologies in a Joint All Domain Operations environment, which will inform FVL requirements including FARA, FLRAA, MOSA, and Air Launched Effects (ALE) and enable timely decisions to accelerate capabilities, develop new capabilities, or defer development based on actual demonstration outcomes and user feedback. The Army?s Experimental Demonstration Gateway Event (EDGE) and Project Convergence will serve as the culminating events for FARA Ecosystem demonstrations. | | | |
| ***FY 2022 Plans:***<br>Continues FARA Ecosystem prototyping demonstration activities, previously conducted under Project F12, through primary surrogate platforms with multiple technologies to enable early opportunity to validate technologies and requirement concepts and to off-ramp, maintain, or accelerate investments in areas of interoperability, mission equipment, architecture, automation, autonomy, and interfaces (A3I), kinetic and non-kinetic effects, and sensors. Demonstration activities will include early Soldier touch points which will enable early feedback to inform requirements and concepts. | | | |
| ***FY 2023 Plans:***<br>Continues FVL Ecosystem prototyping demonstration activities through primary surrogate platforms with multiple technologies. Transitions available S&T items directly into prototyping and operationally relevant demonstration activities. Continues prototyping and demonstration of architecture, automation, autonomy, and interfaces (A3I), kinetic and non-kinetic effects, and sensors. Conducts Soldier touch points to facilitate early feedback to inform requirements and concepts. | | | |
| ***FY 2022 to FY 2023 Increase/Decrease Statement:*** | | | |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Army | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603801A / *Aviation - Adv Dev* | **Project (Number/Name)**<br>CK7 / *FARA Ecosystem* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|
| Increase due to inflationary adjustments. | | | |
| ***Title:*** Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) | - | 0.803 | - |
| ***FY 2022 Plans:***<br>SBIR/STTR amount in accordance with Title 15 USC 638. | | | |
| ***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>SBIR/STTR amount in accordance with Title 15 USC 638. | | | |
| **Accomplishments/Planned Programs Subtotals** | - | 21.986 | 28.794 |

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

| Line Item | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| • F12: *Future Attack Reconnaissance Aircraft* | 480.758 | 635.062 | 439.915 | - | 439.915 | 151.567 | 670.200 | 769.789 | 1,072.795 | Continuing | Continuing |

**Remarks**

**D. Acquisition Strategy**

The FVL CFT will utilize a number of U.S. Army Combat Capability Development Centers, Other Government Agencies, Test Centers, Project Management Offices and their respective procurement and scope execution instruments to execute capability demonstrations to assess the viability of technology and inform the Ecosystems requirements and concepts.

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>2040 / 4 | R-1 Program Element (Number/Name)<br>PE 0603801A / *Aviation - Adv Dev* | Project (Number/Name)<br>CK7 / *FARA Ecosystem* | |

**Management Services ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SBIR/STTR | TBD | Various : Various | - | - | | 0.803 | Apr 2022 | - | | - | | - | 0.000 | 0.803 | - |
| | | **Subtotal** | - | - | | 0.803 | | - | | - | | - | 0.000 | 0.803 | N/A |

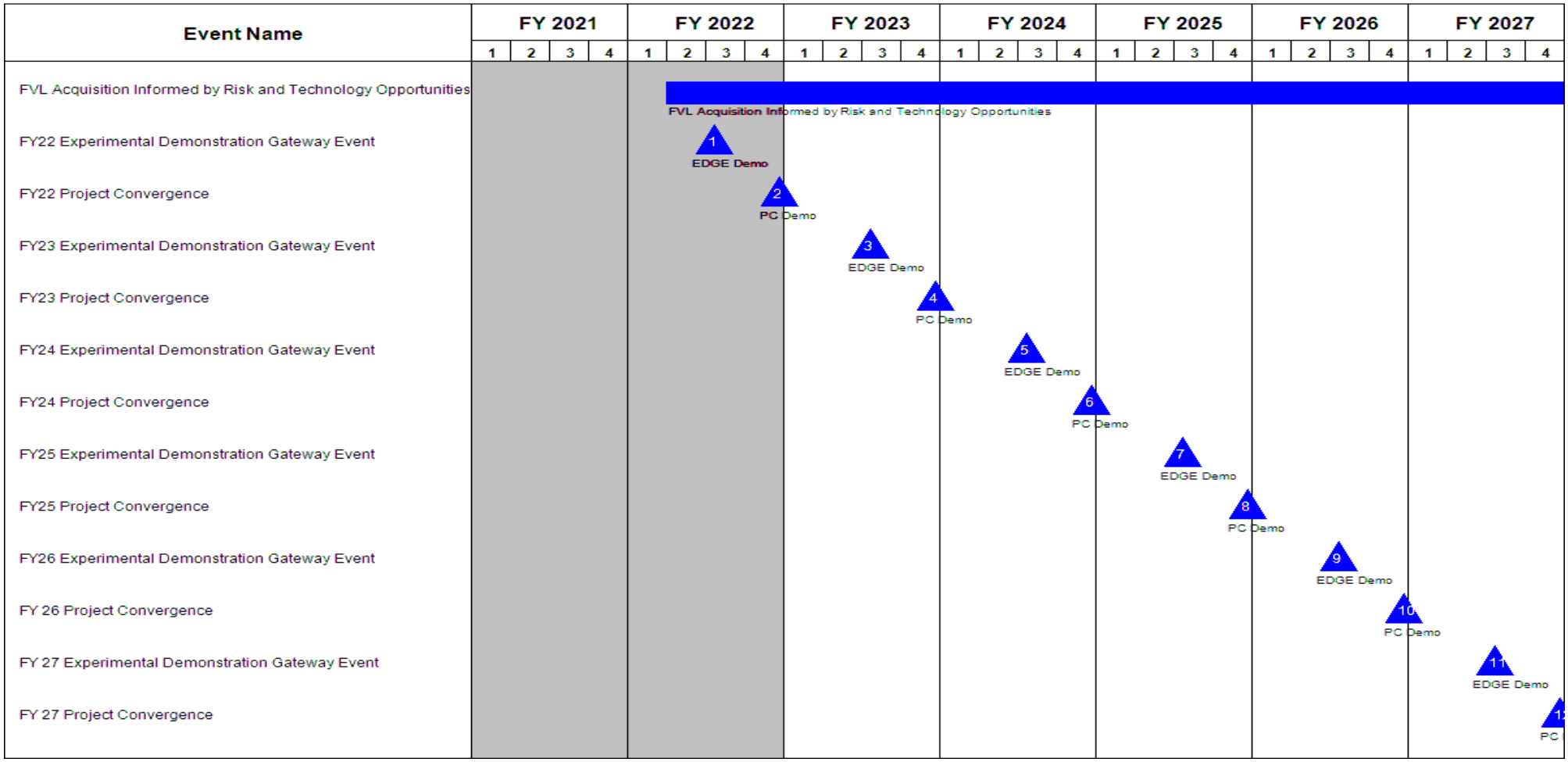
**Test and Evaluation ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FARA Ecosystem Demonstration | Various | Multiple : Multiple | - | - | | 21.183 | Nov 2021 | 28.794 | Nov 2022 | - | | 28.794 | Continuing | Continuing | Continuing |
| | | **Subtotal** | - | - | | 21.183 | | 28.794 | | - | | 28.794 | Continuing | Continuing | N/A |

| | Prior Years | FY 2021 | | FY 2022 | | FY 2023 Base | | FY 2023 OCO | | FY 2023 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Project Cost Totals** | - | - | | 21.986 | | 28.794 | | - | | 28.794 | Continuing | Continuing | N/A |

**Remarks**

| Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603801A / *Aviation - Adv Dev* | **Project (Number/Name)**<br>CK7 / *FARA Ecosystem* |



| Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603801A / *Aviation - Adv Dev* | **Project (Number/Name)**<br>CK7 / *FARA Ecosystem* |

## Schedule Details

| | Start | | End | |
|---|---|---|---|---|
| **Events** | **Quarter** | **Year** | **Quarter** | **Year** |
| FVL Acquisition Informed by Risk and Technology Opportunities | 2 | 2022 | 4 | 2027 |
| FY22 Experimental Demonstration Gateway Event | 3 | 2022 | 3 | 2022 |
| FY22 Project Convergence | 4 | 2022 | 4 | 2022 |
| FY23 Experimental Demonstration Gateway Event | 3 | 2023 | 3 | 2023 |
| FY23 Project Convergence | 4 | 2023 | 4 | 2023 |
| FY24 Experimental Demonstration Gateway Event | 3 | 2024 | 3 | 2024 |
| FY24 Project Convergence | 4 | 2024 | 4 | 2024 |
| FY25 Experimental Demonstration Gateway Event | 3 | 2025 | 3 | 2025 |
| FY25 Project Convergence | 4 | 2025 | 4 | 2025 |
| FY26 Experimental Demonstration Gateway Event | 3 | 2026 | 3 | 2026 |
| FY 26 Project Convergence | 4 | 2026 | 4 | 2026 |
| FY 27 Experimental Demonstration Gateway Event | 3 | 2027 | 3 | 2027 |
| FY 27 Project Convergence | 4 | 2027 | 4 | 2027 |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Army | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>2040 / 4 | R-1 Program Element (Number/Name)<br>PE 0603801A / *Aviation - Adv Dev* | Project (Number/Name)<br>CS7 / *FLRAA MTA* | |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CS7: *FLRAA MTA* | - | - | - | 483.441 | - | 483.441 | 16.885 | 6.880 | - | - | 0.000 | 507.206 |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |

**Note**

The FLRAA MTA was initiated under PE 0603801A/B47 - Future Vertical Lift in FY 2022 and was restructured into the unique Project CS7 for FY 2023 through the remainder of the MTA Program.

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

The Army's use of Middle Tier of Acquisition (MTA) authorities for Future Long Range Assault Aircraft (FLRAA) transitions work completed during the Competitive Demonstration and Risk Reduction effort to support three priority efforts: (1) completion of the rapid prototyping for the delta Preliminary Design Review; (2) deliver two virtual prototypes including a vehicle dynamic model and portable crewstation; and (3) support the requirements for Milestone B certification under 10 U.S.C. 2366b.

Funds will provide for the completion of the FLRAA weapon system preliminary design to include development of a digital backbone architecture to meet modular open system approach (MOSA) objectives. The development and delivery of two virtual prototypes will directly support early user involvement at the Air Maneuver Battle Lab (AMBL), the Combat Aviation Brigade Architecture Integration Lab (CABAIL), and also support system and subsystem analysis and testing.

The total cost of the FLRAA Middle Tier of Acquisition effort under this Project is $617.10 million RDT&E from FY23 to FY25. The remainder of the FLRAA MTA is fully funded across the Future Years Defense Program.

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|
| ***Title:*** Middle Tier of Acquisition (MTA) Preliminary Design and Virtual Prototype Rapid Prototyping | - | - | 483.441 |
| ***Description:*** The FLRAA MTA program supports finalization of the preliminary design through execution of the delta Preliminary Design Review (dPDR) to complete any outstanding tasks required to ensure any deficiencies identified during the Competitive Demonstration and Risk Reduction (CD&RR) effort are addressed, preliminary designs are sufficiently documented, and all mission system solutions are identified and incorporated into the design. Additionally, MTA efforts support design and development of two FLRAA virtual prototypes consisting of a FLRAA Vehicle Dynamics Model (VDM) and a FLRAA Portable Crewstation (FPC) to support system and subsystem analysis, testing, and training. | | | |
| ***FY 2023 Plans:***<br>Completes delta Preliminary Design Review work initiated under Project B47 and continues work on the FLRAA Virtual Prototypes. | | | |
| ***FY 2022 to FY 2023 Increase/Decrease Statement:*** | | | |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Army | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603801A / *Aviation - Adv Dev* | **Project (Number/Name)**<br>CS7 / *FLRAA MTA* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|
| FY 2022 funding increased from $0.000M to $483.441M to complete the delta Preliminary Design Review work required to support a Milestone B decision.The FLRAA MTA was initiated under PE 0603801A/B47 - Future Vertical Lift in FY 2022 and was restructured into the unique Project CS7 for FY 2023. | | | |
| **Accomplishments/Planned Programs Subtotals** | - | - | 483.441 |

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

| Line Item | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| • B47: *Future Vertical Lift* | 213.538 | 521.412 | 210.194 | - | 210.194 | 1,023.681 | 1,030.448 | 689.392 | 738.781 | Continuing | Continuing |

**Remarks**

The FLRAA MTA was initiated under PE 0603801A/B47 - Future Vertical Lift in FY 2022 and was restructured into the unique Project CS7 for FY 2023 through the remainder of the MTA Program.

**D. Acquisition Strategy**

The Future Long Range Assault Aircraft (FLRAA), Future Vertical Lift (FVL) Capability Set Three (CS3) is the program that will develop the next generation of affordable vertical lift tactical assault / utility aircraft for the Army.

The FLRAA MTA program supports finalization of the preliminary design through execution of the delta Preliminary Design Review (dPDR) to complete any outstanding tasks required to ensure any deficiencies identified during the Competitive Demonstration and Risk Reduction (CD&RR) effort are addressed, preliminary designs are sufficiently documented, and all mission system solutions are identified and incorporated into the design. Additionally, FLRAA MTA efforts support design and development of FLRAA virtual prototypes consisting of a FLRAA VDM and a FPC. The VDM will be used in conjunction with an FPC prototype simulator integrated within the CABAIL and the AMBL capabilities. The VDM will perform hardware-in-the-loop tests during the design phase for early validation by offline simulation; conduct early Tactics, Techniques, and Procedures (TTPs) experimentation prior to user evaluations; and to participate in Army warfighting exercises for development of Multi-Domain Operation doctrine and concepts.

The follow-on physical weapons system development will leverage the outcomes of the FLRAA MTA program to provide the Joint Force with a capability that possesses transformational increases in speed, range, and maneuverability to allow the Army to retain the freedom of maneuver and win in Multi Domain Operations (MDO). This medium lift tactical assault and medical evacuation (MEDEVAC) aircraft will augment the Army's H-60 Black Hawk utility helicopter fleet to provide Combat Aviation Brigades with long-range, high-speed options that are survivable in contested environments.

The Army is executing a hybrid acquisition approach to design, develop, and deliver the FLRAA weapons system. In order to support the Army's modernization strategy and concept for multi-domain operations, the FLRAA program will deliver a first unit equipped in FY 2030. This hybrid approach builds on the Joint Multi-Role Technology Demonstration (JMR-TD) efforts (ongoing since 2013); the Army's AoA (completed in July 2019); and multiple ongoing risk mitigation efforts.

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Army | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603801A / *Aviation - Adv Dev* | **Project (Number/Name)**<br>CS7 / *FLRAA MTA* |

The Army's risk mitigation activities ahead of the MTA and Weapon System Development include: (1) additional conceptual design and flight envelope expansion tasks on the existing JMR-TD TIA; (2) MOSA, FVL Architecture Collaboration Working Group (with participation from industry and academia) to establish a common architecture requirements framework for FLRAA and FARA system development; and (3) a CD&RR effort, awarded to two PAHs, using an AMTC OTA agreements to provide substantiating technical documentation on weapon system designs, requirements decompositions, trade-studies, and requirements feasibility for the FLRAA PoR. These risk reduction activities maintain industry engagement and momentum from the JMR-TD S&T program, inform capabilities and system requirements, and provide initial trade assessments for the final operational requirements. They also inform the final acquisition strategy, mature the Government's architecture requirements development, and transition appropriate S&T data and technologies to the PoR. CD&RR Phase II incorporates efforts leading to preliminary design using a digital engineering environment. In FY 2022, the Army plans to competitively award the Weapon System Development contract to one vendor with a hybrid acquisition approach.

This approach includes the opportunity to employ new DoDI 5000.80 (Operation of the Middle Tier Acquisition (MTA)) authorities along with a tailored DoDI 5000.85 (Major Capability Acquisition) acquisition strategy. Finally, the Army is also addressing life cycle affordability, sustainability, and maintainability early in the program. The FLRAA program is employing multiple strategies including: should cost reduction opportunities, use of a digital thread from design through sustainment, and stochastic sustainment modeling. FLRAA is also one of the Army's pilot programs for life cycle intellectual property and data strategy development.

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>2040 / 4 | R-1 Program Element (Number/Name)<br>PE 0603801A / *Aviation - Adv Dev* | Project (Number/Name)<br>CS7 / *FLRAA MTA* | |

**Management Services ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FLRAA MTA Technical Support | MIPR | AvMC SRD : Huntsville, AL | - | - | | - | | 7.155 | Dec 2022 | - | | 7.155 | 0.000 | 7.155 | - |
| FLRAA MTA Program and Technical Support | C/CPFF | Torch : Huntsville, AL | - | - | | - | | 5.916 | Apr 2023 | - | | 5.916 | 0.000 | 5.916 | - |
| | | **Subtotal** | - | - | | - | | 13.071 | | - | | 13.071 | 0.000 | 13.071 | N/A |

**Product Development ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FLRAA MTA delta Preliminary Design and Virtual Prototyping | C/CPIF | TBD : TBD | - | - | | - | | 430.221 | Nov 2022 | - | | 430.221 | Continuing | Continuing | Continuing |
| | | **Subtotal** | - | - | | - | | 430.221 | | - | | 430.221 | Continuing | Continuing | N/A |

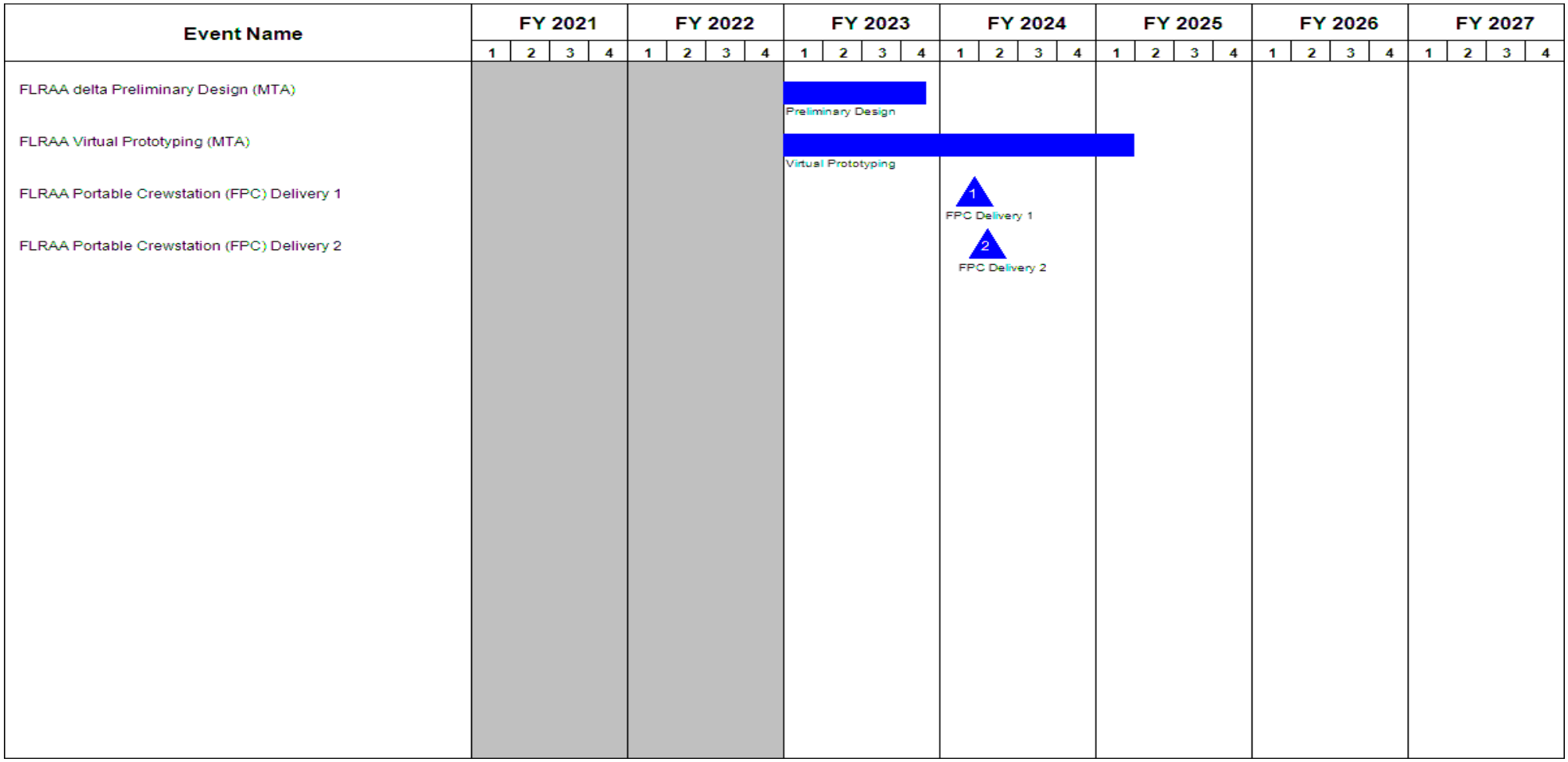
**Support ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SBIR/STTR | TBD | Multiple : Multiple | - | - | | - | | 16.691 | Oct 2022 | - | | 16.691 | 0.000 | 16.691 | - |
| FLRAA MTA Technical Services | TBD | Various : Various | - | - | | - | | 23.458 | Mar 2023 | - | | 23.458 | 0.000 | 23.458 | - |
| | | **Subtotal** | - | - | | - | | 40.149 | | - | | 40.149 | 0.000 | 40.149 | N/A |

| | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Project Cost Totals** | - | - | | - | | 483.441 | | - | | 483.441 | Continuing | Continuing | N/A |

**Remarks**

| Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603801A / *Aviation - Adv Dev* | **Project (Number/Name)**<br>CS7 / *FLRAA MTA* |




**Note**

Middle Tier Acquisition (MTA) efforts are funded in Project B47 in FY2022. Funds are realigned to new budget project CS7 in FY23.

| Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603801A / *Aviation - Adv Dev* | **Project (Number/Name)**<br>CS7 / *FLRAA MTA* |

## Schedule Details

| | Start | | End | |
|---|---|---|---|---|
| **Events** | **Quarter** | **Year** | **Quarter** | **Year** |
| FLRAA delta Preliminary Design (MTA) | 1 | 2023 | 4 | 2023 |
| FLRAA Virtual Prototyping (MTA) | 1 | 2023 | 1 | 2025 |
| FLRAA Portable Crewstation (FPC) Delivery 1 | 1 | 2024 | 1 | 2024 |
| FLRAA Portable Crewstation (FPC) Delivery 2 | 2 | 2024 | 2 | 2024 |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Army | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>2040 / 4 | R-1 Program Element (Number/Name)<br>PE 0603801A / *Aviation - Adv Dev* | Project (Number/Name)<br>F12 / *Future Attack Reconnaissance Aircraft* | |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| F12: *Future Attack Reconnaissance Aircraft* | - | 480.758 | 635.062 | 439.915 | - | 439.915 | 151.567 | 670.200 | 769.789 | 1,072.795 | Continuing | Continuing |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |

**Note**

This effort restructured funds within the FARA Ecosystem Project/CK7 to better support the cross-cutting capabilities demonstration and to provide transparency in modernization efforts.

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

The Future Attack Reconnaissance Aircraft (FARA) Project's funding provides for the development of a Capability Set 1 aircraft system within the Future Vertical Lift (FVL) family of systems. FVL Capability Set 1 aircraft will conduct attack/reconnaissance missions in support of the Army's modernization objective of conducting Multi-Domain Operations (MDO). FARA will support the Army, including Special Operations Command (USSOCOM) and the Joint Force, in a contested, near peer threat environment. The FARA platform will fill the gap in capability for light weight attack/reconnaissance while significantly increasing speed, range, survivability, and lethality, providing Combatant Commanders with greatly increased tactical, operational and strategic capabilities.

Funding supports the development and integration of Government Furnished Equipment (GFE). FARA will be powered by Improved Turbine Engine (ITE), with minimum cruise airspeed greater than or equal to 180 KTAS (1.5x Apache), an integrated 20mm gun, Modular Effects Launcher (MEL) for Air Launched Effects (ALE) and Long Range Precision Munition (LRPM), Modular Open System Approach (MOSA) digital backbone, and the highest level of maneuverability and agility.

The FVL Capability Set 1 Initial Capabilities Requirements Document (ICRD) was approved in July 2018 under the name Future Attack Reconnaissance Aircraft (FARA). An Abbreviated Capability Development Document (A-CDD) was approved on 9 Apr 2021. The Acquisition Approach and Determination and Findings for Other Transaction Authority for Prototyping agreements were approved on 1 February 2019 by the Acting Under Secretary of Defense (Acquisition and Sustainment) to execute a Competitive Prototyping effort.

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|
| ***Title:*** Future Attack Reconnaissance Aircraft | 480.758 | 607.065 | 439.915 |
| ***Description:*** Design, build, and test Competitive Prototype (CP) aircraft to rapidly develop and field a Multi-Domain Operations capable attack/reconnaissance vertical lift aircraft. | | | |
| ***FY 2022 Plans:***<br>Continues support of HW and SW development, component/subsystem AI&T, SW and HW In-the-Loop efforts, GFE planning and MOSA development in preparation for final AI&T for CP aircraft. Begins Inc #1 Air Vehicle design and mission systems | | | |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Army | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603801A / *Aviation - Adv Dev* | **Project (Number/Name)**<br>F12 / *Future Attack Reconnaissance Aircraft* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|
| development. Continues support of documentation requirements for the Program of Record (POR) and supports an Engineering and Manufacturing Development (EMD) Request For Proposal (RFP) release.<br>***FY 2023 Plans:***<br>Continues support of hardware (HW) and software (SW) development, component/subsystem Assembly, Integration and Test (AI&T), SW and HW In-the-Loop efforts, GFE planning and MOSA development in preparation for final AI&T of the CP aircraft and supports CP Flight Demonstration. Continues Increment #1 Weapons System preliminary design (air vehicle and mission systems development) with two in-process design reviews. Supports the first of two Open Systems Verification Demonstrations that will verify each vendors compliance with MOSA standards. Continues support of documentation requirements for the Program of Record (POR) and supports an Engineering and Manufacturing Development (EMD) Request For Proposal (RFP) release. Initiates Source Selection Evaluation Board (SSEB) for EMD contract award and down selection to one vendor.<br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>Funding requirements decrease in FY23 due to significant reduction in CP NRE requirements. NRE requirements reflect completion of CP design and build and transition to system testing. | | | |
| ***Title:*** Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR)<br>***FY 2022 Plans:***<br>SBIR/STTR amount in accordance with Title 15 USC 638.<br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>SBIR/STTR amount in accordance with Title 15 USC 638. | - | 22.997 | - |
| **Accomplishments/Planned Programs Subtotals** | 480.758 | 630.062 | 439.915 |

| | FY 2021 | FY 2022 |
|---|---|---|
| ***Congressional Add:*** FARA All Electrical Flight Controls<br>***FY 2022 Plans:*** Support analysis of Flight Control Systems for FARA Air Vehicle / Weapon System Preliminary Design. | - | 5.000 |
| **Congressional Adds Subtotals** | - | 5.000 |

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

| Line Item | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| • B47: *Future Vertical Lift* | 213.538 | 521.412 | 210.194 | - | 210.194 | 1,023.681 | 1,030.448 | 689.392 | 738.781 | Continuing | Continuing |
| • A12001: *Future Attack Recon Aircraft* | - | - | 0.000 | - | 0.000 | - | - | - | 83.812 | Continuing | Continuing |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Army | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603801A / *Aviation - Adv Dev* | **Project (Number/Name)**<br>F12 / *Future Attack Reconnaissance Aircraft* |

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

| Line Item | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| • CK7: *FARA Ecosystem* | - | 21.986 | 28.794 | - | 28.794 | 29.767 | 30.631 | 31.564 | 31.871 | 0.000 | 174.613 |

**Remarks**

The FARA Competitive Prototype effort was initiated in FY 2019 with a Congressional Add of $75.400 million under Program Element (PE) 0603801A Aviation - Adv Dev Project B47 Future Vertical Lift, which was shared with Future Long Range Assault Aircraft. FARA requirements will be executed under PE 0603801A Aviation - Adv Dev Project F12 Future Attack Reconnaissance Aircraft from FY 2020 and beyond.

A12001: FARA funding line represents the follow on procurement effort associated with Army Program Element (APE) 0603801A.

**D. Acquisition Strategy**

The Future Attack Reconnaissance Aircraft (FARA) program is executing a streamlined acquisition approach leveraging modern tools, processes, and industry innovation, while employing efficiencies provided by the Army's modernization enterprise and Cross Functional Team (CFT) framework. The aircraft developed under this program will utilize a MOSA approach, which will enable more efficient and cost effective mission equipment integration throughout the lifecycle of the weapon system.

The Army is executing a two-phased FARA Competitive Prototyping (CP) effort from FY 2019 through Milestone B using Other Transaction Authority for Prototyping (OTAP). The scope of this effort includes prototype design and fabrication process refinement, subsystem development and representative system level testing, flight control and mission processor software development/testing, development of systems integration labs, development or modification of test fixtures and facilities, preparation of test plans and reports, the generation of airworthiness documentation, and testing of all processes and subsystems within the prototype aircraft.

The initial design and risk reduction phase was awarded in April 2019 to five industry performers. Phase two began in March 2020 with two of the five industry performers selected to proceed to final detailed design and the development, integration and test of a flyable prototype air vehicle. Phase two will culminate with flight testing of the FARA Competitive Prototypes to inform Milestone B and entry to EMD.

The Competitive Prototype effort will inform full FARA Weapon System requirements development process, and will develop the data needed to reduce the risks for full Weapon System design, integration, testing, and qualification to be completed during the FARA EMD phase.

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>2040 / 4 | R-1 Program Element (Number/Name)<br>PE 0603801A / *Aviation - Adv Dev* | Project (Number/Name)<br>F12 / *Future Attack Reconnaissance Aircraft* | |

**Management Services ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SBIR/STTR Transfer | TBD | Various : Various | - | - | | 22.997 | Apr 2022 | 17.597 | Oct 2022 | - | | 17.597 | 0.000 | 40.594 | Continuing |
| PM FARA System Engineering and Program Mangement | Various | Various : Redstone Arsenal, AL | 11.101 | 11.030 | Mar 2021 | 17.031 | Mar 2022 | 24.332 | Mar 2023 | - | | 24.332 | Continuing | Continuing | Continuing |
| | | **Subtotal** | 11.101 | 11.030 | | 40.028 | | 41.929 | | - | | 41.929 | Continuing | Continuing | N/A |

**Product Development ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Competitive Prototype (CP) Execution - Other Vendors | C/Various | CCDC AvMC : Redstone Arsenal, AL | 24.016 | - | | - | | - | | - | | - | 0.000 | 24.016 | - |
| Competitive Prototype (CP) Execution - Raider X | C/CS | Sikorsky Aircraft Corporation : Stratford, CT | 152.000 | 201.500 | Feb 2021 | 237.000 | Oct 2021 | 159.500 | Oct 2022 | - | | 159.500 | 0.000 | 750.000 | - |
| Competitive Prototype (CP) Execution - 360 Invictus | C/CS | Bell Textron, Inc. : Fort Worth, TX | 135.849 | 187.499 | Feb 2021 | 127.715 | Oct 2021 | 76.157 | Oct 2022 | - | | 76.157 | 0.000 | 527.220 | - |
| Inc #1 Air Vehicle / Weapons System Preliminary Design | C/Various | Sikorsky Aircraft Corporation and Bell Textron, Inc. : Stratford, CT and Fort Worth, TX | - | - | | 67.664 | Dec 2021 | 76.992 | Oct 2022 | - | | 76.992 | Continuing | Continuing | Continuing |
| Inc #1 Mission Systems Development | C/Various | Sikorsky Aircraft Corporation and Bell Textron, Inc. : Stratford, CT and Fort Worth, TX | - | 8.335 | Jul 2021 | 64.776 | Dec 2021 | 21.716 | Dec 2022 | - | | 21.716 | Continuing | Continuing | Continuing |
| GFE - Improved Turbine Engine Development - Single Engine Configuration | C/CPIF | PM ATE : Redstone Arsenal | 13.298 | 13.442 | Mar 2021 | 16.670 | Dec 2021 | 7.412 | Dec 2022 | - | | 7.412 | Continuing | Continuing | Continuing |

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>2040 / 4 | R-1 Program Element (Number/Name)<br>PE 0603801A / *Aviation - Adv Dev* | Project (Number/Name)<br>F12 / *Future Attack Reconnaissance Aircraft* | |

**Product Development ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GFE - Modular Effects Launcher Development | Various | CCDC AvMC : Redstone Arsenal, AL | 4.524 | 9.744 | Mar 2021 | 15.560 | Dec 2021 | 12.535 | Dec 2022 | - | | 12.535 | Continuing | Continuing | Continuing |
| GFE - 20mm Cannon Development | Various | CCDC AC : Picatinny Arsenal, NJ | 13.812 | 6.930 | Mar 2021 | 6.200 | Dec 2021 | 5.900 | Dec 2022 | - | | 5.900 | Continuing | Continuing | Continuing |
| GFE - Radar Development | Various | CCDC C5ISR : Aberdeen Proving Ground, MD | 3.009 | 3.500 | Mar 2021 | 8.052 | Mar 2022 | - | | - | | - | 0.000 | 14.561 | Continuing |
| Modular Open System Approach Development | Various | CCDC AvMC : Redstone Arsenal, AL | 24.316 | 17.972 | Mar 2021 | 23.602 | Dec 2021 | 12.543 | Dec 2022 | - | | 12.543 | Continuing | Continuing | Continuing |
| | | **Subtotal** | 370.824 | 448.922 | | 567.239 | | 372.755 | | - | | 372.755 | Continuing | Continuing | N/A |

**Support ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Engineering Services Support - CP Air Vehicle Dev & Test | MIPR | Redstone Test Center, CCDC-AvMC: : Redstone Arsenal, AL | 7.246 | 1.477 | Mar 2021 | 3.715 | Dec 2021 | 7.178 | Dec 2022 | - | | 7.178 | 0.000 | 19.616 | Continuing |
| Engineering Services Support - CP Airworthiness | MIPR | CCDC-AvMC-SRD: : Redstone Arsenal, AL | 7.127 | 14.112 | Mar 2021 | 13.500 | Mar 2022 | 13.500 | Mar 2023 | - | | 13.500 | 0.000 | 48.239 | Continuing |
| Simulation, Studies, and Analysis | TBD | Various : Various | 4.874 | 5.217 | Mar 2021 | 5.580 | Mar 2022 | 4.553 | Mar 2023 | - | | 4.553 | Continuing | Continuing | Continuing |
| FARA All Electrical Flight Controls | TBD | Various : Various | - | - | | 5.000 | Aug 2022 | - | | - | | - | 0.000 | 5.000 | - |
| | | **Subtotal** | 19.247 | 20.806 | | 27.795 | | 25.231 | | - | | 25.231 | Continuing | Continuing | N/A |

| | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Project Cost Totals** | 401.172 | 480.758 | | 635.062 | | 439.915 | | - | | 439.915 | Continuing | Continuing | N/A |

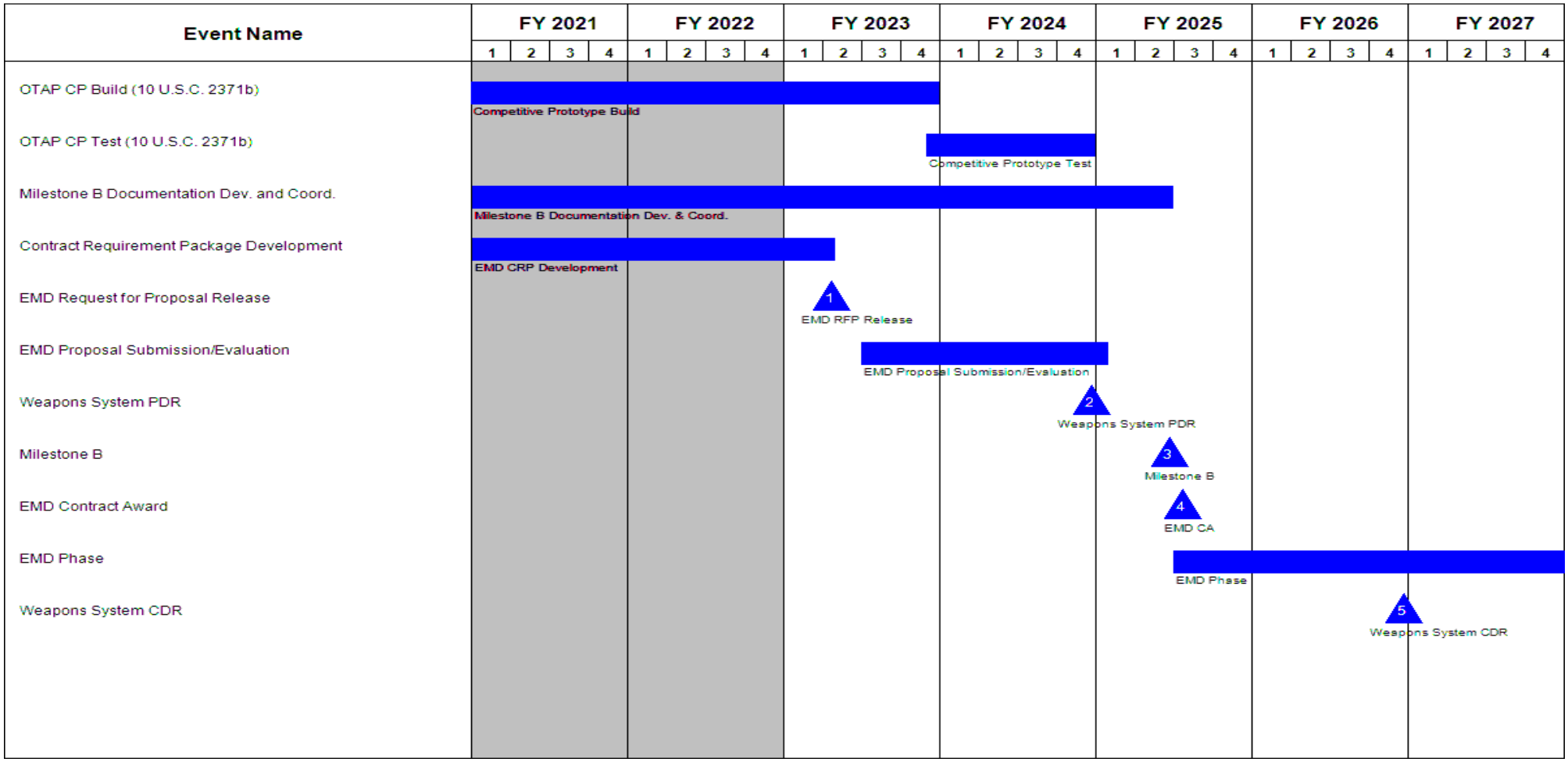
| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>2040 / 4 | R-1 Program Element (Number/Name)<br>PE 0603801A / *Aviation - Adv Dev* | Project (Number/Name)<br>F12 / *Future Attack Reconnaissance Aircraft* | |

| | Prior Years | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|

**Remarks**

Under the Other Transaction Authorities for Prototyping (OTAP), five incrementally funded agreements were awarded in April 2019 which have payments based on performance milestones through Fiscal Year (FY) 2023. Funding will be incrementally added to the existing awards by modification as negotiated with each performer. In March 2020, two of the five performers were selected for continued execution through final design, prototype build, and flight testing; the other three performers were issued a stop work order and ceased to receive additional funding.

| Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603801A / *Aviation - Adv Dev* | **Project (Number/Name)**<br>F12 / *Future Attack Reconnaissance Aircraft* |



| Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603801A / *Aviation - Adv Dev* | **Project (Number/Name)**<br>F12 / *Future Attack Reconnaissance Aircraft* |

## Schedule Details

| | Start | | End | |
|---|---|---|---|---|
| **Events** | **Quarter** | **Year** | **Quarter** | **Year** |
| OTAP Competitive Prototype (CP) Design (10 U.S.C. 2371b) | 3 | 2019 | 2 | 2020 |
| OTAP CP - Down Select to 2 Performers (10 U.S.C. 2371b) | 2 | 2020 | 2 | 2020 |
| OTAP CP Build (10 U.S.C. 2371b) | 3 | 2020 | 4 | 2023 |
| OTAP CP Test (10 U.S.C. 2371b) | 4 | 2023 | 4 | 2024 |
| Milestone B Documentation Dev. and Coord. | 1 | 2021 | 2 | 2025 |
| Contract Requirement Package Development | 1 | 2021 | 2 | 2023 |
| EMD Request for Proposal Release | 2 | 2023 | 2 | 2023 |
| EMD Proposal Submission/Evaluation | 3 | 2023 | 1 | 2025 |
| Weapons System PDR | 4 | 2024 | 4 | 2024 |
| Milestone B | 2 | 2025 | 2 | 2025 |
| EMD Contract Award | 3 | 2025 | 3 | 2025 |
| EMD Phase | 3 | 2025 | 2 | 2032 |
| Weapons System CDR | 4 | 2026 | 4 | 2026 |