

Space Acquisitions: Analysis of Two DOD Reports to Congress

GAO-24-106984

Q&A Report to Congressional Committees

March 26, 2024

Why This Matters

Department of Defense (DOD) space acquisitions are a significant government investment. In fiscal year 2024, DOD expected to spend over \$23 billion on programs to develop and acquire space capabilities for the U.S. Space Force. These programs work to deliver important capabilities for U.S. national security, commerce and economic growth, transportation safety, and homeland security.¹ Yet, DOD space programs have faced development challenges, which we have reported on over several decades. For example, in 2017, we reported that fragmented leadership and responsibilities, as well as a redundant oversight bureaucracy, have made it difficult for DOD to coordinate and deliver interdependent systems.²

DOD has made various changes to policies that govern its acquisitions. In one such change in January 2020, DOD restructured its foundational acquisition policy, establishing the Adaptive Acquisition Framework, to emphasize speed and agility in the acquisition process.

In light of these challenges and changes, and as directed by statute, the Department of the Air Force (DAF) and DOD produced two reports on space acquisition processes. The first, a 2020 report by the Secretary of the Air Force, discussed an Alternative Acquisition System for the Space Force.³ The second, a report by the Secretary of Defense, looked at applying DOD's Adaptive Acquisition Framework to space systems.⁴ DOD issued a final version of its report in 2022.

House Report 116-442 and the National Defense Authorization Act (NDAA) for Fiscal Year 2021 include provisions for us to review the DAF and DOD reports.⁵ We assessed how the elements included in the DAF and DOD reports align with our prior work and address challenges to space acquisitions that we and others have identified. For this work, we drew largely on our prior work on national security space acquisitions as well as our prior work on the application of leading practices to acquisitions across DOD.⁶ This Q&A report summarizes and updates work we previously briefed to congressional committees in 2020 and 2021.

Key Takeaways

- The DAF's May 2020 report and DOD's September 2022 report propose various elements or respond to congressional requirements. These report elements are aimed at improving the acquisition process for space programs and fall into three categories: acquisitions, budget, and requirements.
- Some of the elements discussed in these reports are supported by our prior work, though we have not specifically reported on other elements. Some elements are no longer being pursued by the DAF or DOD, including two elements aimed at developing a separate space acquisition pathway under the Adaptive Acquisition Framework.

What challenges have DOD space programs historically faced?

DOD space system acquisition programs have historically faced challenges relating to management, oversight, culture, and leadership. These challenges have exacerbated the inherent risks associated with developing complex space technology. Collectively, these challenges and risks have resulted in billions of dollars in cost overruns and years of schedule delays.

- **Management and oversight.** For more than 10 years, we have identified management and oversight problems that hinder DOD's space system acquisition programs. These problems include making overly optimistic cost and schedule estimates; pushing programs forward without sufficient knowledge about technology and design; and challenges in overseeing and managing contractors.⁷
- **Culture and leadership.** We have also reported that DOD's culture has generally been resistant to changes in space acquisition approaches. Our past work identified some suggested themes for reform that include: (1) streamlining reviews; (2) delegating more decision-making authority to lower levels; (3) increasing unity of national security space decisions between DOD and the National Reconnaissance Office; (4) achieving lasting change that cannot be quickly undone and that allows time for the changes to work; and (5) providing sufficient acquisition, execution, and budget authority.⁸

We have recommended numerous actions that DOD can take to address its challenges in acquiring space systems. For example, we recommended that DOD separate the process of technology discovery from acquisition, follow an incremental path toward meeting user needs, match resources and requirements at program start, and use quantifiable data and demonstrable knowledge to move programs forward to next phases.⁹ DOD agreed with many of these recommendations. As DOD continues to develop the Space Force, the department has the opportunity to leverage our prior recommendations to strengthen Space Force acquisitions.

How have DOD space acquisition policies changed over the past 2 decades?

DOD has taken many actions to improve its space acquisitions policies over the past 2 decades. In 2003, DOD released National Security Space Acquisition Policy 03-01, a space-specific acquisition policy. We reported, in 2003, that the new policy may help provide better program information, but that it did not address leading causes of program challenges.¹⁰ In 2010, DOD combined key aspects of this policy with DOD Instruction (DODI) 5000.02, which governs a management process known as the Defense Acquisition System. This hybrid policy combined existing policies to ensure that DODI 5000.02 was the primary acquisition policy for space. In 2013, DODI 5000.02 was again updated, combining the Milestone B and C decision for high-cost first article programs, such as spacecraft and ships, and removing other space-specific policies.

In January 2020, in part to address additional reforms directed by Congress, DOD reissued and updated its foundational acquisition guidance. The new guidance established the Adaptive Acquisition Framework, which includes six acquisition pathways based on the characteristics and risk profile of the system being acquired.¹¹

In addition to the policies above, in May 2022, the Assistant Secretary of the Air Force for Space Acquisition and Integration was sworn into office. This official serves as the Service Acquisition Executive for the Space Force. Since taking the role, the Assistant Secretary published nine tenets of space acquisition that articulated a new vision for how the Space Force will acquire capabilities. They are:

- Build smaller satellites, smaller ground systems, and minimize non-recurring engineering
- Get the acquisition strategy correct
- Enable teamwork between the contracting officer and the program manager
- Award executable contracts
- Maintain program stability
- Avoid special access programs and over classifying
- Deliver ground capabilities before launch capabilities
- Hold industry accountable for results
- Execute—deliver capabilities that work, and deliver them on schedule and on cost

According to DOD officials, these tenets conveyed the message to industry and the government workforce that DOD could accomplish its mission within existing authorities. Further, these officials noted that the multiple options in the Adaptive Acquisition Framework offer flexibility to deliver capabilities.

What do the DAF's and DOD's reports on space acquisition processes address?

In response to statutory mandates, the DAF and DOD released reports that addressed specialized acquisition processes for space programs.

- **DAF Alternative Acquisition System report.** The NDAA for fiscal year 2019 directed DOD to prepare a plan and submit a report on whether and, if so, how to implement an alternative acquisition system for DOD space programs.¹² In May 2020, the DAF transmitted this report on an Alternative Acquisition System for the Space Force to congressional committees.¹³ In the report, the Secretary of the Air Force determined an alternative acquisition system could be useful, and the report described nine features of the DAF's proposed acquisition system, several of which DOD subsequently implemented.¹⁴
- **DOD Space Adaptive Acquisition Framework report.** The NDAA for fiscal year 2021 directed DOD to report on applying the Adaptive Acquisition Framework policy to space system acquisitions, with eight required areas of focus. In response, DOD published an interim report in June 2021 and a final report in September 2022. The interim report addressed four of the eight requirements outlined in the fiscal year 2021 NDAA. The final report provided additional detail on the requirements DOD did not address in the interim report.

What did GAO’s review of the DAF’s and DOD’s reports assess?

We assessed how each of the elements in the DAF and DOD reports align with our prior work.¹⁵ The elements discussed in the reports are shown in table 1 by category.

Table 1: Summary of Space Acquisition Elements Addressed in May 2020 Department of the Air Force Report and September 2022 DOD Report, by Category

	Department of the Air Force May 2020 report	DOD September 2022 report
Acquisitions		
Milestone decision authority delegation	√	—
New start letter notification proposals	√	—
List of programs for alternative acquisition pathways	—	√
New space acquisition pathway	√	√
Useable end item determination	√	√
Space Force head of contracting activity	√	√
Budget		
Separate Space Force topline budget	√	√
Line-item restructure	√	√
Codification of efficient space procurement	√	—
Requirements		
Modified joint capabilities integration and development system approach	√	√

Legend:
 √ = addressed in report
 — = not addressed in report

Source: GAO analysis of Department of the Air Force and Department of Defense (DOD) information. | GAO-24-106984

In the Q&A that follows, we will discuss the elements listed in table 1.

How does the DAF’s milestone decision authority delegation proposal align with our prior work?

The DAF’s proposal to delegate milestone decision authority, which provides approval for an acquisition program to enter the next phase of the acquisition process, to the lowest feasible level aligns, in some ways, with our prior work. We previously found that DOD has made progress implementing reforms that have affected the oversight of major defense acquisition programs. Decision-making authority for these programs has been realigned between the Office of the Secretary of Defense and the military departments.¹⁶ This included delegating acquisition decision-making authority for many programs to the services instead of retaining it all at the department level. A challenge facing DOD is the amount of information required at each step of the decision-making process, which must be reviewed by many stakeholders at each step, leading to long review time frames.¹⁷ Our prior work identified suggested themes for reform within DOD acquisitions, including delegating more decision-making authority to lower levels and providing entities with sufficient acquisition, execution, and budget authority.¹⁸

The DAF’s May 2020 report included a proposal to allow the DAF to create space-specific milestone decision authority definitions and change Acquisition Category cost thresholds. In the report, the DAF proposed to discontinue the Secretary of Defense’s authority to designate an alternative milestone decision

authority for Space Force acquisition programs. Delegating the milestone decision authority would reduce the number of stakeholder reviews. However, it is unclear from the report exactly how far milestone decision authority might be delegated under this proposed element.

DOD officials stated that DOD, and therefore the DAF, are no longer pursuing this proposal. The Commission on Planning, Programming, Budgeting and Execution Reform is considering hierarchical programming and budgeting process results in the absence of delegation of authority as a root cause of hindering innovation and adaptability.¹⁹

As shown in table 1, DOD did not address this topic in its September 2022 report.

How does the DAF's new start letter notification procedure proposal align with our prior work?

The DAF proposed, in its May 2020 report, that it be given the ability to start new programs outside of the regular budget process, which is not something we specifically examined in our past work. However, we previously found that DOD starts more weapon programs than it can afford, creating competition for funding that encourages low cost estimating, optimistic scheduling, overpromising, suppressing of bad news, and, for space programs, forsaking the opportunity to identify and assess potentially better alternatives.²⁰ Further, DOD tends to start its programs before it has the assurance that the capabilities it is pursuing can be achieved within available resources and time constraints.²¹

As described in its May 2020 report, the DAF proposal would allow the Space Force to begin new programs by providing congressional notification letters for new program starts with a 30-day review window, after which the Space Force would assume consent unless it heard otherwise. The letter notification process would also allow for new program starts during a continuing resolution. Continuing resolutions have often contained a standard provision stating that, except as otherwise provided, no appropriation or funds made available or authority granted will be used to initiate or resume any project or activity for which appropriations, funds, or authority were not available during the prior fiscal year.²² An Air Force official previously told us that the intent of the new start letter notification proposal is to leverage a standard process used by other acquisition programs for decisions such as starting low-rate initial production.

DOD did not address this topic in its September 2022 report as shown in table 1. However, in April 2023, DOD submitted a legislative proposal that would allow the secretary of a military department such as the DAF, after making a determination and obtaining approval by the Secretary of Defense, to use rapid acquisition authorities and funding authorities to initiate new start development activities. These activities could span up to a preliminary design review level of maturity to leverage an emergent technological advancement of value to the national defense or provide a rapid response to an emerging threat, per the proposal. The determination made by the Secretary of the military would be submitted in writing to the Secretary of Defense and provide that there is a compelling national security need, that the effort cannot be delayed, and that there is funding identified for the effort in the current fiscal year.

Congress had not acted on this proposal as of January 2024.

How does DOD's list of programs for which alternative acquisition pathways may be used align with our prior work?

DOD's September 2022 report contained a list of programs for which alternative acquisition pathways may be used. We previously noted that characteristics particular to space programs can cause complications in the acquisition process and have posed challenges to DOD.²³ We have not, however, commented on which DOD programs should use a space-specific pathway. DOD is no longer pursuing a space-specific pathway, according to DOD officials. They told us that the department believes it can effectively implement required programs using existing authorities and pathways within the Adaptive Acquisition Framework.

DOD's September 2022 report did not address how programs would report information and data related to any transitions between pathways or conduct multiple efforts in the same pathway, a gap that does not align with our prior work. In June 2021, we stated that DOD has yet to develop a data collection and reporting strategy for programs transitioning between acquisition pathways or conducting multiple efforts using the same pathway to deliver the intended capability.²⁴ This not only limits DOD's visibility into these programs, but also hinders the quality of its congressional reporting and makes the full cost and schedule of the eventual weapon system more difficult to ascertain.²⁵ We recommended that DOD ensure that internal and external reporting for capabilities developed using multiple efforts or pathways provides information on each individual effort, as well as the overall planned cost and schedule required to deliver the eventual capability. DOD concurred with the recommendation and has taken some steps to address it, as of February 2024.

The DAF's May 2020 report did not address this topic, as shown in table 1.

How do the DAF's and DOD's proposals on a new space acquisition pathway align with our prior work?

Both the DAF and DOD reports proposed a new space acquisition pathway to help better manage space acquisition efforts. We have not commented specifically on a space pathway under the Adaptive Acquisition Framework. However, we have noted challenges with developing and acquiring space systems, and that streamlining reviews has the potential to improve the acquisition process.

The DAF's May 2020 report proposed that DOD establish a space system-specific pathway within the DOD Adaptive Acquisition Framework.²⁶ Per the report, this pathway would establish decision points separate from the current acquisition milestones construct that are most appropriate for development, fielding, and sustainment of space systems. The report recommended that the DAF seek legislation to codify these decision events and tailored reporting requirements for space programs.

In DOD's June 2021 interim report, DOD described a proposed new space pathway under the Adaptive Acquisition Framework, included information about key decision points, and broadly discussed reporting requirements. DOD's September 2022 report provided further detail, but the phases and process remained the same.

The report's proposed pathway attempted to address past space acquisition challenges through a modified pathway that includes:

- separating development of high-risk components from low-risk ones;
- better aligning key decision points and phases with space development processes; and
- providing options for easier development of replenishment satellites or procurement of satellite upgrades.

As discussed above, DOD is no longer pursuing such a pathway. According to DOD officials, DOD no longer needs a dedicated space pathway due to changes in the way it plans to acquire future space capabilities. One such change is a planned shift from buying small quantities of large and expensive satellites to buying larger numbers of smaller and less expensive ones. Another is an emphasis on shortening development and acquisition cycles to deliver capabilities more quickly, according to these officials.

How do the DAF's and DOD's proposals related to useable end item determination align with our prior work?

The DAF and DOD both addressed changing the definition of a usable end item, a topic that we have not specifically reported on in our prior work. Under current DOD policy and definitions, an end item is the final production product when assembled, or completed, and ready for issue or deployment.²⁷

The DAF's May 2020 report proposed defining a useable end item below the system level on a case-by-case basis. For example, if the Space Force built a standard, open architecture bus and then payloads for that bus, the bus and the individual payloads would each be useable end items under this element. This flexible definition would apply to integrated payloads, subassemblies, ground equipment, and components (up to complete space vehicles). These items, under the definition above, would be considered "a part" or "component" of the final end item rather than end items themselves.

By altering the definition of end item on a case-by-case basis, the DAF would be able to fund a component of a full system on the component level, and not on the system or end-item level. It is unclear at this point what the resulting effects, if any, would be on effectively tracking overall progress in delivering end-to-end capabilities to warfighters.

The goal of this change, according to the DAF, would be to encourage open architectures, innovation, and increased commercial partnerships. Per the report, other benefits of the definitional change would be encouraging robust supply chains and greater international partnering opportunities. This element would not require legislative change but, instead, would make changes to Office of the Under Secretary of Defense (Comptroller) policy.²⁸

DOD's September 2022 report found that the current definition of useable end items is sufficient to execute the programs currently planned for production and did not seek further changes or make further recommendations. Because DOD is not changing the definition of a usable end item, there are no effects to funding or relationships to specific acquisition pathways, according to DOD officials.

How do the DAF's and DOD's proposals regarding Space Force head of contracting activity align with our prior work?

The DAF's and DOD's proposals to designate a separate Space Force head of contracting activity (HCA) is consistent with our past findings on DOD acquisition reform. HCAs are officials to whom an agency head may delegate broad authority to manage the agency's contracting authorities. We have found that fragmented leadership in space acquisitions contributed to poor coordination and lengthy decision-making, and identified that entities be provided sufficient acquisition, execution, and budget authority as a key theme for acquisitions.²⁹

The DAF's May 2020 report proposed that the Space HCA be exempt from the Air Force Federal Acquisition Regulations Supplement and be able to deviate from the Defense Federal Acquisition Regulation Supplement as necessary. Under this proposal, the Space HCA would have the authority to develop supplemental space acquisition guidance. In November 2023, however, DOD officials stated that Space HCAs are not exempt from the Air Force Federal Acquisition Regulations Supplement—which has since been renamed the

Department of the Air Force Federal Acquisition Regulations Supplement—and cannot deviate from the Defense Federal Acquisition Regulations Supplement.

Additionally, DOD conducted a risk/benefit analysis on designating a separate HCA as part of its June 2021 interim report. DOD reported that the benefits of a separate HCA included a flatter organizational structure that would contribute to quicker decision-making and a space-focused approach. DOD noted that the risks of establishing a separate HCA for the Space Force included potential duplication by HCAs within the DAF, but that the Space Force is working to overcome this by documenting collaboration and communication practices, among other things. DOD’s September 2022 report did not provide additional information on this topic.

As of November 2023, the Office of the Assistant Secretary of the Air Force for Space Acquisition and Integration had designated four HCAs, according to DOD officials. The three within the Space Force are the Director, Space Systems Command Contracting; Director, Space Development Agency; and the Space Rapid Capabilities Office Director of Contracting. Outside of the Space Force, Air Force Contracting serves as an HCA for DAF space systems and programs not executed by the organizations named above. The Office of the Assistant Secretary of the Air Force for Space Acquisition and Integration and the Office of the Assistant Secretary of the Air Force (Acquisition, Technology & Logistics) are documenting collaboration and communication practices among the HCAs identified in the Department of the Air Force Federal Acquisition Regulation Supplement via recurring contracting synchronization meetings, according to DOD officials.

How do the DAF’s and DOD’s budget proposals align with our prior work?

The DAF’s May 2020 report and DOD’s September 2022 report addressed three budget-related elements, some of which our prior work discussed in general terms:

Separate Space Force topline budget. The DAF and DOD both addressed the creation of a separate “topline budget” for the Space Force, which we have not reported on specifically. In both reports, the term “topline” is used to refer to “total dollar amount” allocated to DOD in a fiscal year. In examining budget structures more generally, we have stated that these structures are important because they help Congress control and monitor agency activities and spending by fostering accountability for inputs and outputs within the control of agencies.³⁰ The DAF stated in its report that a separate “topline budget,” meaning a separate total dollar amount, for the Space Force would increase budget stability and flexibility. This element was implemented with the fiscal year 2021 budget request.

DOD’s September 2022 report addressed policies and a governance structure for a separate Space Force budget “topline, corporate process, and portfolio management process.” The report found that within the DAF, a Space Force “budget topline corporate process,” separate from but modelled after the DAF corporate process, was established following the establishment of the Space Force in 2019, and that no further changes are required to implement the corporate process.

Budget line-item restructure. The DAF’s May 2020 report proposed allowing the DAF to consolidate budget line items for the Space Force budget based on mission portfolios. According to the DAF, this element does not require legislative change but does require agreement from the defense appropriations committees. This element was also included in DOD’s September 2022 report, which stated that the DAF did not have a need to restructure its budget line-items at that time. According to DOD officials, as of November 2023, DOD is planning to evaluate

the recommendations of the Commission on Planning, Programming, Budgeting and Execution Reform. DOD will then work with Congress to implement initiatives with broad-based legislative support.³¹ There are ongoing efforts by the commission and congressional interest in portfolio management to determine whether and how this will work.³²

Our past work in portfolio management recommended that DOD assess investments collectively from an enterprise-wide perspective and integrate requirements, acquisition, and budget information.³³ In general, DOD's fragmented governance structure for making weapon system investment decisions makes implementing these practices difficult.³⁴ With consolidated budget line items, the total resources associated with programs and performance may be more visible, but information on individual programs may become obscured. Budget restructuring represents more than structural or technical changes and involves important trade-offs among the needs of Congress and executive branch agencies. There were not enough details in the reports to determine how this proposed budget structure would give Congress sufficient transparency into program performance and opportunities to weigh in on funding priorities.

Codification of Efficient Space Procurement (ESP). The DAF's May 2020 report proposed granting the Space Force the ability to incrementally fund procurement of space systems and services to reduce space portfolio constraints. This approach would be consistent with the ESP authorities already used by the Space-Based Infrared System and Advanced Extremely High Frequency programs. We have not previously commented on the efficacy of ESP specifically, nor validated the estimated cost savings from ESP on the two programs. We previously reported, however, that the use of incremental procurement funding can erode future fiscal flexibility for programs because funding is needed to complete procurements begun in previous years, and it may limit cost visibility and accountability.³⁵ On the other hand, such funding can be justified for high technology capital projects, including space exploration equipment.³⁶ These projects are often closer in nature to research and development, where useful knowledge can be obtained even if no additional funding is provided. As of November 2023, DOD officials stated they are not pursuing this action.

How do the DAF's and DOD's proposed modified joint capabilities integration and development system approach align with our prior work?

Both the DAF's May 2020 report and DOD's September 2022 report proposed to limit the Joint Requirements Oversight Council's (JROC) review and validation process, which we have not specifically examined in past work. The JROC's review and validation process and the Joint Capabilities Integration and Development System (JCIDS) are designed to look at the development of capabilities from a joint perspective, to help identify capability gaps, and validate proposed solutions to mitigate those gaps.³⁷ We previously reported on problems with DOD's joint requirements process, but not on the use of a broad service-level or joint performance requirements approach, as proposed by DOD. In October 2021, we found that the Joint Staff could not assess the JCIDS process because it lacks reliable data and a baseline to measure timeliness, among other issues.³⁸

The DAF's May 2020 report recommended that the DAF focus the JROC's requirement validation for Space Force capabilities on broad joint military requirements or high-level Joint Performance Requirements. According to the report, these requirements should reflect only the highest-level capability attributes, not detailed system parameters.

DOD's September 2022 report proposed limiting the JROC's review and validation to high-level attributes instead of detailed system requirements. Detailed requirements that do not violate the overarching high-level system requirements would not need the JROC's review, according to DOD's June 2021 interim report.

According to DOD officials, as of November 2023, space acquisition programs use requirements executed by the JROC and Deputy Chief of Space Operations for Strategy, Plans, Programs, and Requirements. This allows the Space Force to be more flexible in meeting the requirements with a portfolio of programs or capabilities, according to these officials.

Statute and a House Report provided that DOD and GAO, respectively, will conduct examinations of the requirements process.³⁹

Agency Comments

We provided a draft of this report to DOD for review and comment. DOD provided technical comments, which we incorporated as appropriate.

How GAO Did This Study

To assess how the DAF's May 2020 Alternative Acquisition System report and DOD's September 2022 Space Alternative Acquisition Framework report align with our prior work and address challenges to space acquisitions that we and others have identified, we reviewed and analyzed both reports. We then compared them to our relevant work, including our leading practices in acquisitions; our prior findings and recommendations on weapon system acquisitions, including an extensive body of work on space acquisition programs, and other related topics. We also reviewed supporting documentation, such as DOD's acquisition policies and instructions, title 10 of the U.S. Code, and sections of the DOD Financial Management Regulation. To inform all of our work, we interviewed DOD officials to discuss both reports.

We conducted this performance audit from July 2023 to March 2024 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

List of Addressees

The Honorable Jack Reed
Chairman
The Honorable Roger Wicker
Ranking Member
Committee on Armed Services
United States Senate

The Honorable Jon Tester
Chair
The Honorable Susan Collins
Ranking Member
Subcommittee on Defense
Committee on Appropriations
United States Senate

The Honorable Mike Rogers
Chairman
The Honorable Adam Smith
Ranking Member
Committee on Armed Services
House of Representatives

The Honorable Ken Calvert
Chair
The Honorable Betty McCollum
Ranking Member
Subcommittee on Defense
Committee on Appropriations
House of Representatives

We are sending copies of this report to the appropriate congressional committees, the Secretary of Defense, and other interested parties. In addition, the report is available at no charge on the GAO website at <https://www.gao.gov>.

GAO Contact Information

For more information, contact: Jon Ludwigson, Director, Contracting and National Security Acquisitions, LudwigsonJ@gao.gov, (202) 512-4841.

Chuck Young, Managing Director, Public Affairs, YoungC1@gao.gov, (202) 512-4800.

A. Nicole Clowers, Managing Director, Congressional Relations, ClowersA@gao.gov, (202) 512-4400.

Staff Acknowledgments: Laura Hook (Assistant Director), Megan Stewart (Analyst-in-Charge), Breanne Cave, Nicolaas Cornelisse, Edward Harmon, Tonya Humiston, Matthew Metz, Jonathan Meyer, Christine Pecora, and Jessica Steele.

Connect with GAO on [Facebook](#), [Flickr](#), [Twitter](#), and [YouTube](#). Subscribe to our [RSS Feeds](#) or [Email Updates](#). Listen to our [Podcasts](#).

Visit GAO on the web at <https://www.gao.gov>.

This work of the United States may include copyrighted material, details at <https://www.gao.gov/copyright>.

Endnotes

¹GAO, *Space Command and Control: Comprehensive Planning and Oversight Could Help DOD Acquire Critical Capabilities and Address Challenges*, GAO-20-146 (Washington, D.C.: Oct. 30, 2019).

²GAO, *Space Acquisitions: DOD Continues to Face Challenges of Delayed Delivery of Critical Space Capabilities and Fragmented Leadership*, GAO-17-619T (Washington, D.C.: May 17, 2017).

³The John S. McCain National Defense Authorization Act for Fiscal Year 2019 required the Department of Defense to submit a report detailing its plan to establish a separate, alternative acquisition system for defense space acquisitions, including with respect to procuring space vehicles, ground segments relating to such vehicles, and satellite terminals. Pub. L. No. 115-232, § 1601(b)(1) (2018). In May 2020, the Air Force submitted a report: Department of the Air Force, *Alternative Acquisition System for the United States Space Force* (Washington, D.C.: May 2020) in response to the Joint Explanatory Statement accompanying the National Defense Authorization Act for Fiscal Year 2020. This report noted DOD had not submitted the report on the plan required by the Fiscal Year 2019 NDAA, and then directed the Secretary of the Air Force to provide to the congressional defense committees a report on whether, and, if so, how, to implement an alternative acquisition system. 165 Cong. Rec. H9793 (Dec. 9, 2019).

⁴The William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 directed the Secretary of Defense to submit a report to the congressional defense committees on the application of the adaptive acquisition framework to any Space Systems Acquisition pathway. Pub. L. No. 116-283, § 807 (d)(1) (2021). In response to this requirement, the Department of Defense submitted two reports: Department of Defense, *Space Systems Acquisition and the Adaptive Acquisition Framework* (Washington, D.C.: September 2022); and *Space Systems Acquisition and the Adaptive Acquisition Framework Interim Response* (Washington, D.C.: June 2021).

⁵We were directed to review the plan submitted by the Air Force in May 2020 in House Report 116-442, accompanying the National Defense Authorization Act for Fiscal Year 2021. H.R. Rep. No. 116-442, at 238. We were also directed to review the report submitted by DOD under the National Defense Authorization Action for Fiscal Year 2021. Pub. L. No. 116-283, § 807 (d)(2) (2021).

⁶GAO, *Leading Practices: Iterative Cycles Enable Rapid Delivery of Complex, Innovative Products*, GAO-23-106222 (Washington, D.C.: July 27, 2023). Our other work on applying industry leading practices to DOD acquisitions includes GAO, *Leading Practices: Agency Acquisition Policies Could Better Implement Key Product Development Principles*, GAO-22-104513 (Washington, D.C.: Mar. 10, 2022).

⁷GAO, *Space Acquisitions: Challenges Facing DOD as It Changes Approaches to Space Acquisitions*, GAO-16-471T (Washington, D.C.: Mar. 9, 2016).

⁸GAO-17-619T.

⁹GAO, *Space Acquisitions: DOD Faces Significant Challenges as it Seeks to Address Threats and Accelerate Space Programs*, GAO-19-482T (Washington, D.C.: Apr. 3, 2019).

¹⁰GAO, *Defense Acquisitions: Improvements Needed in Space Systems Acquisition Management Policy*, GAO-03-1073 (Washington, D.C.: Sept. 15, 2003).

¹¹Programs, with approval from the decision authority or the milestone decision authority, may leverage a combination of acquisition pathways to provide value not otherwise available through use of a single pathway. DOD's general acquisition processes for weapon systems are described in Department of Defense Directive 5000.01, *The Defense Acquisition System* (incorporating change 1, July 28, 2022); and Department of Defense Instruction 5000.02, *Operation of the Adaptive Acquisition Framework* (incorporating change 1, June 8, 2022). See GAO, *DOD Acquisition Reform: Increased Focus on Knowledge Needed to Achieve Intended Performance and Innovation Outcomes*, GAO-21-511T (Washington, D.C.: Apr. 28, 2021).

¹²John S. McCain National Defense Authorization Act for Fiscal Year 2019, Pub. L. No. 115-232, § 1601(b)(1) (2018).

¹³As required by the Joint Explanatory Statement accompanying the National Defense Authorization Act for Fiscal Year 2020, 165 Cong. Rec. H9793 (Dec. 9, 2019).

¹⁴The report, though coordinated across DOD, was rescinded after its submission to Congress due to lack of coordination with the Office of Management and Budget, according to the Defense Business Board. Defense Business Board Business Operations Subcommittee, *A Review of Space Acquisition*, DBB FY24-01 (Washington, D.C.: Nov. 15, 2023).

¹⁵We did not address the NDAA for Fiscal Year 2021 requirement of DOD's September 2022 report for a list of Space Force acquisition programs for multiyear contracting authority, because there are no Air Force Programs for which a multiyear contracting strategy was planned as of publication of the report. Pub. L. No. 116-283, § 807 (d)(1)(C) (2021).

¹⁶National Defense Authorization Act for Fiscal Year 2016, Pub. L. No. 114-92, § 825 (2015). GAO, *DOD Acquisition Reform: Leadership Attention Needed to Effectively Implement Changes to Acquisition Oversight*, GAO-19-439 (Washington, D.C.: June 5, 2019).

¹⁷GAO, *Acquisition Reform: DOD Should Streamline Its Decision-Making Process for Weapon Systems to Reduce Inefficiencies*, GAO-15-192 (Washington, D.C.: Feb. 24, 2015).

¹⁸GAO, *Defense Space Acquisitions: Too Early to Determine If Recent Changes Will Resolve Persistent Fragmentation in Management and Oversight*, GAO-16-592R (Washington, D.C.: July 27, 2016).

¹⁹Commission on PPBE Reform, *Commission on Planning, Programming, Budgeting, and Execution Reform Interim Report*, (Washington, D.C.: August 2023). The NDAA for Fiscal Year 2022, Pub. L. No. 117-81, § 1004 (2021), established the Commission on Planning, Programming, Budgeting, and Execution Reform. The final report is expected to be delivered in March 2024.

²⁰GAO, *Space Acquisitions: Actions Needed to Expand and Sustain Use of Best Practices*, GAO-07-730T (Washington, D.C.: Apr. 19, 2007).

²¹GAO-07-730T.

²²See also Continuing Appropriations Act, 2018, Pub. L. No. 115-56, § 104 (2017), stating that no appropriation or funds made available, or authority granted . . . shall be used to initiate or resume any project or activity for which appropriations, funds, or other authority were not available during fiscal year 2017. The Office of Management and Budget solicits anomaly proposals from federal agencies to change the funding for a program or account from what would be available under the assumed continuing resolution formula, but we previously found that these are not often enacted. See GAO, *Defense Budget: DOD Has Adopted Practices to Manage within the Constraints of Continuing Resolutions*, GAO-21-541 (Washington, D.C.: Sept. 13, 2021). In other work, we found that longer continuing resolutions can make it more difficult for agencies to implement unexpected changes in their regular appropriations, because they have a limited time to do so. In addition, longer continuing resolutions can contribute to distortions in agencies' rates of spending as agencies rush to obligate funds late in the fiscal year. GAO, *Continuing Resolutions: Uncertainty Limited Management Options and Increased Workload in Selected Agencies*, GAO-09-879 (Washington, D.C.: Sept. 24, 2009).

²³GAO, *Space Acquisitions: DOD Faces Challenges and Opportunities with Acquiring Space Systems in a Changing Environment*, GAO-21-520T (Washington, D.C.: May 24, 2021).

²⁴GAO, *Weapon Systems Annual Assessment: Updated Program Oversight Approach Needed*, GAO-21-222 (Washington, D.C.: June 8, 2021).

²⁵GAO-21-222.

²⁶Department of Defense, *Operation of the Adaptive Acquisition Framework*, DOD Instruction 5000.02 (January 23, 2020) (incorporating change 1, June 8, 2022).

²⁷The Defense Acquisition University glossary definition of "end item" is used in this report.

²⁸Department of the Air Force, *Alternative Acquisition System for the United States Space Force*.

²⁹GAO-16-592R.

³⁰GAO-05-117SP.

³¹Commission on PPBE Reform, *Commission on Planning, Programming, Budgeting, and Execution Reform Interim Report*.

³²Commission on PPBE Reform, *Commission on Planning, Programming, Budgeting, and Execution Reform Interim Report*.

³³GAO, *Weapon System Acquisitions: Opportunities Exist to Improve the Department of Defense's Portfolio Management*, GAO-15-466 (Washington, D.C.: Aug. 27, 2015); and *Best Practices: An Integrated Portfolio Management Approach to Weapon System Investments Could Improve DOD's Acquisition Outcomes*, GAO-07-388 (Washington, D.C.: Mar. 30, 2007).

³⁴GAO-15-466.

³⁵GAO, *Budget Issues: Alternative Approaches to Finance Federal Capital*, GAO-03-1011 (Washington, D.C.: Aug. 21, 2003).

³⁶GAO-03-1011.

³⁷GAO, *Defense Management: Guidance and Progress Measures Are Needed to Realize Benefits from Changes in DOD's Joint Requirements Process*, GAO-12-339 (Washington, D.C.: Feb. 24, 2012).

³⁸GAO, *Weapon System Requirements: Joint Staff Lacks Reliable Data on the Effectiveness of Its Revised Joint Approval Process*, GAO-22-104432 (Washington, D.C.: Oct. 21, 2021).

³⁹National Defense Authorization Act for Fiscal Year 2024, Pub. L. No. 118-31, § 811 (2024) (DOD); H.R. Rep. No. 118-25, at 241 (GAO).