

# **WHY TRANSFORMING THE BUDGET STRUCTURE WOULD BENEFIT DEFENSE SPACE**

Robert S. Wilson, Jamie Morin, and Lara Sayer

## **Executive Summary**

The Department of Defense (DOD) uses a top-level budget structure no longer befitting of how complex systems are developed and produced. Although industry has largely evolved to fluid development and production, the DOD’s Planning, Programming, Budgeting and Execution (PPBE) process still categorizes defense acquisitions as either (1) research, development, testing, and evaluation (RDT&E) or (2) procurement. This division poses challenges for acquiring space capabilities, particularly as the department transitions to larger numbers of iteratively designed systems and commercially owned assets and services.

In March 2024, a congressionally directed commission on the PPBE process recommended that the DOD work in consultation with Congress to transform the defense budget structure to favor major capability areas over lifecycle phases. The DOD has endorsed many of the near-term recommendations of the commission but is still exploring the longer-term ideas like budget transformation. For space, this could look like requesting and receiving funding in categories such as missile warning and tracking, narrowband satellite communications, or positioning, navigation, and timing instead of RDT&E and procurement.

<b>Table 1: Current and Proposed Budget Structure</b>	
<b>Current Structure</b>	<b>Proposed Structure</b>
Lifecycle Phase (e.g., RDT&E or Procurement)	Service/Component
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Budget Line Item	System/Program (Budget Line Item)
Project	Lifecycle Phase

Source: “Defense Resourcing for the Future,” Commission on Planning, Programming, Budgeting, and Execution Reform (March 2024).

Such a change would offer significant benefits for national security space systems, including giving Congress better insight into how much funding is going toward specific capability areas and aligning budgetary decisions with force structure analyses. As noted often by Congress and the DOD, the United States is in a period of intense global competition, and improving defense acquisition would better prepare the nation to defend its global interests.

## Introduction

The Department of Defense (DOD) requests and receives funding through a top-level budget structure that has largely remained intact for more than 60 years, albeit with increasing segmentation at lower levels. Although the DOD's acquisition processes and practices for technology and product development have undergone many changes over those decades, the two primary budget categories used for defense acquisitions have been remarkably consistent: research, development, testing, and evaluation (RDT&E) and procurement.<sup>1</sup> The DOD's reliance on these two appropriation categories continues, even as the private sector has largely evolved to a more fluid, iterative approach to development and production.

While drawing precise distinctions between RDT&E and procurement can be difficult for many types of defense acquisitions, it has been a particular challenge for space acquisitions. The RDT&E/procurement distinction quickly breaks down when applied to complex, expensive development projects that result in small numbers of systems, especially when the system design changes from one unit to the next. Few of the DOD's spacecraft programs have entailed large-scale production runs, and it is common for even satellites with the same name in the same constellation to differ from one another at a component level. In contrast, acquisition programs that result in high production volumes of similar or identical units fit more neatly within the existing appropriations categories. For munitions acquisitions as an example, RDT&E appropriations buy 10 percent of the total expected purchase as test assets, and—once the design is finalized—procurement appropriations buy hundreds, thousands, or millions of rounds to complete the remaining purchase.

The department is changing the types of space capabilities and services it seeks to acquire. Instead of relying on a small number of custom-built satellites mostly in high-altitude geosynchronous Earth orbits, the department is seeking to buy large numbers of cheaper and smaller space assets across a diversity of orbits. A central principle of these programs is to rapidly iterate on designs, further blurring the lines between how they should be funded. Further, given the maturity of some commercial space providers, the DOD is aiming to leverage commercial services to a greater extent. These changes are valuable and necessary, particularly given the threat environment for space; however, they will further stress the existing budget structure even beyond the challenge of navigating the RDT&E/procurement divide. To enable, among other things, faster delivery of military capabilities and more flexibility for meeting defense needs, policymakers should consider transforming the DOD's budget structure, which will deliver specific benefits for future space acquisitions.

***How the Current Budget Structure Challenges DOD Space Acquisitions.*** The Fiscal Year 2022 National Defense Authorization Act directed the establishment of an independent commission to “conduct a comprehensive assessment of the efficacy and efficiency of all phases and aspects of the planning, programming, budgeting, and execution [PPBE] process.”<sup>2</sup> In March 2024, the PPBE Commission released its final report with 28 recommendations.<sup>3</sup> Among these recommendations, the commission recommended transforming the DOD's budget structure. Although this change would be beneficial for many parts of the department, it would produce a particularly powerful effect for national security space.

As noted, determining when RDT&E ends and procurement begins has been a persistent challenge for defense space acquisitions. For space systems, the DOD's Financial Management Regulation states that when satellites are launched individually, the “first two satellites may be financed with either RDT&E or Procurement appropriations” and the “third and subsequent satellites shall in all cases be financed with Procurement appropriations.”<sup>4</sup> However, for programs in which a single rocket launches multiple satellites, all of the satellites on that launch may be financed with “either RDT&E or Procurement appropriations depending upon which budgetary approach is most consistent with the contract structure.”<sup>5</sup> Accordingly, a launch vehicle's capacity and the size of the spacecraft would weigh heavily on whether they are funded through procurement or RDT&E.

This separation between the first two satellites and the subsequent satellites, along with the high cost of nonrecurring engineering for redesigning large, monolithic satellites, has limited the DOD's ability to change designs for satellite programs in acquisition. Satellites in programs such as Advanced Extremely High Frequency, Space-Based Infrared

System, and Global Positioning System remained mostly static due in part to PPBE rules. Only in recent acquisitions has the DOD been able to return to more incremental design changes, bending rules to address changing threats.

The department's plans to modernize its military space capabilities will further test the limits of the current budget structure. A priority within the department, as reflected in the statements from leadership and in the budget, has been the transition to large numbers of smaller satellites.<sup>6</sup> For example, the Space Development Agency's budget has increased significantly over the five years since it was created.<sup>7</sup> Although the Space Development Agency is not only the acquisition center trying to acquire lots of space assets, it is perhaps most emblematic of the transition towards proliferation. The agency's top priority, as an example, is the Transport Layer, which it says will comprise 300 to 500 communication satellites in low Earth orbit. On its face, a transition from handfuls of satellites to hundreds of satellites could be taken to make the distinction between research and procurement sharper. However, spiral development, a systems development lifecycle method that relies on iteration and incremental improvement, has guided the agency's acquisition approach, and under this approach, hardware and software design will continuously evolve and development and procurement efforts will happen concurrently.<sup>8</sup> As evidence, although the agency has launched dozens of satellites and is funded to launch hundreds more over the next several years, it does not have a procurement funding line for its spacecraft.

Agile and fluid development is becoming more of the norm for space systems, even outside the Space Development Agency. Digital engineering allows for virtual modeling and testing of different hardware and software configurations to streamline acquisition, and new development methodologies enable faster capability deliveries and user feedback loops. Collectively, defense space acquisition benefits from these developments and models, and their ascendance shows that research, development, testing, evaluation, and procurement are more circular rather than linear processes.

The department's aspirations in space also show problems beyond simply the RDT&E and procurement divide. A common talking point among DOD and Space Force leadership with respect to space has been the importance of the DOD using commercial space services. Typically, commercial services would be purchased using operations and maintenance appropriations, which are available for only one year. Space Systems Command leaders have adopted the motto "exploit what we have, buy what we can, and build only what we must."<sup>9</sup> In 2024, the DOD released a commercial space integration strategy and Space Force released its newest commercial space strategy.<sup>10</sup> Despite the attention on commercial space capabilities, industry and Space Force leaders have pointed out the lack of available DOD funds to spend on commercial space. In May 2023, Jeremy Leader, acting deputy director of the Commercial Space Office in Space Systems Command, attributed part of the problem to the absence of line items in the budget for commercial services: "If folks don't have their own dedicated line item for commercial capabilities within their mission area, it makes it kind of convoluted to try to find where that commercial money is actually available."<sup>11</sup> Even with commercial budget lines, the current budget structure does not lend itself to easily weighing the trades between buying commercial services for a mission area or using traditional DOD acquisition. A typical acquisition program will cut across multiple appropriations accounts, and the senior official responsible for reviewing and approving the acquisition program may not be the same person responsible for a commercial services budget line, especially if it is in the operations and maintenance budget. Moreover, the DOD submits budgets with five-year spending plans, and the fast pace of change in commercial innovation complicates the department's ability to appropriately plan for commercial services in its budgets or make trades between commercial services and traditional acquisition programs.

**The Benefits of a Transformed Budget Structure for Space.** The PPBE Commission’s recommendation for a transformed budget would alter the hierarchical structure of the budget, as laid out in Table 1.

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Source: “Defense Resourcing for the Future,” Commission on Planning, Programming, Budgeting, and Execution Reform (March 2024).

The most important part of this change would be appropriating the budget using major capability activity areas. For space, this could look like requesting and receiving funding in categories such as missile warning and tracking, narrowband satellite communications, or positioning, navigation, and timing instead of RDT&E and procurement. Congress would have better insight on how much funding is going toward capability areas and what systems and programs cost. Further, major capability activity leads could more easily weigh trades among systems and programs within their major capability area. The PPBE Commission’s proposal would still require such trades to undergo reprogramming procedures or to have prior approval, but it would give leads in capability areas comparable information about its programs and mechanisms to try to reroute money. Such change would be valuable for commercial space services because it would allow major capability activity leads to assess, for example, narrowband satellite communications services with custom-built narrowband satellite communications acquisition programs. Commercial services could be considered within the context of meeting capability needs, and, for some missions, commercial services could be chosen in lieu of traditional acquisition.

Transforming the budget along these lines would also better align it with how force structure decisions are being made. Over the past several years, the Space Warfighting Analysis Center (SWAC) has had tremendous influence shaping capability decisions for the Space Force. As an example, in the fiscal year 2023 budget request, the Space Force unveiled plans for fundamentally changing its approach to missile warning and tracking, including large amounts of funding for missile warning and tracking satellites in low Earth orbit and medium Earth orbit. The budget noted that these changes were in response to a SWAC force design on missile warning and tracking.<sup>12</sup> More recently, in the fiscal year 2025 budget request, the largest new budget line was for a capability that the budget documents indicate was in response to a SWAC force design for protected satellite communications.<sup>13</sup> If the Space Force is adapting its thinking to mission level assessments of capability, this modified budget structure would integrate decisions on the budget and force structure.

Additionally, this budget transformation would mitigate issues between delineating lifecycle categories (e.g., RDT&E and procurement). Although the DOD would still present the lifecycle categories, it would be within the amount listed for the system or program and the service could move money in and out of these categories without the need to go through reprogramming procedures or consume general transfer authority, as is required under the current budget structure. The budget construct would better align with how space capabilities are developed and acquired.

**Changes Short of Transforming the Budget Structure.** Importantly, the PPBE Commission recognized that the budget structure transformation is a long-term project, a fundamental change to how the DOD and the military space community organizes and presents its budget, and recommended a multi-year process of socialization and adoption. In the interim, or if there is limited or no political appetite to fully transform the budget, the commission included several recommendations that would benefit military space and give needed agility to provide emergent technology and deliver capability more quickly.



- ◆ **Review and Consolidate Budget Line Items (BLI):** There are 113 BLIs within the Space Force budget structure and 75 Program Elements (PE) in the RDT&E appropriation alone. The sheer number of line items makes it difficult for the DOD and Congress to manage and have sufficient oversight; it also impacts the agility needed for changing threats and evolving technology. Consolidating these budget line items would streamline the allocation and execution processes and support more fluid realignment of funding to support warfighter requirements. This review and consolidation would be a collaborative effort between the executive and legislative branches, and it would increase transparency for Congress and end unnecessary duplication or redundancy in the existing budget structure. There have been several successful consolidations demonstrated by the Department of the Army and the United States Special Operations Command. Each was the result of many months of engagements and a strong partnership with defense committees prior to the president’s budget submission.<sup>14</sup>
- ◆ **Mitigate Problems Caused by Continuing Resolutions (CR):** Unfortunately, CRs have become a regular way of life for the DOD and the rest of the federal government. The Office of the Under Secretary of Defense (Comptroller) estimates that five out of the last 15 years have been spent operating under CRs, which delay the department’s ability to implement new or growing programs. This recommendation strives to mitigate some of the adverse impacts of CRs by allowing the department to proceed with new starts and increased program quantities and development ramp-ups under CRs when those items have been included in the president’s budget request, and all four defense committees have supported them in their corresponding bills. Execution of these and all requirements will be limited by the total CR funding authority, so decisions on funding priorities will be necessary.<sup>15</sup>
- ◆ **Update Thresholds for Below-Threshold Reprogramming (BTR):** BTRs are one of the most important tools available to the DOD for handling changing threats, requirements, and technology. Unfortunately, these thresholds have not kept pace with historical budget increases. Increasing these thresholds in alignment with budget increases over the past two decades will give program managers and program executive officers the agility that today’s environment demands. The proposed thresholds under the commission’s report are: RDT&E - \$25 million, Procurement - \$40 million, Operations and Maintenance (O&M) - \$30 million, and Military Personnel (MILPERS) - \$15 million.<sup>16</sup>
- ◆ **Increase Availability of Operating Funds:** Year-end spending challenges for one-year funding remains a significant issue for all of the DOD. Allowing a small portion (5 percent) of operating funds (O&M and MILPERS) to be carried over into a second year of availability, a type of flexibility that is already available to some non-DOD federal agencies, will support more effective execution on high priority requirements. If Congress is willing to enact this change, it would allow the DOD to better handle late-breaking changes to requirements, unanticipated bills, contracting challenges, as well as provide for smoother execution in years with lengthy CR periods. Funds that remain unobligated at year-end could be expended through a thoughtful, deliberative process, rather than through compressed contracting processes. The result would be more productive expenditure of the funds, fewer deobligations (situations where the Department reduces the funding level previously set aside for a contract and often loses the ability to spend that money) and hence greater buying power for the department.<sup>17</sup>
- ◆ **Address Challenges with Colors of Money:** Although this recommendation would become unnecessary once the DOD’s budget structure was transformed as proposed, the PPBE Commission also included alternative recommendations to address challenges managing different lifecycle-oriented appropriations accounts, often referred to as “colors of money.”<sup>18</sup> These include:
  - ▶ **Allow Procurement, RDT&E, or O&M to be Used for the Full Cycle of Software Development, Acquisition, and Sustainment:** The capability of software-intensive or software-enabled programs takes place through a continuous cycle of development, prototyping, testing, fielding, troubleshooting, revision,

and sustainment. The requirement to break down the funding for this cycle into different appropriations for research and development, procurement, and sustainment does not align with the reality of how this capability is created and maintained and results in arbitrary color of money budget and execution determinations. For example, while a single appropriation for software and digital technology pilot programs can be helpful, it adds yet another execution challenge for programs that are not solely software focused. Allowing software to be funded by any existing color of money available to an organization achieves the effect of “colorless” money, reducing delays and administrative burdens associated with realigning funds through BTRs or above threshold reprogramming (ATR) without creating additional budget segmentation or delaying program schedules. Implementation of this recommendation would require collaboration between the DOD and Congress, an update to the DOD Financial Management Regulation, and clarity in the narratives of program justification books.<sup>19</sup>

- ▶ **Use O&M for Hardware Improvements:** Many DOD weapon systems that are currently in sustainment have been in the inventory for an extended period and require periodic hardware updates due to obsolescence issues, part failures, and/or diminishing manufacturing sources. Updates incorporating more readily available components and more current technologies may reduce costs, increase capability, or both. In such cases, it has become increasingly difficult to differentiate between increased capability (which requires RDT&E and procurement funding) and form/fit/function hardware updates to maintain a capability (which can be made with O&M funding). Sustainment is generally executed with O&M funds, so a requirement for RDT&E or procurement funds may be difficult for sustainment activities to predict and obtain, creating a barrier to efforts to effectively address parts’ issues.<sup>20</sup>
- ▶ **Align Program and Program Office Funding to the Predominant Activity of the Program:** While already a practice in DOD labs and many program offices, allowing a program office to use a single color of money for all activities would further streamline execution. This recommendation, which could act as an interim step to the more intensive effort to transform the budget structure, would allow program personnel to focus on executing the mission and adjusting to rapidly changing operational needs and technological advancements.<sup>21</sup>

In some regards, the Space Development Agency is a test case for some of the commission’s recommendations. The Space Development Agency is using a single color of money (RDT&E) for all its acquisitions except launch, a small number of consolidated budget line items, and other approaches that enable flexibility and increased acquisition speed.<sup>22</sup> Although the agency is still in the early phases of fielding its architecture, it has received consistent praise for its execution speed and agility.<sup>23</sup> The agency’s success in moving quickly reflects some of the advantages of pursuing the commission’s recommendations for defense space writ large.

***Feasibility of Altering the Budget Structure for Space.*** Although these changes, particularly the transformation of the budget structure, would represent a significant departure from how the DOD has requested and received appropriations, there seems to be at least some willingness on the part of the department and Congress for fundamental change. Prior to the PPBE Commission’s final report, it released an interim report in August 2023. Kathleen Hicks, the deputy secretary of defense, directed the department to “adopt all actions that can be implemented now.”<sup>24</sup> In December 2023, the DOD released an implementation plan for the interim report’s recommendations.<sup>25</sup> Importantly, the budget transformation recommendation and most of the other recommendations discussed were listed as “potential recommendations” in the interim report. In August 2024, the department announced it was moving forward with 26 of the 35 initiatives recommended by the commission and is considering resourcing implications, while also noting, “our resourcing process must evolve in concert with the Congress.”<sup>26</sup> Since the Fiscal Year 2024 Appropriations Act noted that the “House and Senate Defense Appropriations Subcommittees look forward to reviewing the recommendations of the Commission,”<sup>27</sup> it is

clear that the department will need to continue to work collaboratively with the appropriate committees to define a future appropriations structure if major change is to be achieved.

Congress has shown an interest in modifying the budget structure specifically for space. The House Appropriations Committee, in its markup to the Fiscal Year 2024 budget, includes direction for the Space Force to prepare a “supplementary budget exhibit for Space Force programs that organizes and aligns the existing budget lines for programs, projects, and activities into mission area expenditure centers, such as missile warning, satellite communications, and position, navigation, and timing.”<sup>28</sup> The FY 2024 Appropriations and the FY 2025 House Armed Service Committee budget markup also included this direction.<sup>29</sup> The budget exhibit could be a trial for how transforming the budget structure could look in practice. Space could serve as a forerunner for the rest of the department.

## **Conclusion**

Given changing threats and pressing needs, the DOD should push for fundamental changes in its budget structure. Although changing the budget structure along the lines of the PPBE Commission’s recommendation would be transformative and require real collaboration with Congress, it should not be viewed as surprising or extreme. Defense acquisition professionals and scholars have called for the department to revisit its budget structure for some time. The PPBE Commission, fitting within a rich history of analytical work on this topic, is simply the latest to make these recommendations.<sup>30</sup> Given the pivotal moment in the DOD’s space program—including transitioning to proliferated assets and commercial services—and the release of the commission’s report that it directed, Congress should also embrace these changes. As noted often by Congress and the DOD, the United States finds itself in a period of intense global competition, and improving defense acquisition would better prepare the nation to defend its global interests.

## **Acknowledgments**

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