



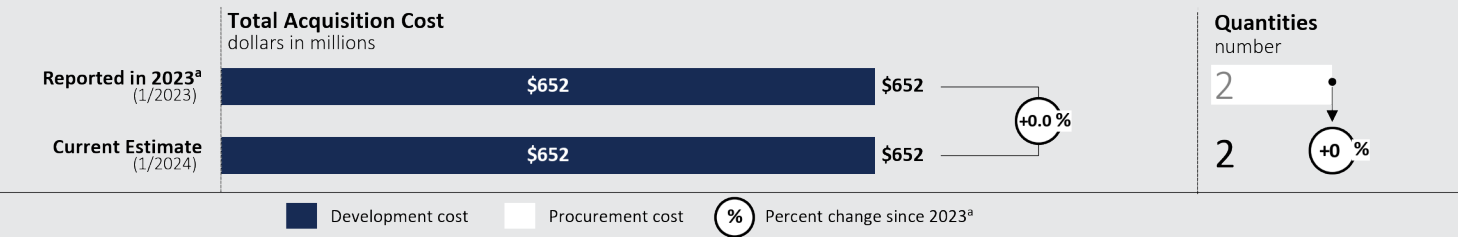
Source: Bell Textron, Inc. | GAO-24-106831

Future Long Range Assault Aircraft (FLRAA)

FLRAA is part of the Future Vertical Lift portfolio of systems, a top modernization priority for the Army. It is intended to be a medium-sized assault and utility aircraft and deliver speed, range, agility, endurance, and sustainability improvements as compared to current Black Hawk helicopters. The Army also expects the program to provide combatant commanders with tactical capabilities at operational and strategic distances. The Army initiated FLRAA using the MTA rapid prototyping pathway in October 2020 to develop two virtual prototypes.



Estimated Middle Tier of Acquisition Cost and Quantities fiscal year 2024 dollars in millions

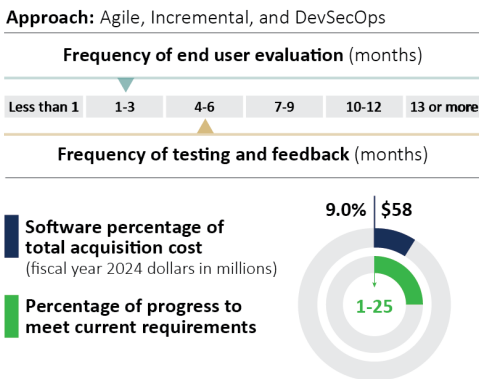


^aGAO-23-106059.

Program Background and Transition Plan

In March 2020, the Army selected two contractors for project awards to develop FLRAA conceptual prototype designs. In December 2022, the Army awarded a development contract to Bell Textron, Inc. to support completion of virtual prototype development, as well as system development and low-rate initial production. The MTA effort will culminate in a virtual prototype of the FLRAA to reduce technical risk prior to prototype aircraft production. The Army plans to transition FLRAA to the major capability acquisition pathway with entry at development start during the third quarter of fiscal year 2024. The Army plans to deliver its first aircraft in 2030.

Software Development as of January 2024



Attainment of Business Case Knowledge as of January 2024

Key Elements of a Business Case	Status at Initiation	Current Status
Approved requirements document	●	●
Approved middle tier of acquisition strategy	●	●
Formal technology risk assessment	○	○
Cost estimate based on independent assessment	●	●
Formal schedule risk assessment	○	○

● Knowledge attained ○ Knowledge not attained ... Information not available NA - Not applicable

Program Essentials

Prime Contractor: Bell Textron, Inc.
Contract type: CPIF/FPI (development)

FLRAA Program

Updates to Program Performance and Business Case

FLRAA has yet to complete all five elements of its business case, but the program plans to complete the two remaining assessments. Program officials stated that they started conducting a formal schedule risk assessment in the first quarter of fiscal year 2024 in association with the establishment of an integrated master schedule, which the program plans to complete during fiscal year 2024. The program expects the Army to complete a formal technology risk assessment by the spring of 2024.

Program officials also reported plans to update the completed elements of FLRAA's business case. The program had an approved acquisition strategy at program initiation and expects to update it prior to entering system development on the major capability acquisition pathway in the third quarter of fiscal year 2024. The program also plans to obtain two new independent cost estimates for reconciliation by a cost estimation review board prior to the transition to system development. The Army validated the FLRAA capability development document in July 2023, and DOD plans to validate the document in the second quarter of fiscal year 2024. The program has had an abbreviated capability development document—which is used to establish characteristics and help the Army understand a potential capability—since program initiation.

FLRAA officials reported that preliminary design work during the MTA effort will continue to mature FLRAA's two critical technologies. While officials stated that they plan to demonstrate the maturity of these critical technologies to a level required by development start, their maturity will not conform to the level recommended by leading practices. These practices call for demonstration in an operational environment.

Leading Product Development Practices

The program reported that it is using an iterative approach for development, including identifying an initial set of capabilities to be fielded in a minimum viable product based on user feedback. The program is also soliciting and incorporating user feedback through regular soldier touchpoints that it uses to iterate on the prototype design, and it intends to use a modular open system approach to enable rapid insertion of software in response to evolving needs.

Program officials reported using digital twins—virtual representations of physical products that incorporate dynamic data—for design modeling and simulation, validation, and production and delivery activities. Program officials stated that the digital twin they are developing will evolve from a twin that represents the system in development to eventually support production and

sustainment, consistent with leading practices. The program will use data from digital modeling, sensors, and simulations for the digital twin.

However, the program stated that it has encountered two main challenges in developing the digital twin—ensuring the use of open, adaptable, and secure digital engineering tools; and providing secure access to the data/models to stakeholders that need it. The program is addressing these challenges through close collaboration with stakeholders.

While the program is planning for digital prototypes, it is not planning to have physical prototypes prior to system development. Once in system development, the program plans to build, integrate, and test a physical prototype in an operational environment prior to entering production.

Software and Cybersecurity

FLRAA plans to use a mixture of software development approaches—including Agile, DevSecOps, and incremental—to deliver off-the-shelf and custom software. The program office noted that it completed cybersecurity and architectural vulnerability assessments in fiscal year 2023 and plans to conduct additional future assessments. FLRAA officials expect to have an approved cybersecurity strategy during the third quarter of fiscal year 2024.

Other Program Issues

Program officials stated that the development contract award process, along with a bid protest of that award, delayed the preliminary design review by approximately 9 months, to the second quarter of fiscal year 2024. The program plans to conduct a critical design review in the third quarter of fiscal year 2024.

Program Office Comments

We provided a draft of this assessment to the Army for review and comment. The Army provided technical comments, which we incorporated where appropriate.

The Army stated that FLRAA began execution with Bell Textron, Inc. in April 2023. The Army noted that the program completed a requirements review using model-based systems engineering in August 2023 to ensure clear, understandable, and testable requirements. It added that this requirements baseline supported preliminary design activities during this time period. The Army stated that in November 2023, FLRAA conducted its first soldier touchpoint at the Bell Flight Research Center, which it stated allowed soldier feedback to shape the final cabin and cockpit design. According to the Army, FLRAA plans to conduct recurring soldier touchpoints every 6 months. The Army also noted that it remains focused on program execution in order to deliver this next-generation aircraft to soldiers.