COMMISSION ON PLANNING, PROGRAMMING, BUDGETING, AND EXECUTION REFORM

DEFENSE RESOURCING FOR THE FUTURE

FINAL REPORT

MARCH 2024

COMMISSION ON PLANNING, PROGRAMMING, BUDGETING AND EXECUTION REFORM
2900 Crystal Drive, Suite 410
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March 6, 2024

Our bipartisan Legislative Commission was established by section 1004 of the National Defense Authorization Act for Fiscal Year 2022 and directed to conduct a comprehensive examination of the Defense Department's Planning, Programming, Budgeting, and Execution (PPBE) process to examine its effectiveness, consider potential alternatives, and provide recommendations to improve the process. After two years of interviews, research, and deliberation, we are recommending significant reform to bring the Department's resourcing into the 21st century.

To say the PPBE process and its associated ecosystem is vast is an understatement. We could not have completed our taskings and this Final Report without a significant amount of input and time from stakeholders across this resourcing ecosystem, particularly in Congress, the Department of Defense, industry, and academia. We truly appreciate all those who shared insights with us and contributed to this Final Report.

We are proud to have had the opportunity to serve as Chair and Vice Chair of this Commission and of the work completed by our Commissioners and Commission staff. This Final Report reflects 24 months of research and deliberations culminating in the following recommendations that we strongly believe will transform and strengthen the resourcing process underpinning our military's capability.

Robert Hale

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Chair

Ellen Lord

The Honorable Ellen Lord
Vice Chair

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Section I – Executive Summary

The Commission on Planning, Programming, Budgeting, and Execution (PPBE) Reform has concluded that a new approach to the defense resourcing process is required to better maintain the security of the American people. For many years the current PPBE process has ably supported United States (U.S.) national security. However, the security environment is rapidly evolving, and the current PPBE process is not capable of responding as quickly and effectively as needed to support today's warfighter. The Department of Defense (DoD) needs a new process, one that enables strategy to drive resource allocation in a more rigorous, joint, and analytically informed way. The new process should also embrace changes that enable the DoD to respond effectively to emerging threats while leveraging technological advances.

Two persistent trends affecting U.S. national security drive a need for transformational change to the current PPBE process.

First, the emergence of the People's Republic of China (PRC) as a large, technologically advanced strategic adversary with corresponding global reach has profoundly threatened the rules-based order advocated by the U.S. in conjunction with partners and allies. After 30 years of focus on regional, asymmetric threats, the U.S. now faces strategic challenges with the PRC as a pacing threat while simultaneously contending with immediate threats from Russia, North Korea, Iran, and instability in the Middle East. This ever-evolving security environment demands rapid and large-scale evolution of current military capabilities. Over the last decade it has become increasingly clear that the current PPBE process does not provide the Department's senior leadership with the ability to implement change at the scale and speed the DoD requires. In response to these near-term challenges and existential threats, the Commission is recommending a fundamental restructuring of the process for converting strategy into a budget along with improvements in analytic methodology that enable DoD resourcing decisions. While these changes are primarily internal to the Department, they require close partnership with Congress for successful implementation.

Second, the pace of global technological innovation only continues to accelerate. The defense laboratories and the defense industrial base no longer lead technological change as they did during the Cold War. Instead, commercial technology enables today's militarily-relevant modernization in multiple applications like robotics and space, utilizing advances in areas such as artificial intelligence and cyber. Strategic adversaries are operationalizing this rapid technological change as they seek to overmatch U.S. military capabilities. The current budgeting and execution phases of the PPBE process, particularly in some key interfaces with Congress, do not provide the agility required to adopt technological advances at the speed of relevance.

The U.S. risks losing more of its already diminishing technological edge without immediate transformational changes in resourcing, especially in the year of execution. The Commission's recommendations include much-needed changes to the period of availability of funds, account structures, reprogramming processes, and data sharing with Congress. These reforms also leverage modern business systems and data analytics to better manage resourcing and communications. PPBE reform can only be implemented through sustained collaboration between the legislative and executive branches.

This Final Report provides a detailed review of the Commission's findings and recommendations as well as the transformational change the recommendations will produce.

Commission on PPBE Reform

Section 1004 of the National Defense Authorization Act (NDAA) for Fiscal Year (FY) 2022 created an independent Commission on Planning, Programming, Budgeting, and Execution (PPBE) Reform," within the legislative branch, and directed the Commission to conduct a comprehensive assessment of all four phases of the PPBE process that governs how the DoD creates its resourcing strategy for the following five years and provides the framework and input for the President's Budget request. The law directs a specific focus on budgetary processes that affect defense modernization.

This Final Report documents the Commission's findings, reflecting 24 months of research and formal meetings. The Commission's staff carried out extensive quantitative research and also contracted with several outside research organizations. More than 400 interviews were conducted with experts in PPBE and related fields, including personnel from Congress, the DoD, industry, academia, and research organizations. The findings of this Final Report also draw on the expertise and experience of its 14 Commissioners and staff (see biographies in Section XI).

Overview of Key Findings

Since the inception of the Planning, Programming, and Budgeting System (PPBS), now known as the PPBE process, the DoD has had a structured repeatable process enabling senior leaders to guide the course of the DoD. The PPBE process has allowed leadership to identify key resourcing issues and bring analytic information to bear on budgetary decisions. The PPBE process has ensured that a wide variety of stakeholder voices are heard, which helps build proposals that can be defended before Congress, and allows senior leaders to drive change. It has also ensured that multi-year budgetary impacts are considered to counterbalance tendencies toward short-term views. The Commission's reforms preserve these advantages and other positive aspects of the current PPBE process.

However, as noted above, the U.S. is experiencing a dramatic change in its national security environment. Responding to this increasingly complex global security challenge requires large-scale and rapid changes in strategic objectives, posture, readiness, force structure, and capabilities. Meeting these challenges requires addressing limitations in the current PPBE process. For example, the Commission is concerned that current strategic and resource allocation guidance documents are frequently consensus-driven, often late to need, and sometimes fail to provide actionable direction to the DoD Components. Although there has been much progress in recent years, the key analytic offices in the Office of the Secretary of Defense (OSD) and the Joint Staff do not have sufficient capacity and assessment tools, nor appropriate training programs and time, to provide the level of analytic support required to inform senior leader decision-making on so many high-stakes issues. As a result, major issues are often elevated to senior leadership too late in the process, limiting the available trade-space and analytic support, which forces compression of the essential subsequent steps in budget development.

These strategic challenges are further compounded by the increasing pace of technological change. Moore's Law–the prediction that the number of transistors on a microchip will double every two years – is perhaps the best-known example of rapidly accelerating technological change. U.S. adversaries are taking advantage of this rapid technological change to build overmatch against U.S. military forces, putting the Department's ability to execute the National Defense Strategy (NDS) at risk.

One of the most consistent concerns the Commission heard over the past two years is that the current PPBE process lacks agility, limiting the Department's ability to respond quickly and effectively to evolving threats, unanticipated events, and emerging technological opportunities. This message has been repeatedly articulated in statements from current and former congressional Members and staff, from senior DoD officials, from program budget and acquisition officials at all levels, and from both traditional and non-traditional DoD industry partners. For example, a current DoD leader told the Commission that the amount of time it takes to approve and distribute funding through the current PPBE process to address a national security problem provides U. S adversaries with an innovation advantage. Another official added that the time-consuming nature of the PPBE process makes it difficult to influence a modification or an upgrade to an existing product design or to counter new threats.

Late enacted budgets, and long Continuing Resolutions (CR), pose another critical challenge to resource allocation. The CRs generally include a provision prohibiting new start activities, which can slow efforts to insert innovative technology in both new and current programs. Not knowing what the final appropriations will be until well into the fiscal year further hinders effective budget execution and the timely delivery of capabilities to the warfighter. Compounding this challenge, under current appropriation rules, operating funds must be fully obligated in the year they are appropriated which can result in a year-end spending spree that can allocate funding to lower-priority programs so that funding is not lost. The Commission also heard concerns that, under the current PPBE process, budgets presented to Congress cannot easily be linked to the defense strategy, in part because the budgets are presented in terms of appropriation title and DoD Component rather than by capability areas. While the Department has been modernizing its systems for over a decade, the current PPBE process still depends on some antiquated information technology systems that make it difficult to quickly access and analyze validated data and effectively share information between the DoD and Congress.

Vision

To address these challenges, the Commission established a vision for a new resourcing process, drawing from the original set of six principles that guided creation of the original PPBS,[1] and modifying and expanding them to meet today's changing strategic environment. The new process should:

1. Closely align budgets to strategy for the Joint Force "based on explicit criteria of national interest,"[2] with the ultimate goal of faster delivery of capability to the warfighter.
2. Base resource decisions on "choices among explicit, balanced, and feasible alternatives."[3]
3. Formulate and assess budget alternatives and consequences over multiple years before making major decisions, and use analysis to compare costs and benefits.

[1] Enthoven and Smith 2005.
[2] Ibid.
[3] Ibid.

4. Enable accountable leaders in acquisition, operational, and support organizations to foster innovation and agility by improving their ability to react to changing threats and requirements, while ensuring the best technology and capabilities are fielded for the warfighter.
5. Use common modern business systems with shared and accessible data to support decision-making, reduce duplicative efforts, and better communicate information inside the DoD and to Congress.
6. Provide a dedicated, appropriately skilled, and resourced staff to support the Secretary of Defense and other senior leaders throughout the DoD.
7. Appropriately signal near- and long-term technological and infrastructure priorities to the industrial base, enabling both non-traditional and traditional vendors to supply capabilities to the DoD.
8. Meet budget timelines while ensuring that stakeholders have a voice in the process.
9. Provide Congress, the Office of Management and Budget (OMB), and the American people appropriate visibility into and understanding of key defense resource decisions.

Transformational Change: The Defense Resourcing System

To implement this vision, the Commission recommends creating a new **Defense Resourcing System (DRS)** to support U.S. national security in an increasingly dangerous world. This new system builds on PPBE's many strengths while also addressing the weaknesses that have emerged. The new DRS fundamentally strengthens the connection between strategy and resource allocation while creating a more flexible and agile execution process and preserving congressional oversight. The proposed DRS replaces what was known as the PPBE process and consists of three processes: Strategy, Resource Allocation, and Execution.

Strategy: The new system employs analytics at the start of the Strategy process to determine priorities and direction for the forthcoming budget while establishing the overall guidance for key budget decisions. The Office of Primary Responsibility (OPR) is the Under Secretary of Defense for Policy (USD(P)). The key documents remain the National Security Strategy (NSS), NDS, and National Military Strategy (NMS). The DRS strategy process remains focused on these enduring, multi-year documents.

Resource Allocation: This is where the most significant process changes are proposed. In place of the current PPBE process the following steps occur within the Resource Allocation process:

1. *Guidance*. Instead of the current process of circulating a lengthy document for coordination (the current Defense Planning Guidance or DPG), the new approach brings the results of wargaming and analytical efforts into established senior leadership forums to inform discussions that can lead to specific guidance or at least provide direction for budgetary debates. Development of the new guidance document involves existing leadership forums, including the Senior Leadership Council and the Deputy's Management Action Group, and concludes by February of the year before the budget submission. The OPR for the Guidance process is the Analysis Working Group (AWG), under the leadership of the Director, Office of Cost Assessment and Program Evaluation (CAPE) as the Executive Secretary. The key document resulting from this process is the Defense Resourcing Guidance (DRG), issued in February that now includes both the integrated program priorities and Fiscal Guidance (FG). A new continuous analytic process overseen by the AWG supports the development of the DRG and will focus debate throughout the new resourcing process.

2. *Build*. This step centers around the Services and DoD Components and their construction of a strategically-informed Resource Allocation Submission (RAS) proposal in compliance with the DRG. The OPRs for this step are the Services and DoD Components. The RAS replaces the current Program Objective Memorandum (POM) and Budget Estimate Submission (BES) as the single submission to the OSD for review. The DoD Components will likely start their RAS well in advance of the DRG, much like they do today, but will be guided by the actionable direction established during the Guidance step.

3. *Decision*. This final step involves the OSD review of the RASs (formerly POM/BES), then issuance of Resource Allocation Decisions (RAD) and incorporation of OMB Passback changes, all of which culminate in a final DoD budget request. After approval by the OMB, this budget request becomes the DoD portion of the annual President's Budget submission to Congress. The OPR is the Under Secretary of Defense for Comptroller (USD(C)), who establishes the necessary timelines and assigns the workload for review. The CAPE and USD(C) organizations will continue to perform their respective tasks, with CAPE focused on DRG compliance and strategic or programmatic issues and USD(C) focused on budget year issues to include pricing, executability, most single-Service or Combatant Command requests, and late breaking or conflict-related issues. The USD(C), working with CAPE, will also maintain a single database documenting all decisions.

Execution: With the USD(C) as the OPR, this process involves distribution of funding, as authorized and appropriated by Congress, and execution of those funds by the Services and DoD Components to meet national security needs. Many Commission recommendations described below will significantly improve the execution process, providing significant mechanisms to allow the DoD to respond to emerging issues more quickly and effectively. Of particular note, this process will also establish a feedback loop to evaluate overall fiscal, program, and operational performance, as well as alignment with strategic and planning goals. Key documents governing this process include budget execution reports, acquisition and operational reports, and other information useful to Congress, the DoD, and other stakeholders for carrying out oversight and analysis.

Naming the New System

The Commission recommends a new name for this process–the Defense Resourcing System–to emphasize the streamlining and combination of several discrete steps and phases of the former PPBE process. The new name, along with changed names for key documents and roles, also emphasizes the extent of the changes recommended by the Commission. Figure 1 depicts the processes and steps in the new DRS.

Figure 1 – Defense Resourcing System Structure

Process	Step	Key Document(s)	OPR(s)
Strategy		NDS	OUSD(P)
Resource Allocation	Guidance	Defense Resourcing Guidance (DRG) *(replaces DPG and Fiscal Guidance)*	AWG (CAPE as executive secretary)
	Build	Resource Allocation Submission (RAS) *(replaces POM/BES)*	Service/Component Resourcing Staffs
	Decision	Resource Allocation Decision (RAD) *(replaces PDMs/PBDs)*	OUSD(C)
Execution		President's Budget Omnibus Reprogramming Request Execution/Obligation Reports	OUSD(C) and Service/Component FMs
The new DRS is enabled throughout the process with continuous analysis and evaluation.			

Key Recommendations:

To shape the Commission's focus on critical areas for reform, the Commission organized its research and identified recommendations designed to:

1) **Improve the Alignment of Budgets to Strategy;**
2) **Foster Innovation and Adaptability;**
3) **Strengthen Relationships Between DoD and Congress;**
4) **Modernize Business Systems and Data Analytics; and**
5) **Strengthen the Capability of the Resourcing Workforce.**

Key Recommendations that Improve the Alignment of Budgets to Strategy

The Commission consistently heard that the current PPBE process does not show a clear alignment between DoD budget requests and overall defense strategies as articulated in the NSS and NDS. This remains a critical shortcoming in matching resources to the DoD's strategic vision and requirements of the Services, DoD Components, and the Joint Force. Under the current PPBE process, the programmed budgets are typically developed by the DoD Components before the appropriate strategic documents like the DPG have been finalized, and fact-of-life changes can easily overwhelm strategic choices. To address this, in addition to the DRS, the Commission recommends two key reforms and changes:

- **Strengthen the Defense Resourcing Guidance through Continuous Planning and Analysis:** As was noted earlier, the effectiveness of the DRG is bolstered by continuous analysis including threat analyses, wargaming, and cost benefit assessments. Beginning these key analyses earlier, and holding leadership decision meetings that consider analytic results from November through February, will produce a timelier guidance document with a regular analytic cadence used to inform the Build step and shape resourcing decisions.

- **Transform the Budget Structure:** An effective and properly stratified budget structure is a crucial underpinning of any resource allocation process, whether in the current PPBE process or the new DRS. The current budget structure begins with the designated life cycle phases (i.e., Research, Development, Test and Evaluation (RDT&E), Procurement, and Operation and Maintenance (O&M)). It then further aligns these to the separate Services and DoD Components before finally presenting data for specific accounts and programs. These top-level appropriations reflect the phases of traditional industrial production, but this is not how the Department or Congress consider the budget when making decisions today. Instead, today's decision-makers focus primarily on capability. Under the current budget structure, this requires pulling data from disparate sections of the budget in order to see the whole program. The Commission's reimagined structure starts with the Services and DoD Components, flows to Major Capability Activity Areas (MCAA) areas under their purview (examples might include ground maneuver units or tactical aviation), then to specific programs and systems, and finally to the relevant life cycle phases. Figure 2 below depicts these changes.

Figure 2 – Current and Reimagined Budget Structure

Current Structure	Proposed Structure
Life Cycle Phase	Service/Component
Service/Component	Major Capability Activity Area
Budget Line Item	System/Program (BLI)
Project (if applicable)	Life Cycle Phase

The Commission believes this budget transformation will enhance congressional oversight by transmitting program and budgetary information to Congress in a way that combines related funding for a capability under a single program and/or portfolio. This change will increase transparency across all types of funding requested and more clearly link decision-making and resource allocation. Moreover, the new budget structure will improve visibility and understanding of the resource allocations across the Services and for similar portfolios in the Joint Force. It also better matches 21st century Digital Age technological developments that no longer fit into the traditional Industrial Age categories of research, procurement, operation, and sustainment.

Key Recommended Changes that Foster Innovation and Adaptability

The Commission recommends the following important changes to foster innovation and improve agility in the allocation and execution of resources. The combination of these key recommendations has the goal of significantly increasing industry involvement and providing emergent technology to the warfighter more quickly and easily.

- **Increase Availability of Operating Funds:** The Commission recommends allowing a small portion (five percent) of operating funds to be carried over for obligation in a second year of availability, a type of flexibility that is already available to some non-DoD federal agencies. This change will reduce the high levels of year-end spending that hamper effective execution of funds, especially after a CR, as well as prevent the funding of lower-priority programs just to avoid losing the money.

- **Update Thresholds for Below Threshold Reprogrammings (BTR):** Raising these thresholds to keep pace with historical budget increases will increase flexibility for Program Managers (PM), Program Executive Officers (PEO), and others while also streamlining the decision-making process. Ultimately the Commission proposes eliminating BTRs and allowing a small percentage of an entire appropriation to be realigned with appropriate congressional briefings and oversight.

- **Mitigate Problems Caused by CRs:** This recommendation mitigates the adverse impacts of increasingly commonplace CRs by allowing the Department to proceed with new starts and increased program quantities under CRs in carefully delineated circumstances.

- **Review and Consolidate Budget Line Items (BLI):** This consolidation streamlines the current resourcing and execution processes, retains and increases transparency for Congress, ends unnecessary duplication in the existing budget structures, and eliminates redundancies. Consolidation will also increase the DoD's ability to adjust rapidly to changing circumstances in the year of execution and inject innovation or adopt new technology to address changing threats.

- **Address Challenges with Colors of Money:** This recommendation aligns colors of money with the way in which programs are actually executed, enabling the Department to better meet mission needs through the funding of software programs, continuing improvements to hardware, and program office accounts.

Key Recommended Changes to Strengthen Relationships Between DoD and Congress

The Commission remains mindful of the need to strengthen and improve relationships and communications between DoD and Congress regarding the President's Budget submission and throughout the resource allocation and execution phases. The Commission offers several recommendations to improve these critical relationships with a focus on data driven communications.

- **Encourage Improved In-Person Communications**: The DoD should work with Congress to determine the best time to offer in-person updates that deal with execution-year issues as well as the budget proposal under review by the Congress. Updates should be informed by execution reviews and timed to support conference negotiations held by the authorization and appropriations committees.

- **Establish Classified and Unclassified Communication Enclaves**: This recommendation will enable more robust communication between DoD and Congress. It will include but not be limited to a common set of reports and budget material that can be readily searched, sorted, and retrieved for analysis across all security classification levels. Enclaves will enable efficient and effective communications across the government, increasing trust, transparency, and relevancy.

Key Recommended Changes to Modernize Business Systems and Data Analytics

The systems DoD uses to manage data do not always allow searching or sorting of shared information, nor can data be easily used or shared for analysis and decision-making. This is a serious impediment to making DoD resourcing more effectively agile, as well as more coherent and transparent. The Commission makes a number of recommendations designed to improve data analytics, including this key recommendation:

- **Create a Common Analytics Platform:** This will make information readily available and provide streamlined access to best of breed analytic capabilities and authoritative data across functional sectors, ensuring that all DoD organizations are leveraging the same authoritative, transaction-level business and warfighting data. A single common platform will, for example, provide the capability to integrate prior year execution and operational data, thereby improving assessments of cost, schedule, and performance.

Key Recommended Changes to Strengthen the Capability of the Resourcing Workforce

The workforce that carries out defense resourcing tasks must be of adequate size, sufficiently trained, and enabled with the tools and resources to support leadership and decision-making. The Commission makes a number of recommendations designed to improve the workforce, including these key recommendations:

- **Continue the Focus on Recruiting and Retention**: Both the Offices of the USD(C) and CAPE need to improve recruiting and retention to ensure they have staffs of sufficient size and skill to carry out their specified duties.

- **Improve Training for Personnel Involved in Defense Resourcing**: Improved training for personnel who support the DRS will ensure the Department has appropriately trained personnel who understand how their role supports the DRS in a number of ways. Training on preparation of the budget justification books, data analytics, and private sector practices represent key areas to empower the DoD workforce.

Additional Recommendations

In addition to the key recommendations described above, the Commission makes a number of additional recommendations that will, if implemented, significantly improve the Department's resourcing processes. Some of these recommendations may be interim steps before the implementation of the broader transformational changes identified above, but many will pay dividends for the long run. A full list of the Commission's recommendations, each of which is described in detail in the report, can be found at the end of this section.

Implementation

The Commission commends the DoD for establishing implementation plans for the 13 Recommendations contained in the Commission's Interim Report that could be implemented prior to this Final Report.[4] Full implementation of all the Commission's recommendations in this Final Report will require substantial effort on the part of Congress and the DoD, especially its resource management community. The Commission recommends that the DoD establish an implementation team that reports directly to the Deputy Secretary of Defense. This temporary team would be made up of experts from various functional areas and, for the next three to five years, provide staff support to implement the Commission's recommendations. The Commission further recommends that the Department engage with Congress on these recommendations and provide regular updates on implementation.

[4] DoD Implementation Plan 2024. Provided to the Commission. Public release forthcoming.

Commission Recommendations

Improve the Alignment of Budgets to Strategy

1. **Replace the PPBE Process with a new Defense Resourcing System**
2. **Strengthen the Defense Resourcing Guidance**
3. **Establish Continuous Planning and Analysis**
4. **Transform the Budget Structure**
5. Consolidate RDT&E Budget Activities

Foster Innovation and Adaptability

6. **Increase Availability of Operating Funds**
7. Modify Internal DoD Reprogramming Requirements
8. **Update Values for Below Threshold Reprogrammings**
9. **Mitigate Problems Caused by Continuing Resolutions**
10. **Review and Consolidate Budget Line Items**
11. **Address Challenges with Colors of Money**
12. Review and Update PPBE-Related Guidance Documents
13. Improve Awareness of Technology Resourcing Authorities
14. Establish Special Transfer Authority for Programs Around Milestone Decisions
15. Rebaseline the OSD Obligation and Expenditure Benchmarks
16. Encourage Use of the Defense Modernization Account

Strengthen Relationships Between DoD and Congress

17. **Encourage Improved In-Person Communications**
18. Restructure the Justification Books
19. **Establish Classified and Unclassified Communication Enclaves**

Modernize Business Systems and Data Analytics

20. **Create a Common Analytics Platform**
21. Strengthen Governance for DoD Business Systems
22. Accelerate Progress Toward Auditable Financial Statements
23. Continue Rationalization of the OSD Resourcing Systems
24. Modernize the Tracking of Congressionally Directed Actions

Strengthen the Capability of the Resourcing Workforce

25. **Continue the Focus on Recruiting and Retention**
26. Streamline Processes and Improve Analytic Capabilities
27. **Improve Training for Personnel Involved in Defense Resourcing**
28. Establish an Implementation Team for Commission Recommendations

Conclusion

The Commission concludes that the recommendations in this Final Report will enable the Department to more effectively meet national defense needs, while preserving the insight required for congressional oversight. Today, the U.S., its allies, and partners face multiple challenges and threats amid the most complex geopolitical environment since World War Two. The DoD must have an agile and responsive resourcing architecture and system, one that promotes innovation, agility, and speed, best harnesses defense resources, and supports timely and accurate senior leader decisions. Time is short, the need for change is increasingly urgent. The Commission calls upon Congress and the Department to adopt these recommendations that will better enable the DoD to continue to preserve U.S. national security in light of the ever-changing landscape.

Section II – Background and Research Approach

Background

Section 1004 of the NDAA for FY 2022 established an independent "Commission on Planning, Programming, Budgeting, and Execution Reform." Specifically, this Commission is composed of "14 civilian individuals not employed by the Federal Government" with proven experience and expertise "in one or more of the following: (A) matters relating to the planning, programming, budgeting, and execution of the Department of Defense; (B) innovative budgeting and resource allocation methods of the private sector; (C) iterative design and acquisition process; (D) budget or program execution data analysis."[5]

In accordance with this language, the Commission's mandate included the following tasks:

- Conduct a comprehensive assessment of the efficacy and efficiency of all phases and aspects of the PPBE process with a focus on defense modernization;
- Review the DoD financial management systems, including an assessment of the Office of the Secretary of Defense (OSD) budget and programming workforces;
- Compare the DoD PPBE process with similar processes of private industry, other federal agencies, and other countries;
- Review the budgeting methodologies and strategies of strategic competitors to understand if and how such competitors can address current and future threats more or less successfully than the United States; and
- Develop and propose recommendations to improve the effectiveness of the PPBE process.[6]

As amended by section 1057 of the NDAA for FY 2023, the Commission was tasked to present the results of its investigation in two reports: an Interim Report to be delivered in August 2023 and a Final Report due in March 2024. A Status Update was released on March 2, 2023 and the Interim Report was released on August 15, 2023. This document constitutes the required Final Report that presents all research and recommendations from the Commission including those discussed in the Interim Report.

Research Approach

Since its establishment, the Commission had approximately 40 formal in-person Commission meetings, each of which included a majority of Commissioners along with many of the Commission's professional staff. The Commission has depended heavily on the experience and expertise of its Commissioners and professional staff, many of whom have extensive experience with PPBE in Congress, in DoD, or both.

The Commission conducted interviews that included over 1,100 personnel from the multiple functional communities that support all the phases of PPBE, which involved multiple individual and group interviews along with open mic sessions. These interviews included 19 engagements with professional staff of the congressional defense committees. The Commission's interviewees included current and former senior congressional professional staff, current and former senior officials from across the DoD,

[5] P.L. 117-81.
[6] Ibid.

current DoD and industry practitioners from all phases of the PPBE process, and industry executives (see Section XI for details).

The Commission also relied on extensive research conducted by various groups. The Commission's staff conducted extensive research on topics related to the PPBE process to further inform the Commission's Interim and Final Reports. This comprehensive research included interviews with industry on their processes; a review of the DoD Financial Management Regulation (FMR) and other PPBE related guidance; a case study on Facilities Sustainment, Restoration, and Modernization (FSRM) funding; an in-depth analysis of reprogramming actions; an analysis of innovation funds; an analysis of program new starts; an analysis of expiring, expired, and cancelled funds; an analysis of the DoD budget structure; an assessment of the OSD Comptroller and CAPE workforces; an assessment of the development, review, format, and utilization of formal and informal justification materials; an assessment of the Service programming and Military Department financial management workforces; analysis of performance metrics; and an analysis of defense business systems including financial management systems.

Understanding the importance of interacting with the entirety of the PPBE ecosystem, the Commission staff actively engaged the public through social media platforms to further conversations regarding PPBE reform and kept the public apprised of the Commission's progress. Commissioners and Commission staff also engaged with other stakeholders and practitioners by speaking at a number of professional forums and events, discussing the Commission's work and research areas. The Commission also engaged with several media outlets who have contributed to furthering this dialogue with DoD and congressional stakeholders. As a result of these engagements and conversations, the Commission gained an extensive understanding of the current PPBE process and suggested areas in need of reform.

At the Commission's request, research was also conducted by Federally Funded Research and Development Center (FFRDC) experts from the Institute for Defense Analyses (IDA), the RAND Corporation, and the MITRE Corporation. The Commission also leveraged academia through the National Security Innovation Network (NSIN) and DoD's Acquisition Innovation Research Center (AIRC) to assist in research efforts. The Commission established an independent Financial Management (FM) Systems Tiger Team made up of Commission staff and outside experts to complete a review of the DoD's financial management systems as they relate to internal controls, auditability, and support to the DoD mission; this analysis is included in Section X of this report. The Service Design Collective also provided the Commission with research conducted under a grant from the Federation of American Scientists. A high-level list of research activities conducted by these organizations is provided on the following pages.

FFRDC RESEARCH

The RAND Corporation: Comparison to PPBE Processes in Other Countries and Federal Agencies:

- Allied and Partner Countries: Australia, Canada, the United Kingdom, France, Germany, Sweden, Japan, and Singapore
- Strategic Competitors: China and Russia
- Other Federal Agencies: Department of Homeland Security (DHS), Department of Health and Human Services (HHS), National Aeronautics and Space Administration (NASA), the Office of the Director of National Intelligence (ODNI), Department of Veterans Affairs (VA), and Department of Energy's (DOE) National Nuclear Security Administration (NNSA)

IDA: Examination of PPBE Documents, Timelines Involved for Each Phase, and the Ability to Make Changes:

- Development of Key PPBE Documents: the DPG, the Program Objective Memorandum (POM), the Future Years Defense Program (FYDP), the Budget Estimate Submission (BES), and the President's Budget (PB)
- Analysis of Timelines Associated with Each Phase and the FYDP
- Examination of Reprogramming Actions

The MITRE Corporation:

- General Use of Metrics and Performance Measures
- Correlated Change in Budget Structure versus Strategy
- Structural Incentives on Spending Behavior

ACADEMIC RESEARCH

NSIN: The College of William and Mary and the University of Virginia:

- Innovation and the Small Business Innovation Research Program
- Aligning Budgets to Strategy

AIRC: George Mason University and Stevens Institute of Technology:

- Case Studies of Technology Transition
- PPBE Process Portfolio Budgeting, Justification Books, Selected Acquisition Reports, and Integrated PPBE/Requirements/Acquisition Reform
- Options for Restructuring the DoD's PB
- Alternative Obligation and Expenditure Target Curves

OTHER OUTSIDE RESEARCH

FM Systems Tiger Team:
Doug Brook – former Acting USD(C)/Chief Financial Officer, Visiting Professor Duke University;
Phil Candreva – Senior Lecturer Naval Post Graduate School;
Mark Easton – former Deputy Chief Financial Officer (DCFO), Professor Defense Acquisition University;
David Fisher – former Director – Business Transformation Agency;
Jared Terry – Commission Staff Lead

- "Review of the financial management systems of the DoD, including policies, procedures, past and planned investments, and recommendations related to replacing, modifying, and improving such systems to ensure that such systems and related processes of the Department result in effective internal controls; the ability to achieve auditable financial statements; and the ability to meet other financial management and operational needs"[7]

Service Design Collective: Eddie Hartwig, Kat Jurick, Shelly Smith, and Noah Firth

- Improving communication, information sharing, and data standards between Congress and the DoD through the development of technical enclaves

In addition, the Commission was provided with papers related to PPBE reform from several universities including: The Naval Postgraduate School, Duke University Sanford School of Public Policy, the Defense Resources Management Institute, and the George Mason University Center for Government Contracting.

[7] Ibid.

Section III – PPBE and the Need for Change

The Current PPBE Process

The Planning, Programming, and Budgeting System (PPBS) was originally established in early 1961 to give the Secretary of Defense a way to make strategic and cost-effective decisions on force structure and major acquisition programs, while also setting the funding and personnel requirements each of these would entail. This new centralized system became feasible in part because of the merging of the separate Services into a united DoD in 1947. It also benefited from research on defense decision-making in the 1950s. The new PPBE process made major changes in defense budgeting practices including addressing budget issues in broad program areas such as strategic forces, bringing analytic information to bear on decisions, and considering budgets over multiple years. The system got a revised name–the PPBE process–in 2003 to reflect increased emphasis on the importance of execution and evaluation as a feedback loop into the process.

Changes to the PPBS began not long after its introduction, some of which shaped the system this Commission was tasked to assess. In the 1970s, for example, Secretary of Defense Melvin Laird decided that the system Secretary of Defense Robert McNamara had introduced in 1961 over-centralized control in the Office of the Secretary of Defense and that more autonomy needed to be restored to the Services in building and designing forces. This led to more significant involvement by the Services, which shapes many of today's PPBE processes.

Congress also tightened controls on DoD budgeting in ways that have shaped PPBE. For example, even before PPBE, informal agreements between Congress and DoD permitted the Department to move funds among programs during the execution phase of PPBE through reprogramming actions, but Congress has gradually restricted those movements over the years. Nevertheless, the reprogramming of funds during the year of execution still provides a key source of budgetary flexibility for DoD and is an important issue the Commission researched and discussed extensively.

Starting in 1977, Congress decided to change the end of the federal fiscal year from June 30th to September 30th, an important shift designed to give Congress more time to authorize programs and enact appropriations. Unfortunately, this change has not solved the problem of late budget enactments which is another focus area the Commission examined and debated. These and other changes, applied to the basic provisions of the PPBS put in place in 1961, have created the current PPBE processes the Commission evaluated in its Interim Report and this Final Report. The current PPBE process consists of four phases, which are outlined in further detail below.

Planning Phase: This phase involves the identification of necessary updates to DoD military strategy, policy, and force manning, training, and equipping, given the evolving strategic environment. During this phase, key DoD missions and goals are translated into prioritized strategic objectives and reviews of existing and programmed capabilities, force structure, and global posture are conducted to assess the sufficiency of the joint force to achieve the strategy and identify current and future warfighting requirement priorities.

This is a joint effort by both civilian and uniformed officials of the DoD (Under Secretary of Defense (USD) for Policy (USD(P)), Chairman of the Joint Chiefs of Staff (CJCS), military Services, and Combatant Commands (COCOM) and is guided by three documents: the NSS as determined by the President of the

United States; the NDS issued by the Secretary of Defense; and the NMS issued by the CJCS. This phase of the process informs preparation of the DPG. The USD(P) oversees preparation of the DPG, which goes to all DoD Components and guides development of their program and budget recommendations.

Programming Phase: This phase is intended to focus decision-making on analytically based trade-offs about future end states.[8] It includes an analysis and decision process that produces a detailed multi-year force and financial plan (the FYDP) that is the bridge to that future end state. This can involve identifying, prioritizing, and resourcing the DoD's manpower (including military end-strength and civilian full-time equivalent work years), acquisition and sustainment programs, facilities, and forces (identified as either items of equipment or combat units) that are required to deliver the future capabilities and forces, all within a fixed topline. This phase begins with the issuance of the DPG and Fiscal Guidance (FG) from the Deputy Secretary of Defense to each of the Military Departments and to the Principal Staff Assistants for their organizations and DoD Components under their purview.

The Director, CAPE oversees this process at the OSD level on behalf of the Deputy Secretary of Defense. The DoD Components spend at least a year developing their POM and then formally submit that POM to OSD. The POM describes how they want to allocate funding, how they comply with the requirements set forth in the DPG and specific Service and Component program guidance, and how they meet the priorities and objectives outlined in the various strategy documents released in the planning phase. The submission and presentations of the POM to CAPE and OSD leadership begins the Program and Budget Review (PBR) during which CAPE evaluates the POM and the Office of the Under Secretary of Defense (Comptroller) (OUSD(C)) evaluates the Budget Estimate Submission (BES) in coordination with the OSD Secretariats, military Services, Joint Staff, COCOMs, and Defense Agencies.

After analyzing the POM submissions, the Director, CAPE issues draft Program Decision Memorandums (PDM) (they have also been called Resource Management Decisions (RMD)) that direct changes to the POM submissions, document approved manpower changes, and direct appropriate program reports and studies. This phase concludes with Deputy Secretary of Defense signature of the final approved PDMs that are then incorporated into the President's Budget (PB). Throughout the programming process, adjustments to programs, projects, funding type, and amounts can be made until the OUSD(C) budget database is locked. Of course, an increase in funds in one part of the program will have to be offset elsewhere as the Department's topline cannot exceed the level established in FG by the Deputy Secretary of Defense.

Budgeting Phase: This phase includes activities executed in both the executive branch and the legislative branch, with important roles played by DoD, the White House, and Congress. Within DoD, the purpose of this phase, overseen by the USD(C), is to develop and then prepare documentation to describe a budget that reflects the President's and the Secretary of Defense's priorities and is balanced at the topline provided by the President's Office of Management and Budget (OMB). Budgeting is done in coordination with the CAPE-led Program Review and requires significant involvement from Service, DoD Component, and OUSD(C) analysts. Using the Service and other DoD Component BESs as its basis, along with changes made during the POM process, OUSD(C) reviews and appropriately adjusts the BES inputs to ensure the correct phasing and pricing of programs and compliance with laws and regulations and assesses the executability of programs within the appropriation lifecycle (obligations and expenditures). In addition, OUSD(C) reviews and adjudicates numerous funding requests not covered in the Program Review, typically single-Service or command requests, and late breaking or conflict-related

[8] Enthoven and Smith 2005.

issues. The budgeting phase also features preparation of the complex and voluminous documentation (justification books or J-books) that accompanies the budget when it is formally submitted to Congress. While PDMs should be completed during the programming phase, they have routinely been issued during the budgeting phase due to concurrent reviews and delayed decisions.

The budgeting phase includes the OUSD(C) review and issuance of draft Program Budget Decisions (PBD) (also previously called RMDs) that direct changes and shape the final DoD portion of the PB. During this time, the OMB participates in the OSD-level review of the DoD budget and provides further guidance and direction known as Passback to the Department on programmatic and budget issues, Administration priorities, economic assumptions, and final topline guidance. These changes often happen very late in the process due to real world events or issues that arise during execution. As in the programming phase, changes can be made up until the last minute in the budgeting phase, but typically require OSD and sometimes OMB leadership support to ensure that previous decisions are not inadvertently overturned in the final days and hours before the PB submission to Congress.

The Commission recognizes and supports DoD's on-going special relationship with the OMB that enables the OMB to actively participate in the concurrent review of the DoD budget during the PBR process and allows the Department to incorporate that feedback as senior leaders are making decisions. The increased review and budget build time for the DoD is required to integrate the most complex of all federal budgets into the Executive Branch's overall budget request. It also allows the OMB to factor in critical information to inform its Passback while the process is ongoing. Incorporating the OMB into the DoD process, and getting both to work together, is essential for this partnership to continue so that the Department can meet OMB timelines for delivering the annual budget to Congress as directed by law. The Commission, therefore, encourages this cooperative relationship to continue especially because it provides the OMB with significant insight into the DoD budget, and it provides the DoD the flexibility to ensure the Defense section of the President's Budget is as current as possible. Anything that interferes with this process would run counter to the Commission's objectives of developing a more responsive and agile resourcing process.

The DoD budget, along with other federal agency budgets, are statutorily due to Congress the first Monday in February for the next fiscal year, which begins on October 1st of that same calendar year. This phase is completed inside the Department when it submits the DoD budget to OMB for inclusion in the PB to Congress, as well as when the Department delivers the detailed information that supports that budget to the congressional committees.

Review of the defense budget continues with congressional hearings involving Department civilian and military leadership; detailed rollout briefings from the Services, Combatant Commands, and other DoD Components to professional staff members on the congressional defense, intelligence, and military construction committees; submission of numerous unfunded priority lists (UPL) from DoD Components; and congressional committee markups of the completed PB as reflected in NDAAs and DoD Appropriations Acts. This phase also includes significant informal interaction between Congress and DoD Components, as well as defense industry, academia, and other parties interested in influencing the final appropriations bill.

Execution Phase: The DoD has always executed its own budgets, but in May 2003, execution formally became the fourth phase of the PPBS, leading to a change of the name to the PPBE process. This phase was added to highlight the importance of managing execution and performance by providing a feedback loop to inform future program and budget decisions. The phase encompasses everything from the initial

apportionment of funds from the OMB (even while under a Continuing Resolution (CR)) and issuance of Treasury Warrants; reconciling enacted changes (reductions and adds) against the request; realigning and reprogramming of funds to meet emergent needs; tracking, reporting, and balancing of the accounting systems for those resources; and a review of overall performance as communicated in the Annual Performance Report (required by the 1993 Government Performance and Results Act (GPRA) and GPRA Modernization Act of 2010).

It is important to note that the execution phase is *always* in process for many different years at the same time. Contracting for services and products is an important part of budget execution, which is provided by the Defense Acquisition System, though it is not formally part of the PPBE process. Congressional staff, Members, and oversight organizations, such as the Government Accountability Office (GAO) and the DoD Inspector General, are also active during the execution phase of previously passed appropriations, performing their mandated oversight duties for multiple fiscal years of appropriated funds.

The execution phase for a particular year begins on October 1st with the start of the fiscal year, even if that year starts under a CR. It proceeds in full force once funds have been appropriated and concludes on September 30th when that fiscal year closes. However, because programs have one to five years to obligate funds depending on the appropriation and another five years to make final payments, at any point in time DoD is executing funds from at least 10 different fiscal years.

Analysis of execution includes determining how well current appropriations are being spent compared to programmatic and financial plans. This ensures alignment to DoD's stated requirements and determines whether resources need to be realigned or reprogrammed to meet emerging or unplanned year of execution needs. The Services and DoD Components conduct monthly execution reviews at the program and Command level and more formal quarterly reviews with higher headquarters. These reviews and assessments feed into the formal mid-year review with the OUSD(C), which informs the realignment requests contained in the Omnibus reprogramming submission which is due annually by the end of June. They provide useful analysis and information to inform future budget decisions.

Close monitoring of execution and reprogramming actions continue through the remainder of the fiscal year, especially for annual appropriations. This monitoring ensures that the 80/20 Appropriations Act General Provision for O&M funding (statutory requirement for meeting the 80 percent obligation rate by the end of July every year) is sufficiently met and that funds will be appropriately executed for the highest priorities before the fiscal year closes.

Strengths, Criticism, and the Need for Change

The Commission found that the PPBE system has many virtues. It serves a critical role in identifying key budget issues and brings analytic information to bear on budgetary decisions. The PPBE process has ensured that a wide variety of stakeholder voices are heard which helps build proposals that can be defended before Congress and enables senior leaders to drive change. It has also ensured that multi-year budgetary impacts are considered to counterbalance natural tendencies toward short-term views. The Commission's reforms preserve these advantages and other aspects of the current PPBE process. These aspects of the PPBE process should be preserved in any reform effort. At the same time almost everyone the Commission spoke with, even those who praised aspects of the current PPBE process, agrees that changes are needed. There is also an extensive body of research that underscores the need

for improvements in PPBE, as well as a very active conversation in social media and panel discussions at industry and other association events.

Strengths. The strengths of the current PPBE process the Commission worked to preserve include maintaining a repeatable process that enables senior leadership to guide the course of the Department, and maintaining the timeline set by the OMB for the PB request while still ensuring that all stakeholders are heard within the process, allowing time for that discussion of priorities and strategy inside the Department. While this can slow down decisions due to the time it takes to allow for this level of participation, this also preserves the opportunity for all voices to be heard on an issue, allowing senior leaders time to evaluate multiple courses of action to support the strategy, and make the most-informed decisions possible, while understanding the impacts of those decisions on capabilities over multiple fiscal years.

The current PPBE process also allows for excursions and alternatives to be developed and debated to meet budget requirements for the operational capabilities needed to meet the DoD missions (e.g., strategic forces, tactical air, etc.). It also brings considerable analysis and information into the discussions on major budget alternatives, assessing them in terms of both costs and benefits in the current and future years.

The Commission generally heard from stakeholders that the PPBE process generates the budget justification materials (formal and informal) that provide Congress and the professional staff on the congressional defense, intelligence, and military construction committees with the necessary information to meet their oversight responsibilities. There is also a considerable volume of information that is made publicly available, such as all the unclassified justification materials, supporting exhibits, appropriation-level data, rollout briefings, and overview books that are available for viewing and can be downloaded from the OSD Comptroller and Service websites. This is a unique level of transparency that is not always available in other partner and allied nations, and the DoD goes through a tremendous process to ensure the information that can be provided, is posted publicly. The Commission believes this transparency is critical to providing taxpayers with insight on the stewardship of public funds and allowing the defense industry to understand where its government customer spending priorities are so that it can plan and execute resources appropriately.

Criticism. Although the PPBE process has served DoD well for many years, the Commission heard significant criticisms of the current PPBE process and calls for change that will be discussed in more detail throughout this Final Report.

One of the most consistent concerns the Commission heard is that the lack of agility in the current PPBE process limits the Department's ability to effectively respond to evolving threats, unanticipated events, and emerging technological opportunities in a timely manner. This message has been reiterated in statements from current and former congressional Members and staff, from senior DoD officials, from program, budget, and acquisition officials at all levels, and from both traditional and non-traditional DoD industry partners. For example, a current DoD leader told the Commission that the amount of time it takes to distribute funding for a national security issue because of the PPBE process, gives an innovation advantage to U.S. adversaries. Another official reported that the time-consuming nature of the PPBE

process makes it difficult to influence a modification or an upgrade to an existing design, and to pivot toward new threats.

This is further exacerbated by the late enacted budgets and CRs, which include a provision prohibiting new start activities, slowing efforts to execute innovative solutions in both new and current programs. The Commission notes that the application of new start definitions is not consistently applied within the DoD as some military Services and DoD Components apply the strictest of interpretations whereas others do not, which affects their execution especially during a CR. The Commission encourages the OUSD(C) to provide clear and consistent guidance to the financial management community or other offices on the specific rules for applying new start definitions. Not knowing what the final appropriations will be, including the congressional adds and marks, with only a single year to execute operating funds, hinders DoD execution, typically for about a quarter of that fiscal year, or longer, depending on the length of the CR(s). This can lead to suboptimal obligations on lower-priority programs and less efficient budget execution while waiting for those final decisions. There are also concerns that the budgets presented to Congress and what is appropriated cannot be tied easily to the overall defense strategy since the budgets are presented to Congress in terms of appropriation title and agency (e.g., Aircraft Procurement, Air Force) rather than by capability areas. There are also antiquated information technology (IT) systems that do track resourcing proposals and make it difficult to quickly access decision quality data. In recent years, these difficulties have been exacerbated by late delivery of the President's Budget (PB) Requests to Congress.

The Commission's Vision for an Improved PPBE Process

To address these challenges, the Commission established a vision for a new resourcing process, drawing from the original set of six principles that guided creation of the original PPBS,[9] and modifying and expanding them to meet today's changing strategic environment. The new process should:

1. Closely align budgets to strategy for the Joint Force "based on explicit criteria of national interest,"[10] with the ultimate goal of faster delivery of capability to the warfighter.
2. Base resource decisions on "choices among explicit, balanced, and feasible alternatives."[11]
3. Formulate and assess budget alternatives and consequences over multiple years before making major decisions, and use analysis to compare costs and benefits.
4. Enable accountable leaders in acquisition, operational, and support organizations to foster innovation and agility by improving the ability to react to changing threats and requirements, while ensuring the best technology and capabilities are fielded for the warfighter.
5. Use common modern business systems with shared and accessible data to support decision-making, reduce duplicative efforts, and better communicate information inside the DoD and to Congress.
6. Provide a dedicated, appropriately skilled and resourced staff to support the Secretary of Defense and other senior DoD leaders.

[9] Enthoven and Smith 2005.
[10] Ibid.
[11] Ibid.

7. Appropriately signal near and long-term technological and infrastructure priorities to the industrial base, enabling both non-traditional and traditional vendors to supply capabilities to the DoD.
8. Meet budget timelines while ensuring that stakeholders have a voice in the process.
9. Provide Congress, the Office of Management and Budget (OMB), and the American people appropriate visibility into and understanding of key defense resource decisions.

Based on these principles, and relying on its interviews and research, the Commission proposes the systematic transformation and reform of the current PPBE process. First, the Commission recommends the establishment of a new Defense Resourcing System (DRS) that consists of three elements: Strategy, Resource Allocation, and Execution. Second, the Commission recommends a series of critically important changes to the period of availability of funds, budget structure, reprogramming processes, and data sharing with Congress. Through implementation of recommendations provided in this Final Report, the Commission proposes a system that ensures closer alignment of strategy and resources, modernizes resource allocation for 21st century strategic and technological threats and opportunities, leverages business system and data analytics technology and processes to provide timely, authoritative data, enhances transparency with Congress and other stakeholders, and enables the DoD workforce that supports the new DRS or current PPBE process.

The Commission believes that this new approach holds great promise to link capabilities to resources in a clear, consistent manner throughout the defense resourcing process, enabling strategy- and resource-informed decision-making across capabilities and missions, and empowering the Department to respond effectively to rapidly developing challenges and opportunities. The Commission's approach also reflects the 21st century realities of continuous research, development, production, modernization, and sustainment and empowers the Department to create an integrated, iterative approach. The new DRS reflects these values as well, prioritizing metrics and feedback loops to drive data-informed decisions, with appropriately accessible analysis across the Department that provides diverse perspectives while adhering to common principles and a commitment to informed engagement and dialogue. The Services and DoD Components maintain their unique characteristics and cultures in this construct. Data and information sharing, cooperation, and coordination are encouraged to maximize resources, talent, and experience across the Department.

A well-trained, resourced, and enabled workforce is the backbone of any resourcing system and key to a successful PB submission. Modern IT tools and systems reduce time-consuming manual labor and risks of knowledge loss, better leveraging the skills and talents of an engaged workforce focused on analysis and action rather than researching and reconciling data.

The Commission's recommendations are designed to achieve this vision. Successful implementation requires leadership, investment, time, and trust. Longstanding stakeholders will have to adjust to new systems and processes and course corrections and adjustments will, at times, need to occur. Resistance to these changes will have to be navigated and accommodations reached. The status quo produces an executable budget, and the DoD and congressional workforces accomplish their missions. But the status quo is insufficient to the demands and realities of today's strategic and technological environment.

Final Report Organization

During the course of the Commission's research and deliberations, the Commission took care to ensure that any recommendation would preserve the current PPBE process' strengths. The recommendations

in this Final Report build on that foundation to create an even stronger link between the strategies of and direction to the Department and the allocation of limited resources, informed by the plethora of analytic products and data. The following sections of the Final Report discuss the Commission's findings and recommendations to strengthen the PPBE process to speed the delivery of capabilities to the warfighter. To shape the Commission's focus on critical areas for reform, the Commission organized its research and identified recommendations designed to:

- Improve the Alignment of Budgets to Strategy;
- Foster Innovation and Adaptability;
- Strengthen Relationships Between DoD and Congress;
- Modernize Business Systems and Data Analytics; and
- Strengthen the Capability of the Resourcing Workforce

The Commission offers several recommendations across these five goals to improve the process, such as a new budget structure, consolidating budget line items (BLI), addressing the availability of operating funds, increasing reprogramming thresholds, increasing access and transparency to budget documents and data, and improving training. These recommendations address critical areas for reform related to increasing innovation adoption and the ability for the Department to adjust and respond to the threat environment with speed. Several of the proposed recommendations can be implemented in relatively short time periods either entirely through DoD internal reforms or by communication and coordination with Congress. However, the Commission encourages Congress and the Department to consider the proposed recommendations in a holistic manner to maximize improvements to the overall process. A phased approach will be required for some recommendations, for example the transformational recommendation regarding budget structure. In the interim, the recommendations related to BLI and budget activity (BA) consolidation and the uses of colors of money can be implemented to adjust within the current budget structure and enable agility.

Individually, the proposed changes addressed in this Final Report address pain points throughout the PPBE process; many can be implemented rapidly inside the Department. Collectively, the recommendations offer a path to a Defense Resourcing System that comprehensively addresses current challenges, provides Congress with the necessary oversight information and strategic insight, and provides the Department with the authorities and tools to respond to emerging threats and opportunities.

Section IV – Improve the Alignment of Budgets to Strategy

Background

A clear and direct linkage of the budget to strategy was one of the primary objectives for originally establishing the PPBS.[12] In January 1961, Secretary of Defense Robert McNamara introduced a new system for budgeting in the DoD based upon a process that he introduced at the Ford Motor Company. The PPBS was built on several guiding principles: resource decisions were based on explicit criteria based on national interests; had to reflect choices among explicit and feasible alternatives where alternatives were evaluated based upon an assessment of the requirements and associated costs considered over a multiyear period; and was supported by a robust and independent analytic staff to carry out this vision and the required analyses.[13] The PPBS was a modern and successful system that became a model for other federal agencies.

Over the intervening decades, the PPBS underwent several changes. Secretary of Defense Melvin Laird changed the process significantly in the 1970s with his decentralized management of the PPBS. Under his version of PPBS, the Services received guidance on Secretarial priorities along with limits on their total funding. The Services would then submit their own budget proposals that were evaluated by the Secretary and, usually with changes, became the basis for the DoD's portion of the President's Budget. This change was fundamental and laid the foundation for much of what exists today. In 2003, then Secretary of Defense Donald Rumsfeld made more modest alterations to the system to place more emphasis on the execution phase, when funds are actually spent to meet defense needs, and PPBS became the Planning, Programming, Budgeting, and Execution (PPBE) process.

The Commission took this history into account, as well as its extensive research and interviews, in order to provide a comprehensive assessment of the current PPBE process and recommend changes. This section of the Final Report discusses the Commission's proposed transformation of the current PPBE process into a new resourcing system for the DoD.

What the Commission Learned and Heard

The need to transform the PPBE process to improve the alignment of budgets to strategy is driven by a number of challenges identified by the Commission to include:

- Translating Strategy to Resource Guidance;
- Analytic Support;
- Focus and Administration of Programming and Budgeting; and
- Budget Structure

[12] History and Library Directorate 2022, 9.
[13] Enthoven and Smith 2005.

Translating Strategy to Resource Guidance

Overview. Resource allocation in the DoD begins with the development of a national level strategy. After assessment of threats, risks, and other factors, strategy development culminates with important enduring or multi-year strategies, including the NSS, NDS, and NMS. These enduring strategies are then translated into annual guidance, such as the DPG, FG, and Military Department or DoD Component planning guidance as discussed in Section III of this report.

Of these documents, the NSS,[14] NDS,[15] NMS,[16] and DPG[17] are required by law. Each document has a regular cadence and expected publication date provided in law; however, in practice, the Department often does not adhere to those schedules (Figure 3).

Figure 3 – Statutory Strategic Guidance Documents

Guidance Document	Statute	Statutory Cadence	Primary Responsible Officer	Publicly Available Release Dates
NSS	50 U.S.C. 3043	Annual with submission of the budget to Congress and 150 days after date a new President takes office	President	12 October 2022 18 December 2017
NDS	10 U.S.C. 113	January, every four years (Except: Year after presidential election, as soon as possible after Secretary of Defense appointed and confirmed); Intermittently as appropriate	Secretary of Defense (with military advice and assistance of the CJCS)	27 October 2022 19 January 2018
NMS	10 U.S.C. 153	Not later than February 15 of even numbered year (if applicable)	CJCS	8 May 2022 12 July 2019
DPG (classified)	10 U.S.C. 153	Annual in February	Secretary of Defense (USD(P))	No public release

As required by Title 10, U.S. Code (U.S.C.), the DPG is an annually prepared document "establishing goals, priorities, including priorities relating to the current or projected risks to military installation resilience, and objectives, including fiscal constraints, to direct the preparation and review of the program and budget recommendations of all elements of" the DoD.[18] The DPG document should include:

- "Priority military missions," "including assumed force planning scenarios and constructs;"
- "Force size and shape, force posture, defense capabilities, force readiness, infrastructure, organization, personnel, technological innovation," and other "defense program elements" that support the NDS;
- Projected resource levels; and

[14] 50 U.S.C. §3043.
[15] 10 U.S.C. §113. In years when an NDS is not required, the Secretary of Defense is required to provide an assessment of NDS implementation and if NDS revision is required. The USD(P) also has responsibilities for the NDS, provided in 10 U.S.C. §134
[16] 10 U.S.C. §153. The CJCS is required to decide on the need to prepare a new NMS or update an existing NMS each even-numbered year.
[17] Ibid. The USD(P) also has responsibilities for the DPG, provided in 10 U.S.C. §134.
[18] 10 U.S.C. §113.

- Discussion of changes in the NDS and assumptions underlying the NDS.[19]

While the DoD has generally been supportive of the Commission's work, DoD leadership declined to provide the Commission with current or historical DPG documents citing the Commission's status as a legislative entity. Lack of access to actual DPG documents limited the Commission's ability to assess how recent DPGs have informed budgetary decisions; however, the Commission was able to draw on extensive Commissioner and staff experience with past DPGs. It also used interviews to examine current practices and processes with regard to strategic guidance documents and how effective they are in shaping the DoD's budget submission.

During interviews with current military programmers and planners, former senior Department officials, COCOMs, and joint officials, the Commission was frequently told that Department-level strategic planning guidance is often formally issued well after the Services and DoD Components start their programming phase and that strategic guidance documents also sometimes lack sufficient specificity and prioritization, particularly for areas of risk and divestiture, which can help to shape the direction of budgetary decision-making. The lack of specificity and long timelines associated with final issuance of the DPG are in part attributable to a coordination process that often weakens guidance in response to critical comments from interested stakeholders. The Commission heard that due to schedule pressures, Service planners provide guidance, based on prior year guidance or draft versions of the forthcoming DPG, to Service programmers who must start their work prior to receiving official OSD guidance to meet their deadlines.[20] This can have a negative impact on ongoing programming efforts and decisions when there are significant changes to OSD guidance from fiscal year to fiscal year. It also reflects an ongoing tension between the demanding PPBE schedule and the timely release of strategic planning documents that are supposed to underpin the PPBE process.[21]

Challenges with Strategic Guidance. The multi-year NDS is not designed to be sufficiently specific enough to guide the programming phase of PPBE, which makes detailed choices among forces, weapons, and operations; that guidance is intended to be provided by the annual DPG. However, Commission research and interviews indicate that the DPG is often a lengthy prose, consensus-driven document that does not make hard choices, is overly broad, and lacks explicit linkages to prioritized goals, timeframes, risk assessments, and resource allocations.[22] These deficiencies mean that the document is less useful in providing the top-down guidance needed during the programming phase of PPBE.

The timing of the DPG also poses challenges. Figure 4 shows that, in seven of the ten years between 2014 and 2023, the DPG was formally issued after February, when it is due by statute. In a year with a normal budget cycle, the Service and DoD Component POMs, which outline their proposed budget plans, must be submitted in the summer. While the Services and DoD Components will know something about the guidance they should expect in the DPG because they have coordinated on drafts, the absence of a signed document by the February timeframe makes the DPG less useful or impactful. The Commission is pleased to note that the 2023 DPG was issued in February.

[19] Ibid.
[20] Commission interview with subject matter experts.
[21] Ibid.
[22] Bradsher et al. 2023, 2.

Figure 4 – Publication Dates of Defense Planning Guidance FY 2016 to FY 2025[23]

Fiscal Years Covered	DPG Release Date
2016 – 2020	July 17, 2014
2017 – 2021	March 23, 2015
2018 – 2022	February 29, 2016
2019 – 2023	August 29, 2017*
2020 – 2024	February 16, 2018
2021 – 2025	April 15, 2019
2022 – 2026	March 13, 2020
2023 – 2027	June 3, 2021
2024 – 2028	June 22, 2022
2025 – 2029	February 22, 2023
*No DPG was issued in 2017. The Secretary of Defense signed Force Planning Priorities for FY 2019 - 2023.	

The DPG is often late in part because there is also no forcing function for the USD(P), who is responsible for producing the DPG,[24] to produce the document in a timely manner as there are no external deadlines that must be met. Department senior leaders are often reluctant to provide firm guidance about hard choices at an early stage in the resourcing process because, at that point, they lack the detailed insight and analysis about resource constraints and options and want to preserve decision space. This reluctance can understandably lead to late DPGs; however, the lack of a formal leadership-driven, and analytically informed process contributes to perceptions of the DPG as a late consensus-driven document that does not make hard choices.

A more robust DPG and planning process will also address issues associated with how the Services and DoD Components navigate the programming process to maximize resources. The Commission identified three main ways that this could occur:

- First, the Services and DoD Components could prioritize funding for internal priorities and then request additional resources to address joint or other-directed issues. This approach could backfire if the Service or the DoD Component does not receive the resources as requested or is instructed to fund programs that support joint requirements from within their existing resources. For example, the Commission learned that Services will sometimes respond to Joint Urgent Operational Needs (JUON) and Joint Emergent Operational Needs (JEON) with a "drive-by acquisition" solution, supporting the short-term acquisition and fielding of a capability but not

[23] Dates provided to the Commission by the DoD.
[24] 10 U.S.C. §134 and DoDD 7045.14, 5.

making longer-term programming adjustments to sustain those capabilities at the expense of Service priorities, particularly without additional resources.[25]

- Second, the Services or DoD Components could prioritize funding for future requirements and programs and then request additional resources to address underfunded fact-of-life requirements. For example, between FY 2020–FY 2022, the Department of the Navy did not fully fund the Department's utility bill in the programming and budgeting phases. Addressing this must-pay bill (between $101 and $182 million) in the year of execution required time-consuming administrative actions to manage cash flow, perform BTRs and above threshold reprogrammings (ATR), and delay projects until the requirement was included and then funded in the annual Omnibus reprogramming request.[26] Direction in the DPG to fund recurring expenses or reprogramming uses could mitigate this issue.

- Third, the Services or DoD Components could adhere as closely as possible to OSD guidance while maintaining autonomy. Engaging earlier in the DPG development process instead of providing comments once it is released for coordination could provide a Service or DoD Component with the opportunity to shape the DPG to support program and budget priorities and allow initial POM development to reflect the DPG once it is officially published. Coordination with stakeholders can also help Service efforts to successfully shepherd priority programs through the PPBE process. For example, the Air Force's Collaborative Combat Aircraft program–part of the Next Generation Air Dominance effort–works closely with Navy, CAPE, the science and technology (S&T) community, and industry to address funding, interoperability, and industrial base issues.[27] Other actors or events can affect this approach, such as a congressional adjustments or changes to the security environment.

While any process will likely result in efforts to maximize organizational benefits, more directive, timely DPG guidance would provide clearer expectations for what to include (or not) in POM submissions and the starting points for evaluating the compliance and adequacy of submissions. A delayed or non-specific DPG means the Services and DoD Components have more time to develop programs independent of OSD guidance, which then leads to making program decisions late in the process (during the PBR), rather than at the beginning of the PPBE process. The Services and DoD Components might still decide to deviate from guidance, but then be prepared to justify such choices during the PBR. Improvements in the Department's analytic approach and capabilities, such as the AWG, discussed later in this Section, allow for more transparent and standardized analysis to support decisions related to divergence from guidance. Other efforts to align strategic guidance and budgets include the U.S. Air Force's operational imperatives that seek to explicitly identify operational capabilities and functions for modernization required to respond to the strategic environment and then use those imperatives to create the POM.[28] At the DoD-level, the AWG developed principles and standards to guide strategic analysis and provide a common analytic basis for strategic decisions.[29]

Difficulty Achieving Jointness. As DoD translates strategy into resource guidance, achieving jointness often poses a challenge. Even though the inclusion of joint perspectives in the defense resourcing

[25] McGinn et al. forthcoming.
[26] FY 2020, 2021, and 2022 Omnibus requests available on OUSD(C) "Budget Execution."
[27] McGinn et al. forthcoming.
[28] For example, see discussion of operational imperatives in Kendall et al. 2023 and "Department of the Air Force Operational Imperatives" 2022.
[29] DoD Memorandum 2022.

process was a motivation for initially establishing the PPBS,[30] the Commission heard repeated concerns in interviews with former senior military program officials, and current and former OSD and COCOM officials about limited advocacy of the joint perspective making it difficult to incorporate jointness into the PPBE process.

Today's PPBE process does offer several opportunities for joint perspectives to be expressed at various points during the PPBE process. These opportunities also cover a multitude of topics, in addition to joint concerns.

While the Services and DoD Components largely produce their POM and BES proposals independently of each other, OSD-led PPBE processes enable deconfliction and prioritization across the Joint Force by incorporating stakeholder views from across the DoD to develop a shared vision across the defense program. Data transparency, for example through CAPE's Defense Resources Data Warehouse site that makes all Component POM data widely available to DoD stakeholders and AWG Advana applications, provides information about joint resources and activities. The Office of the Director, CAPE also reviews POMs for gaps in joint priorities; the CAPE-led Program Review teams allow the Joint Staff (JS) to continuously participate in Program Review rather than inserting JS views through a Chairman's Program Assessment toward the end of the PBR.[31]

In addition to OSD, the Joint Staff and the COCOMs provide joint input on defense resource decisions, both to the Department and directly to Congress. Examples of Joint Staff and COCOM inputs in relation to PPBE are presented in Figure 5.[32]

[30] History and Library Directorate, 2022, 6, 9.
[31] The Chairman's Program Assessment (CPA) is described in CJCSI 8501.01B. In conversation with the Joint Staff, the Commission learned that an updated instruction is anticipated in early 2024 that removes the CPA as an input in the process.
[32] The Joint Staff produces strategy and guidance, force employment, and force development products that contribute to the DPG. For additional information on the relationship of Joint Staff products to the PPBE process, see CJCSI 3100.01E.

FOCUSING ON JOINTNESS: A LONG-STANDING CHALLENGE

The lack of focus on joint needs and decision-making is not new. In 2004, the Beyond Goldwater Nichols Phase 1 report identified this problem and related it to challenges with the fall programming and budgeting phases discussed later:

> "Although the OSD (and the Services) attempt to provide front-end planning guidance, the Services build the first budgetary documents when they turn their POMs into OSD. As a result, there is weak advocacy of the joint perspective in this Service-centric process, as Service-prepared budgets, not surprisingly, reflect Service priorities. The process of allocating resources that are insufficient to meet the demand require Herculean efforts by all involved to avert the annual "train wreck" as the Pentagon scrambles to prepare the PB request to Congress. Few strategic decisions are made during the frenzied end game to make the fiscal "bogey" that sets the "top line" for the defense budget. The entire process consumes so much time and resources that little attention is paid to policy implementation and program execution."[33]

In another report in 2009, a reform approach was developed that recommended:

"A. The Secretary sets the strategy and uses it to drive the process

- To implement that strategy, the planning and resources process should focus largely on mission needs
  - Mission needs are derived from current operations, contingency plans, Theater Campaign Plans, and future scenarios derived primarily as logical extensions of current plans
  - The SecDef should lead a thorough review of current plans and future scenarios to ensure their consistency with the strategy
  - There should be a consistent set of current plans for future scenarios of interest
  - The capabilities needed to address current operations and plans should be seen as important indicators of future needs
- The Secretary should also set the agenda for other major aspects of the defense program, including mission support programs (e.g., defense agencies, medical)

B. Apply secretarial leverage early, rather than reactively at the end of the annual cycle

- Revamp the planning process to provide better analytical and decision-making mechanisms that allow the SecDef and DepSecDef to guide component program decisions (POMs)
  - Conduct a broad planning assessment to set the Secretary's agenda for the annual cycle
  - Address major issues selected by the Secretary for analysis and early decisions to direct the component POMs
  - Use Secretary's guidance to clearly convey themes and major priorities
  - Create a capabilities-oriented analytical process to support the Secretary's strategy and priorities"[34]

The Commission's recommendations later in this section are consistent with the recommendations of this literature that also highlights the importance of analytic support to the translation of strategy to resource guidance.

[33] Murdoch et al. 2004, 37.
[34] Soule et al. 2009.

Figure 5 – Examples of Joint Staff and COCOM Inputs to the PPBE Process

PPBE Phase	Input	Description
Planning	National Military Strategy	By law, informs joint planning documents and force management products
	Joint Military Net Assessment	Integrated assessment of ability to execute NMS today and through the FYDP
	Chairman's Program Recommendation	Direct input to the DPG; advice on programmatic priorities
Programming	COCOM Strategic Priorities Memos and Issue Papers	COCOMs submit strategic priorities and issues for review and resource decisions in PBR
	Program Review Teams	JS and COCOMs participate in CAPE-led Program Review teams, as well as Resource Management Groups and Deputy's Management Action Groups
Budgeting	COCOM Testimony	COCOMs present missions and requirements to Congress during posture season hearings
	CJCS Testimony	CJCS testifies on the budget request alongside the Secretary of Defense and USD(C)
	COCOM UPLs (legislative requirement)	By law, COCOMs present unfunded priorities to Congress (Title 10, U.S.C. § 222a)
Execution	Joint Rapid Acquisition Cell (JRAC)/JUON and JEON Process	Responsible for overseeing fulfillment of JUONs/JEONs

Despite these opportunities, the Commission heard that there are several challenges to presenting and advocating for joint priorities within the PPBE process. One challenge is the broader tension between the COCOM fight tonight perspective and the Service responsibility for future fight requirements. For example, current and former COCOM officials stated that Services would sometimes ignore joint requirements unless pressed to recognize them by the Joint Staff and related organizations, such as the JRAC. One DoD official observed that if the JRAC Director is not assertive and does not elevate JUONs or JEONs within the appropriate forums, then those requirements often fall between the cracks and do not receive the appropriate funding, especially for sustainment of weapons systems.[35] Another official noted that PPBE is focused on Service decisions and pushing those decisions up the chain throughout the process.[36]

The PPBE process can lead to long delays in meeting joint needs. The Commission heard an example of a JUON identified in FY 2015 but not delivered until late FY 2023. This timeline was caused by the need to identify and develop a solution (around three years), time to prioritize the JUON against other

[35] Commission interview with subject matter experts.
[36] Ibid.

operational requirements, adequately resource the solution in Service POMs, and communicate the need for the requirement (and its funding) in the Department and to Congress.[37]

Congress has taken action to increase the budget authority of the COCOMs to resource cross-cutting and joint requirements.[38] In 1986, citing "the unending resistance in the Department of Defense to necessary organizational and other reforms of special operations forces" Congress provided the United States Special Operations Command (USSOCOM) Commander with "additional authority to control or influence resource decisions and the execution of such decisions" and required consultation with USSOCOM on program and budget changes "to counter the low priority that the Military Departments have traditionally assigned to special operations forces funding and the tendency of the Departments to shift such funding to meet their higher priorities."[39] Recently, the NDAA for FY 2022 provided the U.S. Cyber Command (USCYBERCOM) commander with enhanced budget control (EBC) for PPBE activities related to training, equipping, operating, and sustaining Cyber Mission Forces.[40] The authority "gives USCYBERCOM the ability to directly allocate resources for greater efficiencies during the Department's programming phase and ensure they remain aligned with priorities through execution. [Enhanced budget control] will lead to better alignment between USCYBERCOM responsibilities and authorities for cyberspace operations."[41]

In a statement to Congress, the USCYBERCOM director nominee stated that "Congress and the Department have set the conditions for U.S. Cyber Command to achieve this same success [USSOCOM's success], leveraging expanded acquisition authorities and enhanced budget control to train and equip our cyberspace forces."[42] The USSOCOM and USCYBERCOM cases are examples of providing COCOMs with more direct budget authority and involvement to achieve their missions and ensure resources are available and prioritized from across the Joint Force, but they are unique to the Service-like roles of these commands.

The Department has also taken steps to speed resourcing for COCOM urgent or emergent operational needs and address this challenge, for example through the establishment of the JRAC. The JRAC coordinates efforts to fulfill urgent needs across the Joint Force, for example by validating, designating, and monitoring the fulfillment of JUONs, JEONs, and other urgent requirements and by making recommendations on the use of the Rapid Acquisition Authority (RAA).[43]

However, the JRAC also faces funding and process challenges in successfully responding to urgent joint requirements.[44] Although the JRAC has unique RAA (discussed further in Section X), the JRAC can have difficulty identifying funds available to support JUONs and JEONs, particularly with the end of separately appropriated Overseas Contingency Operations (OCO) funding.[45] The RAA is an authority that does not

[37] Ibid.
[38] The two functional commands with enhanced authorities are USSOCOM and USCYBERCOM, which have special Service-like roles and authorities related to organizing, training, and equipping forces.
[39] H. Rpt. 99-1001, 534, 536.
[40] S. Rpt. 117-39, 304.
[41] USCYBERCOM 2023.
[42] APQs 2023, 28.
[43] DoDD 5000.71, 5.
[44] For an in-depth case study on the JRAC, see McGinn et al. forthcoming.
[45] Ibid.

come with appropriated funds, so an offset must be found to fund the urgent need. Services can be reluctant to trade Service modernization priorities for JRAC-identified solutions, leading to initial fielding without longer-term sustainment (so-called "drive-by acquisition").[46] The current PPBE process, with the emphasis on Service-driven POMs, highlights potential challenges with balancing Service priorities and joint requirements, that is further exacerbated when funding involves direct tradeoffs within constrained toplines. Despite these challenges, the JRAC does provide the Department with an accelerated resourcing authority and process to respond to emerging operational and strategic situations, as demonstrated by the increased use of the RAA in recent years to support COVID-19 responses and requirements in the U.S. European Command and U.S. Central Command areas of responsibility (AOR) (see Figure 7).[47]

Figure 7 – RAA Requests, FY 2020 – FY 2023[48]

Fiscal Year	RAA Requests	Purpose	Recipient
2020	1	Acquire Solutions for Safely Airlifting COVID-19 Infected Passengers	Air Force
2021	0		
2022	0		
2023	4	Acquire Deep Persistent Warning for European AOR	Air Force
		Field Long Endurance Airborne ISR Unmanned Aerial Platforms for USCENTCOM	Air Force
		Acquire Improved Integrated Air and Missile Defense Sensor for USEUCOM	Army
		Acquire Fixed Wing Counter Uncrewed Aerial Systems Capabilities for USAFCENT	Air Force

Balancing between a Service-led POM process and joint requirements is a longstanding challenge for the DoD. As noted above, previous efforts to address this challenge include changes to authorities and the creation of organizations to advance joint requirements. Leadership engagement and advocacy for joint requirements in PPBE-related forums emerged as a best practice during Commission engagements with current DoD leadership and is a key value that OSD brings through its leadership of the PPBE process. As joint warfighting remains a preeminent operational approach, and as joint capabilities such as Joint All-Domain Command and Control (JADC2) increase in prominence in the current and future strategic environment, the resourcing process must ensure that joint analysis, requirements, and resources are incorporated, prioritized, resourced, and supported, from start to finish.

The Commission kept this in mind as it considered reorganization and other changes to the PPBE process, for example through the modernization of budget databases and J-book development systems, as discussed in Section VII, to simplify congressional efforts to identify and understand joint efforts across currently disparate appropriations and accounts, and the use of AI to support the identification of

[46] Ibid.
[47] Commission interview with subject matter experts and RAA Reports to Congress provided to the Commission.
[48] Data provided to the Commission by the DoD.

related programs across justification materials and analyze resource change implications on joint efforts.[49] The Commission also supports language in the NDAA for FY 2024 requiring the Secretary of Defense to modernize the requirements process, including the Joint Capabilities Integration and Development System (JCIDS).[50]

Along with PPBE reform and continued improvements to the Defense Acquisition System, modernizing the requirements process is a necessary element of comprehensive reform to ensure requirements are identified in a timely manner for integration into the PPBE process to support the Joint Force. Reform of the requirements process could also provide additional responsiveness in the PPBE and Acquisition processes by allowing programs to ensure funds are not spent on technologically or operationally outdated requirements at the expense of current and emerging requirements that respond to the strategic environment.[51] Reform of the JCIDS could also focus on defining requirements in a way that does not exclude emerging or replacement capabilities from being pursued.

Analytic Support

Need for More Strategic Analysis. Overall, interview responses and Commissioner experience suggests that there has been a lack of authoritative and transparent analysis and assessment of the joint forces required by the force planning construct and associated joint warfighting assessments through wargaming, modeling, simulation, and diverse knowledge bases. This hinders DoD's ability to judge sufficiency of the capability, capacity, and readiness of the Joint Force to fully inform force structure, readiness, posture, and investment and divestment decisions during the PBR.[52]

While there are force structure analyses and force sizing and shaping assessments, these do not directly support the PPBE process and NDS formulation.[53] These types of strategic choices stand out from most investment decisions the DoD makes because they take time to consider and to be effective, and therefore require insertion at the beginning of the PPBE process. The sequencing of strategy and analysis in defense resourcing has been a longstanding issue, with the 2003 Joint Defense Capability Study noting that "[t]he resourcing function focuses senior leadership effort on fixing problems at the end of the process, rather than being involved early in the planning process."[54] A lack of actionable force sizing and shaping guidance, as well as reductions to joint analytic capability, such as reductions to DoD's headquarters staffs, to include CAPE's joint analytic decision support capacity, amid budget pressures and DoD internal priorities in the 2010s have all contributed to this problem.

Efforts to provide the analysis necessary to inform linkages have varied over time. For example, the Dynamic Commitment Series of wargames in the 1990s and the early 2000s sought to provide common data and model foundations to support strategic thinking about future conflicts and contingencies. That

[49] Buettner et al. forthcoming.
[50] P.L. 118-31, 186.
[51] Commission interview with subject matter experts.
[52] The Joint Staff (JS) is responsible for a range of documents related to planning, investment, and readiness, including assessments of budget and FYDP resources to meet military requirements. The JS (J-8 Force Structure, Resources, and Assessment Directorate) is also responsible for reviewing PPBE and warfighting documents, providing analysis, and preparing JS program/budget input, including the Chairman's Program Recommendation and Joint Capabilities Integration and Development System Capability Gap Assessment.
[53] For example, see CJCSI 3100.01E Figure 4 "JSPS Products – Translating Strategy to Outcomes" for Joint Staff Planning System products.
[54] Joint Defense Capabilities Study Team 2023, 2.

information helped establish priorities among possible DoD investments. However, these efforts did not become permanent approaches to aligning budgets to strategies. Large scale, strategically driven joint analysis efforts tend to rely heavily on civilian and contractor staff that are often targets for cuts during periods of more constrained budgets.

In response to the 2018 NDS Commission[55] and a 2019 GAO report[56] dealing in part with analysis in the planning process, the DoD established the Analysis Working Group (AWG) co-chaired by the Joint Staff, the USD(P), CAPE, and the Chief Data and Artificial Intelligence Office (CDAO). CAPE acts as the Executive Secretary for the AWG. The AWG, established in April 2021, sought to "reform and reinvigorate DoD's analytic expertise, set standards for joint analysis, and ensure that senior leaders have solid analytic foundations for resourcing decisions."[57]

Among other endeavors, the AWG provided a control case for joint strategic analysis supporting Program Review decision-making.[58] More broadly, the establishment of the AWG reflects an effort by the DoD to strengthen the links between strategy and budget, beginning with the FY 2023 budget.[59] Planning and analysis work using the AWG's standards and principles was formative in the development of the 2022 NDS and its force planning construct, which in turn informed the DPG.[60]

This Administration sought to infuse more analysis into the process through the AWG, which represents a different approach to analysis compared with previous analytic efforts. The approach emphasizes common principles, access, and improved data environment, tools, and technology while exploring uncertainty, experimentation, and alternative views to improve analytic decision support across the Department, including for (but not limited to) the PPBE process. The AWG's first principle is transparency, to increase sharing of analysis and thereby improve visibility, collaboration, and a joint view. Its second principle is robustness, emphasizing the need to explore how options perform across a range of uncertainties and provide context and tradeoffs for decisions. The third principle is that analysis should be well-designed, using the appropriate methods for the issues and a range of analytic approaches.[61]

The AWG also encourages a joint perspective, emphasizing the responsibility of Components conducting analysis to apply a joint lens and acknowledging analytic efforts that benefit broader communities. It is important to note that the AWG itself does not produce analysis; rather, it facilitates quality, collaboration, and integration across the Department's analytic community.

Starting in FY 2023, the AWG required submission of annual analytic plans, promoting visibility of efforts across the DoD and identifying opportunities for jointness and collaboration. The Services and DoD Components are also conducting joint analysis, such as Army and Air Force work on base defense and munitions, the OUSD(P) and the Joint Staff J7 Directorate for Joint Force Development work on Ukraine

[55] NDS Commission 2018.
[56] GAO 2019.
[57] OSD 2023, 11.
[58] Ibid.
[59] Commission interview with subject matter experts.
[60] Ibid.
[61] AWG 2023, 2.

lessons learned, and the OUSD(P) and Navy work on unmanned surface vessels. Frequent engagement, at leadership and functional community levels, is a key enabler of the AWG's efforts to develop a cooperative analytic environment. The AWG also serves as a forum for senior DoD leaders to receive comprehensive briefings on analysis from across the Department on high-interest topics, such as munitions and JADC2.[62]

Other processes and analyses that DoD has implemented for providing strategic analysis that link budgets to strategy are described in Section X. These include CAPE-led Strategic Portfolio Reviews (SPR) that analyze complex, strategic, and joint issues by the start of each annual Program Review and Program Review reforms to focus analysis and senior leader decisions on strategic priorities and courses of action.

The DoD is also using new technological advances, such as Advana, to improve strategic performance measurement. Advana is a "big data platform for advanced analytics" that draws on data from business systems across DoD, and commercial applications and solutions, to support decision-making.[63] In addition, the Advana Pulse capability is an executive analytics capability that draws on authoritative data across the DoD to provide leaders with a dashboard-view of performance against priorities[64] and provides DoD senior leaders with insight into NDS implementation (NDS-I) through the NDS-I Data Input Tool.[65]

According to the CDAO, Advana has developed three applications to support the AWG and the analytic community. The Joint Country Operating Force Assessments (JCOFA) Tool ingested JCOFA information and includes Military Equipment Parameters Data Base information. This provides access to information on equipment, inventory, force structure, and readiness/intelligence confidence to users in a more accessible, but appropriately classified, format. The Integrated Commercial Infrastructure (ICI) application "allow[s] planners to see what commercial assets are in logistics, health, and space" and includes open-source and internal data presented in map visuals and quantitative data tables.[66] Finally, the AWG Calendar application is designed to facilitate planning efforts across the Department through tagging and provides AWG event information.

The Commission commends the Department on its significant improvements on analysis, in particular through the AWG and Advana. However, the Commission heard concerns that DoD's current "rapid and finite" analysis during programming and budgeting does not provide sustained, iterative analysis timed to provide up-to-date information at decision points.[67] The DoD is rebuilding its capacity (especially in key offices such as CAPE, the Joint Staff, and OUSD(P)) to conduct such analysis, but has not yet achieved the capacity and capability required to support the analytical demands of the evolving national security environment.

[62] Ibid.
[63] "Data Analytics" 2023.
[64] "DoD SMP 2023 and Commission interview with subject matter experts.
[65] Ibid and OUSD(P) responses to the Commission. The DoD continues to mature Pulse capabilities for monitoring NDS implementation.
[66] CDAO response to the Commission.
[67] Whitley et al. 2023, 55-56.

Need for Improved Feedback Loops. The Commission also found that execution and operational outcomes of the PPBE process are not always fed back into the beginning phases of the PPBE process in a consistent way. Notably, there are examples of successful feedback. Several important financial execution metrics, such as obligations and expenditures, and programmatic metrics for major defense acquisition programs are consistently tracked and reported and can be analyzed to inform future developments during the programming, budgeting, and execution phases of PPBE. There are also other measures that are tracked in a timely manner. The DoD's military readiness, for example, is tracked through the Defense Readiness Reporting System, which issues regular reports to Congress, along with other readiness reports.[68] The Department is also working to incorporate Strategic Management Plan (FY 2022 – FY 2026) metrics and objectives into the programming phase to improve the alignment of resources to strategy and incorporate performance feedback into future programming decisions.[69] Performance metrics are further addressed in Section X of this report.

These successes notwithstanding, there are only limited mechanisms for operators and industry to provide feedback and information to programmers during the execution phase in ways that substantially influence Service and DoD Component efforts to build budgets. The Commission repeatedly heard that there are challenges in connecting execution and programming data, particularly given the timing of each of these phases in the process.[70] Late budget enactment creates timing challenges for linking execution and programming, as programming decisions are made to maintain the PPBE process schedule before operational units and programs can report execution outcomes from the previous year's enacted budget. However, even an on-time budget enactment of appropriations does not close the gap resulting from a PB request that is sent from the Department to the President only a few months into the previous fiscal year and due to Congress eight months before the beginning of the fiscal year in question. The Beyond Goldwater-Nichols Phase I report also addressed this challenge:

> "Our concern that policy implementation and program execution are not receiving the attention they deserve is buttressed by our conviction that a year-end review is not sufficient in any case. Too often, as seemed to be the case with reporting to comply with the Government Performance and Results Act (GPRA), the reporting becomes a means of justifying DoD performance, rather than assessing it. As onerous as the process is, DoD is much better at allocating resources than ensuring that the resources are spent in the manner they are intended."[71]

The Commission provides a recommendation to create a continuous analytic process to address these challenges as well as recommendations in Section VI to enhance communications between the Department and Congress, which is key to mitigating the effects of information lags.

Focus and Administration of Programming and Budgeting

Challenges translating strategy to resource guidance affects subsequent programming and budgeting phases in the PPBE process. As mentioned above, the DPG often represents consensus rather than hard

[68] Nicastro 2022.
[69] Commission interview with subject matter experts.
[70] Ibid.
[71] Murdock et al. 2004, 45.

decisions on major strategic issues, leaving those issues to be resolved during the programming process. The Commission heard that this can overburden the downstream phases, resulting in "overworked staff and lower quality decisions" as multiple phases-worth of effort is performed in one phase.[72] The Commission also heard that other potential outcomes include "inconsistent decisions" (caused by different approaches to strategic questions), "unstable resource plans" (revisiting resource allocation decisions in the absence of Department-level guidance), and "execution overload" (responding to "inconsistent and unstable decisions" make it more difficult to "address[ ] true emergent needs)."[73]

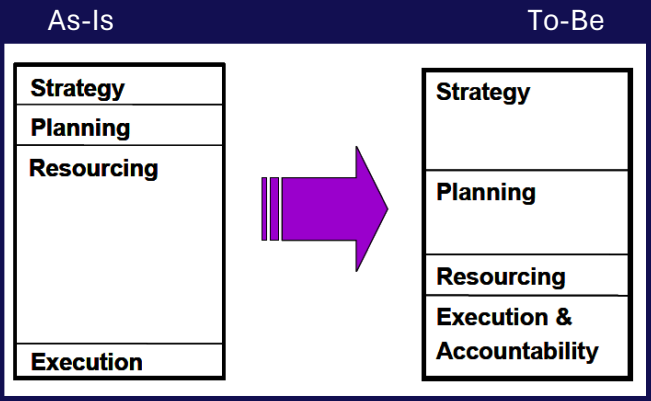
More importantly, the challenges limit the ability of leadership to make strategic decisions in general. In the fall, there is limited time to develop and analyze options, especially when there are established positions (e.g., in the POM submissions) that have been developed over months and have significant momentum behind them. Leadership engagement at this point in the process is constrained, with little trade space available for strategic decisions. Commissioner experience suggests there is a tendency for the Department-level Program Review to focus on individual and specific resource allocation choices, rather than on larger strategic decisions. This is a result of the limited time and decision space made available to consider strategic direction, its implications for resource allocation, and the ability to develop feasible alternatives to meet strategic objectives and emerging threats. It is noteworthy that the original McNamara PPBS was less susceptible to this due to the requirement for the Services to submit major proposed new efforts directly to the Secretary, with Systems Analysis staff identifying major alternative ways to address those objectives, including tradeoffs among warfighting domains. The McNamara approach also risks not addressing significant budgetary impacts from late-breaking rate changes that can have a considerable impact on program funding throughout the PB, such as increased civilian and military personnel costs or fuel price changes, that must be appropriately funded; these issues are typically excluded from Program Review and addressed as part of the final Budget Review.

[72] Whitley et al. 2023, 19.
[73] Ibid.

Envisioning a New End State

The 2003 Joint Defense Capabilities Study discussed the challenges associated with front-end decision-making in detail. It found "[t]he [current] resourcing function focuses senior leadership effort on fixing problems at the end of the process, rather than being involved early in the planning process." This study recommended a capabilities-based process in which "Senior leaders will focus on providing guidance and making decisions in the 'front end' of the process."[74] The Study's proposed system would achieve the following change:

Figure 4 – Reform recommendation from 2004 Joint Defense Capabilities Study[75]



Duplication During Programming and Budgeting Phases. These structural challenges with the focus and content of programming are compounded by challenges in the administration of the programming and budgeting phases. On paper, the two phases have separate functions: programming focuses on *evaluating* choices over where the Department needs to be in six years and builds a bridge to that future, while budgeting focuses on what can be *executed effectively* in the next year consistent with that future path and presents the recommendation to Congress. But the distinctions between those two phases sometimes become blurred. Commissioners and Commission staff also relayed their experiences with the issues of duplication, and senior DoD leaders also agreed. One example is competing decisions in PDMs and PBDs that are not clear about their resourcing intent and are sometimes in direct conflict with each other.

Documents produced in each phase of the process are not always provided to other DoD stakeholders, which makes it difficult for some to maintain a full understanding of the resourcing outlook at a given time. For example, CAPE gets the BES database position for review, but does not routinely receive the BES J-books, which include narrative program details, that the Services and DoD Components submit to the OUSD(C). Similarly, the lack of a common database, or common platform, that is used throughout the PPBE process creates further confusion and challenges for having an authoritative answer to questions about the status of programming and budgeting positions. In this regard, CAPE and the OUSD(C) have been working to transition capability for collection of POM/BES/PB submissions from

[74] Joint Defense Capabilities Study 2003, ii.
[75] Ibid., 2-2.

legacy stand-alone systems to a new integrated programming and budgeting system called the Next Generation Resource Management System (NGRMS). NGRMS achieved initial capability in 2022 and was used successfully in the FY 2024 PBR cycle.

The duplication challenge becomes especially acute toward the end of the programming and budgeting phases. As the programming phase gets overwhelmed trying to resolve strategic questions that should have been addressed earlier in the process, it runs into the time required by the budgeting phase to finalize the PB. This sometimes results in errors in pricing and budgeting that in turn raise concerns in Congress about the quality of the DoD budget submissions. Changes in available funding for DoD can also occur late in the budgeting process, which are sometimes caused by the President's final decision about DoD's total funding and sometimes by late decisions about factors such as inflation or pay raises. Late shifts in available funding may demand rapid changes in programs to meet budgetary guidance while also trying to ensure a timely submission of the DoD budget to the OMB. At that point programming and budgeting functions must occur together; however, using separate systems and processes increases the possibility of unnecessary duplication within the two processes.

Improving the translation of strategy into resourcing guidance through the streamlining of steps that are underpinned by analytic support will allow the Department to provide strategic direction earlier in the process and change the nature and content of resource decisions in the fall. In the recommendations below, the Commission fundamentally restructures the process of reviewing Service and DoD Component resource submissions and issuing resource decisions to be more streamlined, unified, and efficient.

Budget Structure

Challenges of Aligning Budget and Strategy. It is difficult to determine how well the budget aligns to strategic objectives based only on publicly available information. Existing budget structure categories, such as colors of money and Major Force Programs (MFP), do not neatly correlate to discrete strategic or operational questions. The FYDP data is stored in a relational database and can be aggregated to reflect different categories, depending on the question asked. Adopting strategy-driven input tags could allow the Department to track investments and identify potential gaps or areas for realignment over time; however, such tagging often involves extensive manual effort and subjective assessments of how to categorize resources.[76] Successful tagging could also simplify responses to Congress regarding investments in particular areas, replacing manual data calls with more automated collection, and providing more consistent and comprehensive data than information presented in stand-alone budget reports, such as the Pacific Deterrence Initiative (PDI) explanatory materials.[77] While tagging can be useful, the Commission goes further and proposes structural changes to the PPBE process and budget structure in this section to strengthen linkages between budget documents and strategy.

Limits Imposed by the Current Budget Structure. The Commission found that the current budget structure significantly limits the ability of DoD to be responsive to changes in strategic direction and

[76] For example, to measure performance against NDS or technology objectives, inputs could include geographic regions (USINDOPACOM), high visibility programs (the nuclear triad), or R&E critical technology areas. Maier et al. 2023, 8-9. The authors note the challenges associated with identifying trends based on publicly available data.
[77] Ibid., 21.

emerging threats. The structure does not align with the way many DoD and congressional decision-makers think about national security challenges, making it difficult to ensure resources are used in a prioritized way that supports strategy and defense objectives. Current budget justification materials make it difficult to achieve a holistic picture of resources for a given effort or portfolio of efforts, since a program or operational budget is broken out by its various appropriations that are published separately.[78] This complicates oversight efforts and requires significant staff work to respond to questions about resource allocations across the budget.

For example, the budgets presented to Congress bury direct insight into the strategic alignment of resources in several thousand budget line items (BLI) that are scattered across many parts of the budget. The current top-level color of money structure of the budget (i.e., Procurement, RDT&E, O&M, MILPERS, and Military Construction (MILCON)) does not produce useful insight into most of the currently relevant strategic choices. This is not surprising, since national defense issues tend to be cross-cutting by their nature, involving people, investment, and facilities, rather than fitting conveniently into the current appropriation categories.

The Commission also found that the current budget structure leads to time-consuming translation of resource information between the programming and budgeting phases. This distracts from reciprocal decision-making, communication, and clarity within and between the Department and Congress. As an example, the formal justification materials further disaggregate budget information based on specific appropriations and the BLIs in which those funds are appropriated. Congressional staffers then receive additional program and budget rollout briefings that may present major acquisition programs by total cost with all colors of money captured in one place, which provides greater clarity as to the entire cost of a program. The programming and budgeting processes present data for senior leader review in still different formats—Program Review articulates programmatic changes by year compared to the POM submission, whereas the Budget Review articulates changes compared to the previous enacted budget or BES requested position. By contrast, other federal agencies like NASA use their budget structure to align outputs with broader capability areas, allowing for more consistency in reporting to Congress and a more transparent connection to strategy-aligned mission outcomes.[79]

Congress has noted this deficiency. For example, when Congress established the Pacific Deterrence Initiative in the NDAA for FY 2021, in part to improve budget transparency and oversight, it noted, "[t]he conferees believe that the availability of budgetary data organized according to regional missions and the priorities of the combatant commands is critical for the ability of the Department and the Congress to assess the implementation of the National Defense Strategy."[80]

In its most recent report to accompany the Defense Appropriations Act for FY 2024, the House Appropriations Committee directed submission of a supplementary exhibit of the budget request for the U.S. Space Force and noted with respect to aligning budgets to capability portfolios, "that there may be

[78] The Department does publish cross-cutting summary documents for a select handful of activities, such as the program Acquisition Costs by Weapons System document, but these are limited in coverage, high level, and mostly focused on the largest development programs.
[79] For additional information on agencies that receive appropriations along mission and organizational lines refer to McKernan 2024b and Young 2024c. For NASA appropriation accounts see H.R. 2617, 87-90.
[80] H. Rpt. 116-617, 1790.

potential benefits to an approach that more directly connects national security strategy and goals to the Department's budget priorities, program plans, and ultimately to capabilities. Such an approach may also bring greater transparency and accuracy to the true total cost and resources needed to accomplish mission goals."[81] The current appropriations account structure prioritizes classical budgetary oversight, such as through execution targets for discrete program elements and RDT&E budget activities (BA) that align to program phases; however, it also generates oversight constraints by complicating the task of viewing programs holistically across all the applicable colors of money to see how resources align against desired strategic outcomes.

Finally, the current segmented budget structure does not align with today's technological and development environment, where systems, especially their software, are constantly improved, rather than an Industrial-Age model where systems are designed, delivered, and then operated with the same capabilities for their lifetimes. For example, current budget structure and execution constraints limit the ability of the DoD to shift funds to incorporate rapidly evolving technologies, like artificial intelligence or quantum sensing, to keep pace with adversaries.[82] The 1960s-era budget structure[83] requires program, headquarters, and OSD leadership to dedicate time and constrain execution choices based on color of money funding alignment and legal interpretation issues, rather than focusing on delivering program outcomes, strategic alignment, and incorporating emerging technologies. In execution, the administrative burdens and risks of realigning funding often dissuades PEOs and PMs from requesting such realignments, choosing instead to reduce the scope of capabilities or extend schedules. This is further described in Section V of this report.

Assessment of Major Force Programs (MFP). One historical feature of the budget structure is the MFP construct. The MFPs originated as part of the FYDP structure as "categories organized by purpose or output of the function or mission of the military forces" highlighting "interrelated groups of elements that could be considered together because they supported or were close substitutes for one another."[84] With the exception of MFPs 11 (Special Operations Forces) and 12 (National Security Space), the MFPs "reflect[ ] the threat environment and platform-centric military capabilities" of the 1960s.[85] While well-designed to support debates of the 1950s-1970s about the balance of investment between strategic nuclear capabilities and conventional warfighting, or between forces in place overseas versus the mobility capabilities required to deploy from the U.S., they do not effectively capture many of today's most important strategic choices. The MFPs appear in the codes for all PEs, which are the basic building blocks of the FYDP.

From the outset, DoD faced challenges in aligning systems to discrete programs.[86] This is reflected in the Department's hybrid MFP structure that groups resources into six combat force programs and six support programs, as well as virtual MFPs to address emerging portfolios of interest.[87] Cyber is currently

[81] H. Rpt. 118-121, 14.
[82] Flournoy 2023.
[83] H. Rpt. 408, 18-20.
[84] Kaplan et al. 2006, 75, 78.
[85] Wong 2002, 317.
[86] Kaplan et al. 2006, 80.
[87] McGarry and Peters 2022. A virtual MFP is "defined within the existing PE structure for new areas of interest as required." (DoD 7045.7-H).

the only virtual MFP. Ideally, the program design ties resource requirements to important decision variables, focusing on key policy decisions for resource requirements.[88]

Today, MFPs can provide insight into costs in established categories historically and over the FYDP and are a mechanism to understand how the DoD is spending its money in broad categories. The MFP totals are provided in aggregate by year in the annual "Green Book"[89] published by the OUSD(C) and every PE is assigned to an MFP in the classified FYDP data available within the Department and provided to congressional staff. However, the MFPs do not always reflect categories of interest. For example, the Senate Armed Services Committee noted that MFPs "provide little analytical value as currently constructed."[90] The Commission heard that the MFP structure is outdated and not useful, although it is a component of the DoD's standard lines of accounting. The MFPs can provide a starting point for examining broad resource categories, with limitations. For example, MFP-1 "Strategic Forces" is often used as a shorthand for nuclear forces but includes non-nuclear elements and excludes certain nuclear capabilities.[91]

The Commission recognizes the role the MFP structure plays in existing systems, such as accounting, and as an initial way to categorize the budget into functional or mission categories. However, the Commission finds that the current MFPs do not provide sufficient insight into capabilities and activities of interest. Recommendation #4 proposes an alternative budget structure (while retaining the MFPs as elements of existing accounting and resource tracking) to better identify the linkages between capabilities and their constituent programs and systems and the resources required for strategic objectives.

The Impact on Industry

While the Commission focused on the DoD and congressional aspects of aligning strategy to budget, the issues discussed above also affect other stakeholders, particularly in industry. Strategic guidance documents can be helpful to industry, though they do not always meet industry's needs. The ongoing engagement with the commercial advanced technology sector and the recent security environment, especially the conflict in Ukraine, have highlighted the close relationship between DoD strategy and the industrial base. For example, the FY 2024 PB requested multi-year procurement authority for munitions to address industrial base stability and capacity and to meet operational requirements for munitions necessary for use in Ukraine.[92] It also included projects using loans and loan guarantees, among other financial management flexibilities to support investment in critical technologies (see Section X).[93] The NDAA for FY 2024 continues multi-year procurement authority for certain munitions and provided additional authority for loans and loan guarantees.[94]

[88] Gordon and Hinkle 2011.
[89] "'The Green Book[]' is a reference source for data associated with the current budget estimates of the [DoD]. It provides current (nominal) and constant (real) dollar historical data for the Department, as well as selected data on all National Defense, the total federal budget, and the U.S. economy." (OUSD(C) 2023).
[90] S. Rpt. 116-236, 280.
[91] For further discussion on the limitations of MFP-1 for tracking nuclear spending see Harrison and Montgomery 2015, 8-12.
[92] OUSD(C)/CFO 2023, 2-5,-11,-13. For additional information on multi-year procurement, see O'Rourke 2022.
[93] OSD "RDT&E" 2023, 701-703.
[94] P.L. 118-31.

Publicly available DoD strategic guidance documents alone do not provide clear enough signals to industry to drive research and supply chain investments. Instead, while industrial actors acknowledge the existence of strategic documents and public statements, they have stated that their own concrete investment decisions tend to be driven by the lagging indicators of budgets and contracts, rather than their interpretation of strategic guidance documents.[95]

Commission interviews with companies doing business with the DoD highlighted the importance of how money is allocated and requested in budgets, including in future years of a FYDP, as a more actionable signal of DoD intent beyond strategic documents or public statements. The interviews also highlighted the benefits of longer-term contracts to incentivize industry investment in supply chains and infrastructure improvements as a means to link industrial capacity to larger strategic objectives.

Sometimes the nature of appropriations can provide signals to industry. For military equipment with long build timelines, the Congress has enacted special appropriations periods of availability that signal funding stability to the industrial base. For example, the Shipbuilding and Conversion, Navy appropriation allows for five and sometimes six years of funds availability, to account for ship construction timelines. Multi-year procurement authorization and advance procurement can also provide savings and stability to industry for major weapons system programs.[96]

The Commission also learned about examples of allied countries using mechanisms for longer-term (10 years) industry signaling such as Australia's Integrated Investment Program and Defence Industrial Capability Plan and Canada's Defence Investment Plan and Defence Capabilities Blueprint,[97] which provide long-term plans and goals for investment in the industrial base. The recent trilateral Australia-United Kingdom-United States partnership is a prime example of how the U.S. and its allies can signal across international defense industrial bases.[98] Japan's Defense Buildup Program supports longer term planning by aligning capabilities to acquisitions and Sweden's Armed Forces Development Plan provides long-term recommendations for future capabilities, linked to resources.[99] The Commission also learned that budget stability can provide reliable signals to industry for how to support national security objectives, for example through consistent Gross Domestic Product (GDP)-related commitments, and personnel and strategic linkages with industry as they do in Singapore.[100] Similarly, Sweden's three-year, legally binding Spring Bill and the five-year Defense Bill provide similar topline stability, while retaining the ability to adjust to fact-of-life changes.[101]

The Commission commends the Department for publishing its first "National Defense Industrial Strategy" on January 11, 2024, to "drive development of an industrial ecosystem that provides a

[95] The Commission also heard concerns about the effect of the Department's PPBE schedule on the ability to leverage academic research. The disconnect between the academic year and appropriations aligned to fiscal years can make it difficult for institutions to recruit and retain researchers for DoD projects. Incremental funding, particularly if the execution environment expects adherence to standard obligation and expenditure rates, can also contribute to this challenge.
[96] Peters and McGarry 2020, 2.
[97] For additional details, see McKernan et al. 2024b.
[98] White House 2023.
[99] Young et al. 2024a.
[100] Ibid.
[101] Ibid.

sustained competitive advantage to the United States over its adversaries."[102] The strategy identifies several challenges to address, including long lead times, procurement instability, and funding uncertainty, to meet the priorities of resilient supply chains, workforce readiness, flexible acquisition, and economic deterrence.[103] With respect to the PPBE process, the Strategy includes actions to invest in interoperability-focused research and development (R&D) and expand the use of multi-year procurement.[104]

Within the Department, the Office of Industrial Base Policy (OIBP) assesses the health of the industrial base and is responsible for providing analysis of, and often mitigation plans for, industrial base shortfalls during the programming phase. The OIBP also signals areas of potential future investment to industry through the Defense Production Act Purchases budget, which is part of the Procurement, Defense-Wide budget request, although these funds are subject to change due to congressional action, industry conditions, and fact-of-life changes in execution, which can affect the ability of industry to address identified shortfalls.[105]

Overview of Commission Recommendations

The Commission carefully considered shifts in the environment in which PPBE must operate and, more importantly, the trends noted above that raise concerns about the structure of the current PPBE process. Based on its assessment, the Commission recommends significant reorganization and streamlining of the PPBE process in addition to changes, discussed in subsequent sections of this report, which are designed to foster innovation and adaptability and to improve business systems.

To address the challenges described above and to respond to the new strategic environment, as described in Section III, the Commission recommends four fundamental changes to the current PPBE processes:

1. Resource allocation should begin with a robust series of threat and analytically informed senior leader discussions that generate substantive strategic decisions at the outset of the process.
2. The current phases of PPBE should be reorganized to combine the programming and budgeting phases into a single resource allocation process to eliminate duplication of effort and permit greater emphasis on relating budgets to strategy.
3. The entire resourcing system should be supported with a continuous and expanded process of analysis that provides inputs from analysis, wargaming, and simulation and modeling at multiple points in the resourcing process.
4. The structure of the budget should be transformed so that budgets are presented and appropriated in terms of the major capability areas that are often used to discuss defense spending and can be more easily related to strategy.

When these transformational changes are made, the current PPBE system no longer exists. The Commission's recommendations create a new system called the Defense Resourcing System (DRS), which enables strategy to drive resource allocation in a more rigorous and analytically informed way while providing the flexibility needed to keep pace with technological advancement. The Commission believes the new name, processes, and steps are sufficiently broad to capture all aspects of the former

[102] NDIS 2024, 12.
[103] Ibid., 11.
[104] Ibid., 35, 39
[105] OASD (Industrial Base Policy) responses to Commission 2023.

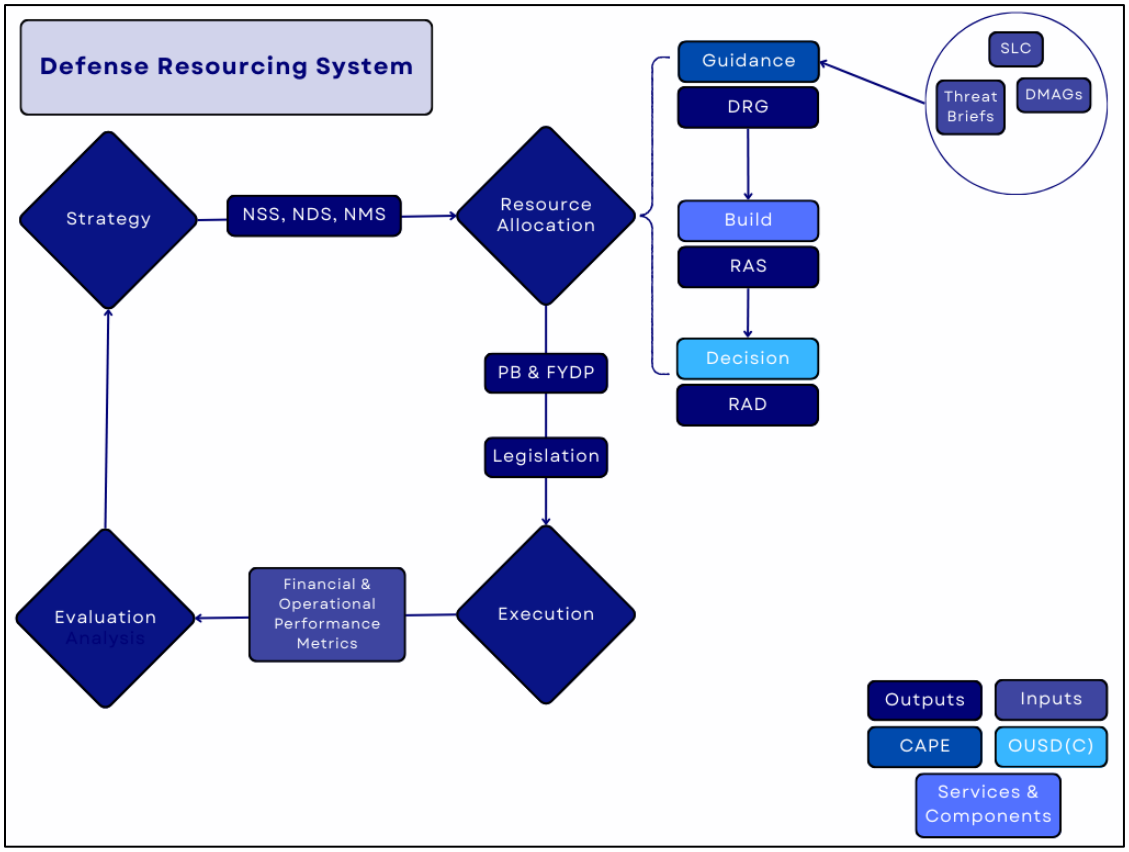
PPBE process but general enough to fit with the new structure that no longer separates programming from budgeting. There are also changes in the content and names of many documents to accompany the new DRS both to further highlight shifts in the content and focus of new DRS documents and institute more permanent structural changes. The DRS bears some similarities to the current PPBE process; however, full implementation of the Commission's recommendations will substantively change the character of the process.

The Commission recognizes these changes will require time, resources, and further development and refinement with all stakeholders, particularly in Congress and the DoD. Figures 8 and 9 below describe the reorganized process including key steps, documents, and Office(s) of Primary Responsibility (OPR) under the new DRS.

Figure 8 – Defense Resourcing System Key Steps, Documents, and Offices

Process	Step	Key Document(s)	OPR(s)
Strategy		NDS	OUSD(P)
Resource Allocation	Guidance	Defense Resourcing Guidance (DRG) *(replaces DPG and Fiscal Guidance)*	AWG (CAPE as executive secretary)
	Build	Resource Allocation Submission (RAS) *(replaces POM/BES)*	Service/Component Resourcing Staffs
	Decision	Resource Allocation Decision (RAD) *(replaces PDMs/PBDs)*	OUSD(C)
Execution		President's Budget Omnibus Reprogramming Request Execution/Obligation Reports	OUSD(C) and Service/Component FMs
The new DRS is enabled throughout the process with continuous analysis and evaluation.			

Figure 9 – Defense Resourcing System Flow Chart



Recommendations

This section presents details of the four recommendations that implement transformation of the PPBE system to improve alignment of budgets to strategy in the new DRS.

Recommendation #1 (Key): Replace the PPBE Process with a New Defense Resourcing System

The DRS fundamentally strengthens the connection between strategy and resource allocation while creating a more flexible and agile execution process. The proposed DRS consists of three processes: Strategy, Resource Allocation, and Execution, all supported by continuous analysis and evaluation.

Strategy: Building on the existing strategy process, the primary change to strategy development in the DRS is greater analytic support. The Office of Primary Responsibility (OPR) remains the USD(P) and the key documents remain the NDS as well as the NSS and NMS. The Strategy process remains focused on these enduring multi-year documents and the DRS transitions to and relies on Resource Allocation to convert this strategic direction into the annual allocation of resources.

Resource Allocation: This is where the most significant process changes are proposed to occur. The current PPBE process is disestablished at this point and the following steps occur within the Resource Allocation Process:

Guidance development begins with the Senior Leadership Council (SLC) around November to gather priorities and direction from the Secretary of Defense, along with input and feedback from the Chairman of the Joint Chiefs of Staff, senior Component leadership, and OSD. This initial leadership conference is followed by a Deputy's Management Action Group (DMAG) led process from November to

February to develop defense resource guidance for Components. The OPR for Guidance is the AWG, with the Office of the Director, CAPE as the Executive Secretary. The key document produced by this process is the Defense Resource Guidance (DRG), issued in February, and includes both integrated program priorities and fiscal guidance. This early, senior leadership driven process supported by continuous analysis will enable wider ranging and more rigorous strategic-level decision-making. Recommendations #2 and #3 detail the substantive changes in this step used to create this new guidance document.

During the *Build* step, DoD components build a Resource Allocation Submission (RAS). The OPRs are the Services and other DoD Components. The RAS replaces the current POM and BES as the single submission to OSD for review. As occurs now, the Components will likely start their RAS well in advance of the DRG, but the collaborative and transparent Guidance process over the fall and winter will provide more concrete actionable direction to inform the RAS build.

While not recommending specific changes to processes in each Service and DoD Component (which vary based on their mission and organizational structure), the Commission expects they will adopt procedures to produce timely and strategically responsive RAS proposals consistent with those established by OSD for its review. The replacement of the separate POM and BES documents and databases with the RAS is an example of streamlining under the new DRS process.

Decision involves the OSD review of the RASs, issuance of Resource Allocation Decisions (RAD), replacing PBDs and PDMs, and incorporation of OMB Passback changes. This step culminates with a final FYDP and DoD budget approved by the OMB for inclusion in the annual PB submission to Congress. The OPR is the OUSD(C), who establishes the necessary timelines and assigns the workload for review. The CAPE and OUSD(C) organizations will continue to perform their respective tasks, e.g., with CAPE focused on DRG compliance and finalizing decisions of strategic and programmatic nature and USD(C) focused on budget year issues to include pricing, executability, most single-Service or COCOM requests, and late breaking or conflict-related issues.

Overall, OUSD(C) is responsible for managing the Decision step and running one combined database, calendar, and decision tracking process for this step. A combined engine room, consisting of OUSD(C) and CAPE personnel, will be responsible for managing the process, calendar, consolidated IT system, and producing RADs. The combined engine room model should be informed by best practices in the Services for co-locating program and budget personnel. Consolidated databases and decision tracking builds on ongoing NGRMS efforts and the Commission's recommendation to consolidate OSD programming and budgeting systems (Recommendation #23).

Providing consolidated decision documents will eliminate duplication that can occur in the current PPBE process with separate, and sometimes divergent, program and budget decisions (PDMs and PBDs). The RADs will be released in the fall and could also include performance measures to inform future cycles. For example, RADs could identify experiments to be briefed at future information DMAGs and direct data collection and analysis on the results of increased funding, e.g., if a RAD increased funds for industrial base munitions development, did that investment increase capacity and output in significant ways? Describing these performance measures as part of the decision document will help inform justification material language on metrics and provide benchmarks for examining the effects of RADs in subsequent years. Program and budget adjustments based on the RADs will be recorded in the combined systems and serve as the basis for producing the PB, FYDP, and associated rollout materials.

While Comptroller is responsible for the process aspects of the Decision step, the Commission emphasizes that OUSD(C), CAPE, OUSD(P), and other organizations in the Department each have a responsibility for subject-related issues and briefings in DMAGs and other review meetings, as appropriate. The Office of the Director, CAPE will retain responsibility for evaluating the joint mission effectiveness of the proposals from the Services and DoD Components, will prepare much of the analytic material for the DMAGs, and will likely author the direction for most of the studies and analyses tasked in the RAD. Other offices may be tasked to lead RAD deliberations on areas of particular interest. For example, OUSD(R&E) may lead a meeting on the allocation of innovation funds, or a Service may lead discussion and provide perspective within their areas such as responding to questions about their force design. Review during the Decision step will focus on compliance with guidance and new issues, such as considerations about topline budgets and economic indicators, as well as analysis of alternative approaches to meeting national security needs. The Services, COCOMs, Under Secretaries, and others will continue to submit issue papers and participate in submission review meetings. The Deputy Secretary of Defense will determine and set the appropriate levels and forums for decision-making, such as DMAGs, mission area tiger teams, and single-issue meetings.

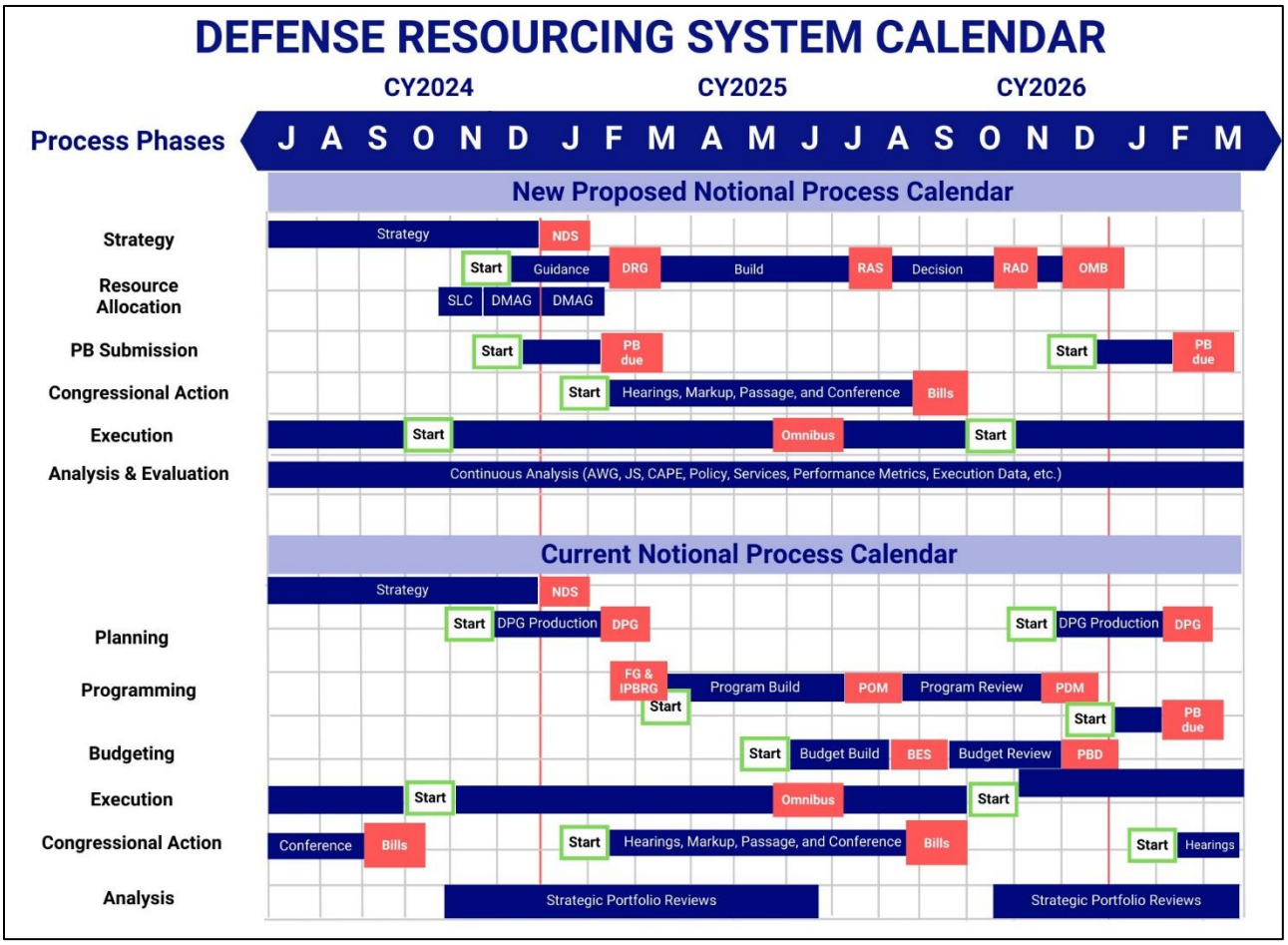
Execution: With the USD(C) as the OPR, this process involves distribution of funding, as authorized and appropriated by Congress, and execution of those funds by the Services and DoD Components to meet national security needs. Many of the Commission's recommendations described below and in subsequent sections will significantly improve the execution process. The process also establishes a feedback loop to evaluate overall fiscal and programmatic performance, as well as alignment with strategic and planning goals. Key documents governing this process include budget execution reports, acquisition and operational reports, and other information useful to the DoD, Congress, and other stakeholders for carrying out oversight and analysis.

Roles of CAPE and OUSD(C). Under the DRS, the Secretary or Deputy Secretary of Defense will provide focused guidance earlier in the process, through the DRG, to shape Service and DoD Component submissions and then the Office of the Director, CAPE will assess their compliance with that guidance. The Office of the Director, CAPE will also remain an active participant through the joint engine room concept overseeing the Decision step and will continue to serve as the lead on many issue-related matters. Systems not directly related to the new DRS, such as the Joint Staff and CAPE's Joint Data Support System, will remain distinct from the proposed program/budget systems consolidation, allowing CAPE to maintain control over specific systems required for their analytic work, as well as their analytic models.

The Commission envisions that the OUSD(C) and CAPE will continue to provide different areas of expertise, and as a result will continue to divide responsibility for key functions that they undertake during the current PBR. For instance, CAPE will continue to maintain the expertise and models necessary to evaluate forces and program contributions to warfighting effectiveness and OUSD(C) will remain responsible for providing expertise on financial execution. For this reason, the Commission recommends against consolidating CAPE and the OUSD(C) into one office.

Timing of the new DRS. Figure 10 below shows the rephased timing of the new DRS compared to the current PPBE process. The new Resource Allocation process begins earlier to provide guidance to the Services and DoD Components as they conduct the Build step. The Build phase also consolidates the currently distinct POM and BES builds and moves forward delivery of resourcing decisions in the Department. However, much of the timing under the new DRS is driven by deadlines to comply with the PB submission so remain the same as under the current PPBE process.

Figure 10 – Defense Resourcing System Calendar



Advantages of the New Defense Resourcing System. Overall, this new DRS offers some important advantages. The Commission believes that adopting this new process will strengthen the connection between strategic guidance and the resourcing process that provides greater specificity, particularly in terms of areas for risk-taking, better links to force sizing and shaping constructs, and draws on CAPE's programming experience, analytic capability, and functions to add specific programming direction to the Services and DoD Components. Consolidating the process as the Commission recommends will reduce current duplication between the programming and budgeting phases to create a more streamlined process, reduce potentially conflicting outcomes caused by overlapping Program and Budget Reviews, and reduce overall system and organizational complexity. Under the DRS, senior leaders will be able to trace a program or initiative in the same format throughout the process, maintaining visibility on priorities and strategic initiatives rather than having to translate between the programming and budgeting phases. Consolidation of OSD programming and budgeting IT systems, as discussed in Section VII, will also create systems and potential workforce efficiencies to support broader structure, process, and decision-making reforms. A consolidated, authoritative source for RADs reduces the possibility of conflicting or contradictory decisions. This will help provide consistent strategic decisions and additional time to prepare budget materials based on a single system and process, streamlining the production of the budget submission to OMB and Congress. Budget structure transformation will also help address duplication and timing challenges by reducing the need for separate systems and processes to track and record data through programming and budgeting.

Recommendation #2 (Key): Strengthening the Defense Resourcing Guidance
Recommendation #1 described the overall structure of the proposed new DRS (see Figure 8). Recommendation #2 proposes improvements to the timeliness and content of guidance documents through the creation of the DRG. The Office of the Director, CAPE, as the Executive Secretary of the AWG, is responsible for administering the guidance stage and providing the DRG to the Department.

The Guidance step begins around November of the year prior to budget completion and starts with a series of senior leader-level meetings. Although actual implementation may vary, the Commission's vision for this process includes:

November Senior Leadership Council (SLC): The process begins with a SLC chaired by the Secretary of Defense. After update briefings on the threat, risk, and other similar issues, this meeting would "close out" the prior Resource Allocation cycle with final decisions on the budget about to be submitted and discussion among the Secretary of Defense, Secretaries of the Military Departments, CJCS, and Service Chiefs about what was accomplished in that budget and how it will be communicated to Congress and the public. This discussion would then transition into setting the goals for the next Resource Allocation cycle.

The Deputy Secretary of Defense, supported by the AWG and the Director, CAPE as Executive Secretary, will guide this discussion. This might include identifying challenges not resolved in the completing cycle, proposing priorities for the upcoming cycle, and identifying key analyses to be conducted during the coming cycle. This SLC discussion seeks the Secretary of Defense's input and direction on the priorities for the upcoming cycle.

November to February DMAGs: This period focuses on developing the Secretary of Defense's direction for the upcoming cycle into actionable and measurable resource guidance. These DMAGs may begin with informational meetings on the threat environment (e.g., from OUSD(P)), operational and budgetary risk assessments (e.g., from the Joint Staff, CAPE, and OUSD(C)), results of strategic analysis and wargames (e.g., from CAPE as Executive Secretary of the AWG), and other relevant issues for the upcoming cycle. Another potential topic is the results of analysis of how prior initiatives performed in terms of meeting strategic objectives. Including this retrospective look at the beginning of the Resource Allocation process will help establish a more formal feedback loop between execution and planning and help programmers incorporate execution realities in developing future programs. It also provides an opportunity to integrate priorities, progress made by previous technology investments, analysis, and data from across the Department and provide a common understanding of the strategic environment at the beginning of the process.

The DMAGs would then transition into decision meetings on topics that include strategic objectives, force sizing and structure, posture, capability investment priorities, readiness and operating tempo, and supporting topics ranging from quality-of-life programs, business system modernization, and major expenses the Department faces. These meetings will also provide a forum for discussing planning and analytic assumptions and principles for use in developing RASs.

These DMAGs will result in decisions on areas of investment and divestments, risk, validation or affirmation of initial Service and DoD Component plans, and identification of areas requiring additional analysis. It is expected that some decisions may be specific and definitive, but others may not be and, instead, provide direction without specific solutions. For these decisions, the guidance may include the

types of options that should be submitted with the RASs in the summer. This could also include options to be presented at varying levels of top-line funding.

In addition to establishing resource guidance, this new process will also support strategic integration across the Department. The DoD has struggled in the past to integrate the many strategic level guidance processes across OSD and the Joint Staff, e.g., global force management, readiness requirements, operational plans, resource allocation, and other issues. Using a formalized senior leadership forum and process that is transparent and includes all senior leaders across the Department provides a venue for coordinating the direction across multiple areas of guidance.

February DRG: The DMAGs will result in an annual DRG, produced by the AWG and signed by the Secretary of Defense, reflecting decisions and direction from the November SLC directional meetings. The DRG will also include Fiscal Guidance, which is largely unchanged in content compared to the current version. In addition to resourcing decisions, the DRG could provide specific details on prioritized capabilities; force structure; analytic assumptions and assessments of past performance; quantitative and output-oriented performance measures; risk and divestment areas; mechanisms to incorporate execution year feedback, including measures of meeting strategic goals; relevant inputs from the Joint Staff and DoD Components; end-of-FYDP joint force capabilities assessments; and requests for solutions to certain challenges. The Commission encourages building on the ongoing efforts within the Department to incorporate performance metrics in the resourcing process, for example by including substantive reference to the Strategic Management Priorities and other enterprise-wide performance metrics in the DRG. The DoD should also provide initial strategic and operational metrics, align investments to metrics, and use data from performance metrics to track how investments lead to (or not) improvement to inform decisions about allocating resources. The Secretary of Defense, likely working through the Deputy Secretary of Defense, will have discretion over the exact content of the DRG.

The Commission considered possible changes to the phasing and frequency of guidance documents but decided to retain the annual production of programming guidance (the new DRG) and annual budget submissions for strategic and practical reasons. The pace of change merits annual deliberation to ensure that resourcing decisions reflect the most current strategic and technological environment and that prior year decisions are achieving their intended effects. The Commission examined previous attempts to move to biennial budgets, such as the FY 1986 requirement for a biennial budget that was repealed in FY 2008, and determined that such a shift was not likely to be implemented.[106] The Commission commends the Department for recent improvements in the relative timeliness in producing the DPG and encourages the Department to ensure that the DRG is released as scheduled to allow the Services and DoD Components to develop program and resource submissions in accordance with that strategic and programmatic guidance.

Because the new DRG is completed during the Resource Allocation process and depends on substantial analytic and some program inputs, the Commission recommends the AWG with Director, CAPE as the Executive Secretary, lead the process to produce the DRG. However, other organizations including OUSD(P) will also be responsible for contributing important content to the DRG. The OUSD(P)'s role on the AWG will ensure use of the DRG to update and alter strategy promulgated in the NDS, which is issued only once every four years.

[106] Hale 2021, 3, 18-19 and DAU 2023.

This distribution of responsibility is similar to recommendations made by other reports. For example, similar to the Commission's recommendation for the AWG, the Beyond Goldwater-Nichols Phase IV report recommended an official responsible for:

> "integrat[ing] and advocat[ing] analytic and decision support… includ[ing]… drafting the secretary's overarching guidance and more detailed mid- to long-term guidance, providing agenda-setting and analytical support capabilities to the secretary in support of his quarterly governance process, overseeing the monitoring of key performance measures, and developing independent civilian expertise in capability portfolio assessment."[107]

In comparison, under the Commission's recommendation for the new DRS, enduring strategy remains aligned under the USD(P). The OUSD(P) also retains its responsibilities for providing guidance on campaign and contingency planning, global force posture, and developing planning scenarios and joint force objectives that will continue to inform the DRGs and RADs. The Resource Allocation process begins with briefings and meetings on these issues, preserving OUSD(P)'s role in shaping the strategic issues considered by senior leaders in delivering decisions and guidance to Services and DoD Components during the build stage. The Commission believes that the core competency of CAPE is analysis, and that resource allocation begins with the translation of strategy to resource guidance, not with the development of strategy itself. The Commission's next recommendation addresses the linkage between strategy and its translation to resource guidance by strengthening the analytic foundations of strategy and resource allocation.

Recommendation #3 (Key): Establish Continuous Planning and Analysis

In a period of sustained strategic competition such as today, rigorous analysis to understand and respond to the threat environment is necessary to make resource-informed decisions and ensure defense investments accomplish strategic objectives. Currently, CAPE is responsible for providing "resource planning, analysis, and advice on matters relating to the planning and programming phases."[108] The Department has focused on enhancing analytic capability and input in recent years, notably through the AWG, SPRs, and PBR reforms discussed previously, but the Department has not yet achieved sufficient capacity to support the DRS as described in Recommendations #1 and #2.

The Commission recommends that DoD, under the auspices of the AWG with CAPE as Executive Secretary, expand its analytic capability and create a program of continuous analysis. Consistent with, and reinforcing AWG principles, this should include: 1) developing and refining analysis on a continuous basis; 2) tool-agnostic analytic capability; and 3) enhanced transparency.[109] Under the DRS, continuous analysis is systematically inserted into the process during the Guidance and Decision steps. Generating open and transparent analyses for insertion allows the Department to use existing and future analysis to inform decision-making, while acknowledging that the Services and DoD Components will begin resourcing activities prior to the formal initiation of the Resource Allocation process and that centralized direction and integration of all strategic processes across the Department is not a feasible option. Continuous planning and analysis should include:

- Continuous planning to support strategic decision-making at the beginning of the DRS by providing analysis and information for strategic decisions, rather than concentrating on budget-driven, less strategically significant decisions later in the resourcing process. The Commission

[107] Hicks 2008, viii-ix.
[108] DoDD 5105.84, 5.
[109] Whitley et al. 2023, 55-56

encourages more independent analysis by the Joint Staff, CAPE, and Policy, in addition to the current Component-led analysis reviewed and integrated by the AWG.

- Improved joint warfighting assessments and analysis to conduct improved assessments and analyses that are iterative, rapid, and joint and cover wargaming, modeling, and simulation for concept development, decision support, and warfighting assessments. This could include outyear assessments of FYDPs against force sizing and shaping constructs to understand how programs and budgets support strategic objectives. Additional workforce could be required to execute this function as described. The SPRs provide valuable insight, but the analytic requirements envisioned to support the informational and directional meetings in the Resource Allocation process will require additional analytic efforts that are provided earlier in the process and are designed to inform the DRG.
- Holistic execution phase reviews beyond financial metrics, such as strategic goals and objectives, progress of past technology investments, operational performance, and other current-year emerging issues that should be reviewed and inform future budget decisions. The Commission commends the Department's ongoing efforts to track NDS implementation through Advana Pulse and the establishment of the AWG.
- Regular analysis of supporting areas, such as critical infrastructure, commercial and defense technology trends and business practices, and industrial base and supply chain readiness and resiliency. The National Defense Industrial Strategy highlighted the need for industrial base data collection, management, and analysis.[110] Such data and analysis can contribute to assessments of industrial base capacity to support national security requirements during the guidance phase of the DRS, which is important to consider given the Department's role in investing in industrial base partners for sustainability and modernization in critical technology areas.
- Department IT modernization to support modern analytic, wargaming, and modeling and simulation capabilities and continuing improvements in access to analytic products across the Department.

In addition to modernizing the underlying IT systems, ensuring access to relevant analysis across the DoD is an important enabler for analytic transparency and insight from a joint and enterprise-wide perspective. In particular, the Advana AWG JCOFA Tool, ICI, and Calendar applications and the Joint Data Support system are systems related to analytic efforts. A user with NIPR and SIPR Advana accounts can access most AWG data and applications. The remaining AWG materials are available on the Enterprise Collaboration Suite Portal. Planning and programming systems are discussed further in Section VII. The Commission commends the Department on its efforts to expand access to relevant systems to the analytic community across the Department by addressing governance and technical issues.

Finally, the analysis to the greatest extent possible, should be data driven and informed by actual performance. A consistent gap raised to the Commission was a lack of analysis of how initiatives approved during previous budgets fared throughout the current PPBE process. Concentrating analytic efforts on realized results in execution will strengthen the feedback between execution and resource allocation, as well as improve credibility in oversight. The Commission's recommendations on budget structure, consolidated OSD programming and budgeting systems, and central access to PPBE systems provide a solid foundation for providing actors throughout the process access to data from other systems and the ability to incorporate such data into their work.

[110] NDIS 2024, 50.

The Commission identified examples of areas that would benefit from analysis of past performance. For example, tracking items that are regular congressional reductions or adds, or included on unfunded priorities lists could highlight opportunities for leaders to engage with Congress on improving understanding of a given strategy or approach. Similarly, tracking consistent reprogrammings for recurring operational expenses could provide leaders with data on how to better allocate funds initially, thereby reducing administrative requirements to reprogram funds and potentially strengthening arguments for additional resources in investment accounts. In addition, tracking of the technical progress of R&D investments can inform the resourcing for the transition of those activities from research initiatives to operational programs. Using systems to feed budgetary outcomes into resource allocation efforts will help provide execution and affordability-informed decisions at the outset of the process.

Implementation. Implementation of this recommendation requires the revision of DoDD 7045.14 and any associated guidance to reflect the new Resource Allocation process.

Recommendation #4 (Key): Transform the Budget Structure

The Commission recommends significant transformation of the structure of DoD appropriations, reorganizing appropriation, account, program, and lifecycle (colors of money) levels. The new structure will be used to present DoD budgets and authorize and appropriate funds. The Commission's proposal is designed to sustain or even enhance congressional oversight and visibility into strategic alignment, tradeoffs, and decisions. The transformation will:

- Enhance congressional, White House, and senior DoD leader, oversight by providing unified views of programs and activities;
- Better align the budget structure to how decisions are made;
- Improve the ability to balance and trade between capabilities;
- Highlight the relationship between programs and capabilities across the Joint Force;
- Update the budget structure to match 21st century technology development and production cycles that do not move sequentially through research, procurement, operations, and sustainment to deliver capability to the warfighter faster; and
- Identify redundancies and areas for cooperation or coordination across capabilities areas and the Services and DoD Components.

The proposed transformation creates new categories for organizing the structure of the budget:

Figure 11 – Current and Reimagined Budget Structure

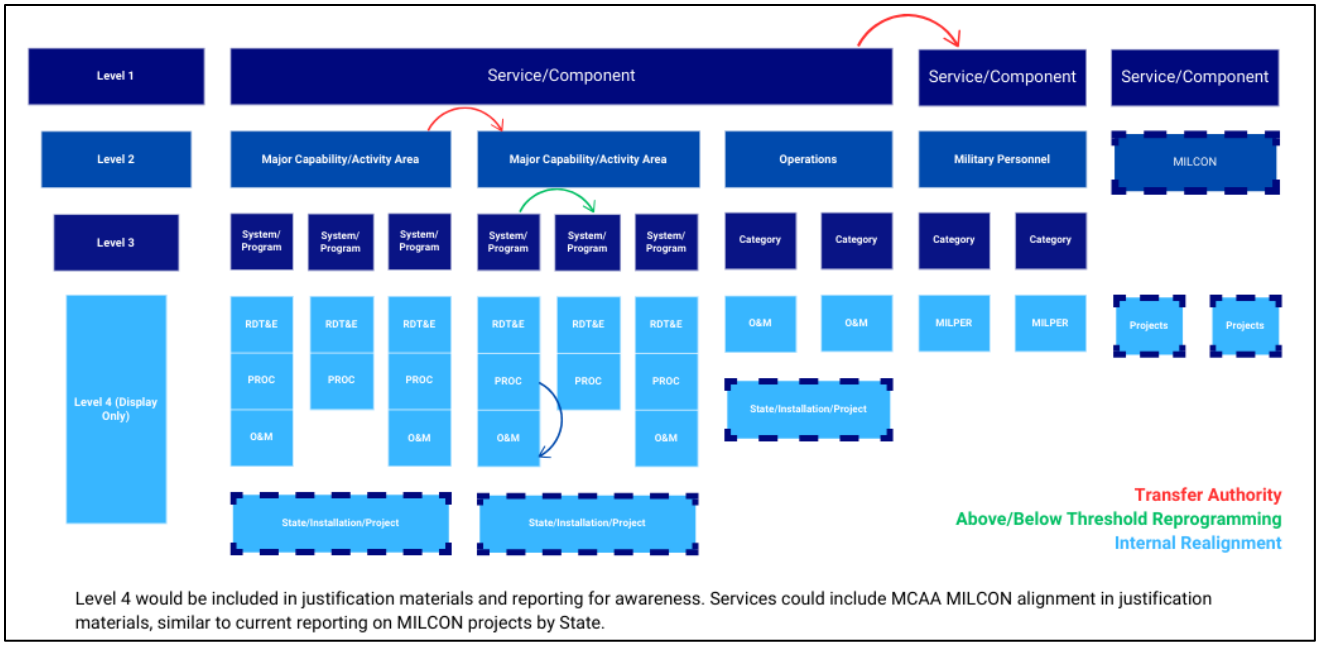
Current Structure	Proposed Structure
Life Cycle Phase	Service/Component
Service/Component	Major Capability Activity Area
Budget Line Item	System/Program (BLI)
Project (if applicable)	Life Cycle Phase

Red indicates levels that require general transfer authority to move funds.
Green indicates levels that require above or below threshold reprogramming to move funds.

The key change in this transformed budget would involve presenting, authorizing, and appropriating funds using Major Capability Activity Areas (MCAA). The DoD will need to identify these MCAAs. Illustrative examples could include hardware-centric categories such as mobility aviation, ground maneuver forces, or surface combat ships. The use of MCAAs to present and appropriate funds will move the focus away from types of funds (e.g., Procurement) towards categories used to discuss defense capabilities, and will likely also facilitate alignment with accountable officials at a variety of organizational levels.

In the Interim Report, the Commission presented three potential options governing the specifics for restructuring the budget, ranging from a comprehensive realignment where all colors of money would align to respective capabilities and programs to a more tailored approach aligning current investment colors of money, while largely preserving O&M and MILPERS as separate accounts. The Commission appreciates the feedback from the DoD, congressional stakeholders, and outside experts. In this Final Report, the Commission recommends a modified version of the third option that strikes the appropriate balance between addressing identified challenges imposed by a linear, Industrial-Age budget structure and maintaining necessary flexibility in more centralized operating accounts (Figure 12).

Figure 12 – Proposed Budget Structure Transformation



The first level of funding breakdown today is a title in an appropriations bill, which today includes Procurement, MILPERS, O&M, RDT&E, and MILCON. In the new budget structure, the appropriation titles would be broken down by Service/DoD Component.

In each Service/DoD Component appropriations title, the new system would include multiple appropriation accounts with names that reflect the various capabilities delineated by MCAAs included in that Service/DoD Component. Illustrative examples of MCAAs could include combat aviation or surface combat ships, though the Commission recommends that the Services and DoD Components propose the MCAA structure that makes sense given their organization and mission (see below). As shown in

Figure 11, the Commission recommends that the Department continue to maintain general, catch-all appropriations accounts for broad operations needs and the pay and benefits of military personnel, in essence treating these as MCAAs in their own right (more detail provided below). Use of general transfer authority would be required to move funds between these new MCAA-based appropriation accounts.

The third level (system or program, for example the F-35 or DDG-51 programs) is defined as Projects/Programs or Activities (PPA) below the appropriation account level and is the new BLI for budget justification materials. Shifts between these PPAs within an account would require use of either prior approval (PA) or BTR reprogramming procedures, depending on the size of the movement and whether the movement relates to a congressional special interest item. For the catch-all Operation and Maintenance and MILPERS appropriations, the PPA could be defined organizationally or functionally, or a combination of both (more detail provided below).

The fourth level is defined as the current colors of money or life cycle phases (e.g., Procurement or RDT&E) and would be included in budget justification requests and execution reporting for awareness. However, under this new system moving resources within a program across the fourth level would not require a reprogramming action, and program officials would not need legal guidance to determine which category is appropriate for a particular expense.

Additional reporting categories beyond these four levels could be added as needed to meet congressional or executive decision support needs, as has been done over time in the current structure. For example, the Department could submit justification materials noting MILCON efforts that support a given MCAA but that are appropriated separately. As is the case today, the Department would also still be free to make binding funds divisions/suballocations below those reflected in the budget justification materials, and to adopt dynamic budget tagging approaches as proposed by various advocates of portfolio budgeting.[111]

Establishing Major Capability Activity Areas. While there is value to consistency of budget structure in some areas across the Services and DoD Components (see below), the Commission does not recommend a one-size-fits-all approach for the MCAA structure and did not find that existing categorization systems in the Department are sufficient. For example, neither the current MFPs nor the joint capability areas[112] would serve well as MCAAs in the structure proposed here.

The Commission recommends that the Services and DoD Components propose MCAA structures that provide appropriate decision support for their leadership, align to existing organizational structures to enable agility and accountability, and accommodate different governance structures across the Department. For example, Aviation may be an appropriate MCAA category within the Navy and Army but may be too broad as a category for the Air Force, which might prefer more specific categories such as Mobility Aviation or Combat Aviation, to align to existing Air Force major commands and PEO

[111] Dynamic tagging would "enable[ ] views by budget group, mission, or technology areas" (MacGregor et al 2023, 6). A BLI could have multiple tags (e.g., for both cyber and AI capabilities) and could be viewed in respective views of said capabilities, but due to the potential for multiple tags, users would have to be cautious using filtered views to generate budget documents.
[112] CJCSI 5123.01I, E-2, F-5.

structures.[113] The new structure will need to cover all requested resources, necessitating some catch-all categories like today's Other Procurement appropriations. As in the current structure, some programs will cross multiple MCAAs, and decisions will need to be made on how to best categorize them. In some key areas of high joint visibility like basic research, autonomy, and C2 systems, OSD and the Joint Staff may impose definitions designed to maintain standardization that permits comparison across the Services and DoD Components.

Consistent Treatment of Certain RDT&E, MILPERS, and O&M Funds. Since it is often difficult to allocate early-stage research and development to specific applications, the Commission recommends the Services and DoD Components establish a Fundamental Science capability area (or BA-A) that would include PPAs and PEs from current RDT&E BA 6.1 and selected activities under 6.2 accounts as established under Recommendation #5. This structural approach would protect these early-stage investments but also highlight technologies in need of continued coordination efforts between labs and users to ensure early-stage research responds to operational needs. Appropriate activities under the new BA-B Technology and Development Budget Activity established under Recommendation #5 should be aligned under relevant MCAAs. As some technology development activities in areas such as computing, materials, and electronics may lead to capabilities in multiple MCAAs, it may be useful to develop a Cross-cutting Technology and Component Development MCAA for efforts to develop these types of enabling technologies. Such a capability area would provide strategic insight into how early research funds are allocated and provide the operational and program communities with insight into emerging technologies that could address requirements, supporting efforts to transition technologies into programs.

The Commission recommends treating MILPERS costs as a standalone MCAA, using the Department's existing billet allocation and personnel assignment processes to manage this important resource. This maintains the Department's current flexibility to manage its military personnel to address the most urgent mission areas. Civilian pay is budgeted and executed in various ways across the Department; this recommendation does not require a single approach to that area.

The proposed restructuring does not realign all O&M appropriations under MCAAs. The Commission recommends that the Services and DoD Components request within the MCAAs that portion of current O&M funds that is most closely associated with the MCAAs, while leaving the remainder of more general O&M funding in a catch-all MCAA for general operations. Such a MCAA could include level 3 BLIs that reflect current O&M sub-activity groups (SAG) for funding efforts like base operating support; facilities sustainment, restoration, and modernization; and similar functions; the current BAs could serve as the MCAAs for those funds with further breakouts at the SAG level. The Commission encourages the Services to review their current O&M SAG structure to ensure that the new O&M MCAAs best serve their operational and organizational needs.

For example, this may mean that the Air Force requests acquisition-related O&M funding for F-16 aircraft as part of the F-16 program within a Combat Aviation MCAA which will allow more agile tradeoffs between system improvements that could result in operational cost reductions. Under the Commission's

[113] The Commission notes that the examples of MCAA presented in this report are notional.

recommendation, more general operating budgets such as the running costs of the 20th Fighter Wing at Shaw AFB would be presented in a general operations MCAA along with those of all the other bases in the Air Force. This is largely consistent with current practice, where the Air Force requests more than $10 billion per year for base operating support activities within a single SAG inside the Operating Forces Budget Activity of the O&M, Air Force appropriation.

The Commission considered omitting O&M entirely from the MCAAs but doing so would have offered fewer opportunities for lower-level funds holders to make tradeoffs between buying services and investing in hardware (which is increasingly important).

Congressional Oversight. The proposed budget structure transformation is intended to maintain or enhance congressional oversight. The points below indicate how congressional oversight is protected under this proposal (the examples of MCAAs used below are illustrative):

- Transfer authority will be required to move funds in execution across the Service or MCAA level (e.g., from the Navy to the Army, or from the Navy Surface MCAA to the Navy Aviation MCAA). Such transfers are likely to reflect strategic or operational shifts of interest to Congress; oversight of such changes is strengthened under this structure. The Department and Congress will need to collaborate to determine the appropriate amount of General Transfer Authority under the new structure.
- Reprogramming will be required to move funds at the System/Program level within accounts (e.g., from Destroyers to Ammunition Ships within the Navy Surface capability area). Major capability area leaders and financial managers would have flexibility to move resources between development, procurement, and aligned operating expenses, funded within the same system/program, but the Department's budget request would provide breakdowns of expected expenditures across these phases and also in execution reporting. Reprogramming procedures and thresholds could change pending implementation of other Commission recommendations. In occasional cases of high interest, the Department should expect to receive more restrictive congressional language, consistent with current practice, e.g., "Provided that of the funds provided for program X, no funds may be obligated for procurement expenditures except upon certification by the Director of Operational Test and Evaluation that program X has successfully completed initial operational test and evaluation."
- The DoD J-books and congressional appropriations would provide more budgetary and programmatic transparency since all directly associated funding for each program and MCAA would be consolidated into end-to-end budget entries, documents or set of documents rather than fragmented across many budget entries and disparate J-books.
- New start rules will remain in effect, with Congress retaining its ability to authorize and appropriate funds for programs and set quantities.
- The DoD will continue to be required to execute systems and programs consistent with submitted budget justification documents, which would be presented using the new budget structure.

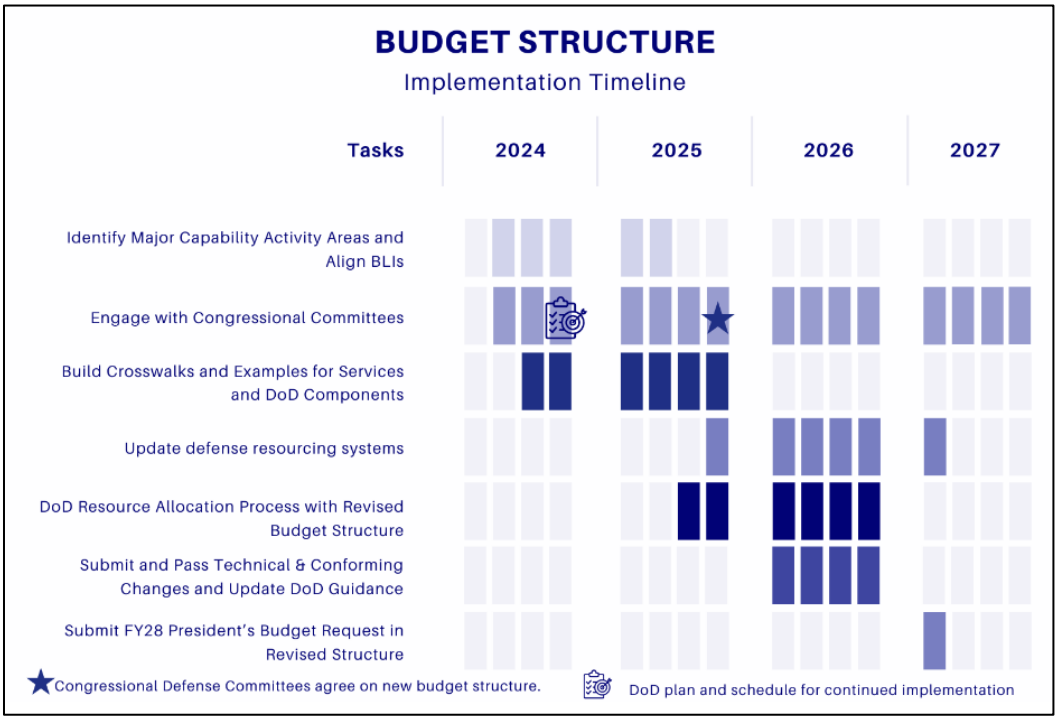
Benefits of the Recommended Changes. The Commission believes this recommendation will significantly improve the ability of DoD and congressional leaders to understand and debate the strategic ramifications of budget proposals while enhancing congressional oversight. The restructured appropriation categories, based on Services and DoD Components and MCAAs, better align to how

internal DoD decision-makers and many congressional stakeholders think about defense activities and the resources necessary to achieve desired strategic outcomes. Decision-makers will be better able to identify capability areas for tradeoffs and resourcing in a more holistic manner across the DoD. For example, MCAAs like aviation and ground maneuver forces are more readily interpreted in terms of implications for strategic competition with China compared to the categories used today, such as Procurement and RDT&E.

In execution, the structure provides different flexibility by allowing officials at the MCAA level to move money within their portfolio through reprogramming more easily (particularly between and within what is currently known as RDT&E and Procurement, a frequent concern heard by the Commission). The structure could also support ongoing efforts to strengthen evaluation and performance measurement by explicitly linking programs and systems to capability and activity delivery and providing additional input for analytic efforts for future resourcing decisions about how to invest within MCAA portfolios to deliver capability. For cross-cutting MCAAs, the structure will also allow easier comparison across the Department to identify and resource enterprise-wide solutions for common requirements and activities.

Implementation. The Commission recognizes that the budget restructure will require a significant amount of effort and cooperation within the Department and require close cooperation and coordination with Congress. The Commission proposes the following timeline for implementation (Figure 13).

Figure 13 – Budget Structure Transformation Implementation Timeline



Implementation begins with Services and DoD Components identifying their MCAAs, coordinating with OSD leadership, receiving congressional concurrence on MCAAs, and reviewing existing BLIs to align with those new areas. The Commission reemphasizes that while some common MCAAs might be

appropriate, the Services and DoD Components should identify MCAAs that support their specific missions and organizational models.

As engagement with Congress is critical to successful implementation and viability of the recommendation, the Commission stresses the importance of sustained, iterative engagement with Congress prior to submitting a budget request with the updated format, recognizing that subsequent improvements will likely be required to ensure Congress receives the information required to inform their strategic and budgetary oversight. Successful implementation will be made more likely by the enactment of related recommendations, particularly modernizing defense resourcing IT Systems and consolidating BLIs (discussed in Sections VII and V, respectively), by providing underlying systems support and initial budget structure streamlining. Improvements in systems used to communicate with Congress and provide access to data in a more ingestible and useful manner also support engagement with Congress, while ensuring Congress maintains visibility of information during the transition period (for example, future justification material writing systems could include linked crosswalks between old and new J-book data).

Implementation Challenges. The Commission acknowledges challenges to implementing the restructure, including:

1. Initial identification and adjudication of MCAAs may take significant time and manpower, which will likely increase the more the Department seeks to standardize across the Services and DoD Components. A Space Force effort to develop a mission-area budget display in response to House Appropriations Committee Subcommittee on Defense (HAC-D) report language necessitated a working group and manual identification and alignment of the budget to mission areas.
2. Potential restructure of staff areas of responsibility on the appropriations committees, in OSD and Military Department comptroller offices, and OMB; they are all currently organized along appropriation lines.
3. Significant changes to appropriations language, including developing new appropriation paragraphs for the new category definitions and determining the appropriate period of availability for each appropriation.
4. Changes to accounting codes and business systems that will require coordination with the Department of Treasury and OMB. Updating business systems to support the new structure may accelerate the mandate to retire, modernize, standardize, and increase interoperability between business systems, but is also culturally challenging and resource intensive (see Section VII for additional information).
5. Some technical and conforming changes to U.S. Code where the traditional colors of money are referenced.
6. Significant policy and regulatory changes, such as in the FMR. This is a further opportunity to modernize FMR language as recommended in Recommendation #12.

Restructuring the budget may reduce some flexibility at headquarters levels to realign resources across the enterprise, but also potentially reduce the need for those kinds of realignments. Currently, a PEO might be responsible for a Procurement program in need of funds and have an RDT&E program with available funds. However, transferring the funds would require highlighting available funds to Service

and OSD leadership, creating the risk of losing the available funds for another purpose and not receiving funds required to address the initial need. Increasing flexibility at the MCAA level may mean that fewer sources are available for higher priorities across the enterprise. However, increased authority to solve issues at the capability level could reduce the number of issues that need to be solved at an enterprise level by empowering MCAAs to balance and trade within the MCAA to address resource requirements and deliver necessary capability without having to navigate the seam presented by the current colors of money.

Additional Considerations for Implementation. The MILCON funds are currently appropriated by a different appropriations subcommittee and in a separate appropriation act from the four DoD colors of money addressed in this recommendation. If Congress decides to reorganize to combine the current military construction and defense appropriations subcommittees and appropriations, the proposed budget structure could be extended to incorporate most MILCON into the MCAAs; however, the longer timelines required to execute construction projects would likely require extended periods of funds availability. Regardless, the Department should ensure that MILCON related to specific programs and systems is described in budget justification materials for those programs to ensure the Department and Congress maintain visibility into the complete resources required to support capability and activity areas across budget categories.

Initial DoD Efforts. In response to HAC-D direction, the Space Force is compiling a mission area-budget display for the FY 2025 PB submission that includes establishing recommended mission areas, drawing on existing areas across joint and service organizations and documents.[114] The Space Force and Department of the Air Force officials reported that the preliminary mission area display has already been helpful for responding to leadership questions about the Space Force budget for FY 2025.[115]

Providing mission-level budget presentations as an adjunct to the existing budget structure justification materials could result in additional demands on an already highly constrained financial execution system and increased workload for an already stressed workforce, as well as create multiple opportunities for disconnects. The Commission recommends adopting the proposed capability-oriented structure as the primary budget structure, not merely a display, meaning that Congress would appropriate, and the Department would execute using that structure. The Space Force pilot project provides a feasibility demonstration for the value of increasing awareness of how the budget aligns to mission and capability areas, though it does not provide the envisioned benefits of the restructured budget, particularly in execution. The Commission encourages the Department to leverage best practices and lessons learned from the Space Force pilot in identifying MCAAs and aligning BLIs as part of implementation.

The Commission also commends efforts in the Department, such as the Navy's Pilot PEO for Portfolio Management effort in PEO Integrated Warfare Systems, to initiate efforts, within DoD's scope, to improve its ability to respond to threats and incorporate emerging technologies, for example through consolidation of BLIs into portfolios.[116] Such efforts implement the Commission's Interim Report

[114] H. Rpt. 118-121, 14-15.
[115] Commission interview with subject matter experts.
[116] PEO, Integrated Warfare Systems Portfolio Management Pilot Final Report provided to the Commission.

recommendation to consolidate BLIs and reflect a capability-based approach to resources and requirements that supports the proposed restructure. They also highlight opportunities within existing structures to rapidly deliver capability to warfighters through greater coordination and engagement within and between Services. Any such efforts depend on transparent and frequent communication with Congress.

Relationship to Portfolio Budgeting. The Commission heard from multiple advocates of portfolio approaches to DoD budgeting, for example, budgeting for all combat aviation assets in one budget category or appropriation. Some of these proposals recommend a cross-program and cross-appropriation data tagging approach, while others create separate organizational layers to manage portfolios. The Commission finds that adopting these approaches without a restructure of the fundamental appropriations is likely to increase constraints and inertia in the system by adding a layer of approval authorities with another set of priorities to balance. Many investment areas do have cross-cutting effects where additional leadership budget visualization would be helpful to align strategy to budget. These types of inputs could be effective in the context of Service or DoD Component program and budget considerations, but the Commission found that a fundamental shift in appropriations structure was needed to drive strategic process change without simply creating additional veto points.

Relationship to Other Recommendations. Overall, the Commission believes that transforming the current PPBE process into the Defense Resourcing System, described above and in later sections of this Final Report, will streamline the current process and reduce duplication while also better relating strategy to budget. The Commission recognizes that less far-reaching changes may be useful while the larger transformative initiatives are being put into place. Other recommendations address critical issues related to budget structure, colors of money, and appropriation availability and are described below and in Section V.

The proposed budget structure provides a strategic framework for consolidating BLIs that will help identify overlapping efforts and enable more efficient uses of funds across the Department, in addition to providing greater flexibility in execution. Recognizing the transformative nature of these recommendations, some of the Commission's other recommendations, such as those associated with carryover and reprogramming authorities, would need to be considered in light of the transformed structure. For example, proposed changes to the reprogramming thresholds are based on historical trends in budget growth by current appropriation categories. The new structure would not initially have a historical basis for establishing such thresholds, which are an important tool to preserve congressional oversight of appropriated funds. Congress and the Department should monitor budget growth, economic factors, and the sizes of appropriations and programs when setting reprogramming thresholds for the new budget structure.

Willingness to revisit the BTR threshold in the new structure also provides an opportunity to balance congressional oversight and avoid reducing agility envisioned under the new structure. Delegation of transfer and reprogramming authority will also look different under the proposed system, with authority delegated to the official responsible for the MCAA. The budget structure transformation would also help address duplication and timing challenges associated with separate systems and displays of information

through programming and budgeting by structuring the budget in a single format throughout the resource allocation process.

Recommendation #5: Consolidate RDT&E Budget Activities (BA)

The Commission recommends the DoD consolidate RDT&E BAs to reflect current technology development paradigms and improve agility for programs. Consolidation should be pursued as a near term approach to increase budget structure agility, separate from the fundamental transformation discussed in Recommendation #4. Along with the recommendations to consolidate BLIs, and increase reprogramming thresholds and decision delegation, this recommendation will allow PMs and PEOs greater flexibility to transition programs in a more dynamic and responsive manner to changing threats, enabling faster capability delivery to the field and warfighter.

Current technology funding and development timelines are not well aligned. Rigid lines between BLIs and BAs pose a constant challenge for PMs. If a technology advances faster than the budget cycle or requires a longer timeframe in each development stage, a program or office cannot get money to fund the proper development cycle of that given technology. This results in start-stop funding that delays technological deployment. In interviews with the Commission, Service and DoD Component program offices shared their challenges in trying to align colors of money and the budget process to support timely technology adoption.[117]

The Commission proposes the following as a restructuring model for RDT&E BAs:

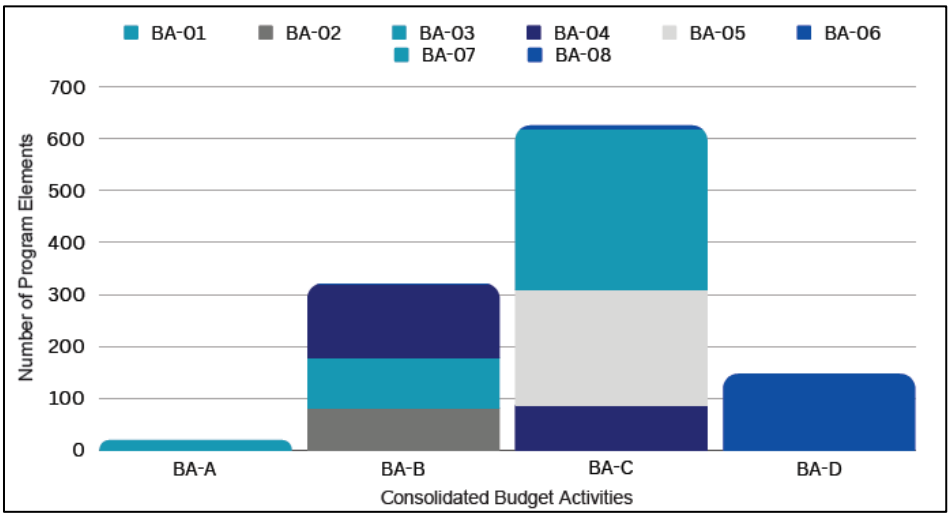
<table>
<tr><th>Current BA Structure</th><th>Proposed BA Structure</th></tr>
<tr><td>BA-01 Basic Research</td><td>BA-A Fundamental Science</td></tr>
<tr><td>BA-02 Applied Research
BA-03 Advanced Technology Development, Non-Programs of Record
BA-04 Advanced Component Development and Prototypes</td><td>BA-B Technology and Development</td></tr>
<tr><td>BA-04 Advanced Component Development and Prototypes
BA-05 System Development and Demonstration
BA-07 Operational System Development (Programs of Record)</td><td>BA-C System Development</td></tr>
<tr><td>BA-06 RDT&E Management Support</td><td>BA-D Capability Support</td></tr>
<tr><td colspan="2">*BA-04 could be divided based on TRL or relationship to a specific program or general efforts.</td></tr>
<tr><td colspan="2">Current BA-08 programs will not require a separate BA under the consolidated model and can be aligned to one of the four new RDT&E BAs or another color of money as outlined in Recommendation #11 - Address Challenges with Colors of Money.</td></tr>
</table>

[117] Commission interview with subject matter experts.

This model preserves congressional oversight of a technology's transition into a program of record, which generally occurs between BAs 04 and 05, while also maintaining congressional visibility into the adoption of S&T to DoD goals and missions, particularly for basic research in BA-01. This model can be adopted simultaneously with the budget structure transformation, as described above. Consolidation into the proposed structure will also support consolidation of BLIs (see Section V) by highlighting different PEs supporting common efforts currently divided across BAs.

In implementing the new BA structure, the Department should provide and enforce a standardized PE taxonomy to ensure new PEs align to their respective activity. Over three to five years, the Department should also transition all PEs to the new structure. This will support transparency and oversight efforts, by allowing Congress, the Department, and industry to use the PE structure to track RDT&E efforts, ensure the appropriate category of funding is used for defined activities, and identify opportunities for transition and investment. Congress can also maintain visibility through the continued use of project codes and improved J-book language, for example with appropriate standardized language (see Section X). Figure 14 below illustrates how FY 2022 RDT&E PEs could align into consolidated BAs.[118] While notional, the figure suggests consolidation could address concerns about correctly aligning RDT&E BAs against more dynamic development models (see Recommendation #10 for related discussion on the benefits of BLI consolidation).

Figure 14 – Concentration of Current PEs in Consolidated BAs



Source: FY 2022 Budget Justification materials available on OUSD(C) website.

In the Interim Report, the Commission included BA-08 Software as a category in a consolidated BA structure. The recommendation in this Final Report does not include software as a separate BA. Recognizing that software is a critical component of future defense capabilities, the Commission chose to address software funding requirements through changes in the underlying colors of money in

[118] The Commission defers to the Department on the most appropriate recategorization of current PEs into the consolidated BAs. Data is based on the FY 2022 RDT&E budget submission. Staff assigned BA-04 PEs to BA-02 or BA-03 as follows: 1) If the BA identifier in the PE was 03 or less, the PE was categorized as BA-02; 2) If the BA identifier in the PE was 05 or more, the PE was categorized as BA-03; 3) If the BA identifier was 04, the PE was categorized into BA-02 if they were for general transition funds, had general technology development titles, or for offices. PEs were categorized into BA-03 if their titles related to specific names systems/programs. Other categorization approaches are possible, including based on technology readiness levels. BA-08 is recategorized based on the BA number in the PE, based on the BA of a PE prior to conversion to BA-08, or based on staff review of the purpose of the PE.

Recommendation #11 which is found in Section V. This approach addresses both the need for different authorities to fund software development and activities throughout its lifecycle, while not adding additional budget structure barriers and management complications in execution.

Implementation. Regardless of the exact approach adopted, any consolidation should:

1. Be conducted transparently and with extensive congressional interactions, both before, during, and after consolidation to maintain visibility and proactively address potential oversight concerns.
2. Be oriented toward accelerating technology adoption and aligning DoD BAs to support modern technology development cycles.

This recommendation will require new definitions for each BA; the BAs are defined in Volume 2B Chapter 5 of the FMR. Implementation beginning with the FY 2026 PB includes:

1. Developing definitions of the new BAs that balance the need to reflect contemporary development cycles and maintain congressional oversight, led by the OUSD(C), in coordination with CAPE, OUSD for Research and Engineering (R&E), OUSD for Acquisition and Sustainment (A&S), and the congressional defense committees.
2. Updating the FMR to reflect new definitions of BA, led by the OUSD(C).
3. Reviewing PEs to ensure correct alignment with new BAs, led by the Services, DoD Components, CAPE, and the OUSD(C).
4. Presenting the FY 2026 PB with updated BAs and aligned PEs using a standard taxonomy for new PEs, led by the OUSD(C), in conjunction with CAPE, the Services, and DoD Components.
5. Engaging with congressional defense committees to maintain transparency and oversight of PEs in new BAs by including crosswalks and identification in FY 2026 PB justification materials, led by the OUSD(C), in conjunction with CAPE, the Services, and DoD Components.
6. No later than the submission of the FY 2030 PB, conforming all PEs to the standardized taxonomy reflecting consolidation.

Conclusion

The new Defense Resourcing System is designed to better align budgets to strategy, and also reduce duplication in the resourcing process. In addition to the recommendations described in this section, the Commission offers recommendations to address other significant challenges, such as fostering innovation and agility, improving business systems, improving the relationship between DoD and Congress, and supporting the resourcing workforce that should be pursued and implemented as DoD and Congress consider putting in place the resourcing system described above. The next section addresses a critical recommendation to foster innovation and promote agility needed to adapt to changing requirements and rapid shifts in technology.

Section V – Foster Innovation and Adaptability

What the Commission Learned and Heard

One of the most consistent concerns the Commission heard over the past two years is that the current PPBE process lacks agility, limiting the Department's ability to effectively respond to evolving threats, unanticipated events, and emerging technological opportunities in a timely manner. This message was reiterated in statements from current and former congressional Members and staff, from senior DoD officials, from program budget and acquisition officials at all levels, and from both traditional and non-traditional DoD industry partners. For example, a current DoD leader told the Commission that the amount of time it takes to approve and distribute funding through the current PPBE process to address a national security problem provides U.S adversaries with an innovation advantage.[119] Another official added that the time-consuming nature of the PPBE process makes it difficult to influence a modification or an upgrade to an existing design or to counter new threats.[120]

Through extensive research, the Commission has identified six aspects of the current PPBE process that contribute to a lack of agility and responsiveness: (1) the length of the process; (2) the inflexibility of the budget structure; (3) the hierarchical nature of the PPBE process; (4) a bias for existing programs and approaches; (5) a lack of awareness and use of innovative new authorities and practices; and (6) inflexibility in the year of execution.

The Commission is aware of mechanisms available to the Department, and efforts by DoD leaders to use those mechanisms to mitigate each of the six potential problem areas. For example, senior leaders can intervene late in the process to redirect funding toward high-priority initiatives and emerging needs. The Department and Congress have worked together to rationalize or increase the size of budget line items (BLI) for some high-priority efforts. Effective commanders, Program Executive Officers (PEO), and Program Managers (PM) have been able to cut through the bureaucracy to raise urgent concerns to DoD leadership. The DoD leaders and Congress have also established numerous mechanisms to fund emerging technologies and non-traditional industry partners to expand the defense industrial base and have provided authorities like the Rapid Acquisition Authority or have created organizations with direct access to senior leaders to streamline these processes, but it is questionable whether these special processes can be scaled Department-wide. In any case, further internal execution guidance on utilizing these authorities is necessary. Congress has also established a reprogramming process that allows the Department to move funds in the year of execution to meet changing needs and requirements. At the same time, while reprogramming actions have been effective in a number of cases, and reprogramming authority should be maintained, the process is time consuming. Efforts to ensure scarce reprogramming sources are applied to the highest priority requirements and a desire to avoid sending excessive numbers of reprogramming requests to Congress, means that at times it can take more than six months to receive approval and funding for some reprogramming requests.

[119] Commission interview with subject matter experts.
[120] Ibid.

The DoD and congressional leaders have also worked to build awareness of technology initiatives, innovation funds, software factories, and other creative acquisition strategies and funding approaches (see Section X).

Unfortunately, most of these mechanisms require action by senior DoD and congressional leadership, who have vast responsibilities and limited bandwidth to deal with matters of detail, making the mechanisms slow to operationalize. For some high-priority programs, senior DoD officials can cut through the bureaucracy to jump-start important initiatives and congressional leaders can approve the movement of money quickly. However, with an annual defense budget of more than $800 billion made up of hundreds of line items and programs, these leaders can only address a limited number of issues.

Understanding Root Causes

In its research, the Commission identified six major root causes relating to PPBE's problems in promoting innovation and adaptability.

Time-Consuming Programming and Budgeting Processes

The current PPBE process is designed to allocate funding to specific programs, projects, or efforts through a rigorous competitive process that begins more than two years in advance of expenditures. The process involves "a serial, time-compressed set of hand-offs from one organization to another."[121] This structured process enables a wide array of voices and interests to be heard as tradeoffs are made between competing priorities, an important attribute of PPBE, but the time-consuming nature of the process is antithetical to moving at the speed of relevance, especially for new and innovative programs whose underlying technology can change quickly. During the time it takes to go through the process, funds may have already been claimed by older well-defined requirements that have had time to go through the rigor of the requirements process. In addition, emerging Science and Technology (S&T) development efforts do not always link to an established warfighter requirement or even have a venue for being deliberated, so they may not come to the attention of appropriate leadership, and game-changing innovations may not be anticipated or funded during the programming and budgeting phases of the PPBE process. As a former DoD official explained, there is a two-year wait before being able to do anything new unless you are able to take advantage of the limited flexibility available in the system.[122]

Numerous personnel told the Commission that the current PPBE process provides limited windows for DoD, particularly the operational community, and for Congress to react appropriately to useful and game-changing technologies or services once they are identified.[123] The current PPBE process makes it difficult to provide timely resources for further RDT&E, Procurement, or O&M sustainment efforts to providers of such goods and services as needs change and develop. Some businesses are built to work in this process and are resourced to wait for the availability of funds; however, smaller firms and non-traditional industry partners may not have sufficient capital to wait on the DoD to secure adequate funding. Both innovation and geopolitical dynamics can change substantially between programming and execution. The PPBE process does include authorities, such as reprogramming or the Rapid Acquisition Authority, that permit the Department to respond to innovations and program changes during budget execution, but these tools also have limitations on their availability.

[121] Ibid.
[122] Ibid.
[123] Ibid.

A former senior DoD official told the Commission that time-consuming DoD processes lead companies to walk away, depriving the Department of significant opportunities.[124] The Commission also heard from small businesses that the technology they were developing or producing did not exist when the budget for that year was being built, and that waiting two or three years for funding is not a viable strategy for most small businesses.[125]

Inflexibility of the Budget Structure

The DoD requests funding in a rigid and highly specified BLI framework of "48 unique investment budget activities across 23 different appropriations that constrain transfers, [resulting in funds being controlled in more than] 1,700 BLIs with a median size of $35-$40 [million]."[126] Fiscal laws and regulations designed to safeguard Congress' power of the purse further require that funds be expended only for the purposes for which they are authorized and appropriated. A single major acquisition program often has multiple Budget Activities (BA) and BLIs, making it difficult for Congress to track the entire program, and even more difficult for the Department to manage the program. While these BLIs were all developed for a reason–they reflect congressional, Department, regulatory, and historical requirements as well as experience and precedent–it is not always clear that the original reasons for developing a separate BLI still apply today.

The BLI structure particularly affects RDT&E, where BLIs less than $50 million make up the majority of lines (Figure 15). The preponderance of small BLIs in the RDT&E account is significant because of reprogramming thresholds that limit the amount of money that can be moved without involving Congress through the prior approval (PA) reprogramming process. Below Threshold Reprogrammings (BTR) for RDT&E are currently limited to $10 million or 20 percent of the BLI, whichever is less. The percentage further constrains flexibility in BLIs less than $50 million because moving $10 million in or out of one of those BLIs would require a PA reprogramming since it exceeds the 20 percent threshold.

Figure 15 – Number of RDT&E PEs/BLIs

Count of BLIs for RDT&E	**Fiscal Year Request**								
Size (Based on Request)	**1980**	**1985**	**1995**	**1999**	**2001**	**2010**	**2020**	**2021**	**2022**
Less than $50M	615	604	437	552	476	474	548	544	555
Greater than $50M	53	101	146	199	164	280	359	350	379
Total	**668**	**705**	**583**	**751**	**640**	**754**	**907**	**894**	**934**

Source: OUSD(C) Budget Materials[127]

The use of funding in these BLIs is further constrained by the J-book narratives supporting the budget that describe the purposes for which money is requested and which must be adhered to when funds are spent. This justification is required to receive authorizations and appropriations for the fiscal year being requested, and it may not adequately explain the entire program, only the portion that pertains to the specific type of funding requested in that BLI. The J-books are frequently written in an overly detailed and prescriptive manner that can unnecessarily constrain the ability of the Department to effectively execute its programs and missions. A senior DoD official described the J-books as "archaic," in the way they are

[124] Ibid.
[125] Ibid.
[126] Ibid.
[127] Data based on request for all of DoD; excludes where funds may have been previously enacted, but the request was zeroed out; excludes classified programs and other anomalies.

transmitted and updated, saying the Department needs to move to using digital access methods of communication instead of emailing PDFs (see Sections VI and VII).[128]

The budget structure presents additional challenges for software, which is further described in Section X of this Final Report. Software programs are often forced to use different funding sources for the development, fielding, testing, and sustainment of a capability, but require continuous shifting across those activities post-initial deployment since software is continually modified to reflect security, performance, and interoperability updates. As one industry official told the Commission, "Software is never done. It gains new requirements tomorrow based off the problems that we solved the day before."[129] Other federal agencies have different budget structures that allow them to develop, procure, and sustain software with greater flexibility, which are discussed elsewhere in Section X of this report.

Hierarchical Programming and Budgeting Process Results in a Lack of Delegation of Authority

The programming and budgeting cycle starts as a bottom-up approach at a high level of detail, but then locks at successive hierarchical levels, making it increasingly difficult to adjust when changes are necessary due to the number of required approvals. Worse yet, the extended programming and budgeting process pulls the ability to make timely adjustments in the RDT&E and Procurement accounts away from PMs and PEOs, who have the best and most current knowledge of that program as they are focused on its development and in the midst of executing funds, and gives it to those at the top, who have less knowledge of program particulars and no responsibility or accountability for execution. For example, a PM may be responsible for executing to a technical and schedule baseline for a multi-billion-dollar program but does not have the authority to reprogram available funds between accounts within his or her own program without prior approval. There are exceptions to these findings, especially for high-priority programs, but these limitations often remain for many programs.

Senior leaders have the authority to intervene late in the PPBE process to address changing circumstances and emerging needs; however, the number of issues that can be addressed in this manner is constrained by bottlenecks in gaining the attention of senior leaders. For example, the Commission was told that if a Command has 20 or 30 major budget concerns, the Command leadership is likely to bring only a fraction of these to OSD. If OSD has 20 or 30 major issues, it is likely to bring only a fraction to Congress. Similar staffing and senior leader bottlenecks also occur in Congress. This kind of triaging at every level means that, even where authorities exist, many issues fall off the table and do not get addressed. As a result, PMs and other working level officials choose to self-censor modification requests and feel forced to wait for another year to pursue ideas.

Bias Toward Existing and Traditional Programs and Approaches

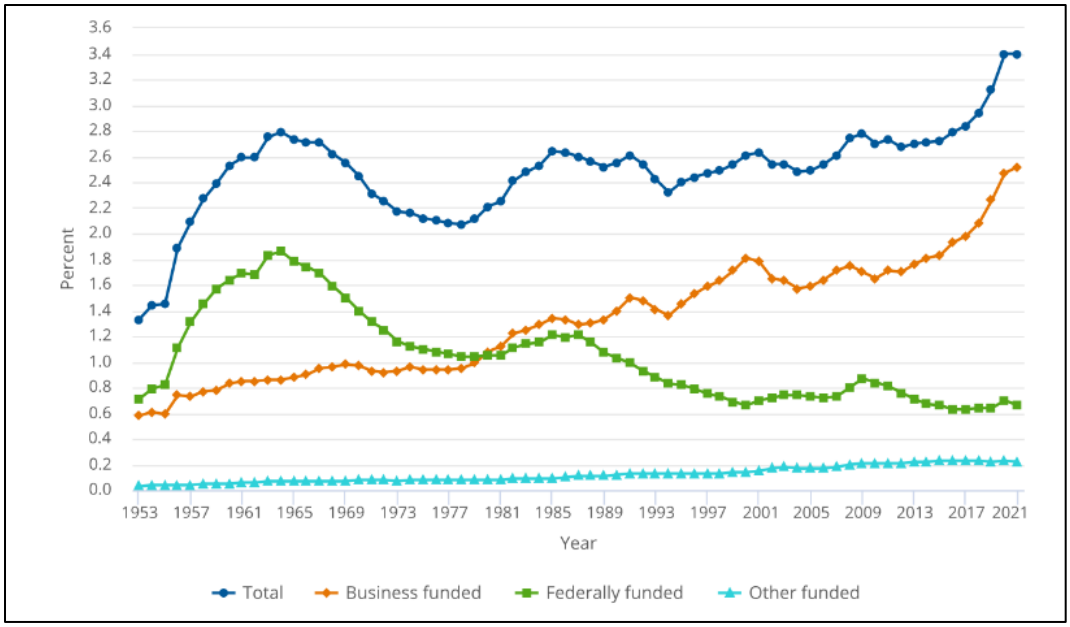
The current PPBE process begins within the DoD Components, which disadvantages cross-cutting joint solutions and novel approaches that are not follow-ons to existing programs. Enabling technologies that serve multiple programs are difficult to fund because they do not fit into neat program boxes, though the PPBE process, in theory, is structured to support joint programs designed to serve multiple needs. The PEOs, PMs, and other stakeholders have incentives to request continued funding for existing programs and activities, sometimes irrespective of their continued value or priority. Because they are already in the program baseline, they have a "leg up" in the PPBE process.

[128] Commission interview with subject matter experts.
[129] Ibid.

In the programming phase, this bias toward existing programs is counterbalanced by the tendency of senior leaders to want to introduce new programs as part of implementing changes; however, in the budgeting and execution phases the focus is not on making changes to programs, so this counterbalance tends to get lost in the process. For example, faced with a choice between buying down risk and improving performance on existing program content or taking on additional risk by spending money on new, untested program content, the conservative option often wins, particularly when the sustainment and other life-cycle costs are not yet programmed or known.[130] Given the requirement to show measurable cost, schedule, and performance today against the established program baseline, with the accompanying pressure of a "use it or lose it" budgetary environment (typically seen with one-year O&M appropriations, see Section XI), current officials are not properly incentivized to spend money on new, innovative solutions that are riskier, are not integrated into existing operational units, and need more time to develop, even when deemed important or urgent.

The historical lack of DoD authority to use innovative financial instruments and arrangements under the current PPBE system also hinders the Department in its ability to attract private sector capital into the defense sector, especially in emerging technology areas where commercial RDT&E investment is much larger today than government investment in the same sector. Yet private capital is becoming more important to DoD and the government as a whole, especially in RDT&E. Figure 13 shows that federally funded R&D has declined as a share of Gross Domestic Product (GDP) since the 1960s, while business or commercially funded R&D has more than doubled in the same timeframe.

Figure 13 – Ratio of U.S. R&D to GDP, by source of funds for R&D: 1953-2021[131]



Several industry experts interviewed by the Commission indicated that the opaque and unresponsive nature of the PPBE process is antithetical to the kind of market signaling, commitment, and certainty that they need to attract private investment supporting development of emerging technologies or manufacturing capacity that could meet future defense needs.[132]

[130] Ibid.
[131] Anderson et al. 2023.
[132] Commission interview with subject matter experts.

The Commission was also told by industry professionals that the current PPBE process is not well suited for signaling the credible possibility of a return on private investment through future DoD procurement of goods and services in either defense or dual-use R&D.[133] At the same time, small businesses and non-traditional industry partners struggle to understand the complex PPBE process and instead rely on cash flow as an indicator of success, but cash flow is slow to materialize under current PPBE processes. A former senior DoD official made an analogy between the DoD budget and a castle without doors. The big prime contractors have rooms in the castle, so their budget issues are routinely addressed. The Department has tried to build doors for non-traditional industry partners through organizations like the Defense Innovation Unit (DIU), Air Force's AFWERX, and USSOCOM's innovation platform SOFWERX, but these doors only open into the foyer, where entrants eventually discover there is often no door leading from the foyer into the rest of the castle.[134]

Lack of Awareness of Innovative New Authorities and Practices

The DoD and industry personnel are sometimes unaware of significant changes in fiscal and program authorities, sometimes due to delayed updates to policies and guidance such as the FMR, which creates ambiguity and hinders scale of use. Several interviewees expressed concern about whether relevant personnel in the finance, acquisition, and contracting communities even know about the innovative authorities that may be available for their use.[135] Moreover, incentive structures for DoD personnel also sometimes reward them for being risk averse and avoiding the use of new or underused approaches, such as Other Transaction Authority (OTA) or Middle Tier of Acquisition (MTA) pathways, even though in recent years DoD leaders have strongly emphasized the importance of innovation for streamlining the acquisition and PPBE processes. Despite this emphasis, and the ready availability of new authorities and practices, challenges still remain with encouraging the use of available flexible authorities to directly support innovation. The GAO found that while flexibilities exist, "DoD has not broadly communicated information about available financial flexibilities throughout the agency."[136]

Inflexibility in the Year of Execution

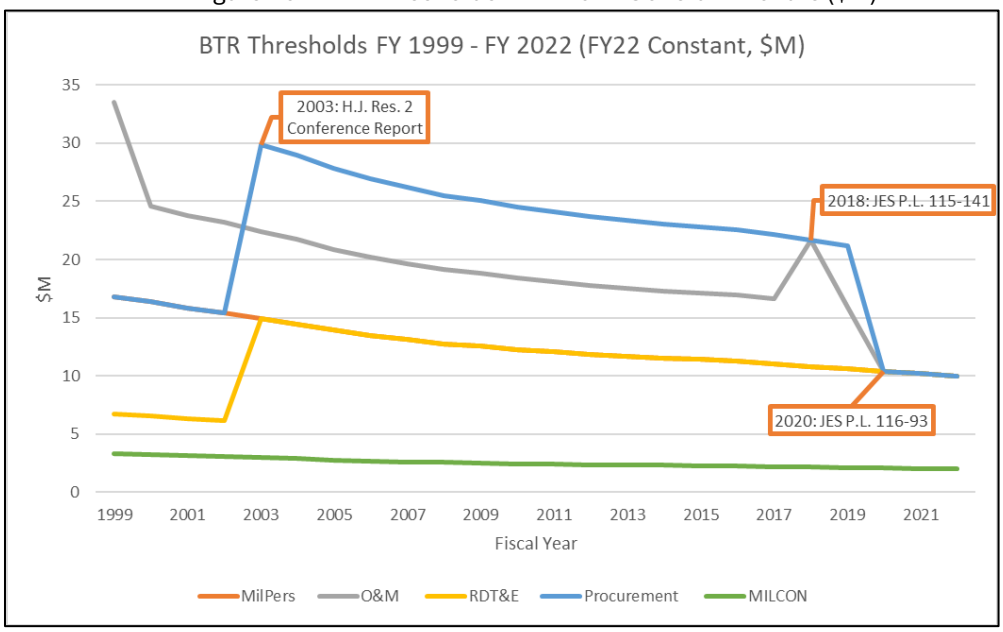
For many years, DoD has used reprogramming techniques to make needed changes in programs during execution, and reprogramming remains a key mechanism to increase the effectiveness of DoD budgets by responding to changes in requirements. However, larger reprogramming proposals like ATRs and other prior approval actions require approval at several echelons within the DoD, the OMB, and the approval of all appropriate congressional committees within the program(s)' jurisdiction, in accordance with established practices and guidance articulated in the Joint Explanatory Statement (JES) of the annual DoD Appropriations Act. Smaller realignments like BTRs do not require congressional approval, but the thresholds are set by Congress at relatively low levels and even those levels have been reduced in recent years. As a result, reprogrammings–while they remain an important and often effective technique–can require months of effort and coordination, especially for larger changes. As one DoD official explained during a Commission meeting:

> "Current thresholds are out of alignment with the growth in the defense budget over the past twenty years. Thresholds haven't changed in 10 to 20 years, [and] unnecessarily restrict our flexibility. Based solely on economic changes, current thresholds should increase 50 to 100 percent depending upon the appropriation."[137]

[133] Ibid.
[134] Ibid.
[135] Ibid.
[136] GAO 2023.
[137] Commission interview with subject matter experts.

The BTR thresholds have not kept pace with inflation or increasing defense budgets and have in fact been decreased by Congress in recent years. Figure 16 below presents the value of BTR thresholds since FY 1999 adjusted to FY 2022 dollars. Every appropriation type shows a decrease due to inflation over the past two decades.

Figure 16 – BTR Thresholds in FY 2022 Constant Dollars ($M) [138]



Callout boxes represent notable congressional action on threshold levels.

In the past, Congress has increased thresholds in response to inflation and budget increases and timing; such increases occurred, in 2003 and 2018.[139] The Commission notes that in their markups of the FY 2024 PB for DoD, the House Appropriations Committee proposed increasing the BTR threshold for MILPERS and O&M appropriations to $15 million, a net increase for MILPERS and a return to the pre-2020 level for O&M, while the Senate Appropriations Committee proposed increasing the BTR threshold for the O&M, Procurement, and RDT&E appropriations to $15 million, an increase for RDT&E and partial restoration to the pre-2020 level for Procurement.[140] The two Committees will reconcile their respective differences as part of the conferenced Appropriations Act that was not available as this Final Report went to print. The Commission is encouraged by this congressional support and increase to the BTR thresholds but also recommends additional actions to provide adaptability within an appropriation to address emerging threats and requirements (see Recommendation #8 discussed later in this section).

As a former DoD official told the Commission, "The reprogramming process is not fast or agile, it's almost as cumbersome as the budget itself."[141] This reflects a common frustration heard by the Commission that is valid though overstated–reprogramming requests typically take months to be approved while the entire PPBE process from planning to execution takes years (see Section X). As also

[138] OUSD(C) 2021, 68-69. Commission staff analysis based on deflators provided by the OUSD(C).
[139] H. Rpt. 108-10, 1499 and C. Prt. 29-456, 342.
[140] H. Rpt. 118-121, 6.
[141] Commission interview with subject matter experts.

noted above, sometimes descriptions in the budget J-books given to Congress further limit flexibility. A former DoD official stated that the Department must accommodate last-minute changes to J-books made within DoD and then go to great lengths to manage within the resulting limitations.[142]

New start rules and definitions – which generally require congressional approval for new programs, either in budget submissions or during execution–can make it particularly difficult to shift funds to foster innovation. Limitations on new starts under a CR can affect industry decisions, with one industry interviewee noting that the new start rules "prevent us from investing on a multi-year budget cycle."[143] The DoD also requests new starts in the year of execution, either through letter notifications or PA reprogramming requests. Most new starts are small, with almost three quarters of those requested between FY 2015 and FY 2022 falling below $50 million in total cost, but even small new starts can be important in fostering innovation in the defense budget (see Figure 17).

Figure 17 – Reported New Start Total Cost of Effort
Prior Approval Reprogramming Requests, FY 2015 – FY 2022[144]

Total Cost of New Start Efforts ($ in M)	Number of New Starts	Percentage of Total New Starts
0-50	137	70.6%
50-100	24	12.4%
100-150	4	2.1%
150-200	7	3.6%
200-250	4	2.1%
250-300	1	0.5%
300-350	3	1.5%
350-400	2	1.0%
400-450	3	1.5%
500-550	1	0.5%
550-600	1	0.5%
600-650	1	0.5%
850-900	1	0.5%
950-1,000	1	0.5%
1,700-1,750	1	0.5%
1,950-2,000	1	0.5%
2,000-2,050	1	0.5%
14,750-14,800	1	0.5%

The DoD conducts assessments of the adequacy of financial execution using obligation and expenditure benchmarks and baseline financial and programmatic execution plans to ensure that resources are used where they can be executed effectively. However, the increasing frequency and length of CRs distort spending rates by crowding the obligation and execution of funds into the later parts of a fiscal year, shortening timelines for contract actions, and delaying new start programs. These trends contribute to

[142] Ibid.
[143] Ibid.
[144] Staff analysis of information provided by OUSD(C).

less-than-optimal spending patterns and higher costs to the Department. The CRs have become more common in recent years as is illustrated in Figure 18 below, only one defense appropriation bill has been completed on time in the past 10 years and twice over the past 20 years; CRs occurred in all other years. In recent years, late budget enactment has often occurred because of disagreements about total federal spending. House defense appropriations have tended to pass both at the subcommittee and full committee level before the beginning of the fiscal year. However, Senate appropriations, which tend to occur later in the process, have been delayed while congressional and executive branch leaders sought overall agreements on federal spending levels.

Figure 18 – Congressional Action Defense Appropriation and Authorization Acts, FY 2004-2024.

	Appropriations							Authorization				
Fiscal Year	HAC-D	SAC-D	HAC	SAC	House Passed	Senate Passed	Presidential Approval	HASC	SASC	House Passed	Senate Passed	Presidential Approval
2024	6/15/2023		6/22/2023	7/27/2023	9/28/2023			6/22/2023	7/11/2023	7/14/2023	7/27/2023	12/22/2023
2023	6/15/2022		6/22/2022				12/29/2022	7/1/2022	7/18/2022	7/14/2022		12/23/2022
2022	6/30/2021		7/13/2021				3/15/2022	9/10/2021	9/22/2021	9/23/2021		3/15/2022
2021	7/8/2020		7/14/2020		7/31/2020		12/27/2020	7/9/2020	6/23/2020	7/21/2020	7/23/2020	1/1/2021
2020	5/15/2019	9/10/2019	5/21/2019	9/12/2019	6/19/2019		12/20/2019	6/19/2019	6/11/2019	7/12/2019	6/27/2019	12/20/2019
2019	6/7/2018	6/26/2018	6/13/2018	6/28/2018	6/28/2018	8/23/2018	9/28/2018	5/15/2018	6/5/2018	5/24/2018	6/18/2018	8/13/2018
2018	6/26/2017		6/29/2017		1/30/2018		3/3/2018	7/6/2017	7/10/2017	7/14/2017	9/18/2017	12/12/2017
2017	5/11/2016	5/24/2016	5/17/2016	5/26/2016	6/16/2016*		5/5/2017	5/4/2016	5/18/2016	5/18/2016	6/14/2016	12/23/2016
2016	5/20/2015	6/9/2015	6/2/2015	6/11/2015	6/11/2015		12/18/2015	5/5/2015	5/14/2015	5/15/2015	5/14/2015	11/25/2015
2015	5/30/2014	7/15/2014	6/10/2014	7/17/2014	6/20/2014		12/16/2014	5/13/2014	6/2/2014	5/22/2014		12/19/2014
2014	6/5/2013	7/30/2013	6/12/2013	8/1/2013	7/24/2013		1/17/2014	6/7/2013	6/20/2013	6/14/2013		12/26/2013
2013	5/8/2012	7/31/2012	5/17/2012	8/2/2012	7/19/2012		3/26/2013	5/11/2012	6/4/2012	5/18/2012	12/4/2012	1/2/2013
2012	6/1/2011	9/13/2011	6/14/2011	9/15/2011	7/8/2011		12/23/2011	5/17/2011	6/22/2011	5/26/2011		12/31/2011
2011	7/27/2010	9/14/2010		9/16/2010			4/15/2011	5/21/2010	6/4/2010	12/17/2010		1/7/2011
2010	7/16/2009	9/9/2009	7/22/2009	9/10/2009	7/30/2009	10/6/2009	12/19/2009	6/18/2009	7/2/2009	6/25/2009	7/23/2009	10/28/2009
2009	7/30/2008	9/10/2008					9/30/2008	5/16/2008	5/12/2008	5/22/2008	9/17/2008	10/14/2008
2008	7/12/2007	9/11/2007	7/25/2007	9/12/2007	8/5/2007	10/3/2007	11/13/2007	5/11/2007	6/5/2007	5/17/2007	10/1/2007	1/28/2008**
2007	6/7/2006	7/18/2006	6/13/2006	7/20/2006	6/20/2006	9/7/2006	9/29/2006	5/5/2006	5/9/2006	5/11/2006	6/22/2006	10/17/2006
2006	5/24/2005	9/26/2005	6/7/2005	9/28/2005	6/20/2005	10/7/2005	12/30/2005	5/20/2005	5/17/2005	5/25/2005	11/15/2005	1/6/2006
2005	6/2/2004	6/22/2004	6/16/2004	6/22/2004	6/22/2004	6/24/2004	8/5/2004	5/14/2004	5/11/2004	5/20/2004	6/23/2004	10/28/2004
2004	6/18/2003	7/8/2003	6/26/2003	7/9/2003	7/8/2003	7/17/2003	9/30/2003	5/16/2003	5/13/2003	5/22/2003	5/22/2003	11/24/2003

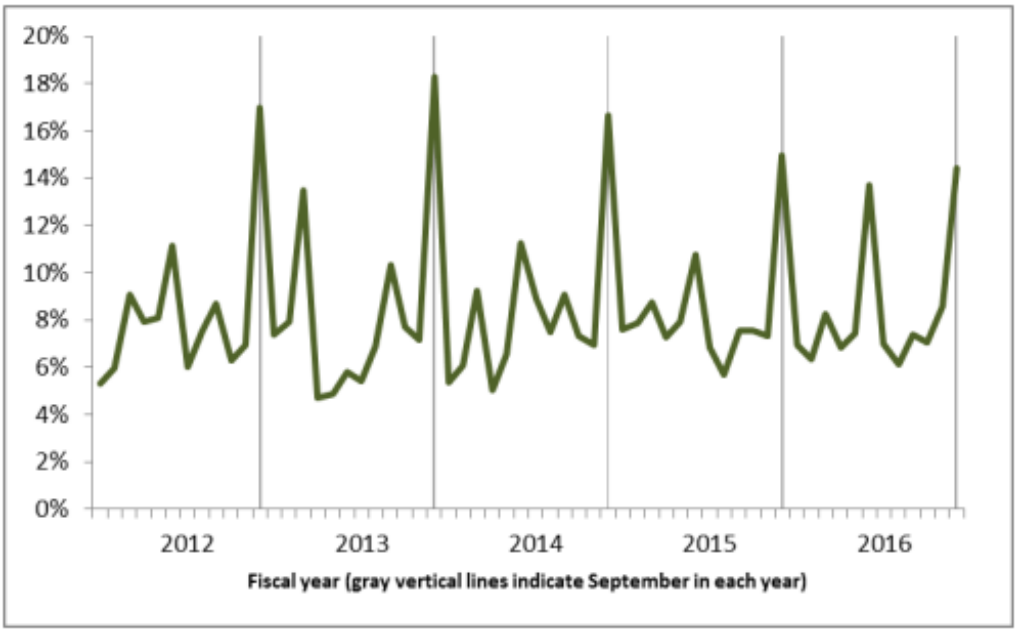
Current as of February 14, 2024. Red indicates years without passage of defense legislation. Sources: CRS Appropriations Status Tables, Congress.gov, and DoD History and Library and Directorate "DoD Authorization and Appropriation Laws: National Defense Authorization Laws (NDAA)." The HASC date is based on the date reported by Committee on Armed Services Committee; the SASC date is based on the date introduced. *Senate vote to consider House legislation failed; House passed a second appropriations act 3/8/17. **1st NDAA was vetoed.

This delay caused by CRs can have a significant and direct impact on effectiveness of the execution phase within PPBE. Inflexibility during budget execution may also occur because of execution-year reviews. At one of the Commission's open mic events, several PMs indicated that the existing benchmarks that are used to judge the adequacy of budget execution are unrealistic, especially regarding RDT&E funding, and result in some PMs taking counterproductive actions in order to obligate and expend funds quickly. On the other hand, Commissioner and staff experience suggests that some form of measurement of program execution, e.g., improved and data-based benchmarks that are subject to modification based on judgements by acquisition leaders, are needed to be sure that DoD funds are executed effectively.

The final concerns regarding lack of flexibility during execution may be one of the most important. The Commission feels strongly that the rules requiring obligation of all O&M and MILPERS funds during the year in which they are appropriated constitutes a serious issue. The one-year period of availability creates incentives to obligate funds in the final days of a fiscal year to avoid losing the use of those funds (the so-called "use-it-or-lose-it" effect), particularly after a typical three month delay due to CRs. Sharp spikes in year-end funding sometimes lead in turn to use of the funds for lower priority programs or projects (Figure 19). Sometimes efforts to meet the one-year availability leads to the appropriate

obligation of funds in excess of what may be required since the final bills are not yet known, for example, obligating funds to pay estimated utility bills that are not yet final until after the end of the fiscal year.

Figure 19 – DoD Action Obligations by Month[145]

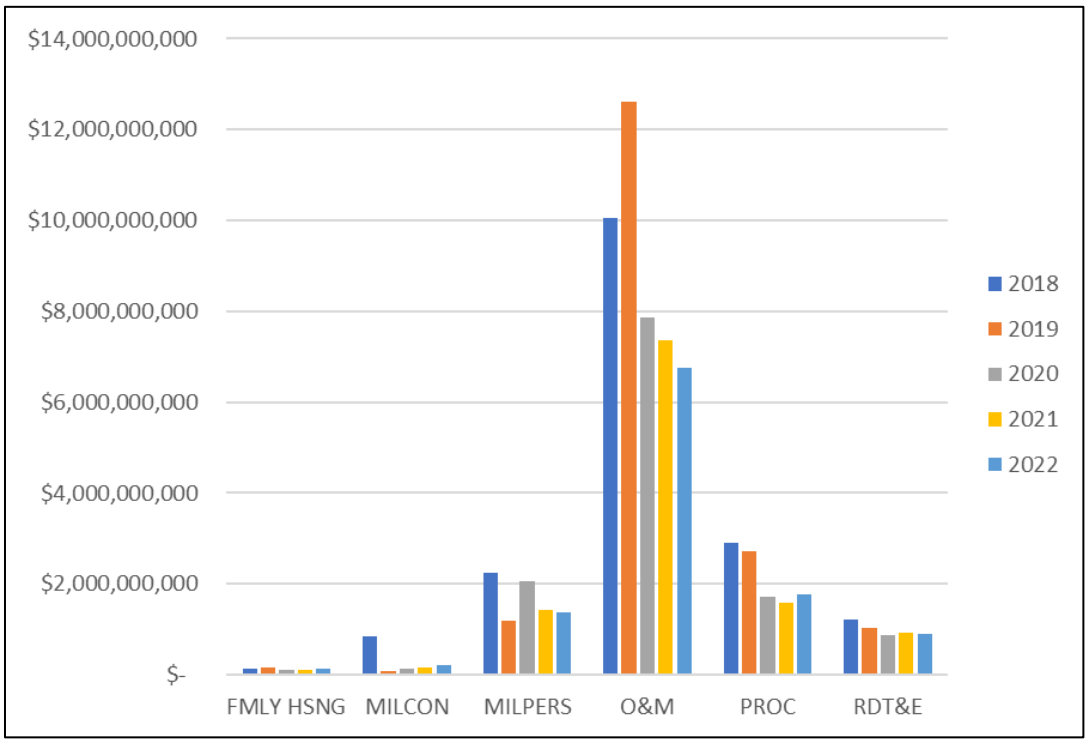


FY 2012–FY 2016 Monthly Percentage of FY Total, Gray Lines Indicate September Obligations

For this and other reasons, the use-it-or-lose-it mentality contributes to much higher fund cancellations of O&M funds, i.e., funds that were obligated but then not used, so they were eventually cancelled and lost to DoD, thereby decreasing DoD's buying power (Figure 19). The rush toward year-end obligations drives hasty and less-than-optimal year-end spending decisions[146] and does not provide contracting officials enough time to create quality contracts, as one study of the effects of use-it-or-lose-it has suggested.[147] All of these issues are then further exacerbated by late enactment of appropriations, which restricts the flow of funding to those individuals that are executing requirements. All operating funds still must be obligated before the fiscal year runs out—which sometimes means in practice of having no more than a few months to execute a full year of funding. The hasty obligation of funds at the end of a fiscal year can then result in the later deobligation of funding and overall loss of buying power, especially for operating funds that are only available for obligation for a single year.

[145] Peters 2017.
[146] Hale 2020.
[147] Belsie 2014.

Figure 19 – Cancelled Funds by Appropriation, FY 2018-FY 2022[148]



In the words of one DoD official, the current use-it-or-lose it practice for O&M creates an incentive for officials to do "some crazier things to try and get some of the money obligated and spent."[149] Included in this Final Report are the Commission's proposed changes to address this challenge.

Commission Recommendations

The Commission appreciates the feedback received on potential recommendations outlined in the Interim Report and has incorporated that input into the recommendations included in this Final Report to ensure that the PPBE system is prepared to respond to changing threats and incorporate emerging technologies in a timely manner. These include recommendations to adjust funding rules, rationalize BLIs, modify reprogramming requirements, address problems caused by CRs, and otherwise enhance the Department's ability to address changed circumstances and new opportunities in a timely manner. This Final Report also includes and reiterates previous recommendations from the Interim Report focused on improving the Department's ability to address emerging requirements and innovative technologies while continuing to ensure congressional oversight is not reduced.

Recommendation #6 (Key): Increase Availability of Operating Funds

The Commission believes it is necessary to address challenges associated with the current periods of appropriation availability and feels strongly that changes need to be made to make one-year appropriations available for long enough to permit effective execution. As described above, the expiration of unobligated O&M and MILPERS funds at the end of a fiscal year can lead to counterproductive actions to quickly obligate funds to avoid their expiration prior to obligation of funds. This challenge is further exacerbated by the Department's need to hold funds until the end of a fiscal year to cover late-breaking bills for items like undefined permanent change of station (PCS) moves, utility

[148] Data provided to the Commission by OUSD(C).
[149] Commission interview with subject matter experts.

bills, military airlift costs, and FSRM projects to avoid Anti-Deficiency Act (ADA) violations. **The Commission recommends addressing challenges related to availability by allowing a carryover of five percent of MILPERS and O&M annual total obligation authority, to cross into the next fiscal year**. This recommendation would also require monthly reporting on the expenditure of carryover funds, to ensure continued congressional control and oversight over these accounts.

Authority to carry over five percent of expiring funds into the next fiscal year would enable DoD managers to reserve a small portion of funds to address late-breaking bills, unanticipated expenses, and avoid ADA violations without risking the loss of the money. Funds that remain unobligated at year-end could be expended through a thoughtful, deliberative process, rather than through rushed expenditures and hurry-up contracting processes. The result will be more productive expenditure of the funds, fewer deobligations, and greater spending power for the Department.

The Commission notes that other federal agencies and parts of DoD like the Defense Health Program currently have O&M carryover authority. Carryover and longer availability periods for other federal agencies, such as two-year availability for non-construction NASA appropriations and DHS authority to carry over half of its unobligated balances of some of its annual appropriations, are discussed in Section X in this report. In addition to supporting innovation, this recommendation relates to those presented in Section IV regarding budget structure.

If Congress believes it needs further visibility into operating funds being carried over into the second fiscal year, it could impose additional limits, though these limits are not part of the Commission's basic recommendation. For example, Congress could require that DoD request approval for funds carried over into the second year using a form of the current process for PA reprogrammings. The reprogramming process for carryover funds would differ from current procedures in two ways: carryover funds could not be moved out of their original appropriation and carryover reprogrammings would not count against limits on general transfer authority (GTA).

Recommendation #7: Modify Internal DoD Reprogramming Requirements

The difficulty of moving funds in the year of execution to address changing circumstances, threats, and emerging needs is of particular concern for both DoD and industry representatives who met with the Commission. The Commission recognizes the vital constitutional significance of Congress' power of the purse and the need for the Department to ensure that funds are spent in a manner consistent with congressional directives. Nonetheless, the Commission believes that a number of steps need to be taken to improve the responsiveness of the PPBE process (or its successor the Defense Resourcing System recommended in Section IV) in the year of execution to include measures that the Department could take to improve its own internal processes, as well as measures that would require congressional support.

Several people who spoke to the Commission tended to blame Congress for the Department's difficulty in moving money in the year of execution. However, the Department's own internal processes may also be unnecessarily restrictive. Even in cases where Congress has authorized the Department to move money on its own, BTRs for example, Commission staff were told that hierarchical DoD approval processes can average as long as a month-and-a-half to two-months to navigate, and even longer if it is difficult to find sources to finance the reprogramming. The DoD does not often use all the GTA authority Congress grants to make larger, PA reprogrammings. The DoD's use of GTA varies, ranging from 35.5 to

100 percent utilization between FY 2011 and FY 2021;[150] in 10 of those 11 years, DoD did not use all of the GTA provided by Congress. At the same time, program-level officials told the Commission that they have become discouraged by cumbersome internal processes and frequent refusals, and as a result may not even bother requesting a reprogramming that would use GTA, delaying the start of the effort until the next fiscal year.

Accordingly, the Commission recommends streamlining the Department's internal reprogramming procedures. First, the USD(C) should delegate a share of GTA to the Military Departments on an annual basis to increase the ease of reprogramming by removing an echelon from the decision-making process. The USD(C) should, of course, retain some GTA to meet valid Department-wide objectives such as meeting overall readiness needs. Second, the USD(C) and Military Department Comptrollers should delegate BTR authority, up to specified dollar levels, to agency heads, commanders, and PEOs who seek to move money within their own portfolios. Both these changes are designed to encourage the Military Departments to become more involved in speeding up and improving the reprogramming process.

Recommendation #8 (Key): Update Values for Below Threshold Reprogrammings

As burdensome as it may be to go through the Department's internal reprogramming procedures, the time and effort required for PA reprogrammings appears to increase substantially when OMB and Congress become involved, particularly for larger PA reprogrammings. Not only are timelines lengthened, but uncertainty is introduced into the process, as the proponents of a change can never be certain whether a reprogramming will be approved at all, let alone when it will be approved. The Commission recommends two steps to alleviate this situation while maintaining congressional oversight. First, BTR thresholds should be immediately adjusted to levels that appropriately reflect growth in defense spending power over the last 20 years. Second, Congress and the Department should begin phasing in a new approach, under which the Department would be given flexibility with regard to a small percentage of each account (based on historic norms), rather than making individual reprogramming requests. In addition, the Commission recommends simplifying the new start notification process and raising the new start threshold to better position the Department to take advantage of emerging technological developments and other new opportunities.

Recommendation #8A: Increase BTR Thresholds Based Upon the Nominal Growth of the Appropriation

The Commission recommends, as an initial step, adjusting existing thresholds to levels more commensurate with historic authority and current needs (see Figure 20). Retaining the existing framework for BTRs but raising BTR levels to a level consistent with historic norms will relieve pressure on the congressional reprogramming process and enable the Department to respond to emerging threats and opportunities on a timelier basis. The approach recommended by the Commission would be to calculate new BTR thresholds by adjusting 2003 BTR thresholds for each color of money by the ratio between total spending for the color of money in FY 2003 and total spending for the color of money in FY 2023. **This calculation would result in new BTR thresholds of $25 million for RDT&E, $40 million for Procurement, $30 million for O&M, and $15 million for MILPERS**. Because the new BTR thresholds would be consistent with historic norms, the increased execution flexibility would not come at the expense of congressional oversight and control. These increases will give the Department greater ability to adjust spending in light of changing circumstances, threats, and emerging needs without changing the overall reprogramming framework or undermining existing congressional oversight procedures and requirements.

[150] OUSD(C) 2021b, 388-389.

Figure 20 – BTR Threshold Analysis by Appropriation, FY 2000 - FY 2023[151]

DoD Topline FY $M	CY RDT&E	% Change	BTR Thres	CY Procurement	% Change	BTR Thres	CY O&M	% Change	BTR Thres	CY MILPERS	% Change	BTR Thres
2000	38,706		4	54,973		10	108,776		15	73,838		10
2003	58,103	50%	10	78,490	43%	20	178,316	64%	15	109,062	48%	10
2005	68,825	18%	10	96,614	23%	20	179,215	1%	15	121,279	11%	10
2010	80,234	17%	10	135,817	41%	20	293,630	64%	15	157,100	30%	10
2015	63,869	-20%	10	102,110	-25%	20	246,572	-16%	15	145,859	-7%	10
2020	105,226	65%	10	140,987	38%	10	301,494	22%	10	163,348	12%	10
2023	140,650	34%	10	167,084	19%	10	352,786	17%	10	183,057	12%	10
2024 (PB Req)	145,791	4%	~15 (SAC-D)	170,348	2%	~15 (SAC-D)	330,751	-6%	~15 (HAC-D)	199,570	9%	~15 (HAC-D)
*2025 (24 PB Req TY)	145,480	0%	**$ 24.207**	175,305	3%	**$ 42.575**	318,410	-4%	**$ 29.676**	215,793	8%	**$ 16.785**
From 2003 to 2023		**142%**			**113%**			**98%**			**68%**	

Recommendation #8B: Allow Reprogramming of a Small Percentage of an Entire Appropriations Account with Regular Congressional Briefings and Oversight

In the longer run, the Commission recommends replacing existing BTR thresholds for individual movements of funds at the BLI level with an approach that will allow the Department to move a small percentage of the funds within an appropriation account in the year of execution with a quarterly report to the congressional defense committees. The Commission recommends that the Department be authorized to reallocate up to a specified amount of funding within each appropriations account, based on historic norms of BTR transfers within such accounts. The Commission evaluated BTR transfers within each appropriations account over the last 24 years and determined that the total of such transfers generally fall within the range of up to 0.1 percent of MILPERS accounts, 0.5 percent of O&M accounts, 1.5 percent of RDT&E accounts, and 1.5 percent of Procurement accounts. Accordingly, the Commission recommends that the Department be authorized to move up to that amount within each appropriation with quarterly reports to the congressional defense committees. The Department could allocate these reprogrammings to one or more programs based on assessment of Department needs. To ensure that this authority is available where it is needed, the Department would be required to delegate a share of the authority to the Military Departments, who would be required to delegate a share of the authority to subordinate commands and PEOs.

The Commission understands that a proposal along these lines will require strong provisions to protect congressional oversight. For example, there would continue to be a prohibition on using the authority to terminate programs, cut items of special congressional interest, or initiate new starts. Programs would have to be executed in accordance with specifications in the budget J-books, though as noted in Section VI, these should be written in a manner to support agile execution by DoD PMs. A mechanism would have to be developed to ensure regular reporting to the congressional defense committees, with meaningful briefings on the rationale for reprogrammings under this authority. Further, the Department would have to develop a formal delegation of authority, with appropriate safeguards, to ensure that commanders, PEOs, and other appropriate senior officials have the authority to transfer funds where they control both the source and the use.

The Commission also recognizes that this recommendation will be difficult to implement all at once and will have to be implemented in steps taken over a period of time. A gradual approach, starting with a limited pilot program to establish and demonstrate processes and procedures will lay the necessary groundwork. Nonetheless, the Commission believes that this approach, if adopted, will dramatically improve the Department's ability to support innovation and responsiveness to changing circumstances.

[151] Staff analysis based on data from OUSD(C) 2023.

Recommendation #8C: Simplify New Start Notifications by Increasing the Notification Threshold

As described above, new starts require congressional notification, even if the amount to be moved is below the threshold for congressional notification and approval. Notify-and-wait letter notifications are allowed for requests below certain dollar limits. While a letter notification may not appear burdensome, it adds several layers of time-consuming bureaucracy to the reprogramming process.[152] The Commission believes that the Department can take some steps to address this issue on its own, by providing standardized guidance for the writing and interpretation of J-books to minimize the number of new start notifications required, for example, by ensuring that minor modifications of existing efforts are not interpreted as constituting new starts.

One of the objectives of the Commission is to foster further innovation within the Department. The Commission believes that impediments to new starts are likely to be an obstacle to promoting innovation and adaptability to changing threats. For this reason, the Commission recommends that the new start threshold be increased by an amount commensurate with the increase in the BTR threshold, as described in Recommendation #8A. This increase in the new start threshold should send the message that new starts are not disfavored (as some in the Department purport to believe) but are an appropriate tool for advancing new technologies and addressing emerging opportunities. This recommendation, if adopted, should also send the message to non-traditional contractors and other private sector innovators that the Department is "open for business" and able to respond rapidly to opportunities and fund new technologies when they are proven to meet national defense needs effectively and efficiently.

Recommendation #9 (Key): Mitigate Problems Caused by Continuing Resolutions

The Commission understands the view of the appropriations committees that easing the burdens imposed by CRs might reduce the pressure to enact regular authorization and appropriations bills. The Commission further understands that it is in the interest of both the Department and the Congress to enact such bills. In recent years, however, CRs have become a routine way of doing business for both branches of government. An approach that may be appropriate at a time when a CR is an undesired stopgap measure may no longer be appropriate when a CR has become a standard part of the funding process.

Continuing resolutions, particularly those that extend well into the fiscal year, create significant challenges for the Department with regard to executing funds. By definition, CRs place a cloud of uncertainty over the amounts that will be available for an effort and push obligations or full funding of that effort later into the fiscal year, undermining expectations to meet execution rates and exacerbating year-end spending surges. In addition, standard CR prohibitions on new starts and increased production quantities delay the start of innovative new programs and the acquisition of essential capabilities. At a time when the Department faces increasing threats from strategic competitors, such delays are increasingly problematic. The Commission applauds the provision provided in Section 229 of the NDAA for FY 2024 allowing the Services to start new RDT&E and Procurement programs during a CR with Secretary of Defense approval, as long as they do not exceed $100 million annually.[153] The Commission has two recommended changes for operating under a CR to ensure that the Department can continue to respond to developing circumstances and take advantage of emerging opportunities during a CR.

[152] OUSD(C) 2021c, 4.
[153] P.L. 118-31.

First, the Commission recommends permitting select new starts under a CR, in limited circumstances where the program to be initiated is included in the PB request and is approved in the House and in the Senate (or by the relevant appropriations committees or subcommittees). In this case, the new start would be permitted to proceed with available funds at the level of the lowest mark acted upon by the House or Senate (or by the relevant appropriations committees or subcommittees).

Second, the Commission recommends allowing an increase in development and production rates during a CR. Under this approach, increased development and production rates would be permitted if such rates were included in the PB request and in appropriations bills approved in the House and in the Senate (or by the relevant appropriations committees or subcommittees). In this case, development and production rates would be authorized up to the level of the lowest mark acted upon by the House or Senate (or by the relevant appropriations committees or subcommittees).

The Commission is aware of a concern that that Congress cannot constitutionally require the Executive Branch to make its actions contingent upon future actions by the House and Senate (or committees of the House and Senate), because the enactment clause of the Constitution requires that all legislation be acted upon by both the House and the Senate and signed by the President. However, CRs have contained similar language in the past.[154] This language appears to be constitutional, because it references statements made in existing documents and is not contingent on any future action to be taken by Congress or any part of Congress. In a similar manner, Congress has enacted an entire NDAA by reference to the text of a bill introduced in the House of Representatives.[155]

In these proposed alternative cases, Congress and the Department could achieve the same objective through a two-step process. First, Congress would include language in authorizing new starts, increased development rates or production quantities, as long as they comply with that language. Second, the Department would revise its own financial regulations (the DoD FMR) to specify that the Department would use authority for new starts or increased production rates under a CR only in cases where the proposed action is included in the PB request and has been approved in appropriations bills passed in the House and the Senate (or in the relevant appropriations committees or subcommittees).

These changes will enhance defense capabilities and enable the Department to respond to emerging challenges in a timelier manner with new programs and acquisitions. At the same time, it would ensure continued congressional control over new starts and increased development and production rates by making such actions contingent upon approval by both the House and Senate (or the relevant appropriations committees or subcommittees) in a manner that is consistent with the enactment clause of the Constitution.

Recommendation #10 (Key): Review and Consolidation Budget Line Items

The Department has taken a number of steps in recent years to review and consolidate BLIs on a select basis. The DoD should continue this effort by beginning a process to systematically review BLIs and work with the congressional defense committees to rationalize and consolidate BLIs where appropriate. Successful consolidation of BLIs requires collaboration between Congress and the DoD. Recognizing the limited bandwidth of DoD and congressional staff, the DoD should conduct reviews of portfolios of BLIs on a rolling basis over a five- to ten-year cycle. After initial consultation with the committees regarding a portfolio (for example, a Service Science and Technology portfolio, or by individual PEO

[154] For example, see P.L. 109-77 Sec. 101(c).
[155] P.L. 106-398.

portfolios), the comptrollers of the Military Departments should review and prepare further proposals to rationalize the BLI structure for the portfolio in consultation with responsible acquisition leaders and OSD leadership. The proposal should then be presented to the congressional defense committees and an agreement reached on what changes, if any, to implement.

Under this approach, each review will address cases in which programs or systems have been subdivided into multiple BLIs, making them more difficult to manage; identify cases in which multiple programs or systems intended to provide a common capability could be combined into a single BLI (as has been done, for example, in the Large Aircraft Infrared Countermeasures and Family of Medium Tactical Vehicles programs); and identify other cases in which the consolidation of BLIs could result in improved performance.

The Commission notes that the Department has previously attempted to consolidate BLIs, with mixed success. Successful efforts, such as the consolidation of some USSOCOM O&M, Procurement, and RDT&E BLIs, are characterized by sustained engagement and collaboration with the congressional defense committees even before consolidation occurs. Between 2010 and 2020, the USSOCOM consolidated 36 Procurement BLIs into 26, 27 RDT&E BLIs into 14, and 14 O&M informal BLIs to eight formal BLIs.[156] Information provided to Congress in J-books remained the same, it was just in fewer BLIs. In addition, from FY 2020 through FY 2024 budget cycles the Army has worked with the appropriations committees to restructure its RDT&E S&T PEs in advance of submitting the changes formally in a PB request. This collaboration resulted in a reduction of 93 PEs over five years.[157] These examples of collaboration between the DoD and Congress ensure that concerns are addressed on both sides before implementation and achieves congressional buy in prior to actual enactment.

The Commission is also aware of Navy and Space Force efforts to consolidate BLIs and encourages the Military Departments and other DoD Components to follow these best practices for BLI consolidation. The Commission is also encouraged by language in the Senate Appropriations Committee Subcommittee on Defense (SAC-D) Report for FY 2024 where "The Committee believes that the consolidation of budget lines, if done transparently and in accordance with existing acquisition best practices, has the potential to save time and resources in the development and review of the defense budget. Therefore the Committee directs the Secretary of the Army, in coordination with the Undersecretary of Defense (Comptroller) and the congressional defense committees, to develop a proposal to reduce and streamline the number of individual budget lines in the ''Other Procurement, Army'' appropriations account prior to submission of the President's fiscal year 2025 budget request to allow for sufficient congressional review and feedback prior to implementation in the Department of Defense Appropriations Act, 2025."[158]

Recommendation #11 (Key). Address Challenges with Colors of Money

The Commission recommends three approaches to address challenges associated with the current color of money construct. An incorrect alignment of colors of money often requires additional time and coordination between the Department and Congress in order to support the execution of requirements. Even for projects that have access to enhanced authorities and JRAC engagement, the shifting of appropriations to support immediate warfighter needs can take significant administrative effort and several months or longer to accomplish.[159]

[156] Additional details are provided in Section XII, Appendix D1.
[157] Army FY 2024 data submission to Congress.
[158] S. Rpt. 118-81, 116.
[159] McGinn et al. forthcoming.

The Air Force's Defense Enterprise Accounting and Management System (DEAMS) program, like other similar software intensive programs, has experienced significant delays while working to realign funding between the RDT&E and O&M appropriations.

Software Colors of Money: DEAMS

The inability to use a single appropriation to fund software improvements creates management challenges for business system upgrades. In the FY 2023 PB, the Air Force asked to include DEAMS in the RDT&E BA-08 Software and Digital Technology Pilot Program, which would have allowed DEAMS to be solely funded with RDT&E funds. However, Congress did not allow additional programs to enter the pilot in FY 2023. As a result, the Air Force uses a mixture of RDT&E and O&M funds to execute program requirements.

It is very difficult to predict the exact ratio of RDT&E and O&M funding that will be required when building the budget, due to the unforeseen challenges that arise in the development and sustainment of a business system. In FY 2023, a software patch was needed to address technical issues on the program. Financial managers and fiscal attorneys spent considerable time assessing and determining which parts of the patch represented a true upgrade in capability (RDT&E funded) vice basic sustainment (O&M funded), even though there is no such distinction to the software developer. A realignment of funding was required to fully fund the software patch, creating execution delays and further pressure on the program since O&M funds would soon be expiring.

Had DEAMS been able to participate in the BA-08 Pilot Program, the appropriate use of BA-08 RDT&E funding for the full cycle of software capability development, deployment, and sustainment would have allowed the Air Force to quickly address the technical challenges, while maintaining the program capability and schedule; there would have been no delays due to determining what color of money needed to be used for which aspects of the program changes.

Source: November 2023 Commission Meeting with Air Force FM Systems Subject Matter Experts

Recommendation #11A: Allow Procurement, RDT&E, or O&M to be Used for the Full Cycle of Software Development, Acquisition, and Sustainment

Multiple sources informed the Commission that effective software acquisition takes place through a continuous cycle of development, prototyping, testing, fielding, troubleshooting, revision, and sustainment. The requirement to use different appropriations for research and development, procurement, and sustainment fits poorly with this cycle. A review of ADA violations between FY 2011 – FY 2022 indicated that 13 reported violations involved the incorrect use of O&M funds rather than RDT&E or Procurement for various software, software-related, or system obligations.[160] The BA-08 Single Appropriation for Software and Digital Technology Pilot Program, which is further described in Section X, is an effort to address this issue that is currently limited in scale. The Commission determined that the

[160] GAO 2023b.

pilot demonstrated the value of reducing color of money barriers for software. However, the Commission also heard that the BA-08 Pilot Program, if expanded to additional programs not solely focused on software, could increase budget complexity by adding another appropriation category. Allowing software to be funded by existing colors of money available to an organization achieves the effect of "colorless" money, reducing delays and administrative burdens associated with realigning funds through BTRs or ATRs without creating additional budget segmentation, and not delaying program schedules.

As software plays a more significant role in defense capabilities, a budget structure that artificially carves out software does not reflect the integrated and integrating nature of software. Allowing Procurement, RDT&E, or O&M to fund software reduces the risks associated with drawing new funding barriers between software and hardware within programs, while providing the budget agility appropriate for the continuous and iterative nature of software. This recommendation allows programs to iteratively deliver up to date capabilities, without having to delay due to administrative requirements. Programs will still have to ensure that software development and acquisition are justified and abide by existing laws and regulations on the legal use of funds, maintaining congressional oversight. This recommendation serves as an interim option to provide greater budget flexibility for software prior to implementation of the more significant budget structure transformation described in Section IV.

Implementation of this recommendation will require the OUSD(C), working with Congress, to revise the FMR[161] to provide guidance that funding requested for software refreshes or upgrades is available to develop, prototype, test, field, troubleshoot, redevelop, procure, and sustain in a complete cycle regardless of whether the funding is requested as O&M, Procurement, or RDT&E. In this scenario, funding for new software systems fielding is requested in the primary appropriation of the program requesting the funding and will continue to be available for the same activities over the life of the program. Funding requested in this manner will also be used for development and testing of hardware incidental to the development of software. The following Defense Prisoner of War (POW)/Missing in Action (MIA) Accounting Agency (DPAA) reprogramming action illustrates the complexity of this issue, to include program delays while sorting through the challenges of which color of money is most appropriate for software programs. The DPAA had to wait while there was a determination on which kind of funding was required, then had to wait for the reprogramming action to be signed and sent to Congress, and then wait again for the congressional defense committees to approve the action months later before being able to pursue the activity as described in their O&M J-book. With the Commission's recommendation, the DPAA would have been able to pursue the commercial solution upon the receipt of enacted FY 2016 O&M funds.

[161] For example (non-exclusively): DoD FMR Vol. 2B, Ch 18; Vol. 2B, Ch. 5; Vol. 2B, Ch. 9; and Vol. 2A, Ch.1.

Interconnecting Color of Money and New Start Rules - DPAA

In FY 2016, the DPAA O&M J-book described ongoing efforts to "develop an information technology solution to establish accounting community accessible files for each missing person that contain all available information regarding the disappearance, whereabouts, and status of missing persons."[162] In FY 2016, the DPAA had only requested O&M funding.

In April 2016, the DPAA requested $9.1 million in Procurement, Defense-Wide funding, as a new start to procure commercial-off-the-shelf (COTS) software for a Case Management System (CMS); the request was approved and later described in budget J-book narratives. The PA reprogramming request justified the funding as "required to purchase a [COTS] software solution to deploy a single database and [CMS] containing information on all missing persons for whom a file has been established…will enable quick, efficient compilation of relevant individual missing persons case data and tracking."[163]

While the requirement was described in the FY 2016 O&M J-book, the FMR also includes a rule for determining whether something is an investment or expense, with a threshold at $250,000 in consideration of which type of funding should be used for the effort. In 2016, Title 10, U.S.C §2245a limited the use of O&M to purchase items with a unit cost greater than $250,000. This limitation was repealed in the NDAA for FY 2017. The FMR maintains a $250,000 expense/investment threshold; the FY 2023 DoD Appropriations Act increased the threshold to $350,000.

Since 2015, the DPAA has occasionally requested Procurement funding, primarily to purchase vehicles to support recovery efforts (see FY 2023 and FY 2020). These requests were a new start initiated in the FY 2020 PB.

This example provides insight into the complex ecosystem of rules and regulations governing DoD spending and points to potential benefits for adjusting color of money rules for software and IT procurement. Changes to new start rules in isolation will not necessarily reduce new starts in PA reprogrammings if other rules and regulations are not clarified or amended.

Recommendation #11B: Use O&M for Hardware Continuing 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 (DMS). 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 and/or Procurement funds may be difficult for sustainment activities to predict and obtain. This creates a barrier to efforts to effectively address parts issues of the types described above.

[162] OUSD(C) 2015, 401.
[163] OUSD(C) 2016, 10-11.

The Commission believes that it is in the Department's interest to remove barriers to the incorporation of up-to-date parts and current technologies into weapon systems in the sustainment phase. For this reason, the Commission recommends that the Department be authorized to utilize O&M funds for hardware improvements in the sustainment phase, even in cases where the improvements result in an increased capability.

This will reduce the need for reprogramming actions, reduce delays that occur while waiting for fiscal and legal interpretations of congressional language, streamline acquisition planning, improve execution schedules, decrease contract administration needs, and improve maintenance timelines in the field for efforts like this. This fiscal improvement will avoid upgrade versus form/fit/function issues in the field that are further compounded by the speed of hardware development and delivery cycles. This would also allow new industry partners to bring new capabilities to a system without having to go through the traditional RDT&E and Procurement life cycle process, bringing emergent technology through the sustainment process.

One consideration in implementing this recommendation is the need for a change to the limitations on expenses versus investments, as described in the FMR.[164] Congress repealed the codified limitation on the use of O&M funds for investment items in 2017, but annual appropriation acts maintain statutory limits on the use of O&M for investment item unit costs (Consolidated Appropriations Act, 2023: $350,000 per end item).[165] The F-35 Joint Strike Fighter case study illustrates the challenges this approach would mitigate.

[164] DoD FMR Vol. 2A, Ch. 1.
[165] P.L. 114-328.

F-35 Joint Strike Fighter Initial Operating Capability (IOC)

The Air Force, Navy, and Marine Corps use multiple appropriations to accomplish their tasks in support of the F-35 program.

Concurrency (overlap of development and procurement) is the new norm in weapon system fielding.

- Jointly (USAF, USN, USMC) used **RDT&E funds** to fix deficiencies and redesign subsystems to meet IOC requirements.
- Jointly used **Procurement funds** to integrate those deficiency fixes into the production line configuration while building fighter jets on the manufacturing line and upgraded any aircraft on the contractor flight line that had not been accepted by the Service (i.e., DD250) and officially fielded.
- Jointly used **O&M funds** to apply fixes to upgrade aircraft that had been operationally accepted with a mix of organic and contractor field teams or during depot inception based on priority.

Diminishing Manufacturing Sources (DMS)

- Jointly used **Procurement funds** to directly fund extended parts buys based on failure rates and availability and conducted DMS redesigns when necessary, with general form/fit/function focus for production line assets.
- Jointly used **Procurement funds** to integrate new DMS redesigns into the active production line configuration aircraft while being built.

Technology Insertion:

- Jointly used **Procurement funds** to develop and integrate upgraded electronic warfare capability into production configuration for aircraft in build process prior to DD250.

All of these activities required multiple appropriations to accomplish each of the required tasks to execute the upgrade or modification. Schedule delays and other technical issues in the year of execution can leave a program with a misalignment of funding across all appropriations, which will require a formal reprograming or transfer of funding to align the funds to the appropriate activity, taking considerable time and effort to execute. There are multiple contracts, contract line items, funding actions, and tracking challenges–all leading to schedule and cost inefficiencies due to the differing appropriations that must be tracked and managed according to their unique rules, which can be a significant workload that adds little value to delivery of capability.

Recommendation #11C: Align Program and Program Office Funding to the Predominant Activity of the Program

Finally, the Commission recommends aligning funding for a program and program office to a single color of money, recognizing the timeline and intensive effort required to implement the budget structure transformation from Recommendation #4.

For example, under this recommendation a Procurement-focused organization like a next generation aircraft acquisition program office would use Aircraft Procurement dollars to fund all its activities in support of its procurement mission. This is analogous to how R&D laboratories and the Defense Advanced Research Projects Agency (DARPA) currently fund their research activities, civilian salaries, and support costs with RDT&E funds. Other federal agencies, such as NASA, request and expend funds in this manner.

The recommendation seeks to address the underlying issues to allow programs to rapidly respond to operational needs and reduce administrative burdens to focus on producing capability. This proposal will need to be accompanied with limits to ensure congressional oversight. Those might include requiring new start approval, clear identification of planned activities in and execution consistent with the budget J-books, and others.

This will bring DoD practices into closer alignment with the audit standards that require the cost of a program office to be included as part of the capitalized value of the acquired equipment. If the definitions were aligned like this, the auditor's valuation of a new asset would equal the sum of the Procurement obligations in that BLI as presented to Congress. This would dramatically improve the usefulness of the audit to Congress and significantly reduce the labor required by DoD to value its systems.

This will also reduce the management complexity faced by the responsible DoD official, by allowing him or her to manage only one color of money at a time. It will also reflect industry practices to a greater degree, where Segment or Program Managers have a single color of money and the authority to use those funds to meet their financial and performance objectives, with wide degrees of latitude for determining spending on investment or operational expenses without requiring headquarters or Board approval (see Section X for additional details). It will also enhance congressional oversight by providing Congress with a more holistic view of an organization, rather than breaking up an organization's budget into component appropriations, and thus often across different staffs, as is currently done.

The Department does currently have the ability to propose to Congress that ancillary costs of development and acquisition organizations be funded using an organization's primary color of money. This approach should be expanded as appropriate, following current practice at laboratories, and serve as a building block to implementing the fundamental budget restructure in Recommendation #4. Further implementation of this recommendation, independent of the budget structure transformation, will require the OUSD(C), working with the appropriations committees, to review and revise the FMR as appropriate, to provide guidance on allowing organizations to use available appropriations for justified uses (Volume 2A, Chapter 1).[166] Adjustments to the expense and investment threshold will likely also be required (see Section X).

Recommendation #12: Review and Update PPBE-Related Guidance Documents

The Commission repeatedly heard about the undue burden and confusion caused by unclear guidance, which creates increased workloads for programs and the legal community and often delays moving at the speed necessary to support modern warfighting requirements. A key component in enabling the PPBE process (or its successor the DRS) is providing clear, consistent, and current guidance that enables efficient and effective decision-making at the lowest levels. This includes systematic updates and revisions of key finance, acquisition, and program guidance documents, such as the FMR, to provide a more useful and timely resource to DoD managers. The Commission understands that such a review may

[166] DoD FMR Vol. 2A, Ch. 1.

have to take place on a rolling basis given the volume of documents and may take time to complete. The Commission recommends the USD(C) dedicate staffing to ensure sufficient review and more frequent updates to PPBE-related guidance documents, with an update cycle initiated at least every three years starting in calendar year 2024. This includes a systematic revision and update of the FMR, as well as and DoDD 7045.14, "The Planning, Programming, Budgeting, and Execution (PPBE) Process," which establishes policy and assigns responsibilities for the PPBE process (or its successor DRS).

As part of this review of guidance documents, the Commission recommends the USD(C) establish a dedicated cross-functional team to review and issue updates to the FMR. Commissioner experience suggests that this important document has not been fully reviewed for decades, though it is periodically updated. The team should include finance, acquisition, and program stakeholders to systematically revise and update the FMR to remove obsolete and unnecessary language, clearly communicate intent, and limit the FMR to binding rules while placing transient guidance or advice in other documents. The team should also coordinate with the congressional defense committees and seek input from affected parties, including those outside the Department as appropriate. After the completion of the initial review, the Department should establish a process to systematically maintain and update the FMR on an ongoing basis.

Recommended actions in support of this initiative include updating volumes with last review date in addition to indicating the date of most recent update; developing an expedited staffing plan for the acceptance of updates; incorporating AI into the plan for updates; and having USD(C) provide a report on the initial establishment and composition of the team as well as the plan to keep the FMR current. The Commission recommends that DoD carry out these activities within 180 days of issuance of this Final Report. Updating the FMR will constitute a major effort. The DoD should consider the use of contractor staff to orchestrate this process, and if possible, outside subject matter experts with DoD fiscal law knowledge to assist DoD in accomplishing this action.

Recommendation #13: Improve Awareness of Technology Resourcing Authorities

The Commission recommends the OUSD(C), OUSD(A&S), and OUSD(R&E) develop a handbook on available innovation and adaptability funds and authorities within six months of the publication of this Final Report. The handbook should be electronically posted and distributed to the entire DoD financial management and acquisition workforces and incorporated into the existing Defense Acquisition University (DAU) and FM training and certification programs. Its existence will help further bridge the valley of death by ensuring that government budget and acquisition personnel are aware of and have complete and up-to-date information on resourcing mechanisms and authorities that could help speed the delivery of capability to the warfighter.

As a best practice, the Commission also encourages the Services and DoD Components to program for out-year funding in anticipation of successful technology maturation. The outyear funding would mitigate valley of death challenges by designating a few critical programs and ensuring that funding is available for the next phase of development and production if that capability proves effective. In addition, OSD, the Services, and DoD Components should provide funding in the outyears of the FYDP for the technology maturation of select, specifically identified, high priority research and development initiatives. This should include S&T and Small Business Innovation Research (SBIR) efforts that link to the USD(R&E) priorities that are likely to achieve technical goals. Outyear funding should also be provided for the procurement of select, specifically identified, high priority dual-use technologies in order to stimulate private sector investment in risk reduction and technology maturation.

As part of efforts to improve emerging technology resourcing awareness, senior DoD, Service, and DoD Component leadership could require the SBIR and Small Business Technology Transfer (STTR) program to provide additional details on the execution of the prior year funding, technical accomplishments, and readiness for transition of priority projects. This approach would provide programming and budgeting officials with additional insight into the innovative programs being executed by the small businesses that are critical to future defense capability development efforts. It will also provide information on successful SBIR and STTR programs to inform Service and DoD Component programming and budgeting processes, and enable more informed decision-making on the allocation of resources to help transition projects into acquisition and capability deployment. A specific annual review of SBIR and STTR by senior leaders also reinforces the connection of new technologies being explored to current and future acquisition efforts and supports the transition of viable technologies into programs of record to fill capability gaps.

It should be noted that other Commission recommendations also support innovation and improve adaptability. For example, improved and more consistent J-books could benefit the Congress by providing better program information and benefit the Department by providing improved guidance and appropriate flexibility. As highlighted in Section VIII–Recommendation #27A, the Commission recommends improved training for preparation of budget justification materials. Improved justifications should be developed to minimize the need for new start requests and to maximize flexibility to address new threats and opportunities arising in the year of execution.

While not one of the Commission's formal recommendations, the Commission encourages public-private RDT&E cost sharing. The Commission notes that parts of the Department have been effectively utilizing cost-sharing type contract vehicles and financial practices for conducting technology development efforts that have both commercial and military applicability, in order to speed technology integration into the U.S. economy and delivery to the warfighter. The Commission encourages the DoD to further incentivize private fund matching for Defense RDT&E activities. Utilizing private fund matching (i.e., AFWERX Electric Vertical Takeoff and Lift, Air Force Mobility Blended Wing Body) for larger early-stage investments in critical capabilities and technologies will speed the delivery of technology to the U.S. defense and commercial marketplaces. Private partners undoubtedly expect payback from their investments, but with proper incentives, they are often able to make funding available more rapidly and apply it more successfully than government-only approaches. Partnering with private capital providers to fund further transition from prototype stages to initial product development will help build back defense capacity, strengthen the American manufacturing base, and improve warfighting readiness.

In some cases, the Department may be able to increase private sector cost-sharing of RDT&E and prototyping activities of interest to the DoD by making use of no or low-cost in-kind U.S. Government services such as access to labs, test ranges, sensitive compartmented information facilities (SCIF), military users, and government-owned intellectual property, coupled with programmed development funding and follow-on procurement for dual-use technologies and services that result in tech advantages on the future battlefield (these procurements may use commercial technology acquisition processes).

These best practices can increase the speed at which technologies can be ready for possible procurement, by leveraging funding that is available to the private sector on a timelier basis than government funding. In turn, this approach can potentially expand the number of companies currently participating in the defense industrial base by providing industry with direct access to unique government assets, while speeding delivery of leading technologies to the warfighter, e.g., by further utilizing DoD test

ranges, labs, and SCIFs for cleared start-up and scale-up businesses. These changes will grow the defense marketplace and have a simultaneous positive impact on the U.S. GDP.

Recommendation #14: Establish Special Transfer Authority for Programs Around Milestone Decisions

The Commission recommends that Congress authorize the use of a new special transfer authority, to be executed in the same manner and subject to the same dollar limitations as a BTR, to move money between RDT&E and Procurement accounts within a single program within an established three-year transition period (i.e., between Milestone (MS) B and C), provided that the use of funds remains consistent with the program purpose as described in the associated J-books. The use of this special transfer authority will allow programs to address the unpredictability inherent in the transition from the development phase to the production phase, as one phase comes to an end and the other begins, aligning funds in the correct appropriations without disrupting the program. Under the current PPBE and acquisition processes, MS decisions are made at a specific time based on the acquisition plan, while the associated funding decisions were made years earlier. Uncertainties inherent in the development process can easily result in acceleration or delay in the transition from one phase to the next. Updates to the funding profile can be made during the build of the POM and finalization of the PB; however, these timelines do not necessarily align to the acquisition decision events where funding is reallocated between appropriations to reflect the current way forward for that program. The recommended change should address this issue and ensure a smooth transition from one acquisition phase to the next (for recommended legislative language see Section X).

Recommendation #15: Rebaseline OSD Obligation and Expenditure Benchmarks

The Department currently uses financial execution benchmarks to assess whether programs are executing funds on schedule. There are separate benchmarks for each color of money during an appropriation's period of availability. For RDT&E programs, for example, the benchmarks include an expectation that 90 percent of the funds appropriated for a program will be obligated in the first year of availability and 55 percent of those funds will be expended. Programs that fail to meet this benchmark are subject to further review at Command-level, higher headquarters, and OSD, and, if financial and acquisition leaders agree, their funds may be taken away and used for other purposes due to under execution. Congress also uses these benchmarks when assessing program execution.

Based upon Commissioner experience, and information from finance and acquisition professionals who spoke to the Commission, it does not appear that these benchmarks are based on recent historical data, which means they may not be realistic indicators of program status in current circumstances. Allocation of funding for today's programs does not usually arrive until many months into a fiscal year due to the frequency of CRs and the delayed enactment of appropriations bills. Once funding does arrive, it must then be obligated through a new contract action, or modification to an existing contract or another appropriate vehicle, before it can then be expended.

Research performed by the AIRC analyzed historical obligations and expenditures for the years FY 2011–FY 2023, across all appropriations, using the current data lake that resides in Advana. Their analysis found statistically significant deltas from current linear OSD benchmarks compared to actual execution, which is further detailed in Section X. As an alternative approach, the AIRC analysis employed a methodology based on an overarching cumulative actual average per month, utilizing historical execution data at the appropriation level from Advana, and evaluated the same data set by applying an

S-curve methodology to further align these metrics to execution realties and current ongoing annual CRs.[167]

The Commission considered all AIRC recommendations, but in the absence of being able to fully review all detailed BLI level execution data by appropriation, except for some RDT&E data, determined that additional analysis is needed before recommending a new set of specific execution benchmarks. The AIRC review of RDT&E data did suggest that there are significant differences in how programs and projects within different RDT&E BAs obligate and expend resources. For example, using the data for FY 2013 through FY 2022, there are different obligation and expenditure rates for the S&T BAs (BA-01 Basic Research, BA-02 Applied Research, and BA-03 Advanced Technology Development), the Development BAs (BA-04 Advanced Component Development and Prototypes, BA-05 System Development and Demonstration and BA-07 Operational Systems Development), and the Management Support BA (BA-06). Much of this data makes sense when looking at the activities that are inherent within each of those BAs. The funding in BA-01 is provided to academia and university research for open unclassified research that is fully publishable and not subject to restrictions, and BA-02 funding is provided to the DoD labs to explore conceptual ideas with potential military application. In contrast, the funding in BA-05 obligates and expends as the capability is developed, when that capability is scheduled to go to test and then when it completes any follow-on activities. But each of the activities in these BAs obligate and expend in alignment with their specific technical structure, schedules, and contract type, not the linear overall benchmarks set by OSD for the appropriation as a whole. More details on performance measures are discussed in Section X.

The Commission recommends that the OUSD(C) assess baseline obligation and expenditure benchmarks based on recent historical execution at the BLI level for all appropriations and establish new benchmarks that reflect more realistic program expectations under current circumstances. The review should consider the results of the research performed by the AIRC, especially the RDT&E historical analysis by BA that presents a statistical argument to at least break out S&T BAs and measure progress with standalone benchmarks. This action should be completed by the Department within a year of issuance of this Final Report.

Recommendation #16: Encourage Use of the Defense Modernization Account

The Commission recommends that DoD fully utilize the Defense Modernization Account (DMA), authorized in Title 10, U.S.C. §3136,[168] to remove barriers to execution and allow the transfer of any expiring funds, available due to efficiencies and other savings, into the account up to $1 billion. Funds in this account are available 1) to reduce life-cycle costs of systems; 2) to support more efficient production or delivery rates; 3) for investment in activities that are necessary to fund unforeseen contingencies within acquisition programs; and 4) to fund costs associated with changing requirements in a major defense acquisition program. The DMA provides a mechanism to quickly respond to these situations.

The Commission also recommends that DoD work with Congress to modify this language or develop an appropriations bill general provision that fully characterizes the need for innovation and related infrastructure investments, rather than just cost savings or investment in current programs. A fifth use of the authority (Title 10 U.S.C. §3136 (C)(3)(d)) should add: "5) for time-sensitive opportunities to develop or procure modern equipment and technology, or adopt cutting-edge commercial products and services, along with associated infrastructure costs, for military adoption and fielding." Since enactment

[167] Anton and Buettner forthcoming.
[168] 10 U.S.C. §3136.

in the NDAA for FY 2017, there have been challenges with making use of this authority by the Department based upon interpretation of current statute requirements. Additional statute clarification and accompanying DoD structure is required to increase its use and for fund execution under the DMA to support future warfighting needs and increase capability.

Conclusion

The discussion in this section explains and justifies the Commission's recommendations, which have been chosen to address the root causes that hinder the current PPBE processes in their efforts to foster innovation and adaptability. These recommendations focus on root causes of particular importance, especially current PPBE processes that are too slow and lack agility during the execution year. Change is required now to further foster innovation internally within the DoD and externally in the domestic commercial sector for the U.S to continue to lead in technological advancement, which is especially important in the evolving and challenging threat environment today and in the future.

Section VI – Strengthen Relationships Between DoD and Congress

What the Commission Heard and Learned

Today, as in the past, the DoD and Congress continue to work together to meet national security needs. That said, representatives of both organizations identified issues and challenges that, if solved, could improve these relationships and foster a more productive working environment, to the benefit of military readiness and national defense.

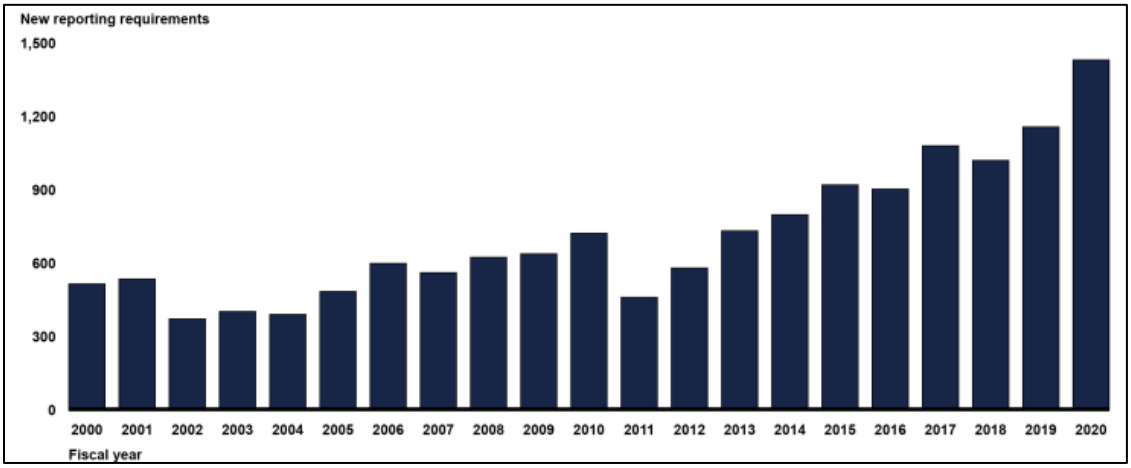
Congressional defense committee professional staff members (PSM) told the Commission that Congress receives a great deal of information about the defense budget during the annual PB submission; however, following that initial activity, information is received occasionally and primarily when specifically requested, thereby reducing Congress's ability to track and follow the larger picture or react to changing programmatic and budgetary needs. As a result, PSMs may need to make consequential decisions on the PB (reductions or adds), based on their markup timelines, without the full context of evolving national security needs. Congressional requests for information (RFI) have increased sharply in recent decades to provide Congress with the necessary information required for their oversight role.

Another significant form of formal information sharing is the mandated reports directed in annual authorization and appropriations legislation and reports. A GAO report from February 2022 highlighted an increase in "congressional reporting requirements for DoD directed reports and briefings on topics ranging from risk management in acquisitions to air and missile defense in Guam. According to DoD data, the number of new reporting requirements from Congress has more than doubled [increased by 178.6 percent] from 513 in [FY] 2000 to 1,429 in [FY] 2020" (See Figure 21).[169] Some DoD interviewees told the Commission that there should be more review of reports requested and RFIs by Congress to be sure that the information is not already available and will improve oversight. But interviewees also felt there was little incentive for congressional staff members to decrease the number of questions they ask.

The Commission was also told that responses to congressional RFIs can sometimes take months to coordinate, often due to the internal staffing process. Sometimes it takes considerable time to conduct the research on a congressional question, compile the response, and then staff answers for approval. The time required varies significantly based on the nature of the RFI itself. For example, a question asking for updated flying hour obligations and actual hours can be answered much more quickly than a question about potential future impacts to the force. Staffing can also be delayed as DoD takes time for legal reviews to be sure that the answers are accurate and appropriate for release to Congress. The resulting delays lead to frustration on the part of congressional staff and Members, which can also negatively impact budget-related relationships between DoD and Congress.

[169] GAO 2022.

Figure 21 – "Number of New DoD Congressional Reporting Requirements Over Time, as identified by DOD"[170]



Source: GAO analysis of DoD Data

The PSMs from the congressional defense committees also specifically expressed concerns about the quality and timeliness of information they receive in the DoD's formal justification books or J-books—the primary source of information provided to Congress regarding DoD's rationale for funding specific programs. The J-books are important; by law they must provide Congress with all the details to justify the PB request. Furthermore, the Commission observed that information in J-books varies widely in content and length; some smaller programs by dollar value receive much more attention than larger ones. For example, in the FY 2024 Space Force Procurement budget justification materials, the National Security Space Launch (P-1 #18 and Line-Item Number NSSL00) has nine pages to justify $2,143 million in requested funding in comparison to the Army's Production Base Support (P-1 #34 and Line-Item Number 3270GC0050) which has 88 pages to justify a $115 million request.

The budgetary information that DoD provides to Congress is both voluminous and important. The DoD provides Congress with tens of thousands of pages of justification for the PB request, at all levels of security classification, to explain how the Department intends to invest its allocated resources. The Congress, including member offices, leadership staff, and defense committee professional staff, use those justification materials, as well as formal committee hearings, detailed rollout briefings, staff and member on-site visits, and additional meetings, to ask questions and evaluate the proposed allocation of resources, make changes to those allocations, and then enact NDAAs and DoD Appropriations bills.

There are DoD personnel at all levels of seniority who conduct engagements with various parts of Congress to explain the fiscal year's PB request. Information is presented and provided through comprehensive program rollout briefings which include detailed financial and procurement plans, responses to hundreds of questions on cuts, adds, previous legislative direction, and new legislative proposals all the way through conference and enactment, all in support of justifying the resources required for the next fiscal year. However, as noted above, congressional staff have concerns about the quality and timeliness of some of this information, which can negatively impact budget-related relationships.

[170] Ibid.

The Commission also heard other concerns from Congress that negatively impact relationships. For example, some in Congress expressed concerns about the late submission or missing justification material associated with the PB, even in years other than those involving a change of Administration. During the last seven years, from FY 2018-2024, the PB request has been submitted an average of 49 days late.[171] Justification materials are usually sent to Congress and budget briefings for staff are held intermittently in the days and weeks after the formal budget release, further delaying congressional review.

Some DoD interviewees also expressed concerns about congressional actions. For example, DoD indicated concern about the length of authorization bills and the number of required reports, both of which add to the administrative workload of the Department. The NDAA legislation has increased in length from an average of 416 pages from 2000-2005 to over 876 pages from 2018-2022.[172] Lengthy reports add to the time required to process congressional direction.

Senior DoD leaders expressed strong concerns about budgets that are enacted after the beginning of the fiscal year, as that impacts their ability to efficiently and effectively execute their responsibilities due to the delayed authorization and appropriation bills. In recent years, late budget enactment has become more frequent and the delays in enactment have increased. From FY 2010 through FY 2023, the DoD appropriations bill has been enacted an average of 113 days after the beginning of the fiscal year on October 1st; only one appropriation bill was enacted on time (for FY 2019). FY 2024 started in similar fashion with several CR periods, with this report going to print during the third CR period. Similarly, the NDAA has been enacted an average of 75 days after the beginning of the fiscal year, with FY 2024 being no different.

In the absence of a full-year appropriation, Congress usually enacts CRs that allow the Department to continue operating but reduce DoD's ability to execute its mission efficiently and effectively. In most cases, while under a CR and its limitations, unless specifically authorized in the CR language, the DoD cannot begin new activities, start new programs, or increase production of quantities until full-year appropriations and authorizations have been enacted. The Commission recognizes that late budget enactments sometimes reflect political disagreements, which are beyond the scope of this report; however, the Commission has recommended changes to reduce challenges associated with executing late funding (see Section V).

The Commission was also told that relationships between members of the executive and legislative branches sometimes depend on a personal relationship that have been established, which enables an imperfect system to function more effectively. This was continuously highlighted during interviews related to justification of the PB. Relationships forged over years have played a key role in assisting DoD and Congress as they work through issues to address congressional concerns and justify the requested resources in reprogramming actions, supplemental requests, and the PB. However, those benefits don't represent a systematic improvement, are not necessarily repeatable, and are not a long-term solution.

[171] PB release based on "Budget of the United States Government" data from the GPO. Note: changes in administration can skew these averages; see Section XII, Appendix D5 of this report for additional details.
[172] Bill language PDF generated by www.congress.gov. Note: includes DoD page counts only, including the index; DoD length is the last page that includes information from a DoD Division (A-D). Divisions after 'D' are considered non-DoD.

While some issues that affect relationships between Congress and DoD cannot be resolved by DoD and defense professionals in Congress, others can be resolved in ways that will promote better working relationships.

Commission Recommendations

The Commission appreciates the feedback received on the actions outlined in the Interim Report and has incorporated that input into these recommendations in the Final Report. The feedback provided the Commission with further insight into challenges and areas of concerns from both sides of the DoD–Congress relationship. In this Final Report, the Commission makes specific recommendations to improve relationships between DoD and Congress.

Recommendation #17 (Key): Encourage Improved In-Person Communications

The Commission understands that DoD leaders spend a substantial amount of time and effort in providing budgetary and other information to Congress. Congressional Members and staff also spend significant time and effort to understand DoD's budget requests. However, the Commission believes that there are opportunities for more and better communications that will greatly improve resourcing-related relationships between the DoD and Congress.

For example, the DoD provides periodic updates to Congress after submission of the PB, but often only at the request of congressional staff or Members. This is a missed opportunity for the Department and the Services to communicate with Congress on emerging needs in response to the changing threat environment and how they relate to the DoD strategy. The Commission recommends the Department and Services establish a process that engages with the appropriate congressional committees on a more frequent basis to improve communication and share relevant information with Congress.

To implement this recommendation, the DoD should establish a working group or similar collaborative process with the goal of enhanced, institutionalized transparency. The group should identify areas in which the Department should routinely engage during the year of execution and prior to markup as well as the best timing for these engagements. Discussion should include analysis of the impacts of congressional adds and cuts to the proposed budget request, as well as any effects on other programs, impacts on the industrial base, or additional resourcing requirements. The engagements should provide a forum for supplying information and answers to congressional questions with the goal of ensuring that Congress has the information necessary to conduct their oversight role, support emerging DoD priorities, and enact well-informed authorization and appropriations bills. This will help overcome current institutional resistance to engaging with Congress on constructive dialogue of any matters that deviate from the formal PB, despite known limitations and inaccuracies contained in that same PB.

A first step to increased engagement could include updates during the year of execution on how programs are progressing based on significant events. Some events might be related to acquisition, like going into or completing test and evaluation events or the award of large procurement contracts. However, engagement should not be limited to acquisition programs and could also be used to discuss results of significant training exercises or changes in operational requirements. Another focus area could be how the Department is progressing on innovation activities, pilot programs, and authorities. Innovation adoption is a key theme of concern, and the Commission has made recommendations to improve agility; the Department should regularly engage with Congress on this topic. These engagements would also be an opportune time to engage with PSMs following the DoD submission of the Omnibus reprogramming action to Congress, highlighting topics such as the importance of the requested

realignments, any follow-on budgetary impacts to the current PB, how changes support innovation and incorporate new technologies, and how they relate to the larger DoD strategy and emerging needs.

Discussing current execution could also influence proposed execution marks prior to authorization and appropriations conferences. Engagement prior to conference could also highlight any emerging issues like realigning funds from Procurement to RDT&E should those acquisition activities need additional time. Prior to conference, the focus on these engagements should be on any activities that will minimize the need for later reprogramming actions during execution or will improve the budget proposal in other ways. The Services and DoD Components should identify to the USD(C) and Acquisition Executives key above-threshold reprogramming candidates and promote their timely approval, paying special attention to ensuring they are paired with reasonable sources to offset the increases since the identification of sources is what typically slows the reprogramming process. This should not be seen as a way to substantially change the PB, but rather a way to engage with Congress on those things that have changed since the PB was submitted. Working with PSMs prior to enactment would help avoid the need to formally reprogram funds later in the next fiscal year, reducing future workload for DoD and Congress.

The Commission encourages the Department to be proactive in reaching out to Congress to help build better relationships with their congressional counterparts. Providing information at these intervals will ensure Congress remains engaged and up to date on things such as major acquisition programs, training exercises, and fielding of new capabilities progress, and can incorporate changes provided by the DoD into its final conferenced bills (if they choose), all allowing the Department to more efficiently execute programs upon appropriations enactment and reduce the need for future year of execution changes.

As noted above, DoD should begin to implement this recommendation by establishing a working group with Congress to determine ways to improve communications and transparency. The Commission encourages the Department to commence activities to support this recommendation beginning no later than the June after publication of this Final Report and after submission of the FY 2024 Omnibus reprogramming. A process should be in place by September to implement the entire recommended action. The success of these engagements should be measured by informal feedback from defense committee staff directors and clerks (both majority and minority), as well as the quicker approval of requested reprogramming actions and enactment of requested realignments in appropriations bills.

Recommendation #18: Restructure the Justification Books

The current J-books vary widely in scope and content, with some large program writeups providing limited information while some smaller programs provide extensive detail. The Commission conducted 17 in-depth interviews with subject matter experts from the DoD and congressional PSMs from the Defense Authorization committees, Appropriations Sub-Committees on Defense, Senate Select Committee on Intelligence, House Permanent Select Committee on Intelligence, and Military Construction Appropriation Sub-Committees. The interviews identified and provided examples of where improvements can be made in the J-books and where best practices need to be emphasized and enforced. There is a significant opportunity available to the Department and Congress to shape and transform the Department's J-book exhibits and associated justification materials to ensure they are more useful in identifying how resources will be executed and contain the information necessary to conduct the appropriate analysis. The Commission urges both DoD and Congress to take advantage of this opportunity.

Based upon information received during these interviews, the Commission recommends that DoD work with Congress to conduct a comprehensive review of the J-books to identify necessary changes to the

information being provided, establish more common formats and content for the J-books, and eliminate exhibits that are no longer needed or of value. More specifically, where there are cross-cutting programs and activities, for example in the RDT&E Science and Technology (S&T) account and the O&M readiness accounts, there should be consistent language and an appropriate depth of budgetary and programmatic content. In addition, the review should focus on the O&M J-books and seek ways to better highlight how O&M funding affects defense programs while preserving an assessment of the effects of inflation.

To accomplish this restructuring, the DoD and Congress should establish a joint working group including representatives from DoD (OSD and the Services) and from the congressional defense committees. The working group should debate and strive to agree on content and format for the J-books; the DoD should implement all agreed-to changes. The working group should also take into consideration the use of these budget materials by industry, taxpayer advocates, and the public, as the J-books represent one of the few windows on the details of how the government plans to spend taxpayer resources provided for defense. Along with improved J-books, the Commission's recommendation on restructuring the budget (described in Section IV) should help provide Congress and the public with better information about defense budget requests.

The USD(C) should lead efforts to implement this recommendation, assisted by the Military Department comptrollers and other stakeholder representatives as appropriate. The working group should be established within four months after publication of this Final Report and seek to complete its work in no more than one year after its establishment. Successful implementation of this recommendation should be assessed based on senior leader attention to the issue, resources allocated for the effort, adherence to these timelines, and from informal assessment provided by members of the working group. Criticisms and best practices associated with the formulation, review, distribution, quality, and utilization of J-books are found in Section XI and should be used to assist in the working group's restructuring efforts.

Recommendation From Section VII: Improve Data Sharing Between the DoD and Congress

Congress requires an extensive amount of information and justification to understand and act on the budget request. Effective congressional oversight requires continuous transmission by DoD of appropriate, secure, and timely data. At present, there are several significant impediments to the smooth flow of data between the DoD and Congress.

In Section VII of this Final Report, the Commission proposes **Recommendation #19: Establish Classified and Unclassified Communication Enclaves** designed to help share information between DoD and Congress. This section summarizes the rationale for the data sharing recommendation, including ways that recommendation could improve resourcing-related relationships between DoD and Congress.

Obstacles to Data Sharing

Culture and Process for Information Sharing within DoD. Checks and balances, and tensions between and among the Services and OSD, have driven the establishment of guardrails for data access and sharing of information between and within the executive and legislative branches. To avoid the release of pre-decisional information and ensure that statements and other information provided to Congress are consistent with Executive Branch policy, the Department has developed a significant coordination process for delivering answers to Congress, which often contributes to delays in delivery of information that may no longer be current or relevant. The pace of the coordination process is further constrained by the lack of a system to sort, track, and rapidly search data for current content and releasability status. The lack of current, accurate, and complete knowledge of program status among multiple DoD

stakeholders leads to confusion about what is pre-decisional versus sharable information, which can give Congress the impression that the information is incomplete, incorrect, or deliberately misleading even when that is not the intent. These challenges can significantly hinder strong relationships between DoD and Congress on resourcing issues.

Complexity and Volume of Data. Funding spread across multiple colors of money, thousands of budget line items (BLI) and appropriated at different levels with varying periods of availability, make it difficult for Congress to track the budget request for a particular program or effort in a given year, and particularly across fiscal years. The DoD struggles to ingest changes in a timely fashion made during the legislative process to include congressional marks, reporting requirements, and legislative limitations.

Challenges Defining "Right." While the DoD may provide access to a significant volume of information to Congress for consideration during the legislative cycle, it may not always be the right data (e.g., the desired data), or in a useful format. The DoD attempts to answer many of the questions Congress poses in the budget justification materials and during the annual PB rollout staffer day briefings, but missing information is typically tasked as a request for information (RFI) that can sometimes take weeks or months for DoD to answer and does not always provide the holistic picture a staffer requires to accomplish their analysis. This can lead to frustration by congressional staffers, especially when they tend to raise the same programmatic and policy issues on an annual basis. Similar delays occur in the delivery of testimony and answers to Questions for the Record as part of congressional hearings on budget issues.

Antiquated Methods for Data Sharing. The current processes and methods for data sharing between DoD and Congress tend to be manual and labor intensive which result in a slow response time, are prone to error, and are not conducive to efficient real-time updates. This often prevents real-time mutual transparency of budgetary or programmatic data. Under the current system, DoD shares its information with Congress through spreadsheets, charts, documents, and PDF files, either emailed or hard-copy hand carried to staffers for consumption. While current digital methods may be searchable, they are in multiple locations, time-consuming to populate, and make it difficult for Congress to extract the needed data for their analysis. For example, Congress, through a congressional reporting requirement, requested the DoD conduct an inventory on how much it is spending on AI. Due to a lack of easily tracked data, DoD spent considerable resources and time answering this single question for Congress. In addition, congressional markups of the DoD budget, as well as congressional language, are returned to the Department in PDF tables that are not easily searchable, sortable, or ingestible. Partly for this reason, significant manual effort is required to locate and distribute all changes and accompanying report language. Antiquated data sharing methods increase workload for both DoD and congressional personnel, which in turn can negatively impact the resourcing-related relationships between the two organizations.

Seeing Opportunity in DoD-Congress Data Sharing. The Commission asserts that when DoD and Congress need to share data, such sharing should provide streamlined, searchable, and sortable access to data that is current, accurate, relevant, secure, and authoritative. A digital, collaborative sharing environment would significantly improve data sharing between the DoD and Congress, fostering a culture of transparency and partnership to deliver the best possible outcomes for both the Department and Congress. This collaborative environment will facilitate enhanced efficiency of DoD submissions to Congress and subsequent feedback from Congress to the DoD, to the benefit of both.

Recommendation #19 in Section VII provides details about how to establish enclaves for data sharing

between DoD and Congress and identifies applications for sharing. Achieving these improvements will not resolve all the challenges associated with communications between Congress and DoD on resourcing issues. Some challenges stem from the nature of the U.S. Constitution, which requires specific actions by the executive and legislative branches that can put them at odds. However, making these changes will streamline and speed the communications between DoD and Congress on resourcing issues, which will constitute a major improvement and help improve relationships between DoD and Congress on resourcing issues.

Conclusion

The Commission understands that the PPBE process, and the new proposed DRS, require a partnership between the Department and Congress to succeed and support national security today and in the future. The recommendations proposed in this, and other sections of the Final Report, all underscore the importance of that partnership. The Commission encourages the Department to engage more regularly with congressional counterparts, so that Congress can be confident in the additional authority and flexibility the Commission has asked Congress to provide the DoD in this Final Report. The Commission believes that a more collaborative sharing environment would improve overall communication, provide more transparency, and lead to a better partnership.

Section VII – Modernize Business Systems and Data Analytics

Overview

Defense business system modernization is critical to streamlining, accelerating, and providing agility to the annual defense resourcing process. The DoD must ensure its business systems, including the technology that enables the compilation of program, budgeting, scheduling, and execution within these systems, can support decision-making at speed, funding with purpose, and delivery of tactical and strategic outcomes that support the NDS.

The Commission recognizes that continuous modernization of defense business systems, which includes defense resourcing business systems, is an ongoing complex and challenging task for the DoD. Even so, it is the view of the Commission that the Department has yet to develop an effective process for the comprehensive governance of its business systems. The Department's business systems architecture remains immature and incomplete, the Defense Business Council (DBC) has yet to prove that it has the authority to make and enforce major decisions, and the Department appears to lack a senior leader below the level of the Deputy Secretary of Defense who is responsible and accountable for the governance process.

The complex and interconnected nature of systems and data environments makes attempting to change only a subset of systems, which rely on the data and standards of systems adjacent to the defense resourcing process, extremely challenging. This section provides recommendations from enterprise transformation to financial management system-specific changes, all of which are critical to delivering a contemporary underlying architecture for the defense resourcing process.

To approach the review of business systems used in support of PPBE processes, the Commission conducted extensive research related to DoD business systems and data analytics with DoD personnel, congressional staff, and industry experts. The Commission also relied on the experience of its Commissioners and staff who have worked in DoD business process and system reform, technology adoption, acquisition, and financial management. The Commission focused primarily on business systems used in defense resourcing, including both core finance and accounting systems and the execution feeder systems that support them to include logistics, contracting, installation management, human resource management, and training and readiness systems. Based on this research and experience, the Commission makes several recommendations related to DoD business systems and data analytics.

Background

The software-based systems used to execute the myriad aspects of the Department's business run the spectrum from decades-old bespoke databases to contemporary commercial systems, platforms, and tools that leverage AI-enabled commercial off-the-shelf (COTS) technologies. Aligning, connecting, and streamlining procedures, processes, and workflows is essential to enabling DoD personnel to focus more on critical analysis and less on navigating multiple disconnected systems and processes. The data contained within these systems provide the necessary insights for internal DoD decision-making forums such as the Deputy's Management Action Group (DMAG), budget submissions to Congress, and discussions within the entire national defense ecosystem.

While modernization of a technical environment requires significant personnel, hardware, and software investment, the ability to have robust data-driven analysis promises a return on investment that will result in time-critical decision-making to enable the acceleration of capability delivery to the warfighter. Business leaders across both the private and public sector interviewed by the Commission advocate for business system investment consistent with best practices within the private sector, acknowledging the need for short-term investment to produce long-term benefits.

The Commission acknowledges the significant body of work and critical DoD senior leadership involvement that has resulted in the ongoing consolidation, modernization, and/or retirement of business systems across the DoD over the last two decades. This work has included the development of roadmaps and establishment of milestones toward an improved systems environment and the migration of core financial systems to commercial Enterprise Resource Planning (ERP) systems. This effort has resulted in significant modernization of the Service and Defense-Wide accounting systems, improvements to internal controls and auditability, as well as the consolidation of programming and budgeting systems. However, modernization and progress to consolidate business systems remain piecemeal with varying standards and there is no clear organizational leader defining the optimized enterprise architecture.

The Commission commends deployment of open architecture analytics capabilities, including the enterprise platform Advana (derived from the term "Advancing Analytics")[173] which has shifted leadership attention to data-driven decision-making. Data analytic platforms have begun to provide DoD users with common business and operations data, decision support analytics, and data tools. However, the data in these platforms is only as good as the data in the systems that feed them.

While a single end-to-end authoritative system to govern all defense resourcing data, processes, and tasks appears to be a logical suggestion, the Commission cannot recommend such a solution at this time, due to the complex technical environment in which DoD currently operates. Dissimilar data types with varying levels of classification and differing uses of data, coupled with requirements to maintain data for auditability, has led to decades of technical and functional debt. Although significant challenges remain, the need for digital transformation of the DoD business systems environment is more critical than ever.

In line with its legislative direction, the Commission has identified two lines of effort for DoD to pursue in order to accelerate progress:

- Modernizing internal DoD business systems in support of decision-making and auditability.
- Improving data sharing between the DoD and Congress.

Within these two lines of effort, the Commission identifies specific concerns and offers six recommendations to support reform.

Modernizing the Internal DoD Business Systems Environment

The DoD has many disparate, siloed, and antiquated data sets, platforms, systems, and tools which make it challenging to share information and provide timely analysis for informed decision-making. The DoD's business systems have been on the Government Accountability Office (GAO) High Risk List since 1995,[174] with hundreds of reports issued by the GAO on this topic over time. The Commission recognizes

[173] DoD FMR Vol. 1, Ch 10.
[174] GAO 2023.

that recommendations outlined in this section must build on efforts by the GAO and others to drive the modernization of DoD's business systems architecture and applications. The following are several root causes that have led to a suboptimized environment.

Lack of Clear and Stable Responsibility and Authorities. The defense business ecosystem has thousands of siloed systems, platforms, and tools with no individual or DoD office with a *full sight picture* of everything, as evidenced by the lack of a DoD enterprise business system architecture. The shifting assignment of roles and responsibilities between organizations for defense business systems has also created disconnects in ownership and leadership of business system responsibilities.

For example, the DoD Chief Management Officer (CMO), established in 2017, had responsibility for all defense business systems, yet the USD(C) had functional responsibility for financial management systems. With the disestablishment of the CMO position and office in the NDAA for FY 2021,[175] all defense business systems responsibility was transferred to the DoD Chief Information Officer (DoD CIO) and the USD(C).[176] Unlike the CMO did at the time, the DoD CIO has no responsibility for or authority over the business processes that are integrated into these business systems. It is also questionable as to how much authority DoD CIO has to direct systems outcomes due to unclear, and in some cases conflicting, law and memoranda providing authority to various Components over mission specific systems. For example, 10 U.S.C. Section 9022[177] states that the Secretary of the Air Force has the authority to direct and manage their financial management systems. The recent establishment of the CDAO and its authorities and responsibilities has also added another layer of uncertainty, as their data governance role and efforts with Advana are central to the ecosystem. The OSD Performance Improvement Officer/Director of Administration and Management (PIO/DA&M) holds responsibility for reforming the management of the DoD and tracking the performance of its Components, necessitating a seat at the table for systems conversations.[178] The Commission repeatedly heard that this shift in responsibility has left the enterprise questioning the balance between overarching technical modernization and functional management of business systems. The HAC-D report for FY 2024 also commented on this stating, "The Committee looks forward to seeing broad collaboration with CDAO across the Department to help accelerate digital transformation. However, unclear roles and responsibilities are a potential risk to this success."[179]

Years of Technical and Functional Debt. Current legacy systems and processes do not enable an exclusively digital process within the Department, impeding data flow and creating duplication and inaccuracies. For example, the Commission found discrepancies across systems where the data should have been consistent. A root cause may be that portions of the process rely on flat files (i.e., Word, PDF, and Excel documents) or manual input to transmit data, requiring personnel to ensure data is updated in multiple systems instead of just one. The result of flat files is that data is not always searchable or sortable, can contain errors that become embedded from one format to another, can be difficult to correct, and is often outdated by the time it is received by decision-makers. The Commission acknowledges that unique security requirements for DoD programs can also deter the evaluation and adoption of common digital solutions.

The Commission interviewed many commercial providers who cited significant challenges trying to

[175] P.L. 116-283
[176] P.L. 117-263.
[177] 10 U.S.C §9022.
[178] DoDD 5105.53.
[179] H. Rpt. 118-121, 254.

navigate the defense business system environment, including acquisition barriers such as authority to operate (ATO) [180] and the Federal Risk and Authorization Management Program (FEDRAMP) [181] requirements, which can delay or prevent vendors from operating within the DoD Information Network (DoDIN).

Investing in underlying business systems that enable mission execution is not always seen as a priority for resources or attention from DoD management.[182] Although there will be a long-term payback, in most cases the Department would prefer to invest in high priority operational needs. This challenge is not unique to DoD though, as indicated by the December 2022 event where the Southwest Airlines reservation and scheduling system went offline, stranding thousands of travelers and costing the airline over $1 billion due to a lack of investment in its information technology (IT) infrastructure.[183] Such an event should serve as a warning to DoD to make the critical investment upfront to address the technical inefficiencies of its IT infrastructure.

Shortfalls in DoD Practices and Digital Culture. There is a lack of clarity relative to the technical policies, standards, and controls the military Services and DoD Components should follow when acquiring, developing, or deploying new solutions. Due to the lack of clear policy for DoD business systems, there is a tendency for the military Services and DoD Components to develop and purchase tailor-made systems for individual needs even though a comparable capability currently exists within solutions already procured by the DoD, or a state-of-the-art commercial solution leveraging a modular open system approach[184] is readily available. Components developing or acquiring new technologies often fail to see the big picture, meaning they deploy a solution which solves for their specific needs, without considering the applicability to or integrations with other functional areas or assessing available capabilities inside already deployed COTS products. This can lead to systems that are suboptimized, redundant, or non-compliant with requirements, and also require unique training and maintenance.

Commercial system customization is often chosen to conform to preferred workflows, rule sets, or data elements instead of standardizing processes to meet the requirements of the new system, thereby negating the benefits of going to the COTS solution. The DoD must make efforts to minimally modify COTS solutions to preserve the future ability to upgrade; customization makes the upgrade to new software versions extremely challenging as the new version will not accommodate the current processes without significant rework and cost. The Commission acknowledges some modification is unavoidable, to include accounting for the various laws, policies, and practices which may be outside of a system owner's control, such as policies established by varying DoD and federal oversight bodies, as well as other stakeholder mission requirements mandating the customization. Even so, the Commission believes that there is significant opportunity to increase communication and education internal to the DoD and with industry about best practices for system development and deployment. This was further reinforced during the Commission's interviews with industry who typically aligns their processes to those designed in the system unless a business case has been made for why something should deviate from the COTS system processes (see Section X). Training of personnel on systems must be put in place to leverage system capability and drive desired optimal outcomes.

[180] DoDI 8510.01 and NIST SP 800-30 R. 1 provide the guidance for an Agency to assess risk as it relates to its information systems, to include the authorization to operate which is defined as "The official management decision given by a senior organizational official to authorize operation of an information system and to explicitly accept the risk to organizational operations (including mission, functions, image, or reputation), organizational assets, individuals, other organizations, and the Nation based on the implementation of an agreed-upon set of security controls.
[181] FedRAMP® provides a standardized approach to security authorizations for Cloud Service Offerings.
[182] GAO 2004.
[183] Radauskas 2023.
[184] Modular Open Systems Approach (MOSA) can be defined as a technical and business strategy for designing an affordable and adaptable system. A MOSA is the DoD preferred method for implementation of open systems, and it is required by U.S. law.

Seeing Opportunity in Business Systems Reform. The Commission believes the goal of DoD business systems reform should be to provide DoD leaders with continuous access to automated, current, accurate, relevant, complete, secure, and *integrated* data that will enable informed decision-making at speed. In the HAC-D Report for FY 2024, the Committee discusses digital transformation and notes that "In many instances, the Committee recommends transfers [of funding] to help drive a more integrated development of enterprise solutions."[185]

While the Department currently seeks to manually link the annual budget request to strategies, such as the NDS and DPG (or equivalent guidance documents under the new DRS), the Commission believes harnessing data through a common platform can aid leadership decision-making at speed and strengthen the link of the acquisition, requirements, and resource allocation systems. The success of DoD to deliver capability at the right time hinges on the integration and synchronization of these three processes. Leaders at all levels should have standard data and tools for data analysis that enable them to make real-time tradeoffs for resourcing decisions. At the same time, increased automation and informed workflows with appropriate checks and balances will enable personnel to spend their time on more meaningful analytic tasks, rather than endlessly searching for information; creating customized charts for specific requests; cross-checking disparate databases and spreadsheets; and navigating archaic processes and tools. Having reliable information to enable decision-making at speed is especially critical in this time of rapid technological development, global strategic challenges, and shifting geopolitical events. Systems and tools alone are not sufficient, the DoD must also seek to strengthen the training and education of the workforce to be able to fully leverage such capabilities in a meaningful way. More on training recommendations is discussed in Section VIII.

Business systems reform should be accompanied with the equally important streamlining of business processes and practices. Reducing burdensome processes customized for individuals in the DoD workforce is critical to maximizing the inherent capabilities built into the well-established business systems and their workflows. Many DoD personnel reported frustration with the processes and procedures that they are required to navigate to conduct their day-to-day tasks. Driving efficiencies in the business process environment also means more appropriate stewardship of the public's investment in the personnel tasked to secure and defend the nation.

Finally, business systems reform is necessary to move toward a clean audit opinion, ensuring congressional and public trust in the transactions that occur and the resources spent in support of national defense. For more information on the relationship between DoD business systems and auditability, see Section X, which provides an assessment of DoD efforts related to FM systems and the audit.

Commission Recommendations on Modernizing Systems

The Commission appreciates the feedback received on the actions outlined in the Interim Report and has incorporated that input, as appropriate, into the recommendations in this Final Report to help the Department move towards a foundational architecture that supports continuous modernization of the business systems environment.

Recommendation #20 (Key): Create a Common Analytics Platform

The Commission recommends the CDAO, in coordination with the DoD CIO, the USD(C), the Director of CAPE, and the PIO/DA&M, establish an integrated product team (IPT) for the expansion and

[185] H. Rpt. 118-121, 254.

enhancement of capabilities through a common platform to provide enterprise resourcing analytics. The DoD will need to ensure appointment of the appropriate functional and technical skillsets for the design and delivery of a user-centric product, meeting the needs of a variety of functional requirements while also leveraging commercial design, development, and deployment best practices. The team will also need to consider the Department's future implementation plans for other recommendations in this Final Report when defining the requirements, workflows, and standards of the platform.

A common platform should provide enterprise-wide and streamlined access to best of breed analytic capabilities and authoritative data across functional sectors, to include but not limited to finance, logistics, contracting, installation management, human resource management, training, and readiness. Ensuring all organizations are leveraging the same authoritative, transaction-level business and select warfighting data, which will be automated, linked, and appropriately integrated, will allow decision-makers to see the complete sight picture like never before, driving more meaningful decisions.

The Commission recommends the IPT explore multiple pathways to delivering a common platform. Such options could include contracting for a commercial solution with Advana as the underlying data layer, leveraging an existing user interface within the Department with Advana as the underlying data layer, or significantly streamlining the user interface within Advana. The IPT should develop a process for assessing and integrating existing applications or capabilities within the DoD into the common platform, including those in the military Services, for enterprise use.

The Commission urges the IPT to deliver a plan to the Deputy Secretary of Defense for implementation of this recommendation within six months of the issuance of this Final Report. Implementation plans must include a training program and a governance structure to ensure compliance across the DoD. Within one year of this Final Report, an adequately resourced and supported IPT should be able to execute a pilot in accordance with this recommendation.

Why a Common Platform

Enterprise use of best of breed capabilities and authoritative data would further enable a more informed and integrated strategy, resource allocation, and execution processes. Specifically for resource allocation, a common platform provides the potential to integrate prior year execution and operational test data, as well as a capability for forecasting inflation costs and other price adjustments, to model resource allocation scenarios and conduct tradeoff analysis. A common platform would also support the integration of efforts across organizations or programs, providing DoD leadership with a portfolio view of investments that is currently only manually conducted, if conducted at all. Leveraging a common platform for integrating data during program execution reviews will support the Department's ability to assess the comprehensive cost, schedule, and performance of a given program, to include assessing obligation and expenditure rates (currently occurring within Advana), reprogramming actions, and contract awards among other program objectives to inform the following year's resource allocation decisions.

More tactically, providing enterprise-wide access to a common platform with standard processes and best of breed applications will ensure all personnel have the best tools at their disposal to make well informed decisions and conduct business most efficiently and collaboratively. As an example, applications could support the financial management community in the navigation, implementation, and modernization of relevant policies or guidance for the new Defense Resourcing System proposed by the Commission. The DoD could leverage the common platform to conduct enterprise business for defense resourcing in a more streamlined and standardized manner, to include drafting of J-books or managing

reprogramming requests. Applications could also support reconciliation of data across disparate systems including disbursing, obligation, funding, and entitlements to General Ledger systems and could enable quarterly reviews of dormant accounts. Making these capabilities available to all users through a common platform is critical to accelerating the technological transformation for DoD business processes and ensuring a common data picture for all stakeholders.

More broadly, the DoD could leverage the common platform to support other areas outside of defense resourcing, to include decision-making for science and technology investment, minimizing redundancy, and maximizing collaboration as recommended by the HAC-D Report for FY 2024.[186] It could also support the enterprise tracking and measurement of resourcing outcomes. The Commission applauds OSD's effort to address performance and risk as a part of a centralized dashboard in Pulse (hosted in Advana) that provides senior DoD leaders with metrics relative to NDS implementation, Strategic Management Plan (SMP) implementation, and business health. Use of operational and execution data as a part of the programming and budgeting process (or the Resource Allocation process under the new Defense Resourcing System) is critical to ensuring performance is considered when budgeting for the following year's programs and projects. The Department should seek to expand the types of data available in Advana for display by Pulse, to include operational test data, to further inform future programmatic and budgetary decisions. Performance measures are discussed further in Section X of this report.

There are several tools and applications already deployed within the DoD, both commercial and government-developed, that offer value to the defense resourcing process and should be leveraged by the enterprise as a part of their daily duties. This includes military Service-developed applications to support the current planning and programming phases of the process. One tool demonstrated to the Commission integrates data across several systems and leverages complex equations to provide comprehensive and accurate cost estimates. Another decision-support tool provides a comprehensive readiness common operating picture, allowing decision-makers to view the location and status of a given weapon system, and provides predictions to support future sustainment and modernization decisions. Unfortunately, in several cases, only a small number of personnel are leveraging the full capabilities due to cultural, policy, resourcing, or training roadblocks previously mentioned in this section.

Centralization of capabilities and data is consistent with congressional intent for the DoD enterprise, including recent direction for the establishment of an AI development pipeline, as stated by the SAC-D Report for FY 2024.[187] A common platform would provide users access to the underlying infrastructure to more readily develop applications, tools, or modules (whether from within the platform or through an alternative development environment) to meet their own analytic needs. Presently, when a user has an idea for a technology or solution to support the mission, in many cases they must acquire or obtain access to the underlying infrastructure necessary to conduct such development, including cloud infrastructure, a development environment, and/or a production environment. This software-as-a-service model empowers users to leverage the existing infrastructure, data, and applications where possible, and build alternative tools as rapidly as needed.

Several small businesses seeking to provide supporting capabilities to the defense resourcing process shared challenges with the Commission on navigating the DoD's bureaucratic processes and policies, to include the complex acquisition, risk management and funding processes. Specifically, vendors expressed concern about the length of time involved with obtaining Authority to Operate (ATO), the process by which a solution is approved to operate on the DoDIN. The ATO process can delay companies

[186] H. Rpt. 118-121, 255.
[187] S. Rpt. 118-81, 11.

for months or even years as they seek testing and approval. The HAC-D Report for FY 2024 directs the DoD CIO to submit a report to Congress "detailing opportunities to streamline the Authority to Operate process to accelerate secure adoption of advance software."[188] One of the major successes of platforms like Advana is its ability to provide thousands of users access to cleared products, without having to redundantly navigate the ATO process for their instance of a capability. Leveraging the infrastructure and security controls provided by a common platform can speed the ATO approval process for new commercial solutions, enabling the faster adoption of commercially available products.

Many businesses also expressed frustration with navigating the political and/or bureaucratic environment of DoD business systems. The complex governance, funding, and user environment makes it challenging for anyone from the outside to know who to talk to if they have a solution that can support the mission. All these roadblocks, and more, contribute to a suboptimized business system solutions environment. A common platform managed by a single organization will provide a clear pathway for commercial companies seeking to support defense business operations.

The Current Environment

Feedback received by the Commission after release of the Interim Report expressed support for a common analytics platform. However, a common platform will only be transformational to the defense resourcing process if users are willing and able to use it. It is for this reason the Commission stresses the need for the IPT to assess current offerings and carefully consider the user interface thousands of personnel will be expected to interact with daily.

Specifically, the Commission highlights the Advana platform, which has made significant strides in expanding data access across the enterprise, particularly the major effort to feed data from over 400 authoritative source systems into the platform. Advana is the current single enterprise authoritative data management and analytics platform for the Secretary of Defense, Deputy Secretary of Defense, and Principal Staff Assistants (PSA). The open architecture platform leverages a variety of best of breed commercial solutions and provides the opportunity to acquire additional capabilities in the future. The established ATO process also provides users with access (upon appropriate approval) to hundreds of applications to support a variety of analytic requirements, which are supported by timely data feeds.

The Military Departments have also invested additional time and resources in deploying their own instantiations of Advana as a data platform called Jupiter (Navy), Financial Air and Space Team Resources (FASTR) (Air Force), and Army Reporting Evaluation System (ARES). This framework has allowed the Military Departments to leverage the infrastructure, ATO, and existing commercial capabilities within their own segmented environment for analytics, while being able to seamlessly share data with other organizations as appropriate.

The Commission recommendation to leverage the foundation of what Advana provides today is an endorsement of the capabilities, structure, and visibility that it provides as a first leap towards the ideal of a fully integrated data and analytics environment. The Commission acknowledges the concerns raised over current analytic environments in the DoD, including Advana. Specifically, users have reported challenges with load times of applications, insufficient availability of the platforms, and lack of easy searchability within the platforms for authoritative data and tools.

Some users expressed concerns with the lack of access management controls within current systems,

[188] H. Rpt. 118-121, 254.

a well-known and documented issue which has widespread security and audit impacts. The IPT should ensure users trust the system, that appropriate controls are being deployed and followed, and that the data is timely by providing visual indicators of the data source and a time stamp of last update. The IPT must also address the need for governance over individually developed capabilities, which can lead to the proliferation of single use applications, burdening the overall environment.

Many have noted challenges navigating the platforms to find the visualization tools necessary to meet the mission and have often cited a lack of trust in the accuracy or currency of the data, as well as a lack of data standardization. Data is only useful if personnel can leverage it to draw accurate or meaningful conclusions. Personnel must have the appropriate authorized access, be able to find the needed data set, understand the source, timeliness, and context for the data, and be able to manipulate it in a way that provides them the answers they need. The DoD has spent considerable effort addressing data challenges,[189] and must continue to make considerable investment in data transformation for ease of use. In research performed for the Commission, the AIRC concluded, "DoD will not achieve timely and adequate management of the delivery of modernized systems (whether hardware or software) without a viable comprehensive data management construct.[190] This approach to data outlines a vision that those with direct responsibility and authority for making critical decisions must have access to appropriate data "without being inundated with extraneous details."[191] The DoD should carefully consider the balance of data access for transparency, but also relevance.

Conclusions Regarding a Common Platform

All of these challenges and more should be carefully considered by the DoD in deployment of the common platform. To ensure the DoD can harness the full potential of a common platform, it is imperative for the IPT to address these challenges, and ensure the environment is prepared to accommodate a variety of missions, skill levels, and needs. A single, consistent, and reliable source of accurate data will transform the way in which DoD conducts its business, but it will not be possible without the significant dedicated attention, focus, and resources of leadership.

Recommendation #21: Strengthen Governance for DoD Business Systems

The Commission recommends the DoD strengthen the governance over DoD Business systems. The DoD has made efforts to clarify roles and responsibilities through the issuance of several memorandums and directives on governance, including the reestablishment of the Defense Business Council (DBC),[192] chaired by the DoD CIO. In the view of the Commission, establishing a single office and/or person as the final authority for defense business systems is a positive step toward an effective and decisive governance structure. In addition, while re-establishment of the DBC is a promising step forward in appropriately governing business systems and processes within the DoD, the Commission believes that this forum will only be effective if both functional and technical leaders across the DoD Components are engaged in the synchronization and standardization of efforts. There has been a lack of use of existing levers, such as the DoD CIO's budget certification authority, to ensure all resources being spent annually on systems are in alignment with policies and roadmaps for a modernized business systems architecture.

It took the Commission several months of interviews and discussions to identify the current state of DoD business systems, leading the Commission to wonder how clearly the responsible leadership

[189] DoD Memorandum 2021.
[190] Cardon et al. 2023, 10.
[191] Ibid., 14.
[192] DoD Memorandum 2023.

understands the current environment. The Commission is encouraged by Section 922 of the NDAA for FY 2024, which directs an independent assessment of the effectiveness of the defense business enterprise architecture.[193] In addition, the HAC-D Report for FY 2024 acknowledges that unclear roles and responsibilities are a potential risk to successful digital transformation, and directs the DoD to provide a report delineating responsibilities for several high-priority areas, to include digital business practices, metrics tracking, and analytics to support operations and investment decisions.[194]

The section 1004 language also directed the Commission to conduct a comprehensive assessment to determine whether DoD's FM systems provided needed support to the audit of financial statements and maintained effective internal controls. The Commission acknowledges the significant amount of work by personnel across the DoD to support the remediation of known weaknesses of business systems that support financial statement audits. More information on the assessment of FM systems can be found in Section X.

The Commission identified several specific **examples** of ways to approach strengthened governance for DoD business systems. These include:

- The USD(C), in coordination with the DoD CIO and PIO/DA&M, should develop a strategic approach to prioritize the remediation of known system issues within the DoD that impact financial statement auditability and address priorities as part of the Enterprise Business Systems Roadmap (described below). All recommendations and concerns could be adjudicated through the DMAG process. If changes are approved by the Deputy Secretary of Defense, the USD(C) should ensure that Service or OSD resources are realigned to accomplish audit-related changes. The strategic approach should be tracked in accordance with Section 920 of the NDAA for FY 2024 that directs "The Secretary of Defense, in coordination with the Secretaries of the military departments, shall develop a set of metrics that reflect the Secretary's audit remediation goals and metrics to measure progress made by the military departments with respect to such goals."[195]
- The DoD should establish a Deputy CIO for Business Systems and ensure the development of a charter, outlining a DoD Business Systems governance process. The DoD CIO, in coordination with the USD(C) and the PIO/DA&M, should develop and lead the execution of an Enterprise Business Systems Roadmap with all associated details, performance measures and timelines, and ensure compliance by leveraging their budget certification authority. The DoD should provide the congressional defense committees with an annual report and briefing on the progression of the Department's Business Systems Roadmap and its linkage to auditability. Such a briefing should address:
    - Accomplishments made in the prior fiscal year towards implementing the roadmap;
    - Plans for future consolidation and modernization;
    - The ongoing process for assessing the business system environment;
    - Efforts to provide training of personnel on new systems and processes related to business systems; and
    - Efforts to address recommendations made by the GAO with regard to DoD auditability.

[193] P.L. 118-31.
[194] H. Rpt. 118-121, 254.
[195] P.L. 118-31.

Recommendation #22: Accelerate Progress Towards Auditable Financial Statements
The Commission recommends that the USD(C), in coordination with the DoD CIO, PIO/DA&M, and the military Services, develop and approve policy changes to financial systems needed to support the financial statement audit.

The Commission believes that **examples** of potential changes could include the following policy changes related to financial systems such as:

- Accelerating the retirement of all non-GL capable accounting systems and adopt the readily available, current generation of ERPs. The DoD should set specific target dates for retiring each legacy accounting system.
- Accelerating the consolidation, rationalization, modernization, and/or retirement of key financial systems and feeder systems related to audit. The DoD should pick a limited number of key systems that would propel audit progress and assign specific dates for replacing or updating these systems, which would be aided by assignment of responsible offices and provision of all necessary resources.
- Placing a priority on achieving unmodified audit opinions for smaller DoD organizations, including changes to improve their financial management systems and other changes that hasten an unmodified audit.
    - The DoD has already pursued this initiative by achieving unmodified audit opinions for seven Components. The Commission understands that the Marine Corps may be close to achieving a modified audit opinion. Achieving unmodified opinions for some organizations provides incentives for others to work toward the same goal and helps identify best practices needed to achieve desirable opinions.
    - The DoD should continue this approach, perhaps focusing next on the Space Force, larger Defense Agencies, and audits of working capital funds.
- Placing a priority on addressing FM system deficiencies that lead to problems with the Universe of Transactions and intra-agency transfers.

It is important that federal audits produce information that is valuable to their audience. As an example, the DoD could take a different approach to asset valuation so that the financial statement value aligns with how Congress and DoD traditionally calculate the value of an asset. This would require working with the Federal Accounting Standards Advisory Board (FASAB) and Congress to bring those definitions into alignment, which would also simplify the process, freeing up time to pursue other priority initiatives.

Recommendation #23: Continue Rationalization of the OSD Resourcing Systems
The USD(C) and Director of CAPE, in coordination with the DoD CIO and CDAO, should continue, and if possible, accelerate efforts to consolidate and streamline OSD programming and budgeting systems and processes as well as analytic capabilities, including providing appropriate enterprise access to PDMs and PBDs (or Resource Allocation Documents under the new DRS) and other similar guidance documents. A single authoritative, integrated, analytic, digital environment for OSD will enable increased efficiencies during the new DRS Resource Allocation process as described in Section IV, reduce duplication of effort and inaccuracies of reporting data, support better capability tradeoff analysis, and provide clarity for final Department-wide RADs. The OUSD(C) and CAPE should also co-locate or consolidate OUSD(C) and CAPE IT offices, including the Comptroller Enterprise Financial Transformation Office (EFT), the Comptroller Next Generation Resource Management System (NGRMS) program located in the Program and Financial Controls Directorate (P&FC), and the CAPE Program Resources and Information Systems Management (PRISM) Division to further enable and accelerate systems consolidation and modernization for OSD systems while creating potential resource efficiencies.

The Commission commends efforts made by the OUSD(C) and CAPE to develop and deploy NGRMS, which allows for a more consolidated view of current programming and budgeting data, and recognizes that it is easy to underestimate the many technical and functional challenges to system consolidation. These challenges include dependencies on cloud and on-premises infrastructure, multiple classification networks, standardization of data, and application program interface connections to authoritative accounting systems. The Commission encourages the OUSD(C) to continue to retire additional legacy systems and to leverage existing commercial solutions for the expansion of NGRMS capabilities according to its existing roadmap.[196] This should include use of analytics tools through the common platform described above and integration of AI capabilities. The Commission also commends military Service efforts to date to more closely link programming to budgeting by implementing their own COTS single authoritative systems. This recommendation will allow the military Services and DoD Components to maintain appropriate autonomy until their POMs are submitted, as is current practice.

Data Sharing Between the DoD and Congress

Each year the President submits a budget to Congress requesting the authorization and appropriation of funding for the following year's activities. Congress requires an extensive amount of information and justification to understand and act on the budget request. Effective congressional oversight requires continuous transmission by DoD of appropriate, secure, and timely data. At present, there are several significant impediments to the smooth flow of data from the DoD to Congress. As described in Section VI on relationships between DoD and Congress, these impediments include:

- **The culture and process for information sharing within DoD**, including confusion about the nature and extent of pre-decisional information.
- **The complexity and volume of data** spread across multiple colors of money, thousands of BLIs, and appropriated at different levels with varying periods of availability.
- **Challenges defining the "right" data** to meet congressional needs.
- **Antiquated methods for data sharing,** including manual and labor-intensive processes which are slow and prone to error.

Seeing Opportunity in DoD-Congress Data Sharing. The Commission believes that when DoD and Congress need to share data, such sharing should provide streamlined, searchable, and sortable access to data that is current, accurate, relevant, secure, and authoritative. A digital, collaborative sharing environment would significantly improve data sharing between the DoD and Congress, fostering a culture of transparency and partnership to deliver the best possible outcomes for both the Department and Congress. This collaborative environment will facilitate enhanced efficiency of DoD submissions to Congress and subsequent feedback from Congress to the DoD, to the benefit of both.

Achieving these improvements will not resolve all the challenges associated with communications between Congress and DoD on resourcing issues. Some challenges stem from the nature of the U.S. Constitution, which requires specific actions by the executive and legislative branches that can put them at odds. However, adopting the Commission's recommendations will streamline and speed the communications between DoD and Congress on resourcing issues, which will constitute a major improvement. Nothing from this section shall be construed as a means to decrease insight or visibility

[196] Commission interview with subject matter experts.

to the private sector or public into the DoD budget. The DoD and Congress should ensure that any changes made retain or enhance current transparency by providing access to the same data provided publicly today, adhering to operational security requirements where appropriate.

To that end, the Commission makes one overall recommendation to improve data sharing between DoD and Congress and suggests how that recommendation could be applied to streamline and speed communications.

Commission Recommendation on Data Sharing

Recommendation #19 (Key): Establish Classified and Unclassified Communication Enclaves

The CDAO, in coordination with the DoD CIO, USD(C), and Assistant Secretary of Defense for Legislative Affairs (OSD(LA)), should expedite the delivery of a classified and unclassified enclave to share appropriate information with Congress and for Congress to share information with DoD. The Department should consider tasking the IPT from Recommendation #20 to also assess the feasibility of deploying an instantiation of the piloted platform to support an enclave requirement for sharing of appropriate data with Congress. The IPT could assess the ability of the backend of the common platform to provide the necessary infrastructure for the enclave, while an alternative team assesses the requirements of Congress to develop and produce the front-end requirements which will meet the needs of a streamlined data sharing environment.

To implement this recommendation, the DoD will need to ensure the use, adaption, or procurement of a platform to support the following initial applications, which should be developed for the purposes of streamlining data sharing with Congress:

- Annual PB and budget justification materials (J-books)
- Reprogramming actions (Below and Above Threshold)
- Financial execution data (obligations and expenditures)
- Expanded acquisition program data (significant events, execution, and mandatory acquisition reports)
- Congressional reporting requirements
- Congressional communications with DoD (RFIs; Advanced Policy Questions (APQ); Questions for the Record (QFR); and constituent requests)

Specifically, the Commission urges the Department to complete a roadmap for the implementation of a classified and unclassified enclave with the above applications, along with any other applications agreed to by Congress and the Executive Branch, including the necessary resourcing requirements to implement the capabilities and timelines for completion, within six months of the issuance of this Final Report. As a part of its roadmap, the Department should assess if other federal agencies have been successful in developing a platform for data sharing with Congress, as well as commercial data sharing examples (e.g., banks or investment firms sharing with outside auditors),[197] and assess the applicability of the system and process taken to deliver the capability.

The Commission encourages a pilot approach for the delivery of a system for use by Congress. The Department should take a user-driven development approach in defining the requirements of the environment to be created. Unfortunately, requirements can vary from committee to committee, staffer to staffer, and by portfolio. While the above applications represent identified buckets of data that may

[197] Cardon et al. 2023.

be generally useful, the IPT will need to assess the needs of its individual congressional customers in more detail. Specifically, agreeing to what kind and level of data should be provided, and how often and in what format, will be critical to the success of the enclaves. The Commission recommends the IPT pilot the capability with the delivery of the FY 2026 PB and J-books, to conduct experiential learning and develop a repeatable process of delivering a successfully tailored product to meet congressional needs. The IPT could also consider piloting the capability to support the oversight by congressional committees of a specific program, such as the report "on a particular development effort, data, and deployment strategy of an appropriately secure web interface that can provide access to data described for DIU project reporting to the congressional defense committees," as directed in the HAC-D Report for FY 2024.[198] For more information on specific details regarding implementation of this recommendation, the Service Design Collective, a public benefit corporation conducting research on behalf of the Commission, will issue its findings in the release of their report.[199]

The remainder of this section provides more detail on several aspects of this recommendation.

The Environment Today

The Commission applauds CDAO efforts to date to enable enhanced data sharing with Congress by making available limited amounts of unclassified data through a secure unclassified platform,[200] secured up to Impact Level (IL) 2,[201] which is intended to be accessible by username and password by the congressional defense committees to view select amounts of unclassified data for specific purposes. The Commission is also aware of other attempts to provide congressional access to DoD systems, but policy barriers to issuing congressional staffers identification or common access cards have prevented the use of other secure systems.

The Commission found limited awareness of the platform, referred to as SUNet, by the committees, documenting only four congressional staffers that have established username and passwords, and noting the concerns about the lack of useful data within the platform. Specifically, OUSD(A&S), in coordination with the CDAO, have made available an application to view the unclassified portions of the annual Selected Acquisition Reports (SAR) data, which were previously delivered electronically via PDF in email and posted on a DoD webpage.[202] While providing this data in a searchable and sortable format is a step forward for congressional usability, the DoD must ensure delivery of such data is timely and accurate in two ways: 1) by delivering at the appropriate time in the legislative cycle to support congressional decision-making; and 2) by including data that reflects the current state of a program or project. In the case of SARs, the data provided typically does not accurately depict the state of a program at that point in time because months have elapsed since the data was captured, reporting due dates do not always align with program events and timelines, and the data is scrubbed to accommodate the public release of the information which can remove pertinent details regarding a program. The Commission recommends the DoD explore additional models of coordination to ensure timely delivery of data to Congress (see Recommendation #17).

[198] H. Rpt. 118-121, 254.
[199] Service Design Collective 2023.
[200] SUNet is an unclassified platform to enable the DoD, US Government Interagency, and Coalition Partners to securely collaborate and share Publicly Available Information, CUI data, analytics, and other enterprise services.
[201] Impact Levels are defined by the Cloud Service Provider (CSP) Security Requirements Guide. Cloud security information Impact Levels are defined by the combination of the sensitivity or confidentiality level of information (e.g., public, private, classified, etc.) to be stored and processed in the CSP environment; and the potential impact of an event that results in the loss of confidentiality, integrity, or availability of that information.
[202] WHS.

The DoD should consider the deployment of an enclave authorized to support higher classifications of data beyond IL 2, which supports the delivery of nonpublic unclassified data. As a first step, the IPT should seek to deliver IL 4 data, which accommodates non-public and up to controlled unclassified information (CUI) data. The IPT will also need to plan for the eventual establishment of a classified enclave to support the consistent delivery of IL 6 data, which supports information classified up to the secret level.

The Commission is concerned about the lack of adequate means to deliver timely classified data to Congress, which historically has been provided to Congress through a hard copy courier and/or the Capitol Network (CapNet) classified email application.[203] These limited methods for delivery have unintended consequences that can appear as a lack of communication from the Department on classified topics, and in some cases inhibit the ability of congressional staffers to receive accurate and complete data on a program in a timely manner. In turn, the DoD will need to address Departmental policy to ensure the enclave allows for a secure method for authenticating congressional stakeholder identity when accessing the enclave.

The DoD will also need to study and ensure proper classification of aggregated data that is intended for the enclave. While it is reasonable to expect unclassified data would retain its classification level when made accessible through the enclave, the aggregation of such data, coupled with increased analytic capabilities, may necessitate additional controls for the information. The DoD should assess this risk and determine the policies and guidance with which to address this challenge.

It is imperative that the DoD provide training to all congressional defense committee staffers on the applications and data provided in the enclaves. It is also critical for congressional staffers to trust the accuracy and consistency of provided data. An enclave will only be as useful as the end user's ability to quickly navigate the application, access the data needed, and know that it is accurate and the most up-to-date data available. Such applications should be developed in coordination between the DoD and Congress, ensuring the most possible streamlined user experience for congressional staffers and ease of proliferation for the DoD.

The remainder of this section describes each of the recommended applications listed above and identifies several barriers that will need to be cleared in support of these applications.

Application for Delivery of the Annual PB and Budget Justification Materials. The CDAO and USD(C) should develop an application, to be accessed through the enclave, which annually delivers the PB and budget justification materials in a searchable and sortable format across fiscal years, colors of money, and programs at a more detailed level than is currently provided on OUSD(C)'s public website. The DoD should consider implementation of such delivery in support of the FY 2026 PB in accordance with the pilot described above. Digitization of the annual PB will ensure timeliness of materials delivery, accuracy of information, and enable congressional staff to easily parse the request based on their portfolio. The enclave also supports the Commission's recommendations on standardization of J-books, where applicable, and the engagement with Congress recommended in Section VI.

In work done for the Commission, the AIRC conducted a proof-of-concept demonstration on J-book key word search association, which provides initial exploratory research into the technical delivery of a capability that could support the searching and sorting of justification materials across Service, color of

[203] Sullivan, Sobel, and Hathaway 2023.

money, or volume.[204] In their report, they state "A comprehensive understanding of the complexities and interdependencies of DoD programs, viewed through J-books, ultimately advances national defense capabilities, and helps in formulating sound budgetary strategies. However, understanding the budget implications of various DoD acquisition programs through J-books is daunting, especially for complex cross-domain strategies like the Joint All Domain Command and Control (JADC2). JADC2, which is woven throughout the different branches of the DoD, is challenging and currently, as far as we know, is limited to human-based analysis."[205] Acceleration of an application would empower congressional staff to understand the holistic programmatic and budgetary request for a portfolio, without delay or additional manual burden on the DoD workforce, prior to finalizing authorization or appropriation language, which may have significant operational implications.

Enabling Action: Ensure DoD J-book Systems Enable Ingestion. To provide the PB and supporting justification materials through an application, ingestion of the source data into an underlying host system is necessary. Unfortunately, the current environment of J-book writing systems does not support this outcome. To provide the digital products as envisioned in this recommendation, all J-book writing system owners must ensure their systems and processes support the export of data as machine readable in accordance with OMB Circular A-11[206] and FMR Volume 2A.[207] In this scenario, data would feed from authoritative J-book writing systems, around 12 systems across the Military Departments and DoD Components, to a host environment of the product team's choosing, and then be externally shared to the enclave via a PB and J-books Application. This is a practice used by other federal agencies, such as the Department of Homeland Security where Agencies and Components build their J-books in disparate systems which then aggregate into a single system.

The Commission is aware that the CDAO is currently ingesting Investment data (RDT&E and Procurement appropriations) into Advana from the Defense Technical Information Center Comptroller XML Exhibit Support Tool, which is being used for internal analytics. This approach may offer a promising pathway for expediting this recommendation. Systems owners and Comptrollers are encouraged to collaborate with the IPT in carrying out the intent of this recommendation, including any additional system or process adjustments necessary to ensure seamless flow of data into the enclave for delivery to Congress.

Application for Reprogramming Actions. Creating, coordinating, and tracking approval of ATR requests is a time-consuming administrative process, requiring the use of PDFs and email delivery to request DoD leadership, OMB, and congressional approval. The CDAO and USD(C) should develop an internal enterprise-wide coordination and tracking application, including a standardized request format, for all DoD reprogramming requests, which would significantly reduce process and approval times, highlight source and requirement trends, and leverage automation to lessen errors, duplication, or misplacement. Upon development of an internal application, the IPT, in coordination with the CDAO and USD(C), should ensure the internal application and enclave allow for the delivery of reprogramming requests and the tracking and archiving of approval, modification, or denial of requests by Congress within the enclave.

Application for Financial Execution Data. Financial execution data, more commonly known as the monthly 1002 reports that track obligations and expenditures by appropriation and year of availability, provides critical information to the congressional committees as they work to authorize and appropriate the annual budget for the DoD. The DoD should ensure Congress has access to timely, relevant, and

[204] Ramirez-Marquez et al. forthcoming.
[205] Ibid.
[206] OMB Circular A-11.
[207] DoD FMR Vol. 2A.

accurate financial execution data to support data-backed decision-making during the legislative process. Legislative requests are made annually to DoD to provide this data for particular programs, and the Joint Explanatory Statement accompanying the DoD Appropriations Act, 2023 requested that the USD(C) provide a plan for delivery of comprehensive obligation and execution data for funds with a tenure longer than one year.[208] The plan, provided in March of 2023, outlines that in addition to the already provided current year execution data by Treasury Account, the DoD will provide cumulative expenditure data from prior fiscal years to the congressional defense committees in an excel spreadsheet format. The Commission applauds efforts by the DoD to make this data more comprehensive and recommends the DoD make available obligation and expenditure data for all appropriations through an application in the enclave at a frequency to be determined by Congress.

Expanded Application for Programmatic Execution Data. The Commission applauds efforts to date by the CDAO and USD(A&S) to make the annual unclassified SARs available to congressional staffers through the SUNet platform in a searchable and sortable format. As previously highlighted, feedback from the congressional defense committees suggests frustration with the lack of accurate, timely, and comprehensive program execution data from the DoD. Section 805(c)(2) of the NDAA for FY 2022 directed the USD(A&S) to submit a plan to effectively share acquisition data using new reporting systems for covered programs previously reported under the SAR.[209] In June 2023, the DoD provided an implementation plan for the modernization of the SAR (MSAR) process.[210] The Commission recommends that the DoD work with Congress to ensure the data and comparisons outlined for the modernized SAR meet the needs of Congress, to include more timely classified programmatic data. The Commission notes the DoD's expressed intent to provide the data on an annual basis and acknowledges the challenges that exist with acquisition reporting, particularly the administrative burden that exists to capture and coordinate the SAR.

The Commission recommends the USD(A&S), in coordination with the CDAO, assess ways to automate portions of the data collection and cataloging process, to enable a more streamlined and timely means of programmatic execution reporting with minimized impact to the DoD acquisition workforce. The DoD should also consider more frequent iterations of SAR data delivery to Congress for certain programs, possibly quarterly or based on significant events, and at a classification commensurate with appropriate program transparency, to provide more frequent insight to congressional staffers while maintaining program execution focus and decision space. This could include more frequent classified annexes to the MSAR delivered through an application in the secure enclave described in this section.

Application for Congressional Reporting Requirements. The Commission is aware of requests by Congress to receive access to the OSD(LA)'s Congressional Hearings and Reporting Requirements Tracking System (CHARRTS) that have been met with little success. At present, when congressional reports or briefings are completed, they are sent directly to professional staff members via email if they contain unclassified or CUI information, and hand couriered or delivered electronically through CapNet if classified. The lack of a streamlined common repository or archive for delivered reports and briefings is a source of frustration for PSMs who either did not receive the report or briefing they think they should have received, were not made aware of the delivery of a classified document, or missed the notification in an abundance of email communications. This is also particularly challenging as new staffers or staffers with a new portfolio do not always have access to historical information, creating requests to the DoD for that information. Upon implementation of Recommendation #24, discussed below, the IPT, in

[208] Explanatory Statement for P.L. 117-70.
[209] P.L 117-81.
[210] Commission interview with subject matter experts.

coordination with the OSD(LA) and USD(C) Budget and Appropriation Affairs (BAA), should ensure immediate access for congressional staffers as appropriate by committee or position through the enclave to a repository of previous and current congressionally directed actions, to include pertinent data such as assigned office, due date, suspense changes, completion date, and the final report or briefing.

Recommendation #24: Modernize the Tracking of Congressionally Directed Actions
The CDAO, in coordination with the OSD(LA), the USD(C) BAA, and the DBC, should modernize the process and platform by which the DoD tasks and tracks congressionally directed actions. This should include:

- An assessment of the OSD(LA)'s CHARRTS and its ability to automatically ingest data from congressional bills and reports, and the feasibility of making available the data from the current system to congressional stakeholders.
- Implementation of a modernized solution which allows for the direct ingestion of congressionally-directed actions and tasking of such actions in a more automated fashion. Such a solution should allow the sharing of congressional reports, briefings, other congressionally directed actions, and overall status with Congress through the enclave.

Each year Congress directs that DoD make many changes to the DoD budget proposal that it has submitted. The DoD uses CHARRTS to track and task DoD stakeholders with all the congressionally-directed actions from the appropriations and authorization bills, their respective reports, and reports from each of the congressional defense committees released during the annual legislative process. At any given time, CHARRTS is tracking more than 1,600 reporting requirements and is essential to ensuring the DoD knows the status of responses to statutory tasks. Once the congressional markup process begins, OSD(LA) personnel manually identify, assign, and track over 1,200 annual reporting requirements. This time-consuming, multi-week process requires several people to review the legislation, identify Offices of Primary and Coordinating Responsibility, and manually create assignment cards which are then tasked to the responsible military Services, DoD PSAs, and DoD Components to complete.

Congress has previously expressed frustration with the process and system used to track congressional reporting requirements, which culminated in the passage of two statutory requirements: Section 908 of the NDAA for FY 2021[211] and Section 903 of the NDAA for FY 2023[212] were directed at modernization of the process used to identify, task, and manage congressional reporting requirements. Most notably, Section 903 of the NDAA for FY 2023 directed a capability to enable direct access by the congressional defense committees to the system (CHARRTS); rapid automatic ingestion of data provided by the committees of reports and briefings; sortable and exportable database views; automated notification to congressional staff of changes in the system; and integration with Microsoft Office. It is the Commission's understanding that minimal modernization of the platform has occurred. During demonstration of the platform's capability, certain search functions did not return results, and the ability to look across portfolios and fiscal years was challenging at best. The Commission encourages the OSD(LA) to continue reviewing CHARRTS capabilities and to work with the congressional defense committees towards meeting their direction as another solution is being deployed.

[211] P.L. 116-283.
[212] P.L. 117-263.

The Commission understands that Congress does not consistently provide final lists of congressional briefings or reports in machine readable format. To expedite the process by which reports and briefings are identified and tasked, OSD(LA) assigns their staff to focus on this task for their portfolios. This two-week process, while a dramatic improvement from the previous months long process, still requires significant manual labor, leading to potential errors and lessened focus on other critical tasks. While the OSD(LA) leads this effort for the OSD, all the DoD Components and PSAs are also focused on reviewing the same legislative texts to see which requirements apply to them. The Commission encourages Congress to provide a list of congressionally-directed actions with assigned Offices of Primary Responsibility in machine readable format as an addendum to each Defense and MILCON/VA bill or report. This practice will ensure both Congress and the DoD are holistically tracking annual reporting requirements and due dates with speed and accuracy.

Finally, it is the Commission's position that the DoD should modernize and integrate technologies to support the automated ingestion, identification, and tasking of congressional reporting requirements from bill and report text, to include creating an unclassified tracking mechanism for all classified requirements. Such capabilities will reduce manual workload and potential for error during the identification process and ensure visibility across the Department and with Congress of what is required and when.

Application for Congressional Communication with DoD. There is a variety of information that is exchanged between DoD and Congress on a daily or semi-regular basis, often through legislative liaisons in the OSD and the military Services. This includes but is not limited to RFIs, APQs, QFRs, constituent requests, and scheduling (as requested by Section 919 of the NDAA for FY 2024).[213] These requests are often received through email, particularly RFIs, which can rely on a single point of failure for critical and often time-sensitive communications. These requests can be missed or forgotten by legislative liaisons who may be responsible for multiple offices or Components, causing unnecessary challenges in communication between a Component and their congressional counterparts with oversight responsibilities. The DoD has no standardized method for tracking congressional communications– OSD(LA) tracks communications and engagements through their own congressional tracking system, and the Military Departments and DoD Components leverage varying systems ranging from commercial solutions to Excel spreadsheets.

The Commission notes that a system would not and should not replace the necessity for direct communication or personal relationships between the executive and legislative branches. Implementation of such a system and its associated processes would be supplemental in nature and would be used when both parties deemed it appropriate.

Enabling Action: Ensure Congressional Bills, Reports, Funding Tables, and the List of Reporting Requirements are Provided in an Ingestible Format to the DoD. Upon assessing congressional processes and systems, the Commission found varying standards for the development and publication of legislation impacting the DoD. Upon the public release of legislation, hundreds of personnel within the DoD scrub thousands of pages to identify impacts to programs for which they are responsible and to determine reporting requirements. These documents include the annual Defense appropriations, NDAA, MILCON/VA appropriations, Intelligence authorization, and the accompanying reports, and each of the individual committee marks and reports leading up to the final bills. Some of these documents allow for the keyword search of interest areas, while others are scanned or provided as unofficial final documents.

[213] P.L. 118-31.

Upon initial scrub of the reporting requirements and adjustments to the budget, personnel throughout the DoD manually apply changes to the budget in the authoritative systems and assign congressional reporting requirements to the appropriate Services and DoD Component(s).

Automation of this information will reduce hundreds of manhours of effort, ensure a common picture between the DoD and Congress, and speed the time in which the DoD responds to congressional intent. Providing these documents in a machine-readable format would allow the DoD to develop or acquire capabilities, which currently exist in the private sector, to analyze, assign, distribute and act on legislation more quickly. While human cognition is and will always be necessary, the DoD could leverage natural language processing to scrub congressional reports for congressionally-directed actions, automatically capturing and assigning those that are explicitly tasked to the Secretary, Military Departments, and DoD Components. Appropriations Bills could be provided back to the DoD more regularly in machine readable format such as an XML or JSON file to allow for the expedited integration of budgetary marks. Congressional reporting requirements that are not explicitly identified by natural language processing will require human intervention and must be assigned to the appropriate entity, requiring cross-Component coordination. Budget analysts will continue to verify the reductions or additions to BLIs, assess authorization or appropriation language, and determine the impact on their programs; however, technology could assist, resulting in significantly faster execution of both the mission and congressional intent.

Conclusion

Investing in the digital foundation upon which decision-makers rely is necessary to maintain pace with strategic competitors. Data has limited currency in any conflict unless it is translated into actionable decisions based on good judgment. Suboptimized decisions ultimately weaken military readiness and could have lasting impact on the security of the nation. It is the Commission's view that the above mix of recommendations will support the critical transformation of the underlying infrastructure necessary to support data-driven and timely decision-making both within DoD and in Congress.

Section VIII – Strengthen the Capability of the Resourcing Workforce

The law establishing the Commission requires an assessment of the adequacy of the portion of the OSD civilian workforce that focuses primarily on programming and budgeting–that is, civilian personnel in CAPE and the Program/Budget (P/B) part of OUSD(C). The details of that assessment can be found in Section X of this report. This section identifies recommendations stemming from that assessment.

The civilian personnel considered in this section include all of the CAPE personnel (164 authorized billets)[214] who support programming, strategic and operational analysis for planning, and acquisition support related to cost analysis and analyses of alternatives (AoA). Only a portion of the OUSD(C)–the P/B organization–is included in this section given the focus on programming and budgeting. The P/B organization has 92 authorized billets, slightly over 50 percent of the total number of billets allocated to the OUSD(C). Other organizations inside the OUSD(C) lead DoD efforts on financial management policies and audit, conduct legislative liaison functions with the appropriations committees, manage human capital and other support functions, and provide front office staff support. When considered together, the CAPE and P/B billets addressed in this section are only a small fraction of the total number of personnel involved in DoD resourcing activities throughout the Department. Today, DoD has more than 50,000 civilian and military personnel working primarily in financial management. The CAPE and P/B personnel are equal to only about half of one percent of that total, though their position near the top of DoD's resource management pyramid often gives their work a significance that exceeds their number.

Much of the Department's resource management work is accomplished within the Military Departments and other DoD Components. For this Final Report, the Commission also completed research on the programming and budgeting workforce within the Service and Military Department headquarters organizations. Some of the same challenges that are addressed in this OSD assessment are shared by the Services and Military Departments. The details of that Service and Military Department review can be found in Section XI of this report; there are no recommendations in that assessment.

The workforces in the Offices of the Comptroller and CAPE provide the OSD-level of support that enables their offices to lead the Budget Review and Program Review, respectively. As such, they are extremely busy ensuring those processes provide the DoD's senior leaders with the information required to finalize funding decisions for capabilities, initiatives, infrastructure, and workforce to support the NDS and meet operational needs today and well into the future. The OUSD(C) and CAPE organizations support Department leadership well; however, given all that these responsibilities entail, and the timeline in which they must be completed, the staffs face serious workload challenges. Section X includes a review of OSD Comptroller and CAPE workforce sufficiency, along with a review of new and agile programming and budgeting techniques, and a review of the frequency and sufficiency of program and budget execution analysis. The following bullets summarize key aspects of those reviews, with a focus on those that most influenced the Commission's recommendations in this section:

[214] OSD 2023.

- CAPE leads the programming phase of PPBE while P/B leads the budgeting and execution phases;
- CAPE is experiencing some recruiting challenges; about 18 percent of its authorized civilian billets were vacant, as of first quarter FY 2023;
- P/B is experiencing challenges with both recruiting and retention;
    - The current annual loss rate is about 16 percent, which is near the highest level in recent history; about 12 percent of P/B's authorized billets were vacant, as of first quarter FY 2023.
    - These figures suggest a P/B staff that is stressed because of a heavy workload; the Commission was told many P/B staff, including its leadership, work extensive overtime, and year-round tasks leave little time for training, leave, and a reasonable work-life balance.[215]
- Several of the Commission's recommendations will take effort to implement, and CAPE and P/B will have key roles in those implementation efforts, likely further exacerbating these challenges; and
- Despite these workforce challenges, the Commission assesses that both CAPE and P/B provide DoD leadership with strong support during the PPBE process.

Overall, the Commission is concerned about staffing in DoD's financial management organizations. The OUSD(C)'s P/B organization exemplifies this staffing stress, which in P/B has been occurring for many years and for a number of reasons. The P/B staff levels have decreased since FY 2002 (from 98 to 91 in 2022) even though the total defense budget, after factoring in inflation, has grown by almost two-thirds since FY 2000. Today, P/B permanent authorized staffing levels are at 81 after the Revolving Fund personnel were realigned in 2022 to the Enterprise Data and Business Performance Office (later named the Enterprise Financial Transformation Office, created in 2023).[216]

The P/B staffing levels do not need to increase in proportion to the defense budget, but much larger budgets generate additional needs for review and hence require some staff increases. The past couple of decades have also witnessed a number of crises that generated needs for supplemental funding and other financial changes. Crises have included 9/11, the Iraq and Afghanistan wars, sequestration cuts in FY 2013, government shutdowns, regular CRs, the Red Hill water crisis, and a recent series of supplemental appropriations to assist Ukraine and Israel. Each of these events has added significantly to the P/B workload. These activities all require additional work and effort, and the regular business and workload for the organization must also continue.

Due to these events, as well as late appropriations enactments due to CRs and PB submissions that are delayed in order to incorporate the newly enacted appropriations, there are few periods when the P/B workload is normal. The budget formulation phase gives way to defense of the budget before Congress, while during that same time and throughout the rest of the year P/B is overseeing and supporting execution of the current-year budget, including accommodating seemingly ever-present financial crises. That results in little downtime for training, leave, addressing long-term issues (e.g., routinely updating the

[215] Commission interview with subject matter experts.
[216] Note: In addition to the 81 permanent authorized billets, P/B has two temporary, one-year billets that expire in November 2024.

FMR), and general work-life balance. The assessment in Section X provides more detail on these trends in P/B and other financial organizations.

For example, the FY 2017 PB was submitted on time on February 1, 2016, to support the congressional timeline for authorization and appropriations of funding required to begin FY 2017 on October 1, 2016. Due to changes in the national security environment at that time, a formal budget amendment for FY 2017 Overseas Contingency Operations (OCO) funding was submitted to Congress in November 2016 and another budget amendment to Request for Additional Appropriations Operations was submitted to Congress in March 2017. The November 2016 OCO amendment was appropriated in one of the many CRs that year, and DoD funding was included in the Consolidated Appropriations Act, 2017 dated May 5, 2017. Final funding was enacted that year with only a few remaining months in the fiscal year for O&M and MILPERS funds that expire every year on September 30th. During that same time, work continued on the FY 2018 Program and Budget review that was completed and paused for the change of Administration, prior year funding was being executed in support of those capabilities and activities, and programs and funding were being continuously shuffled and managed due to the extended CRs.

Keeping in mind the staffing stress on DoD's financial management organizations, and based on the research and the knowledge of the Commissioners and staff, this Final Report offers four recommendations to strengthen the OSD resourcing workforce.

Commission Recommendations

The Commission appreciates the feedback received on potential recommendations outlined in the Interim Report and has incorporated that input into the recommendations in this Final Report. These include recommendations to improve training and overall workforce capability, as well as the recommendation for a cross-functional implementation team to coordinate and institutionalize implementation of the Final Report recommendations. This Final Report also includes and reiterates previous recommendations from its Interim Report focused on improving the DoD's resourcing workforce capability to support the overall resourcing process and enable faster delivery of information for decision-makers.

Recommendation #25 (Key): Continue the Focus on Recruiting and Retention

Both CAPE and P/B realize they need to recruit more personnel with the right analytic skillsets. While continuing to recruit personnel from the Military Departments and DoD Components who have the appropriate analytic skills and experience, CAPE has been strengthening its recruiting pipelines, which include greater use of American Association for the Advancement of Science Fellowships; the Presidential Management Fellows Program; the John S. McCain Strategic Defense Fellows Program; Intergovernmental Personnel Act placements and detailees; and outreach to recent university graduates with advanced degrees. For its part, P/B has implemented plans that hire more junior analysts and provide holistic training in addition to recruiting senior personnel from the military Services. There are currently some Presidential Management and McCain Fellows who serve in P/B as junior analysts, which is promising. If P/B can identify the necessary billets, it plans to try to keep some of these Fellows in financial management, seeking to broaden their skills and experience through assignments in the Services and DoD Components with the hope that some would eventually return to P/B.

The Commission commends these efforts and recommends that CAPE and the P/B portion of the OUSD(C) go further and seek support from the Department for incentives for recruiting and retention. These incentives could include:

- Pay enhancement authority that would permit paying senior or skilled personnel at higher rates;
- Recruiting and retention bonuses that would allow paying bonuses to new hires;
- Expansive use of Direct Hire authority to speed the process of hiring new personnel;
- Broader use of social media to make potential candidates better aware of opportunities in CAPE and P/B; and
- Providing modest telework opportunities as a recruiting and retention incentive.

The Office of the Director, CAPE and P/B should also consider whether they can reduce recruiting and retention demands through greater use of contractor personnel. For example, the P/B organization, which currently uses contractor personnel primarily for administrative support, should determine if there are other tasks that could be performed by qualified contractor personnel. Perhaps, as a start, P/B could consider whether contractors could gather information for budgetary reviews, formulate options and implementation plans for tasks including those related to proposals from the Commission, develop written materials and charts, and train P/B analysts on new budget techniques including the use of data analytics. In making these determinations, P/B must ensure that contractor personnel would not be performing inherently governmental or closely related work.

Recommendation #26: Streamline Processes and Improve Analytic Capabilities

Ways to reduce demands on personnel involve streamlining processes and improving analytic capabilities. In P/B, they could reduce some workload, for example, by asking for revisions in the policy that requires the USD(C) to review and coordinate on all congressional reporting requirements. In addition, other senior staff or SES members within the OUSD(C) could be the final approval authority for many documents and actions, instead of the current process that requires all packages be approved by the USD(C). This small change would eliminate many steps and save significant staff time spent working that coordination effort up through the USD(C) chain of leadership. The Commission understands the OUSD(C) has tried to delegate the review of some packages.

Also promising in terms of workload reduction is greater use of the NGRMS–a single resourcing system now being used to record changes in data made during both the programming (Program Review) and budgeting (Budget Review) phases of PPBE. The P/B leaders indicated that the current version of NGRMS is already providing some help in reducing workload by avoiding data re-entry and corrections as there is no longer a need to reconcile between the two previous legacy systems it replaced. Later versions of NGRMS should assist P/B analysts during the Resource Allocation process of the new DRS, for example during pricing reviews, in tracking the overall status of that year's program and budget changes, which should further reduce workload.

Additional and better use of data analytics and business tools will also help reduce workload as analysts become more familiar with the capabilities and spend less time on data calls to find information. The Advana platform has already helped in assembling data for submission of supplemental appropriations for Ukraine; it has also been used to analyze spend plan variances, to include use by the DoD Inspector General for their review of Ukraine supplemental funding. The DoD plans to broaden the use of shared platforms/applications, data analytics, and other available tools for budgetary trend and execution analysis. It will also be used to identify misreported transactions and support actions to improve the accuracy of spending reports.

Cost data collection and tools, such as the CAPE-managed Cost Assessment Data Enterprise (CADE) and Enterprise Visibility and Management of Operating and Support Cost (EVAMOSC) systems, are also valuable tools to reduce workload and improve estimation and savings in cost management.

The DoD's AWG is also guiding improvements to analytic capabilities that can reduce workload across DoD's analytic community, including for CAPE, OUSD(C), OUSD(P), the Joint Staff, and the military Services. Efforts are focused on improving quality of and access to data, improving analytic tools, and resolving classified access and infrastructure challenges. Recent progress in these areas is promising, including efforts to connect and catalogue data on the Advana platform and to create a joint classified portfolio available across organizations. Future AWG plans include enhancements for weapons performance data, adding levels of detail in posture data, structuring data for use in key models, and sharing data from models, wargames, and experiments.[217]

The Commission also believes that workload could be reduced by streamlining the organization within P/B and the OSD staff. The USD(C) has created an Enterprise Financial Transformation (EFT) office in addition to the existing Program and Fiscal Control (P&FC) office. These offices appear to have some overlapping responsibilities, particularly in the management of the budget database and other IT capabilities. The DoD has also created the CDAO, which is responsible for speeding the adoption of data analytics and AI, providing the appearance to the Commission that there may be overlaps among these offices. Eliminating these overlaps may help P/B streamline its workload.

As noted in the Commission's assessment of the CAPE and P/B workforces, both offices appear to be providing strong support to the PPBE process (see Section X for further details). The recommendations in this section will further improve the analytic aspects of this support.

Recommendation #27: Improve Training for Personnel Involved in Defense Resourcing

The Commission determined that better training on a number of topics is required for resource management and acquisition personnel, as well as for those who execute and support the PPBE process from strategy through execution. Many personnel understand their functions, but do not necessarily know how that function supports the larger efforts that culminate in all the analysis and budget justification materials, or how those products are used with Congress to support the authorization and appropriations processes. An understanding of the entirety of the process should be part of the training that personnel receive, so that they understand how important their role is in the process and what happens with their analytic or work products. In many cases, these topics can be added to existing classes and new orientation schedules; however, in some cases, implementation may require more specific development of curriculum by training providers. Specifically, the Commission recommends the following:

Recommendation #27A: Improve Training for Preparation of Justification Materials (J-books)

The PB is the formal submission to Congress of everything that the DoD requires from paying its personnel and purchasing supplies, to buying planes, vehicles, and ships, etc. The J-books are used to provide Congress with needed information, to include justification for why resources are needed for a specific program, and to aid Congress in their review before authorizing and appropriating DoD budgets. They are also used to develop a common understanding of the purpose of requested funds. The exhibits in the PB are often supplemented with other highlight materials and much more detailed additional

[217] AWG 2023, 4-5.

information during staffer rollout days. However, the exhibits need to be complete enough to stand on their own in case the opportunity to provide additional information does not occur. After an appropriation is enacted, budget J-books become a key document providing guidance to ensure that funds are expended in accordance with their intended purpose based on how those requirements were described.

Today, there is limited training that teaches DoD personnel the importance of the J-books or how to develop and write the descriptive narratives that provide Congress needed information and the Department with appropriate guidance on the expenditure of funds. While the Commission has been told that some training in writing J-books is available in parts of the Department, it appears that it is not institutionalized within the military Services and DoD Components. Instead, "on-the-job" training is the rule and repeating last year's J-book narratives with minor adjustments is common practice.

The Commission recommends the creation of training courses for various types of budget justification materials, including J-books, data files, and staffer briefings. Course material for inclusion in existing courses or individual courses should be created for financial management (FM) and acquisition personnel and for other groups as needed. For FM personnel the course(s) should be offered through the FM Certification Program while acquisition and other functional specialties would utilize their own training certification programs and processes. The training should also be offered to congressional staff and personnel on a voluntary basis.

The Commission also recommends that training on the purpose and use of J-books be inserted into existing training for acquisition personnel and Command-level leadership. It is imperative that personnel responsible for directing the use of funds and executing those funds are appropriately informed of the importance and legal implications of the J-book narratives and accompanying congressional direction. The DAU, in coordination with the USD(A&S) and the USD(R&E), will be responsible for incorporating this training into existing curricula. Command-level orientation should be updated to include a session on J-books and congressional direction.

The OUSD(C) should take the lead on this recommendation, starting with creation of a cross-functional team including representatives from USD(A&S), USD(R&E), and appropriate organizations within the military Services and other DoD Components. The team would identify the specifics of training to be conducted and then, for FM personnel, personnel in charge of the FM Certification Program would create a course. The cross-functional team should be identified within four months after publication of this Final Report and should complete its work within six months, if possible, but no later than one year. Success in implementation of this recommendation should be judged by adherence to the deadlines and by student feedback on the resulting courses.

Recommendation #27B: Improve Training for DoD Liaisons

The personnel serving in liaison billets provide a critical service to the Department by linking DoD personnel with their congressional counterparts in everything from formal hearings with the most senior leaders, to meetings or briefings on a requested topic with the subject matter experts best postured to address the issues. As further addressed in Section VI, the liaisons also need to understand the congressional calendar to assist with scheduling meetings and briefings at the most opportune times to provide information from the Department to meet staffer needs. Sharing information and best practices across the liaison offices will also lead to better awareness on the part of the military and career civilians who serve there and improve the effectiveness of their communications.

This recommendation involves the appropriation and authorization liaisons who, in the course of their duties, provide support to the resourcing workforce as well as DoD leadership. While the liaisons are not directly involved in resourcing work, a successful liaison will help make the financial workforce more effective.

Recommendation #27C: Expand Training on Data Analytics

As discussed further in Section VII, the focus for personnel supporting the PPBE process needs to shift from finding and reconciling data to analysis of the available authoritative information. Understanding what is available and where to find it will further enable better analysis and presentation of that information to senior leaders. The CDAO and EFT should expand opportunities for the PPBE workforce to receive training on the applications, data sources, and capabilities of and within the Advana platform. Feedback from different users of the PPBE process (CAPE, the Joint Staff, and the OUSD(C)) mentioned concerns about their ability to use and access data via Advana. Such training should be geared toward different levels of the leadership chain and include an overview of the capabilities, applications and feeder systems, and technical architecture.

Recommendation #27D: Improve Understanding of Private Sector Practices

The Commission recommends that those personnel heavily involved in PPBE become more familiar with private sector issues that could influence their work. Increasingly, DoD needs the assistance of the private sector, including small business and venture capital firms, to provide the innovation needed to meet warfighter requirements. The Commission believes that PPBE personnel should be better informed about private sector firms and their incentive structures to increase DoD's understanding about how PPBE decisions impact private firms and make better decisions during the PPBE process, to include industrial base and supply chain challenges. Familiarization information should include, but not be limited to, issues such as financial management in private sector companies including profit and loss considerations, market analyses that private enterprises use to make decisions about DoD projects, timelines faced by private sector firms including the short timelines faced by some small businesses, and differences in the overall culture between private firms and DoD.

To achieve needed familiarization with private sector practices, the DoD could reinstitute site visits by PPBE personnel to private companies, which the Commission understands to have been discontinued in some cases as a result of reduced travel budgets. The Commission recommends that the USD(A&S) take the lead on formulating a familiarization program perhaps built on site visits for those PPBE personnel most involved with the private sector. The program should be available within one year of publication of this Final Report. Those formulating the program should reach out to industry associations for advice and assistance.

Recommendation #28: Establish an Implementation Team for Commission Recommendations

Many of the Commission's recommendations drive additional, though temporary, workload which will be critical to successful implementation. The Commission recommends that the Department establish a cross-functional implementation team for a three-to-five-year timeframe that reports directly to the Deputy Secretary of Defense to oversee and implement recommendations. The Commission recommends adequate staffing for this team but does not recommend the specific size of the team, which will depend on which Commission recommendations the DoD and Congress agree to implement. Nor does the Commission recommend specific sources of personnel. The DoD could use existing billets from various organizations to provide staffing, perhaps including temporary billets. Consultants and other contractor support may also prove useful in providing the necessary expertise to support the breadth of the requirements and fully implement the Commission's recommendations, so long as the consultants and contractors do not perform any inherently governmental work.

Section IX – Complete List of Recommendations

#1. Replace the PPBE Process with a new Defense Resourcing System (DRS)

- The Commission recommends establishing the DRS to replace the current PPBE process. The DRS includes three processes: Strategy, Resource Allocation, and Execution. The Resource Allocation process includes three steps–Guidance, Build, Decision–to produce a strategically-aligned budget submission.
- Refer to Section IV, page 47 for more detailed information.

#2. Strengthen the Defense Resourcing Guidance

- The Commission recommends improving the timeliness and content of guidance documents through a new guidance step that produces the DRG. This includes a process, led by CAPE in its role as executive secretary of the Analysis Working Group, of a series of informational and decisional meetings presenting threat and analytical information to senior leaders to frame the strategic environment and drive up-front resource decisions documented in the DRG.
- Refer to Section IV, page 51 for more detailed information.

#3. Establish Continuous Planning and Analysis

- The Commission recommends creating and strengthening robust analytic processes and metrics aligned with strategic guidance to inform all phases of the DRS with improved joint warfighting assessments and analysis; holistic execution phase reviews beyond financial metrics; continuous planning and strategic reviews to inform the DRG and Resource Allocation Submissions; industrial base and supply chain analysis; and information technology modernization to support modern analytic, wargaming, and modeling and simulation capabilities and improve access to analysis across the Department.
- Refer to Section IV, page 53 for more detailed information.

#4. Transform the Budget Structure

- The Commission recommends transforming the structure of DoD appropriations by reorganizing the budget structure to a proposed structure of Service/Component, Major Capability Activity Area, System/Program, and lifecycle. The recommendation treats Military Personnel (MILPERS) as a standalone capability area and recommends realignment of some Operating and Maintenance funds (O&M) while retaining broader O&M MCAAs for general operations.
- Refer to Section IV, page 55 for more detailed information.

#5. Consolidate RDT&E Budget Activities (BA)

- The Commission recommends consolidation of RDT&E BAs to reflect current technology development paradigms and improve agility for programs.
- Refer to Section IV, page 64 for more detailed information.

#6. Increase Availability of Operating Funds

- The Commission recommends addressing challenges related to the availability of operational funding by allowing a carryover of five percent of MILPERS and O&M annual total obligation authority, to cross into the next fiscal year. This recommendation would also require monthly reporting on the expenditure of carry-over funds, to ensure continued congressional control and oversight over these accounts.
- Refer to Section V, page 77 for more details.

#7. Modify Internal DoD Reprogramming Requirements

- The Commission recommends the Department streamline internal reprogramming procedures. The Under Secretary of Defense for Comptroller (USD(C)) could delegate a share of general transfer authority to the Military Departments on an annual basis, and the USD(C) and Military Departments should delegate BTR authority, to specified dollar levels, to commanders and Program Executive Officers who want to move money within their own portfolios.
- Refer to Section V, page 78 for more detailed information.

#8. Update Values for Below Threshold Reprogrammings (BTR)

The Commission recommends three steps to improve the BTR process while maintaining congressional oversight:

#8A. Increase BTR Thresholds Based Upon the Nominal Growth of the Appropriation

- The Commission recommends an interim step of adjusting existing thresholds to levels more commensurate with historic authority and current needs calculated by adjusting BTR thresholds for each color of money. The proposed calculation would result in new BTR thresholds of $25 million for RDT&E, $40 million for Procurement, $30 million for O&M, and $15 million for MILPERS.
- Refer to Section V page 79 for more details.

#8B. Allow Reprogramming of a Small Percentage of an Entire Appropriations Account with Regular Congressional Briefings and Oversight

- The Commission recommends a longer-term replacement of existing BTR thresholds for individual movements of funds at the budget line item level with an approach that would allow the Department to move a small percentage of the funds within an account in the year of execution with a quarterly report to the congressional defense committees. The Commission recommends that the Department be authorized to reallocate up to a specified amount of funding within each appropriations account, based on historic norms of BTR transfers within such accounts.
- Refer to Section V page 80 for more details.

#8C. Simplify New Start Notifications by Increasing the Notification Threshold

- The Commission believes that the Department can provide standardized guidance for the writing and interpretation of justification materials to minimize the number of new start notifications required, for example, by ensuring that minor modifications of existing efforts are not interpreted as constituting new starts.
- The Commission recommends that the new start threshold be increased by an amount commensurate with the increase in the BTR threshold, as described in Recommendation #8A.
- See Section V page 81 for more details.

#9. Mitigate problems caused by Continuing Resolutions (CR)

- The Commission recommends actions so the DoD can continue to respond to developing circumstances and take advantage of emerging opportunities during a CR by (1) permitting select new starts under a CR, in the limited circumstances where the program to be initiated is included in the PB request and has not been disapproved in an authorization or appropriation bill under consideration in either chamber, and (2) allowing increased program quantities and development ramps in the same limited circumstances.
- Refer to Section V, page 81 for more detailed information.

#10. Review and Consolidate Budget Line Items (BLI)

- The DoD should systematically review BLIs and work with the congressional defense committees to consolidate where appropriate.
- Refer to Section V, page 82 for more detailed information.

#11. Address Challenges with Colors of Money

The incorrect alignment of colors of money often requires additional time and coordination to address, delaying execution on programs and projects. The Commission recommends three ways to improve alignment of colors of money to a program while maintaining congressional oversight:

#11A. Allow Procurement, RDT&E, or O&M to be used for the Full Cycle of Software Development, Acquisition, and Sustainment

- Effective software acquisition takes place through a continuous cycle of development, prototyping, testing, fielding, troubleshooting, revision, and sustainment. Allowing software to be funded by existing colors of money available to an organization reduces delays and administrative burdens associated with realigning funds without creating additional budget segmentation or delaying program schedules.
- Refer to Section V, page 84 for more details.

#11B. Use O&M for Hardware Continuing Improvements

- Many DoD weapon systems 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. 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 done with O&M funding).
- The Commission recommends that the Department be authorized to utilize O&M funds for hardware improvements in the sustainment phase, even in cases where the improvements result in an increased capability.
- Refer to Section V, page 86 for more details.

#11C. Align Program and Program Office Funding to the Predominant Activity of the Program

- The Commission recommends colors of money be aligned to a program and program office purpose or mission to allow the use of a single color of money to fund activities associated with the effort's primary focus.
- Refer to Section V, page 88 for more detailed information.

#12. Review and Update PPBE-Related Guidance Documents

- The OUSD(C) should dedicate staffing to ensure sufficient review and more frequent update to PPBE-related guidance documents, with an update at least every three years. A dedicated cross-functional team to review and issue updates to the FMR is also recommended.
- Refer to Section V, page 89 for more detailed information.

#13. Improve Awareness of Technology Resourcing Authorities

- The Commission recommends the OUSD(C), OUSD(A&S), and OUSD(R&E) develop a handbook on available innovation and adaptability funds and authorities that should be electronically posted and distributed to the entire DoD financial management (FM) and acquisition workforces and incorporated into the existing Defense Acquisition University and FM training and certification programs.
- Refer to Section V, page 90 for details.

#14. Establish Special Transfer Authority for Programs Around Milestone Decisions

- The Commission recommends that Congress authorize the use of a new special transfer authority, to be executed in the same manner and subject to the same dollar limitations as a BTR, to move money between RDT&E and Procurement accounts within a single program within an established three-year transition period (i.e., between Milestone (MS) B and MS C), provided that the use of funds remains consistent with the program purpose as described in the associated J-books.
- Refer to Section V, page 92 for details.

#15. Rebaseline OSD Obligation and Expenditure Benchmarks

- The Commission recommends the OUSD(C) assess baseline obligation and expenditure benchmarks based on recent historical execution at the BLI level for all appropriations (especially for the Science and Technology (S&T) portfolio) and, if necessary, establish new benchmarks that reflect more realistic program expectations under current circumstances.
- Refer to Section V, page 92 for details.

#16. Encourage Use of the Defense Modernization Account (DMA)

- The Commission recommends that DoD fully utilize the DMA, authorized in Title 10 U.S.C §3136,[218] to remove barriers to execution and allow the transfer of any expiring funds, available due to efficiencies and other savings, as specified.
- The Commission also recommends that DoD work with Congress to modify this language or develop an appropriations bill general provision that fully characterizes the need for innovation and related infrastructure investments, rather than just cost savings or investment in current programs.
- Refer to Section V, page 93 for details.

#17. Encourage Improved In-Person Communications

- The Commission recommends the Department, Services, and DoD Components establish a process that engages with the appropriate congressional committees on a more frequent basis to improve communication and share relevant information with Congress.
- Refer to Section VI, page 98 for more detailed information.

#18. Restructure the Justification Books (J-book)

- The DoD should work with Congress to establish common formats and content for the J-books. There should be consistent language and appropriate depth of budgetary and programmatic content where there are cross-cutting programs and activities, such as the RDT&E S&T budget lines and the O&M readiness accounts.
- Refer to Section VI, page 99 for more detailed information.

#19. Establish Classified and Unclassified Communication Enclaves

- The CDAO, in coordination with the DoD CIO, USD(C), and Assistant Secretary of Defense for Legislative Affairs (OSD(LA)), should expedite the delivery of a classified and unclassified enclave to share appropriate information with Congress and for Congress to share information with DoD.
- Refer to Section VII, page 115 for more detailed information.

[218] 10 U.S.C. §3136.

#20. Create a Common Analytics Platform

- The CDAO, in coordination with the DoD CIO, the USD(C), the Director of CAPE, and the PIO/DA&M establish an integrated product team for the expansion and enhancement of capabilities through a common platform to provide enterprise resourcing analytics.
- Refer to Section VII, page 107 for more detailed information.

#21. Strengthen Governance for DoD Business Systems

- The DoD should strengthen the governance over DoD Business systems, including those that support financial statement audits. The USD(C), in coordination with the DoD CIO and PIO/DA&M, should develop a strategic approach to prioritize the remediation of known system issues within the DoD that impact financial statement auditability and address priorities as part of the Enterprise Business Systems Roadmap. The DoD should establish a Deputy CIO for Business Systems and ensure the development of a charter, outlining a DoD Business Systems governance process.
- Refer to Section VII, page 111 for more detailed information.

#22. Accelerate Progress Toward Auditable Financial Statements

- The USD(C), in coordination with DoD CIO and the military Services, should develop and approve policy changes to financial systems needed to support the financial statement audit.
- Refer to Section VII, page 113 for more detailed information.

#23. Continue Rationalization of the OSD Resourcing Systems

- The OUSD(C) and Director of CAPE should continue to accelerate efforts to consolidate OSD-level resourcing systems, processes, and analytic capabilities.
- Refer to Section VII, page 113 for more detailed information.

#24. Modernize the Tracking of Congressionally Directed Actions

- The CDAO, in coordination with the OSD(LA), the USD(C) Budget and Appropriations Affairs, and the Defense Business Council, should modernize the process and platform by which the DoD tasks and tracks congressionally directed actions.
- Refer to Section VII, page 120 for more detailed information.

#25. Continue the Focus on Recruiting and Retention

- The Office of the Director, CAPE and OUSD(C) Program/Budget organizations should seek support from the Department for a variety of recruiting and retention incentives.
- Refer to Section VIII, page 125 for more detailed information.

#26. Streamline Processes and Improve Analytic Capabilities

- The Commission suggests actions that would reduce workload for the OSD resourcing workforces.
- Refer to Section VIII, page 126 for more detailed information.

#27. Improve Training for Personnel Involved in Defense Resourcing

- The Commission determined that better training on a number of topics was required for financial management and acquisition personnel, as well as for those who execute and support the DRS from Strategy through Execution.
- Refer to Section VIII, page 127 for more detailed information.

#27A. Improve Training for Preparation of Budget Justification Materials

- The Commission recommends creation of training courses for various types of budget justification materials, including J-books, data files, and staffer briefings, and also recommends that training on the purpose and use of J-books be inserted into existing training for acquisition personnel and Command-level leadership.
- Refer to Section VIII, page 127 for more detailed information.

#27B. Improved Training for DoD Liaisons

- The OSD(LA), in coordination with OSD Comptroller's BAA office, should provide standardized, structured training that adopts best practices from the Services and DoD Components for both appropriation and authorization legislative liaisons to improve engagement with Congress and cross-communication between both branches.
- Refer to Section VIII, page 128 for more detailed information.

#27C. Expand Training for Data Analytics

- The CDAO and OUSD(C) Enterprise Financial Transformation organizations should expand opportunities for the resourcing workforce to receive training on the applications, data sources, and capabilities of and within the Advana platform.
- Refer to Section VIII, page 129 for more detailed information.

#27D. Improve Understanding of Private Sector Practices

- Personnel heavily involved in PPBE should become more familiar with private sector issues and incentives that could influence their work.
- Refer to Section VIII, page 129 for more detailed information.

#28. Establish an Implementation Team for Commission Recommendations

- The Commission recommends that the Department establish a cross-functional implementation team for a three-to-five-year timeframe that reports directly to the Deputy Secretary of Defense to oversee and implement recommendations.
- Refer to Section VIII, page 129 for more detailed information.

Required Assessments and Findings

Section X – Required Assessments and Findings

This section of the Final Report presents and summarizes findings required by Section 1004 of the NDAA for FY 2022 and which are addressed in greater detail in previous sections of this report.

A. Establishing Commission Language

Section 1004 of the NDAA for FY 2022 (Public Law 117–81) established an independent "Commission on Planning, Programming, Budgeting, and Execution Reform" as follows:

SEC. 1004. COMMISSION ON PLANNING, PROGRAMMING, BUDGETING, AND EXECUTION REFORM.[219]

(a) ESTABLISHMENT.—
  (1) IN GENERAL.—There is hereby established an independent commission in the legislative branch to be known as the ''Commission on Planning, Programming, Budgeting, and Execution Reform'' (in this section referred to as the ''Commission'').
  (2) DATE OF ESTABLISHMENT.—The Commission shall be established not later 30 days after the date of the enactment of this Act.

(b) MEMBERSHIP.—
  (1) NUMBER AND APPOINTMENT.—The Commission shall be composed of 14 civilian individuals not employed by the Federal Government who are recognized experts and have relevant professional experience one or more of the following:
    (A) Matters relating to the planning, programming, budgeting, and execution process of the Department of Defense.
    (B) Innovative budgeting and resource allocation methods of the private sector.
    (C) Iterative design and acquisition process.
    (D) Budget or program execution data analysis.
  (2) MEMBERS.—The members shall be appointed as follows:
    (A) The Secretary of Defense shall appoint two members.
    (B) The Majority Leader and the Minority Leader of the Senate shall each appoint one member.
    (C) The Speaker of the House of Representatives and the Minority Leader shall each appoint one member.
    (D) The Chair and the Ranking Member of the Committee on Armed Services of the Senate shall each appoint one member.
    (E) The Chair and the Ranking Member of the Committee on Armed Services of the House of Representatives shall each appoint one member.
    (F) The Chair and the Ranking Member of the Committee on Appropriations of the Senate shall each appoint one member.
    (G) The Chair and the Ranking Member of the Committee on Appropriations of the House of Representatives shall each appoint one member.
  (3) DEADLINE FOR APPOINTMENT.—Not later than 30 days after the date described in subsection (a)(2), members shall be appointed to the Commission.
  (4) EXPIRATION OF APPOINTMENT AUTHORITY.—The authority to make appointments under this subsection shall expire on the date described in subsection (a)(2), and the number of members of the Commission shall be reduced by the number equal to the number of appointments so not made.

(c) CHAIR AND VICE CHAIR.—The Commission shall elect a Chair and Vice Chair from among its members.

(d) PERIOD OF APPOINTMENT AND VACANCIES.—Members shall be appointed for the term of the Commission. A vacancy in the Commission shall not affect its powers and shall be filled in the same manner as the original appointment was made.

[219] P.L. 117-81.

(e) PURPOSE.—The purpose of the Commission is to—
  (1) examine the effectiveness of the planning, programming, budgeting, and execution process and adjacent practices of the Department of Defense, particularly with respect to facilitating defense modernization;
  (2) consider potential alternatives to such process and practices to maximize the ability of the Department of Defense to respond in a timely manner to current and future threats; and
  (3) make legislative and policy recommendations to improve such process and practices in order to field the operational capabilities necessary to outpace near-peer competitors, provide data and analytical insight, and support an integrated budget that is aligned with strategic defense objectives.

(f) SCOPE AND DUTIES.—The Commission shall perform the following duties:
  (1) Compare the planning, programming, budgeting, and execution process of the Department of Defense, including the development and production of documents including the Defense Planning Guidance (described in section 113(g) of title 10, United States Code), the Program Objective Memorandum, and the Budget Estimate Submission, with similar processes of private industry, other Federal agencies, and other countries.
  (2) Conduct a comprehensive assessment of the efficacy and efficiency of all phases and aspects of the planning, programming, budgeting, and execution process, which shall include an assessment of—
    (A) the roles of Department officials and the timelines to complete each such phase or aspect;
    (B) the structure of the budget of Department of Defense, including the effectiveness of categorizing the budget by program, appropriations account, major force program, budget activity, and line item, and whether this structure supports modern warfighting requirements for speed, agility, iterative development, testing, and fielding;
    (C) a review of how the process supports joint efforts, capability and platform lifecycles, and transitioning technologies to production;
    (D) the timelines, mechanisms, and systems for presenting and justifying the budget of Department of Defense, monitoring program execution and Department of Defense budget execution, and developing requirements and performance metrics;
    (E) a review of the financial management systems of the Department of Defense, including policies, procedures, past and planned investments, and recommendations related to replacing, modifying, and improving such systems to ensure that such systems and related processes of the Department result in—
      i. effective internal controls;
      ii. the ability to achieve auditable financial statements; and
      iii. the ability to meet other financial management and operational needs; and
    (F) a review of budgeting methodologies and strategies of near-peer competitors to understand if and how such competitors can address current and future threats more or less successfully than the United States.
    (G) Develop and propose recommendations to improve the effectiveness of the planning, programming, budgeting, and execution process.

(g) COMMISSION REPORT AND RECOMMENDATIONS.—
  (1) INTERIM REPORT.—Not later than February 6, 2023, the Commission shall submit to the Secretary of Defense and the congressional defense committees an interim report including the following:
    (A) An examination of the development of the documents described in subsection (f)(1).
    (B) An analysis of the timelines involved in developing an annual budget request and the future-years defense program (as described in section 221 of title 10, United States Code), including the ability to make changes to such request or such program within those timelines.
    (C) A review of the sufficiency of the civilian personnel workforce in the Office of the Secretary of Defense and the Office of Cost Assessment and Program Evaluation to conduct budgetary and program evaluation analysis.
    (D) An examination of efforts by the Department of Defense to develop new and agile programming and budgeting to enable the United States to more effectively counter near-peer competitors.

(E) A review of the frequency and sufficiency of budget and program execution analysis, to include any existing data analytics tools and any suggested improvements.
(F) Recommendations for internal reform to the Department relating to the planning, programming, budgeting, and execution process for the Department of Defense to make internally.
(G) Recommendations for reform to the planning, programming, budgeting, and execution process that require statutory changes.
(H) Any other matters the Commission considers appropriate.

(2) FINAL REPORT.—Not later than September 1, 2023, the Commission shall submit to the Secretary of Defense and the congressional defense committees a final report that includes the elements required under paragraph (1).

(3) BRIEFINGS.—Not later than 180 days after the date specified in subsection (a)(2), and not later than 30 days after each of the interim and final reports are submitted, the Commission shall provide to the congressional defense committees a briefing on the status of the review and assessment conducted under subsection (f) and include a discussion of any interim or final recommendations.

(4) FORM.—The reports submitted to Congress under paragraphs (1) and (2) shall be submitted in unclassified form but may include a classified annex.

(h) GOVERNMENT COOPERATION.—

(1) COOPERATION.—In carrying out its duties, the Commission shall receive the full and timely cooperation of the Secretary of Defense in providing the Commission with analysis, briefings, and other information necessary for the fulfillment of its responsibilities.

(2) LIAISON.—The Secretary shall designate at least one officer or employee of the Department of Defense to serve as a liaison between the Department and the Commission.

(3) DETAILEES AUTHORIZED.—The Secretary may provide, and the Commission may accept and employ, personnel detailed from the Department of Defense, without reimbursement.

(4) FACILITATION.—

(1) INDEPENDENT, NON-GOVERNMENT INSTITUTE.—Not later than 45 days after the date specified in subsection (a)(2), the Secretary of Defense shall make available to the Commission the services of an independent, nongovernmental organization, described under section 501(c)(3) of the Internal Revenue Code of 1986 and which is exempt from taxation under section 501(a) of such Code, which has recognized credentials and expertise in national security and military affairs, in order to facilitate the discharge of the duties of the Commission under this section.

(2) FEDERALLY FUNDED RESEARCH AND DEVELOPMENT CENTER.—On request of the Commission, the Secretary of Defense shall make available the services of a federally funded research and development center in order to enhance the discharge of the duties of the Commission under this section.

(i) STAFF.—

(1) STATUS AS FEDERAL EMPLOYEES.—Notwithstanding the requirements of section 2105 of title 5, United States Code, including the required supervision under subsection (a)(3) of such section, the members of the commission shall be deemed to be Federal employees.

(2) EXECUTIVE DIRECTOR.—The Commission shall appoint and fix the rate of basic pay for an Executive Director in accordance with section 3161(d) of title 5, United States Code.

(3) PAY.—The Executive Director, with the approval of the Commission, may appoint and fix the rate of basic pay for additional personnel as staff of the Commission in accordance with section 3161(d) of title 5, United States Code.

(j) PERSONAL SERVICES.—

(1) AUTHORITY TO PROCURE.—The Commission may—

(A) procure the services of experts or consultants (or of organizations of experts or consultants) in accordance with the provisions of section 3109 of title 5, United States Code; and
(B) pay in connection with such services the travel expenses of experts or consultants, including transportation and per diem in lieu of subsistence, while such experts or consultants are traveling from their homes or places of business to duty stations.

(2) MAXIMUM DAILY PAY RATES.—The daily rate paid an expert or consultant procured pursuant to paragraph (1) may not exceed the daily rate paid a person occupying a position at level IV of the Executive Schedule under section 5315 of title 5, United States Code.

(k) AUTHORITY TO ACCEPT GIFTS.—The Commission may accept, use, and dispose of gifts or donations of services, goods, and property from non-Federal entities for the purposes of aiding and facilitating the work of the Commission. The authority in this subsection does not extend to gifts of money. Gifts accepted under this authority shall be documented, and conflicts of interest or the appearance of conflicts of interest shall be avoided. Subject to the authority in this section, commissioners shall otherwise comply with rules set forth by the Select Committee on Ethics of the Senate and the Committee on Ethics of the House of Representatives governing Senate and House employees.

(l) LEGISLATIVE ADVISORY COMMITTEE.—The Commission shall operate as a legislative advisory committee and shall not be subject to the provisions of the Federal Advisory Committee Act (Public Law 92–463; 5 U.S.C. App) or section 552b, United States Code (commonly known as the Government in the Sunshine Act).

(m) CONTRACTING AUTHORITY.—The Commission may acquire administrative supplies and equipment for Commission use to the extent funds are available.

(n) USE OF GOVERNMENT INFORMATION.—The Commission may secure directly from any department or agency of the Federal Government such information as the Commission considers necessary to carry out its duties. Upon such request of the chair of the Commission, the head of such department or agency shall furnish such information to the Commission.

(o) POSTAL SERVICES.—The Commission may use the United States mail in the same manner and under the same conditions as departments and agencies of the United States.

(p) SPACE FOR USE OF COMMISSION.—Not later than 30 days after the establishment date of the Commission, the Administrator of General Services, in consultation with the Commission, shall identify and make available suitable excess space within the Federal space inventory to house the operations of the Commission. If the Administrator is not able to make such suitable excess space available within such 30-day period, the Commission may lease space to the extent the funds are available.

(q) REMOVAL OF MEMBERS.—A member may be removed from the Commission for cause by the individual serving in the position responsible for the original appointment of such member under subsection (b)(1), provided that notice has first been provided to such member of the cause for removal and voted and agreed upon by three quarters of the members serving. A vacancy created by the removal of a member under this subsection shall not affect the powers of the Commission, and shall be filled in the same manner as the original appointment was made.

(r) TERMINATION.—The Commission shall terminate 180 days after the date on which it submits the final report required by subsection (g)(2).

Section 1057 of the NDAA for FY 2023 (Public Law 117-263) further modified the Interim and Final Report dates as follows:

SEC. 1057. EXTENSION OF CERTAIN REPORTING DEADLINES.[220]

(a) COMMISSION ON PLANNING, PROGRAMMING, BUDGETING, AND EXECUTION REFORM.—Section 1004(g) of the National Defense Authorization Act for Fiscal Year 2022 (Public Law 117–81; 135 Stat. 1886) is amended—

(1) in paragraph (1), by striking ‘‘February 6, 2023’’ and inserting ‘‘August 6, 2023’’; and

(2) in paragraph (2), by striking ‘‘September 1, 2023’’ and inserting ‘‘March 1, 2024’’.

[220] P.L. 117-263.

B. Case Studies: Budgeting in the Private Sector

Introduction

The PPBS established in 1961, by then Secretary of Defense Robert McNamara, reflected a modern approach to management business practices and processes with an emphasis on statistical techniques and analytical rigor for linking resources to strategic objectives and decisions.[221] Secretary McNamara was a former Ford Motor Company Executive, who modeled PPBS after the company's (quantitative methods and) business processes.[222]

Section 1004 of the NDAA for FY 2022, required the Commission to compare the PPBE process of the DoD, including the development and production of documents including the DPG (described in section 113(g) of title 10, U.S.C.), the POM, and the BES, to similar processes of private industry, other Federal agencies, and other countries. This analysis identifies the budgeting practices of select companies in industry to identify the best practices for a more adaptive PPBE process. Adopting industry best practices will further improve the PPBE process to provide the flexibility, agility, and speed required for delivering timely operational solutions to the warfighter. Some of the recommendations put forward in this Final Report are based on these findings, including delegation of authority, allowing increased flexibility for PMs and PEOs, budget structure transformation, and consolidating BLIs and RDT&E BAs.

To meet this requirement, the Commission talked with 15 privately held and publicly traded companies identified in Figure 1. The companies included large defense industry participants; small, medium, and large companies in various non-defense commercial sectors; non-profit, independent companies, and a holding company. The companies are all based in the U.S.; however, many have a global presence with offices, facilities, and workforces in other countries. The companies reported annual revenues ranging from $100 million to nearly $600 billion based on their publicly available Securities and Exchange Commission (SEC) 10K filings. A summary of the research on industry best practices are described in the subsequent sections.

Figure 1 – List of Companies Interviewed

AAR Corporation	L3 Harris Technologies, Inc.
Arete	The Lockheed Martin Corporation
Battelle Memorial Institute	Northrop Grumman Corporation
The Boeing Company	Parsons Corp
Costco	PepsiCo, Inc.
Ford Motor Company	Voyager Space Holdings, Inc.
Google Public Sector	Walmart Inc.
Huntington Ingalls Industries, Inc.	

Methodology

The companies were chosen based on referrals by Commissioners or on the suggestion of Commission staff. The selection focused on a variety of industries to ensure a diverse mix in the sampled population. Interviews were then conducted with designated members of the company's staff including a mix of the Chief Executive Officer (CEO), Chief Financial Officer (CFO), Chief Development Officer (CDO), leaders in Financial Planning

[221] Rosenzweig 2010.
[222] Wilson 2023.

and Analysis (FP&A), Controller/Chief Accounting Officer, the business leaders in Government Affairs, Public Sector, Global Public Segment, Global Government and Defense Integrated Solutions, Strategic Initiatives Director, Contracting Representative, and a Treasury Director.

An approved interview protocol, *Commission Questions for Industry,* was used for consistency in interviews and data gathering. The non-attribution discussions with industry participants were conducted between November 2022 and December 2023. The meetings facilitated a factual and insightful exchange that focused on each company's resource management processes including strategic planning, budgeting, execution, business systems and tools, and related budget topics. The interview results for each company were documented in White Papers internal to the Commission.

A manual qualitative data coding methodology, supplemented by qualitative data analysis software, was used to organize text data from the White Papers and support data analysis.[223] The coded data was labeled to represent significant information that answered the research question, "What are the resource management best practices in industry?" Labeled codes with shared relationships formed clusters used to generate major and minor themes.

In keeping with the Commission's non-attribution discussion agreement, a participant code was assigned to each company to preserve the source identity. Figure 2 identifies an example of the qualitative data coding structure: participant, themes, codes/clusters, and related excerpts from the White Paper for each industry participant. Where appropriate, the related excerpts or quotes are identified, or paraphrased to prevent inadvertent disclosure or attribution.

Figure 2 – Example of Qualitative Data Coding Structure

Participant	Themes	Codes/Clusters	Excerpts from White Papers-Transcripts
4	Budgeting	Aligning to Goals	"...sets financial targets at a company, segment, and division level."
		Clear Line of Sight	"...financial targets at the division or program level provide a 'clear line of sight' to achieve the set of five-year targets."
		Financial Targets Alignment	"...financial targets are aligned to the company's strategic and financial objectives."
	Innovation	Incorporate Innovation	"Innovation at the Company occurs in a lot of different ways...." "there is a core organization...ongoing collaboration with business segments...daily interactions with the customer...."
	Planning	Strategic Planning	"The Segment is trying to trim the duration and phases of the Strategic Plan and the Operating Plan...connecting these business activities that reside at both the enterprise level and within the business levels."
	Execution	Quick Response Capability	"For new starts in execution, ...the Company has a dynamic process that enables it to quickly react and address new needs/requirements."

[223] Saldaña 2009.

Discussion of Industry Best Practices

The discussion of private sector budgeting summarizes the interview results and are focused on eight key areas including strategic planning and budgeting, strategy, flexible budgeting, budget execution and accountability, delegated authority, regular performance monitoring, adopting advanced business systems, and transparent communications. Each section ends with a summary of best practices.

The interviews identified some recurring themes. The ability to adapt to changing circumstances, administer budgets and accountability, and align financial plans with strategic goals were stressed during the interviews across all the different companies. The participants also shared their lessons learned with business systems highlighting the importance of selecting the right commercial off the shelf (COTS) product to meet their business needs, increased costs of customized software/systems, present use of a "commercial wrapper," and need to simplify the business processes before implementing a new business system.

Planning and Budgeting

Planning is ubiquitous across industries and integral to budgeting. Several of the participants described a dynamic and comprehensive annual planning process that produced the annual three-to-five-year strategic plan. The strategic plan is aligned to the five, 10, and 20-year long-range goals as well as the company's overall strategy. The planning process establishes the "high-level financial targets at the company, segment/sector, and unit level"[224] based on top-down guidance and bottom-up inputs on how strategic goals or initiatives will be met.

In some cases, the first year of the consolidated plan becomes the annual operating plan (AOP) that identifies the details of funding and funded business activities for the upcoming fiscal year. A discussion on the budgeting process is identified in a separate section of this analysis. The outyears of the strategic plan include estimates "with fewer details based on initial assumptions" [225] that are updated and addressed in the following year's strategic planning process. The Board of Directors (BOD) approval of the plan and AOP affirms the company's investment and operational priorities or goals for the budget year and long-term planning horizon.

The planning timelines varied across companies. Depending on the size of the company, the planning process occurred over three, four, six, or eight months. One participant stated that the "planning process takes place all year long because we're always evaluating our products and our customer needs."[226] However, this participant also noted "a snapshot of the process from product content development to presentation to the BOD is about eight months."[227] Several large companies reported different approaches to planning; "plans were built from the bottom-up"[228] or "bottom-up with top-down perspectives,"[229] or "was a fully integrated process from start to end involving leadership, teams, and departments." [230] Another participant acknowledged the integrated planning process was resource intensive; however, "this practice ensured alignment and consistency throughout the organization."[231] The iterative process allowed for the continuous

[224] Commission interview with subject matter experts.
[225] Ibid.
[226] Ibid.
[227] Ibid.
[228] Ibid.
[229] Ibid.
[230] Ibid.
[231] Ibid.

refinement of assumptions and planning details to adapt to changes in the business environment or "to be responsive to market volatility."[232]

In contrast, another participant reported that the company worked with a consultant to improve the process. The consultant helped to focus on "the most value-added parts of the process, value-added inputs that support the process, who should be involved, at what levels of the organization should people be involved, and when should they be involved."[233] As a result, the number of people involved in the process was reduced to a handful of key functional leaders and skilled analysts who were close to the program that drove targets to produce a credible and achievable strategic plan. One major company reported it "moved away from detailed annual plans to high-level long-term plans using strategic deep dives"[234] to focus on big strategic problems and planned near and far-term solutions.

The overall planning factors in the industry are complex and varied. Depending on the industry, the participants identified factors that include expected growth, margins, forecasts informed by cash flow, current and prior year performance plans, and profit and loss statements; backlog, environmental factors, and regulatory changes; market dynamics, competition, capabilities and gaps; planned product content, volumes, operations team inputs, and planned capital investments to include infrastructure, and independent research and development (IRAD) estimates that will generate sales or revenue, or solve future emerging challenges, or requirements that align with customer priorities, etc. Tradeoffs are made to ensure the priorities, affordability targets, and profit objectives are included in the strategic plan.

Summary of *Planning* Best Practices

Planning is a core function for developing a company's strategic plan. The first year of the strategic plan includes an AOP for the upcoming budget year and operating investment priorities for the next three to five years of the long-term business plan. The strategic plan/AOP is aligned with the company's overall strategy. Planning is an annual process that requires extensive coordination to ensure it is fully integrated from start to end, is shaped by corporate governance and executive leadership team (ELT) participation, and includes a variety of complex and detailed planning factors that are adjusted to changes in the business environment. Overall, the participants described a best practice for developing a "right-sized planning approach" adapted to the company's needs that focused on value-added processes while considering the resources needed to achieve the desired outputs.

Strategy

Strategy is a foundational element of industry planning. Strategy is a roadmap that defines the overall mission, future vision, and direction of an organization.[235] A few participants discussed their strategy and the importance of aligning the budget to the strategy to gain a competitive advantage in the market. This alignment ensures efficient resource utilization, strategic execution, and informed decision-making for sustained success. The lack of strategy inputs does not mean that it was of less importance to other industry participants; instead, the available time and topics of discussion were prevailing factors.

[232] Ibid.
[233] Ibid.
[234] Ibid.
[235] Boyles 2022.

The participants described different approaches for developing the company's overall strategy to prioritize "strategic investing"[236] and the "bottom-up work of linking the strategy to budget."[237] One participant reported that strategy is set at the corporate level due to the need to have a "common approach and process"[238] while another affirmed their "strategy is set and only tweaked for updates based on market changes."[239] Another participant reported their strategy was led by a corporate strategy team with "87 strategy people from corporate to different segments and divisions."[240] The strategy ensures "the near-term and long-term goals are aligned with the long-term vision for the company."[241] As an example, select participants described their strategy to:

- "Grow through planned expansions or relocations, while aiming for a more specific percentage of pretax cash on cash return on investment (ROI) within the first five years;"[242]
- "Grow the top line while holding indirect costs flat (e.g., between 15 percent to 20 percent,)"[243] or
- "Grow through acquisitions, divestitures, or joint venture candidates."[244]

Summary of *Strategy* Best Practices

Strategy is integral to a company's planning process to ensure continued success. A company's distinct strategy can provide a competitive advantage in a dynamic global economy. Select participants reported a strong alignment of the company's strategy to the budget or annual operating plan. This key alignment is considered a best business practice to ensure the efficient use of resources, strategic execution, and enhanced decision-making.

Flexible Budgeting

Budgeting is a structured, comprehensive, and extensive process.[245] Most participants reported their annual budgeting process involves a bottom-up build based on top-down leadership guidance provided early in the fiscal year. Budgets are not broken out into different types of money that have varying periods of availability as the DoD does with its colors of money. The budgets that are built will address all the funds to accomplish the efforts; IRAD and capital expenditures are addressed separately. Capital expenditures are funds used to acquire, upgrade, or maintain physical assets or plan future investments.[246] In general, the process involves:

- *Bottom-up build*. Given a high-level budget target and pre-planned operating activities, or from a target budget based on a percentage of the previous fiscal year, each sector develops a detailed plan and considers financial targets, market expectations, growth targets, affordability constraints, and other goals to include the funds to be spent on IRAD requirements. The budgets roll up from the program manager to the major program or division level and are consolidated at the business unit or segment/sector level. Each level is responsible for achieving its financial targets. The CEO and ELT review the sector's planned budget and consider the overall strategy, priority initiatives targets, and objectives. Revisions are included in an update and submitted to the corporate finance team for consolidation.
- *Top-down guidance*. Here, the corporate leadership provides overall budget guidance to the sectors early in the calendar year for the upcoming fiscal year. Participants from the defense companies assume and plan for a 90 to 180-day CR contingency. Due to the CR lag in defense appropriations and delay in getting those funds on contract, one firm reported it maintained a significant amount in cash

[236] Commission interview with subject matter experts.
[237] Ibid.
[238] Ibid.
[239] Ibid.
[240] Ibid.
[241] Ibid.
[242] Ibid.
[243] Ibid.
[244] Ibid.
[245] Accounting Notes 2023.
[246] Cornell Law 2023.

during a CR to support all the small business partners that provide more than 50 percent of their supplies for production efforts. If appropriate, indirect rates in contracts and the allocation of corporate costs to each sector are also included as well as forward pricing rate proposal(s) (for the government's approval). The corporate finance team works with each sector to develop their planned budget. Corporate leadership ensures financial targets at the division/program levels provide a "clear line of sight to achieve financial targets."[247] The CEO and ELT conduct a review of the budget with each sector. The review addresses the sector's strategy and sets the groundwork for top-level financial planning, e.g., external reporting, profit and loss forecast, projected sales, income statement, balance sheet, and indirect rates. The corporate finance team consolidates all sector inputs to develop the AOP for the CEO and ELT.

- *BOD approval*. The corporate ELT will brief the BOD on the overall financial plan that includes a high-level financial forecast from a profit and loss and balance sheet point of view, and identifies the capital investments (or expenditures) to include IRAD or infrastructure, forecast of cash flows (in and out), sales, estimates, taxes, defined benefit pension plan, cost drivers, inflation, etc. and discusses related sensitivity analysis, affordability, and a review of assumptions and risks. The BOD (normally) approves the annual plan that "is really a forecast after the first month"[248] and the capital expenditures plan (as required by law in a few states). The company's financial performance is measured against the BOD-approved strategic plan and AOP.

The participants across all companies stated *funding in the budget is fungible with no restrictions on its use*. If the funds are not spent in the year budgeted, it does not "carry forward."[249] Thus, if a project is not approved with a follow-on budget in the new fiscal year, that project ends. Exceptions are rare and require BOD approval. However, there is continued execution for things that were a multi-year effort in the plan like capital expenditures.

A few participants described the attributes of an agile budgeting process. In one example, the participant suggested that budget flexibility is garnered by "always sticking to the core goals and strategic plans laid out."[250] The flexibility comes from "management of the budget at the sector level rather than the specific project level, allowing pivoting where and when necessary and not having to wait on a long, drawn-out approval process to implement new initiatives and keep pace with the speed of technology"[251] and a changing market. In another example, the participant reported that business cases are evaluated throughout the year; approved investment plans are locked at a granular or segment level instead of at detailed program levels.[252] The "planned budget is locked at 90 percent; the remaining 10 percent is not locked in for contingencies."[253]

Budgeting Timelines

For most companies, the fiscal year follows the calendar year. The participants reported a mix of budgeting timelines depending on the size of the company. Several participants reported the "budgeting process is typically six months."[254] However, one large company reported working a three-to-four-month-long iterative budgeting process "involving over 800 end users"[255] and others up to the corporate team and BOD. All the participants reported their intended goal is to have the budget finalized and approved by the BOD (if appropriate) before the start of the new fiscal year. On occasion, a company will begin the new year with a notional budget pending a final BOD-approved budget.

[247] Commission interview with subject matter experts.
[248] Ibid.
[249] Ibid.
[250] Ibid.
[251] Ibid.
[252] Ibid.
[253] Ibid.
[254] Ibid.
[255] Ibid.

Budgeting for Innovation

Select large companies (>$4 billion) have dedicated resources for a core innovation organization or unit. The participants reported their advanced research, development, and prototyping centers are staffed with talented engineers and scientists who explore and create new innovative products and services to meet customer needs as well as generate new revenue or growth. In one example, a development team manages the cost planning and cost control elements "from a capital perspective" for work on future products. Innovation is embedded in their culture.[256]

While other companies may not have the dedicated research and development infrastructure, the participants reported funding for innovation is a priority and included in their innovation/IRAD budget. Government signaling, active customer engagement, and market or technology changes are relevant factors for prioritizing innovation/IRAD investments. Several participants reported funding for emergent technology solutions is routinely determined during the budget year using its flexible budget structure, processes, and resources to increase innovation adoption. Another participant stated the company "will partner or invest in another company that has a promising technology if capital is needed to scale."[257] One CFO noted, "There is no shortage of good ideas. However, spending decisions on capital investments need to be consistent with the expected rate of return and include revenue projections."[258] Another CFO reported the company "routinely works on innovative environmental, social, and governance (ESG) initiatives that may be profitable."[259] The participants stated their companies routinely accepted any new ideas or proposals during the year that could easily be pursued; however, the level of approval varied based on the potential cost of the idea. In contrast, ideas that do not develop as intended can also be easily canceled.

Summary of *Budgeting* Best Practice

The budgeting process in the industry is extensive and involves active leadership participation. Given the top-down corporate budget guidance provided, budgets are built from the bottom-up e.g., program/project level, and roll up to the division, unit, segment, or sector level for consolidation. The corporate finance team assists during the budgeting process. The CEO and ELT review the budget plan to ensure the overall strategic priority goals and financial objectives are addressed. There is a strong alignment of the budget to strategy. The annual budget is approved by the BOD (if appropriate). Flexibility in the budget is attributed to managing the budget at the sector level that allows for pivoting or tradeoffs within and across sectors without exceeding the company's overall financial objectives. This flexibility is considered a best budgeting practice that enables speed and agility to meet evolving needs.

Budget Execution and Accountability

Budget execution and accountability are a core focus in the industry. Budget execution reviews are conducted at various levels from the bottom-up to the CEO, and at recurring intervals e.g., sometimes weekly, more often monthly, quarterly, mid-year, and annually. In general, the focus is on revenue, expenses, operating costs, sales, and capital expenditure and to determine how (well) funds are being spent on strategic priorities.

Several participants reported a "contingency hold" (management reserve) of funds held at every level e.g., unit, segment/sector, or corporate. During the quarterly or mid-year reviews, a deep scrub of the budgets helps to identify programs that are under or over-executing e.g., tracking plans or forecasts, as well as identify excess resources that can be realigned to meet emerging or unplanned needs. As appropriate, major adjustments are made to the AOP, or strategic plan, and the management reserve is allocated based on an expected ROI. There is also a related discussion on the need to restore funds in the next budget year for

[256] Ibid.
[257] Ibid.
[258] Ibid.
[259] Ibid.

anything that is not on its original schedule where funds were realigned to other priorities. As funds do not expire like in DoD, the private sector has more levers to adjust funding according to more current project plans, and there is less of a use it or lose it approach to spending allocated resources; unspent funds can be reallocated to other efforts or just not spent.

Most participants reported their companies conduct a recurring review of their programs, operations, and finances. These reviews assess program operational and financial performance, planned and actual spending, opportunities to realign funds, and include customer feedback. One participant reported the importance of monitoring cash flow is essential to its nonprofit status, with a focus on breaking even. Another emphasized flexibility in resource allocation allows for adjustments based on changing market conditions. Another reported detailed budget and project reviews are conducted for each project to ensure transparency and accountability.

Industry participants identified different approaches to budget execution; however, a continuing theme was the delegation of authority for programs and sectors to operate independently and execute funds and the necessary tasks to meet those plans. One company reported each segment operates as an independent business with an established top-line budget it must operate within, and delegated authority and responsibility for its portfolio of programs. As such, each segment is responsible for the cost, schedule, and performance of contracts including cost overrun or underrun, schedule changes, and performance issues, and has the flexibility to shift dollars where needed to mitigate risk and meet monthly financial and performance operating goals. Thus, there is flexibility in the budget that allows for budget adjustments within and across portfolios in the year of execution. The capital budget is typically controlled at the corporate level and spending is restricted. Segments are not allowed to "go $1 above" [260] their capital allocation, and corporate approval is required on every decision.

The participant of another company reported that functional tradeoffs are allowed in execution if it is consistent with the "top-down view."[261] Managers work alongside the financial staff who "routinely check in for budget transfers, regardless of the dollar amount."[262] The executive team also tracks and addresses the budget transfers during the monthly execution reviews with lower-level staff and up to the CEO.

Several participants reported the monthly budget execution review will include an update of actuals to the AOP. The CFO will also review the sector's/segment's investments and expenditures to ensure they are "returning on expectations and adjusting as needed."[263] A quarterly review will include a closer examination of the operating plans for SEC compliance reporting (as required) and expected estimate at completion (EAC) costs for contracts. Issues are immediately elevated and resolved as required with varying levels of approval based on the dollar amount.

Overall, industry participants reported their companies held managers accountable for achieving designated financial and operational targets. Most managers were given "the flexibility and decision-making authority to make tradeoffs within their unit or business segment." [264] However, the participant of a large defense company reported that "no (real) flexibility is given to unit managers during budget execution of the capital budget as decisions are managed by the corporate finance team."[265]

[260] Ibid
[261] Ibid.
[262] Ibid.
[263] Ibid.
[264] Ibid.
[265] Ibid.

Summary of *Budget Execution and Accountability* Best Practices

Budget execution is a core function in the industry. Managers are held accountable to meet designated targets. Recurring budget reviews ensure funds are being expended as planned and against strategic priorities. Fungible funding enhances flexibility and allows for adjustments within and across portfolios in the year of execution. A management reserve of funds during the year of execution and fungible funding are considered best practices.

Delegated Authority

Most of the companies reported that authority was delegated from the BOD to the CEO to lead the company, and from the corporate ELT down to the segment or sector, unit, or division level for operations. The BOD empowers the corporate executive team to make the decisions necessary to meet the strategic goals rather than micromanage the day-to-day decisions within the company. Each sector's role, authority, responsibility, accountability, and expectations are clearly defined for the efficiency of operations. Delegated authority enables trust at the executive team level and below, and personnel are held accountable for meeting those goals and plans.[266]

Company executives ensure the BOD decisions are aligned with high-level goals and strategies e.g., alignment of budget to strategy, whereas the corporate/staff manages the details of the budget and operational plans. Segment leads are given broad latitude and authority by corporate leadership to manage their budget and portfolio plans to achieve their overall target objectives. The corporate executive structure empowers the workforce with delegated authority "through many echelons of the organization to manage and adjust budgets to meet their needs" and thereby enable an "act as owner's principle."[267]

Delegation of authority streamlines decision-making and reduces bureaucracy enabling a company to operate with greater speed and agility.[268] In one example, a participant reported that each segment/sector president has the authority and flexibility to "defund a project and put more funding on something new"[269] or emergent. At the time there was an emerging technology that bridged the gap between disparate systems, and the company diverted IRAD money because it was an urgent need. The sector's president "did not have to ask permission of the corporate office unless it's a high visibility project."[270]

Another participant reported budget authority was delegated at various segment/sector, unit, or division levels. For example, projects less than $20 million could be approved at the local level, over $20 million require approval at the executive level, and above $200 million require BOD approval. In contrast, another participant indicated budget authority rests with the CEO as the BOD approved targets only and was not involved in approving the annual budget as the CEO was the final decision authority on the budget. Another participant reported there is a less formal and streamlined process for business issues, with a "focus on keeping the approval processes simple and efficient for faster decision-making" [271] while maintaining oversight of significant financial and operational matters.

Short Decision Chain

Several companies described a central organization with direct line reporting and access to the CEO for accelerated decisions. This abbreviated and narrow chain of command enables quick-informed decisions to respond to customer needs or changing economic, social, or political market conditions, e.g., COVID-19, supply chain issues, labor issues, etc. Speedy decision chains enhance a company's ability to pivot and

[266] Baker and Murphy 2022.
[267] Commission interview with subject matter experts.
[268] Guggenberger and Rohlfing-Bastian 2016.
[269] Commission interview with industry subject matter experts.
[270] Ibid.
[271] Ibid.

capitalize on opportunities for acquisition, vertical integration, or to adopt innovative technology or creative solutions that can result in increased revenue or resolve priority issues promptly.

Summary of *Delegated Authority* Best Practices

The delegation of authority in industry is vital to efficient operations. The participants described the flow down of delegated authority from the BOD to the CEO, ELT, and staff. Delegated budget authority and a short decision chain enable quick decisions and improved timeliness to respond to evolving needs. Delegated authority is a fundamental management best practice that improves operational efficiency and responsiveness for sustained success.

Performance Metrics and Regular Performance Monitoring

Key performance indicators (KPI) or metrics are integral to quantifiably measure a company's overall performance.[272] Several participants reported their company developed and tracked distinct KPIs on its budget and operations. Actual performance is compared to forecasts to ensure outcomes are aligned with the business plan or AOP. Detailed KPI tracking and reporting are enhanced by advanced business systems, data analytics, and processes.

The participants reported each company developed and tracked both operational and financial KPIs. The KPIs are adjusted to pivot as needed. One participant indicated the process of setting top-level financial targets had shifted from a bottom-up approach to a more streamlined top-level analysis by a group of informed individuals. The importance of "balancing ambitious targets with achievable goals and aligning financial targets with line-of-sight strategies"[273] was emphasized. An ongoing focus is on "identifying the right set of metrics to drive performance and material outcomes."[274]

The participant from one company reported it has detailed metrics to monitor infrastructure and e-commerce units on a daily and weekly basis. Corporate leadership ensures the KPIs are tracked as expected and anomalies are identified and resolved. Accountability drives everything - there is a morning email on the prior day's statistics identified on a business unit's dashboard. Since managers are held accountable and are responsible for "hitting their numbers,"[275] every manager wants to know where they stand at any given time. Managers can access the operational KPIs along with financial KPIs (e.g., total actual sales, daily sales, unit sales by commodity or store, cost per order, etc.) to monitor their status. Twice weekly meetings are held with unit leads; each Monday at the Vice President level and then on Friday with the CEO to assess the week's performance. Another participant reported the company tracked the detailed number of stock-keeping unit (SKU) levels in each store. If a store had less than the target number of SKUs, it could add more SKUs, that could "add half an item per basket"[276] to increase sales. The SKU count and monthly sales are reported monthly and are "a barometer of how they're doing" in the retail industry.

Several participants described their company's monthly forecast review process. In one example, the process involves an assessment of "top-level financial metrics down to a program level"[277] to make data-informed predictions on "revenue, earnings, margin, cash flow, capital R&D, etc."[278] One participant reported the senior leaders of operating activities or business units will review and input the latest projections from each team for consolidation at the corporate level. The forecasts are continuously reviewed throughout the year by the operating heads, unit leads, and up through the CEO. Another participant indicated the company

[272] Investopedia 2023.
[273] Commission interview with industry subject matter experts.
[274] Ibid.
[275] Ibid.
[276] Ibid.
[277] Ibid.
[278] Ibid.

developed a two-week forecasting rollup to "keep a pulse"[279] on the business and to manage long-term plans. Executives can check a segment's daily performance to ensure the operations are tracking to monthly and quarterly plans.

Depending on the industry, examples of key financial metrics that are integral elements of the budget include revenue earnings, margin, cash flow, capital commitment, capital expenditures, and research and development. These metrics are provided down to the individual budget level and functional level. Key operational metrics that have potential financial implications are also compared to what was projected e.g., product deliveries, factory rework levels, part shortages, etc. In one example, the participant of a major company reported "every contributor into the specific X program is executing to those targets (metrics) whether it's engineering, manufacturing, supply chain, etc. We know how much each of those pieces represent of the total X program."[280] A considerable amount of time is spent "to identify what the right set of leading indicator metrics are that they need to focus on that align to the top-level financial metrics."[281] In another example, the CFO of a major company affirmed that management focuses on monitoring sales, profit and loss, and other key factors, and will "look at every sales dollar and expense dollar twice through two different lenses i.e., geographic versus business line to determine the margin on the percentage of sales and examine controllable expenses."[282] Metrics can differ by sector or program. Another key theme was to not have too many metrics that would divert attention away from those that best-focused leadership on what was driving the business.

Summary of *Performance Metrics* Best Practices

The carefully selected KPIs are quantifiable measures to gauge a company's overall performance and track the company's strategic, financial, and operational measures of success. Managers are held accountable for achieving their targets and actively track actual performance to forecasts and plans. Performance measures are reported at recurring intervals, e.g., weekly, monthly, and quarterly to validate the latest profitability assumptions or identify potential changes in financial outcomes compared to projections, and at mid-year and annually to corporate leaders and the BOD. A focus on identifying the right set of financial and operational performance metrics is a best practice.

Advanced Business Systems

Advanced business systems are critical to the success and efficiency of modern companies. The participants described the importance of various automated business processes and tools that support strategic planning, financial, operational, logistics, etc. These processes involve collecting and managing large volumes of data, enhanced communications for faster decision-making, compliance reporting requirements, etc. All the participants reported their companies leveraged technology to optimize processes, enhance communications, and drive innovation to succeed in a competitive business environment.

Optimized Business Systems

Each company employed a COTS business system and tools for its operations and mission. These authoritative systems integrated key operational and financial components of the business plan and facilitated transparency and trust. Mapping and simplifying processes to match the capabilities inherent in the system represented a recurring theme in most companies; they avoided customizing the system unless a business case had been made for why that capability should modify the system. In one case, the participant of a major company reported it has been using an Oracle customized tool over the last ten years and has plans to fully implement SAP tools (by late 2025) to meet their current needs and account for complex processes."[283]

[279] Ibid.
[280] Ibid.
[281] Ibid.
[282] Ibid.
[283] Ibid.

There was also an extended planning focus and implementation for specific functions over time, with an immediate concentration on the company's ability to submit its mandatory SEC filings. Companies whose revenue exceeded $30 billion intentionally prioritized and invested in business systems modernization regularly to ensure they are leveraging the right tools (scalable, security, controls, costs, efficiency, and assessment of critical technology, to name a few criteria)[284] to facilitate data analytics, tracking and alignment of budget to plans, goals, and forecasts, tracking program performance, making data-informed strategic decisions, and enabling regulatory, compliance, and risk management reporting. The ability to look at data "any which way,"[285] to drill down to different cost elements, product lines, locations, etc. is essential to forecasting, and managing the budget from the top-down and bottom-up.

Several companies identified specific business systems for financial data integration, data analytics, and reporting. One CFO suggested that the choice of software should align with business needs and user adaptability. The company recently migrated from SAP to OneStream to simplify reporting. Other companies reported using Deltek-CostPoint, IBM-Cognos, Oracle EPM, and SAP S/4HANA. Several major companies identified using two or more business systems (e.g., SAP for tracking operational and financial metrics, and Salesforce for tracking human capital resources) and then consolidated the outputs for display and analytics through the use of a commercial "wrapper" like OneStream Software. One participant emphasized the modernization of a company's business systems is "critical to the firm's people strategy to attract, retain, and build a talented workforce."[286] He added, "The new workforce coming in does not like antiquated systems."[287] In contrast, another noted problems with staying current, reporting that "it never ends with keeping the systems up to date."[288] The companies evaluated the available COTS products and selected products they thought best suited their needs. Moreover, the CEO of a large company reported they "did the work to not let the commercial product be customized and make the business fit into the COTS product as is"[289] given how difficult and costly it is to upgrade a customized product.

One participant identified the challenges with data reliability and expressed the need to combine financial and operational business systems for faster decision-making. The ongoing pursuit of integrated business systems characterizes the company's resource management best practices. Continuous improvement, automation, and adaptation to emerging challenges underscore the company's commitment to long-term success and the importance of leveraging technology for efficient resource management. For these companies, data, and the proliferation of that data, are key to ensuring visibility of daily and long-term operations.

IT Infrastructure Advanced Planning

Several participants reported their companies had spent many years thinking about the business case options to modernize the firm's IT infrastructure and business systems. These companies reported at least 24 to 36-months of planning was necessary to develop a plan, estimate costs and timelines, identify and prioritize the functions or business segments for initial migration, minimize risk, and analyze and complete the required actions to ensure a smooth transition of a phased implementation to the new or upgraded business systems and processes. One CFO suggested having a strong centralized Enterprise Resource Planning (ERP) system with both financial and operational data and metrics allows for effective measurement and tracking of performance and resources. Implementation was also well planned for, with a focus on implementing by sectors. As the CFO of a major company reported, IT "is always one of those places where you spend twice

[284] Ibid.
[285] Ibid.
[286] Ibid.
[287] Ibid.
[288] Ibid.
[289] Ibid.

as much, it takes twice as long, and you get 2/3 of what you wanted."[290] Sometimes there was also an intentional decision to keep differing business segments on different software systems that best worked for that segment, as well as the need to have differing software to accommodate international reporting requirements.

Streamlined Internal Processes

The participants of several companies reported that they streamlined the internal manufacturing, logistics, and business processes, and consolidated different systems to optimize operations before transitioning to the new business systems. One major company intentionally kept a simple business model with a focus on managing a limited number of items, and simplicity in its business processes and decision-making. The CFO offered "we (still) try to keep it simple" and "don't need a big complicated (one) IT system,"[291] and reported that the company recently implemented the OneStream Software system that, for their company, streamlined and consolidated complex financial activities for efficient decision-making and reporting.

Summary of *Advanced Business Systems* Best Practices

Advanced business systems are critical to help a company become more efficient, productive, and improve customer service in order to grow and succeed in a highly competitive environment. The participants reported their companies leveraged the latest business systems technology and tools that met their needs to make faster and data-driven decisions, planned 24 to 36-months in advance of implementing a new system to include an orderly transition approach, and streamlined internal processes before transitioning to the new system. Large companies prioritized and invested in business systems modernization on a recurring basis. One large company noted its business systems are an integral element of their human capital strategy and ability to" attract, retain, and build a talented workforce."[292] Advanced business systems that are agile and robust enhance a company's business processes by providing real-time data and analytics for efficient decision-making. All these elements are considered best business practices to succeed in a competitive and ever-changing global market.

Transparent Communications

Transparent communication facilitates trust in relationships.[293] Open, intentional, and frequent communication that facilitates trust, teamwork, and creative thinking is key to forging and maintaining a transparent working relationship. A culture based on open communications and trust is crucial for timely decisions and efficient operations.[294]

The participants reported that trust with the BOD was built on open, clear, and regular communications with mutual respect for their shared goals and responsibilities. The participants unanimously emphasized the importance of transparency and frequent communications that enabled a trusting relationship with the BOD and the company's executives. The companies provided the BOD with an annual update as well as recurring reports on finances, operations, or priority issues or projects. Trust in the system, structure, and its people is essential for effective decision-making.[295] Several companies indicated the CEO is also the Chair of the BOD which ensures efficient BOD meetings, discussions, and timely decisions, and provides a definitive link between the BOD and the company.

Similarly, another participant described the company's efforts to build and maintain a strong customer relationship. Active customer engagement, being responsive to the customer's needs, and clear

[290] Ibid.
[291] Ibid.
[292] Ibid.
[293] Hadziahmetovic and Salihovic 2022.
[294] Aaron Hall 2023.
[295] Ibid.

communications are vital to the company's continued success and planned growth.[296] In one example, a CFO reported understanding the customer "requires the company to navigate all the ways people want to access information which presents different challenges and opportunities."[297]

Summary of *Transparent Communications* Best Practices

Effective and timely communications are central to building trust in relationships. The participants reported a trusting relationship with the BOD based on recurring updates and transparent communications that facilitate efficient decisions. Understanding the customer's needs to include access to information is essential to engaging and maintaining a strong relationship. Efficient, accurate, and frequent communications are key elements to building a trusting relationship and are considered a best practice.

Overall Summary of Industry Budgeting and Management Best Practices

A company's structure, culture, business processes, and systems that support rapid data-driven decisions are fundamental to its success. Many of the industry-identified best practices provide a degree of agility and flexibility in the budget and operations that enable it to achieve the near-term strategic and operational goals, long-range plan, and overall strategy.

All participants described the best practices for developing a "right-sized planning approach" focused on value-added processes while considering the resources needed to achieve the desired outputs; ensuring internal budgeting processes and strategic plans are aligned to the company's strategy; ensuring flexibility is built into its budget processes as well as fungible funding to provide the speed and agility to meet evolving needs; delegating authority to enable quick business decisions; developing and monitoring key performance measures to gauge overall performance; and emphasizing communications to build trust with internal and external customers. As it did in the 1960s with the creation of the PPBS, the DoD can and should routinely adopt modern budgeting practices and techniques involving strategic planning, flexible budgeting, delegated authority, regular performance monitoring, transparent communications, and the adoption of advanced business systems to accomplish its warfighting mission. The DoD should also routinely look at these practices with a focus on any necessary changes. These best practices will ensure DoD resources are allocated to the highest priorities to pace the ever-evolving threats.

Key Differences Between a Public Company and the DoD

There are fundamental differences between DoD and a public company. Public companies are the focus here rather than privately-owned or non-profit companies. A public company can, to a large extent, conduct business any way it wants so long as that way is not illegal. The DoD and other federal agencies can, for the most part, only conduct business as authorized in law. This distinction leads to much more budgetary control in DoD compared to a public company. Size and complexity also differ. The DoD's FY 2024 President's Budget of $842 billion is nearly 1.5 times the revenue of the largest public company interviewed by the Commission. The DoD runs a worldwide healthcare system and operates a federal government system of schools. The 535 Members of Congress have been described as the BOD for the Department. Congress does often direct or restrict DoD's activity like the BOD of a public company; however, that's where the comparison ends. There are far fewer members on the BOD of a public company (9-15 on average), and the BOD does not debate over authorizing or appropriating funds for the public company over months of formal and informal meetings that can cause a company shutdown if funding is not appropriated by the fiscal year end. Moreover, the other major differences between the DoD and a public company include purpose and mission, ownership and

[296] Danao 2023.
[297] Commission interview with industry subject matter experts.

control, funding and revenue, accountability, key performance measures, transparency, regulation and oversight, and profit. The DoD is of course not a public company and does not operate on a profit or loss basis.

A public company's goal is to maximize profits, grow market share, and increase shareholder equity through sales of its products or service offerings to meet customer needs.[298] It is owned by shareholders, private individuals, or institutional investors who hold shares of stock.[299] Governance involves a BOD elected by the shareholders. The corporate decisions are driven in part by profit motives and shareholder interests and are further influenced by market dynamics. Management is accountable to the shareholders.

A public company generates revenue through sales, investments, and other business activities.[300] To raise capital (for operations, expansion, new projects, or growth), a company can issue new shares of its stock (equity financing), borrow money from banks or issue bonds to lenders (debt financing), or both, depending on the financial situation, growth prospects, and cost of capital. These financing options allow successful companies to adapt quickly to capitalize on potential opportunities or respond to changes in the business environment. In one case, the participant of a large company reported the "flexibility to react to changing market conditions and adjust their projections on both income and expenses to stay balanced is the big driver"[301] to achieve sustained success. A public company is required to disclose financial information, performance metrics, and executive compensation to shareholders and regulators, and can face legal consequences for non-compliance.[302] The shareholders hold management accountable. A public company is regulated by the SEC and industry-specific bodies and is subject to financial reporting requirements that include compliance with the 2002 Sarbanes Oxley Act[303] and Dodd-Frank Act of 2010.[304] The 2002 Sarbanes Oxley Act was enacted to protect investors from corporate accounting fraud by improving financial reporting and auditing standards.[305] The 2010 Dodd-Frank Act was enacted to promote the financial stability of the U.S. by improving accountability and transparency in the financial system, to end ''too big to fail'', to protect the American taxpayer by ending bailouts, to protect consumers from abusive financial services practices, and for other purposes.[306] The BOD has a significant role and influence on a company's performance, providing high-level oversight of the company's activities to ensure profitability, and growth, and to protect the shareholder's interests.

In comparison, the DoD is a government-funded entity created for the national defense and security of the U.S. (and its allies), to defend against threats and maintain peace.[307] The DoD prioritizes national security and focuses on military readiness, technology development, and strategic planning. The DoD operates under the authority of the executive branch[308] and is not profit-driven - mission success is paramount. The DoD is part of the U.S. federal government and funded by U.S. taxpayer dollars.[309] Governance is provided by civilian and military leadership. Decision-making involves government officials, policymakers, and military leaders who prioritize national security, defense strategy, and military preparedness. Funding for the DoD is allocated through the federal budget. Congress authorizes and appropriates funding on an annual basis for the DoD.

[298] Sanghoee 2014.
[299] Blackrock 2019.
[300] Banton 2023.
[301] Interview with industry subject matter experts.
[302] Georgiev 2023.
[303] P.L. 107-204 2002.
[304] P.L. 111-203 2010.
[305] Kenton 2022.
[306] P.L 111-203 2010.
[307] 2022 NDS.
[308] CRS June 2020.
[309] Saturno 2023.

The government can increase its funding for the DoD by either increasing taxes or borrowing more money by issuing more debt instruments or raising the debt ceiling.

The DoD is governed by federal laws, executive orders, and congressional oversight, and adheres to strict procurement rules and transparency standards.[310] Congressional oversight of the DoD spending involves 535 Members of Congress (with varying backgrounds and experiences) who must authorize and appropriate funds that then require signature by the President before they become law, compared to an average of 9 to 15 BOD members in industry (participants interviewed for this study) who are chosen for a variety of factors like experience and knowledge in the sector. This structural difference presents a communication challenge for the DoD. Some critics suggest Congress's directive nature (and timelines) e.g., number of pages in the authorization bills, number of mandated congressional reports, limitations on special interest or priority programs, and its engagement process protocols, likely impede the DoD's ability to be responsive to congressional requests. This lack of responsiveness, among other factors, hinders the DoD's efforts to build a trusting relationship with Congress. This issue is addressed in Section VI of this Final Report.

Some critics suggest the DoD should operate more like the private sector. At the time of its adoption, the PPBS was based on the industrial corporate practices of a leading manufacturing firm–the Ford Motor Company. While the DoD can learn from a public company's best business practices, the underlying core differences are not conducive to the direct adoption of a public company's management business practices. As the CEO of a major company stated, "DoD's annual budget has one, two, or three-year money. It's not really like a business; we have a balance sheet, and we have 12 months. The government has debt, but the DoD doesn't have debt (here's your $842 billion)."[311]

Budgeting Similarities and Potential Lessons for the DoD

While DoD often cannot copy the private sector's budgetary practices, and despite the major differences, the Commission's interviews with private companies suggest some important similarities in budgeting processes to those in DoD. Both typically have planning processes that seek to relate strategy to budgets, as well as have an inclusive and fully integrated planning process from start to end; normally budget one year at a time and build budgets from the bottom-up. They conduct mid-year reviews and build contingency risk reserves into funding for major programs.

The industry interviews also suggest there are some lessons that DoD can learn and could apply even though it is a government organization such as:

- Make funding for innovation a priority.
- Establish and regularly review performance measures at all levels.
- Seek more flexibility for its managers in managing program execution and funding.
- Avoid customizing IT systems because it negates the inherent system capabilities and makes them costly to maintain and modernize.
- Regularly review needs and invest in data analytics and advanced COTS business systems to support them.

Commission recommendations have worked to address many of these lessons.

[310] DoD Regulatory Program 2023.
[311] Commission interview with industry subject matter experts.

Public companies operate in pursuit of profit and increasing shareholder value, whereas the DoD serves broader societal goals related to national security, safety, and public welfare. Their distinct missions, ownership, funding, governance, and regulatory environments shape their operations and priorities that are significantly different from one another. For these reasons, the DoD can learn from a public company's best business practices and where appropriate, selectively adapt such practices where it can make the greatest improvements.

Industry Feedback on Issues Outside of PPBE Reform

The participants from several companies in the defense sector interviewed by the Commission identified various challenges with contracting and other areas outside the scope of PPBE reform. While not directly associated with PPBE, the incidental challenges described below are provided for DoD and congressional consideration to potentially improve the contracting and acquisition processes. The Commission has no opinion on these issues and is sharing the concerns expressed by industry participants as a matter of courtesy; they are not associated with the findings identified in this Final Report.

Contracts. There were many thoughts on how the DoD could improve the contracting and acquisition processes.

- "The short-term nature of government contracts can deter industry from bidding due to uncertainty about the ability to recoup up-front investments on short-term contracts with frequent options years" adding "longer-term government contracts would provide more stability and sufficient incentive to invest $100 million in the supply chain" that can help to mitigate the risks and challenges around the industrial/vendor base availability.[312]
- A need for "greater use of multi-year contracts" to "create efficiency and stability in the supply chain, especially with small businesses."[313] "Multi-year procurement contracts offer predictability, which can help companies to better plan, effect better prices, assist the myriad of suppliers (in the defense industry), and stabilize the defense industrial base."[314] A challenge with long lead materials for multi-year contracts – annual funding for an order for that year means that "we can't get the best pricing from our suppliers" noting "some suppliers will not give quotes more than 30 days in advance when they used to give six months or even a year of validity on their quotes."[315] Annual buys make it tough for a company to manage their suppliers. Figuring out ways to fund long lead times faster, to enable better materials pricing more than one year at a time and get people to commit to a timeline of delivering, [would be helpful]. An option for better pricing could include the flexibility, if money wasn't spent in the first year, to be able to still spend in the next year if it stayed within the funding allotted.
- The company "supported larger block (bundled) contracts because it is more efficient and facilitates earlier procurement decisions to buy things in bulk."[316] Predictability will facilitate better decisions and makes it easier for a company to forecast and plan.
- One interviewee reported "there are significant risks and challenges around the industrial base and vendor base availability." For some systems and technologies, there are a limited number of vendors "probably one or two."[317] The company is reaching out to the vendors to provide as much visibility as

[312] Ibid.
[313] Ibid.
[314] Ibid.
[315] Ibid.
[316] Ibid.
[317] Ibid.

possible on future business and suggested subsidies or help with capital projects can assist to maintain continuity in the technologies and vendor base sectors.

- An area for improvement is the "faster appropriation of authorized funds; being authorized does not equal having a contract in place. The prolonged time to get work on contract creates internal obstacles from both a budgeting and program management standpoint that has a multiplying effect across the program and efforts."[318]
- There is a need for a "smoother transition from the engineering into the production phase."[319] When there's a gap between the engineering phase and deciding on production, the company may lose its workforce.
- Many "contracts are becoming accounting ledgers where each organization wants to see their funding separately for audit purposes and assigned a unique CLIN [contract line item number]."[320] For example, one contract has "180 ACRNs [accounting classification reference numbers] and 77 CLINs that receive three to five funding mods per month and is overwhelming the [Defense Finance and Accounting Service] DFAS system."[321] It drives a lot of rework and costs as a lot of time is spent reconciling with DFAS. If there's a mistake, corrections will probably not occur until the next time a contract modification is executed; those errors can have impacts until they are corrected. There's a need to bring some of this budgeting up to a higher level, and to strike the balance between the appropriate level of insight and accounting in the financial systems.
- There is a need for higher Truth in Negotiations Act (TINA) compliance thresholds. Specifically, increasing the threshold from $2 million to $10 million and still cover more than 90 percent of the value of the supplier agreements. The TINA requires contractors who are negotiating certain government contracts (e.g., sole source contracts where there is no established "market price" for the good or service) to submit cost and pricing data to the Government that is truthful, accurate, and complete.[322] The company includes the cost and pricing data for all their suppliers in their request for proposal process. The interviewee suggested the increased threshold is a "very low risk approach that would significantly free up resources to focus on the suppliers where we do have challenges, potentially less auditing, less oversight with relatively low risk to the government."[323]

Security Clearances. One interviewee identified a challenge with "getting more people through the security clearance pipeline," noting experience with people moving from one company to another every two years "because they know there aren't enough cleared people, and they know it's a gold mine. They can get a raise every two years by switching companies as seen in certain areas."[324] At one organization, there's a churn of people and it was suggested that "if the government invested in more people to help with the clearance process, they'd save money in the long run. That means we're not all just driving salaries higher or hiring from each other."[325]

Government Signaling. Many suggested that the whole industry would welcome and benefit if the government did a better job of signaling their near and longer-term requirements to help industry make the necessary investments, to include workforce needs. An interviewee indicated that the company works

[318] Ibid.
[319] Ibid.
[320] FAR Subpart 4.10 2024
[321] DFARSPGI 204.7107 2023.
[322] DFARS 215.4 2023.
[323] Commission interview with industry subject matter experts.
[324] Ibid.
[325] Ibid.

closely with the DoD to identify needs, technologies, and the emerging threats. Government signaling will help the company plan for "what's coming down the line for us to compete and know where there's an urgent need. There's a great deal of effort to triangulate and understand the various viewpoints across the decision-making community especially where the requirements are still being developed and the acquisition strategy is not solidified."[326] A final comment was that "Ultimately, the government has to back it up with money and a contract."[327]

[326] Ibid.
[327] Ibid.

C. Case Studies: Other Federal Agencies and Countries

As required by Section 1004 of the NDAA for FY 2022, the Commission conducted "a comparison of the PPBE process of the DoD with similar processes of private industry, other Federal agencies, and other countries and a review of budgeting methodologies and strategies of near-peer competitors to understand if and how such competitors can address current and future threats more or less successfully than the United States."[328] The Commission contracted with the RAND Corporation to support this area of research and highlights of the findings are summarized in the sections that follow; RAND's full analysis and detailed findings are, or will be, published on the RAND Corporation's website.[329]

Looking at Other Selected Federal Agencies

For the comparison of DoD's resourcing process to other federal agencies, the Commission contracted with the RAND Corporation to focus on the Department of Homeland Security (DHS), the Department of Health and Human Services (HHS), the National Aeronautics and Space Administration (NASA), and the Office of the Director of National Intelligence (ODNI) for its Interim Report. Since publication of the Interim Report, the RAND Corporation completed additional research on the Veterans Administration (VA) and the Department of Energy's National Nuclear Security Administration (NNSA). The analysis in this Final Report reflects results from all of the federal agencies that were reviewed.

The RAND Corporation research found that many other U.S. government agencies originally looked to the DoD's PPBE process as a model for planning and resource allocation decision-making within their own systems. This was the case with NASA's PPBE process, ODNI's Intelligence PPBE (IPPBE) process, DHS's PPBE process, HHS's budget process, and NNSA's PPBE process.[330] However, their respective budget processes have evolved differently since then in accordance with each agency's missions, organizational structures, authorities, staff capacities, available resources, and many other factors. While the processes may vary by agency, they all fall within the same system of governance as the DoD for congressional appropriations and oversight. The systems these agencies are employing have both strengths and weaknesses as well as opportunities to apply lessons learned and best practices that could be of benefit to the DoD. Key examples of these opportunities include some flexibilities not currently available to the DoD, greater emphasis on performance and evaluation, and consolidated IT systems.

Each agency has different flexibilities, either by design of their budget structure, or due to how funding is appropriated by Congress. For example, NASA derives part of its flexibility by arranging appropriations by mission, theme, and specific programs instead of by the appropriation categories of RDT&E, Procurement, and O&M.[331] Also, since all of NASA's funds, except construction, have two years of appropriations availability, this helps NASA avoid the "use it or lose it" mentality of one-year appropriations and provides stability during uncertain times or extended periods under a CR.

The HHS derives agility through multi-year and no-year appropriations. "Discretionary HHS funds are overwhelmingly budgeted annually, but some discretionary programs receive multiyear or no-year appropriations…other major sources of multiyear and no-year discretionary funds are supplemental appropriations, which have different obligation periods depending on congressional intent and whether

[328] McKernan et al. 2024d.
[329] RAND National Security Research Division 2024.
[330] McKernan et al. 2024c.
[331] Ibid.

Congress has identified a dedicated purpose for the funds."[332] Congress has also provided the HHS a Non-Recurring Expenses Fund (NEF) as a mechanism for more efficient obligations and to address department-wide technology and infrastructure needs. The NEF allows the HHS to take expired, unobligated funds and reallocate them to a department-wide capital investment account; however, they may not be used for their original purpose.

The DHS has flexibility with carryover of 50 percent of unobligated balances of some annual appropriations. This allows for obligations to be made through the end of the subsequent fiscal year.[333] This also helps reduce the "use-it-or-lose-it" spending that occurs in DoD.

The VA has several mechanisms that provide flexibility with multiple types of appropriations to include advance, no-year, and multi-year funds. The no year and multi-year appropriations allow flexibility in funding long term projects such as land acquisition and construction.[334] Advance appropriations provide budget stability through CRs and mitigate the effects of a government shutdown.[335]

The NNSA has no-year appropriations for operational budgets that are not time restricted and are available until expended, allowing for continued unrestricted operations through a CR and beyond. The NNSA also does not have colors of money like the DoD, which allows for more agility during program execution without having to reprogram funds between account categories (i.e., RDT&E, Procurement, and O&M).

While the mechanisms are different in nature, these flexibilities allow each agency to respond to needs within their organizations more efficiently and effectively than is sometimes the case in the DoD. These mechanisms also provide a higher level of budget certainty, especially under periods of CRs, which have become the norm over the past decade.

The DoD might also be able to learn from the performance and evaluation processes implemented at some federal agencies. For example, ODNI, the VA, and the DHS have, in their respective evolutions of PPBE, instituted a robust performance and evaluation process, with the ODNI and the VA substituting evaluation instead of execution for the "E" in PPBE. All use the evaluations early on to inform other phases within their process. The ODNI focuses on continuous evaluation across their enterprise and employs many tools in the process:

1. Strategic Evaluation Reports - independent evaluations of prior major issue decisions and intelligence investments to assess their effectiveness relative to expected outcomes, success measures, prior investments, cost benefits, and potential utility;
2. Budget and Performance Reports - assessments of Intelligence Community (IC)-wide budget, performance, and execution measures to enable performance-based budget decisions;
3. National Intelligence Strategy (NIS) Progress Assessment - an assessment of IC progress towards achieving the goals and objectives of the NIS to inform decisions and products in each phase of the IPPBE System; and
4. IC Strategic Assessment - an annual assessment of the implications for the IC of policy and strategy changes, long-term trends, and alternative future challenges to inform decisions and products in each phase of the IPPBE System.[336]

[332] Ibid.
[333] Ibid.
[334] Young et al. 2024b.
[335] Ibid.
[336] ODNI 2011.

The DHS develops metrics for program assessment during the planning and programming phases in conjunction with their multiple components who provide quarterly reports detailing progress toward these performance goals. The component strategic and performance assessments are intended to inform the following year's annual budget.[337]

While there is no formal output from the NNSA evaluation phase, they "assess progress toward achieving the identified performance measures of the PPBE process at multiple levels within the NNSA."[338] Accounting compliance, internal controls, risk analysis, cost performance, and agency goals are the main components of this process and results of these evaluations continuously feed the planning, programming, and budgeting phases.

Each of these agencies are using a system that clearly ties the budget to their strategy and assesses it using performance metrics, as available, to help drive decision-making within their respective resourcing processes.

The ODNI, the DHS, and the NNSA are also utilizing consolidated IT systems to help manage the planning and programming phases. The ODNI leverages their Intelligence Resource Information System (IRIS), that while not directly integrated across the multiple agencies, provides one common picture of the National Intelligence Program (NIP). The ODNI Chief Financial Officer manages IRIS to monitor budget inputs and conduct analyses, which automates information and reduces the need for manual inputs and data calls. The ODNI is currently building and testing the next generation of IRIS to replace an aging system that is not as powerful a tool as it could be.[339]

The DHS has launched their PPBE One Number system based upon a commercial off-the-shelf information technology product. This system was first rolled out at the DHS level and subsequently, most of the Components within DHS have begun or completed migration to using this system. "The PPBE One Number system offers the DHS a consolidated tool for budget formulation, performance management, and monthly obligation planning while eliminating disparate tools and the need to reenter data into multiple systems and spreadsheets."[340] The DHS is also incorporating execution into One Number to better inform decision-making and ensure a more robust feedback loop is incorporated to improve and inform the next planning and programming cycle.

The NNSA implemented an enterprise-wide authoritative financial information system called FormEX. This system allows users to look across the agency and see what is and is not being funded and where there may be redundancies. It provides real-time data for decision-makers in formats of their choosing and is a single source for authoritative data.

Based on its overall analysis of DoD and non-DoD agencies, the RAND analysis found that "consolidated resource management information systems could improve visibility across the federated structures of government agencies."[341] The RAND analysis further concluded, "DoD should examine the feasibility of implementing a consolidated PPBE information system and whether the benefits of doing so would outweigh the costs."[342]

For more information on the flexibilities in the allied and partner nations, see Figures 2 – *Funding Categories and Funding Availability for DoD and Comparative U.S. Agencies,* Figure 3 – *Carryover Funds and Restrictions*

[337] McKernan et al. 2024c.
[338] Young et al. 2024b.
[339] McKernan et al. 2024c.
[340] Ibid.
[341] Young et al. 2024c.
[342] Ibid.

for DoD and Comparative U.S. Agencies, and Figure 4 – *Reprogramming, Transfers, and Supplements for DoD and Comparative U.S. Agencies* at the end of this paper.

Looking at Other Countries

China and Russia. The Commission contracted with the RAND Corporation, to provide case study analysis of the defense budgeting processes of both China and Russia, the U.S.'s two principal strategic competitors in terms of size of military forces and size of defense budget.

Both China and Russia have authoritarian political systems which give leaders the power to decide how much to spend on their armed forces and which programs to invest in with minimal legal oversight. What political incentives and constraints the leadership in these systems respond to is not readily apparent to external observers. However, the RAND Corporation found that Chinese and Russian leaders face many of the same challenges as their counterparts in Western democratic countries when it comes to resourcing their militaries.[343] Key insights from the RAND Corporation's report focus on centralized decision-making, long-term plans with inherent flexibility, a supportive political system, the need to curb corruption, and the need for oversight.

Senior leaders in both Russia and China make top-down decisions about military priorities and resources. The centralized decision-making does not always yield the results leadership would expect. For example, the RAND Corporation found that in China's case "modernization efforts in areas such as jet engines and semiconductors have not yielded consistent outcomes."[344] China made both national priorities and provided stable funding but still could not overcome the lack of technical expertise in the industrial base and the loss of funds to fraud, corruption and misallocation.[345] Likewise in the case of Russia, "a significant increase in the defense budget for the war in Ukraine, along with the adoption of new mobilization laws, have run into limitations in industrial capacity, supply chain reliability, and the ability to call up required manpower even through conscription."[346]

Both China and Russia employ long-term plans but can make strategic changes along the way. The Chinese budgeting process focuses on investment in priority projects, which "allows for generous and consistent funding of priority projects over long periods."[347] Because the budget is always focused on long-term plans, this allows the Chinese government to resource priority projects of high strategic value over many years without programs being left unresourced due to sudden cut-off or interruption of funding.[348]

For flexibility during the year of execution, it allows for "lower-level managers to make decisions and adjust spending and acquisitions to better serve project needs."[349] Russia's process runs along a 10-year armaments program with three-year budgets and annual allocation of funds. However, the RAND Corporation noted in practice that the program is being updated every five years, and while this can enable flexibility and responses to technology, it can also lead to uncertainty in the defense industrial base. The war in Ukraine

[343] McKernan et al. 2024a.
[344] Ibid.
[345] Ibid.
[346] Ibid.
[347] Ibid.
[348] Ibid.
[349] Ibid.

highlights Russia's ability to pivot to fulfill different military procurement needs. As part of the response, Russia suspended their long-term plan and announced that it would commit more resources to the war.[350]

There is a natural friction built into the U.S. system of checks and balances between the separate branches of government which can add time and additional layers to resourcing decisions, whereas there is a lack of overt political opposition inherent in the Chinese and Russian forms of government. This allows for apparent ease of course corrections and support for the size and budget of their militaries. For Russia, this was apparent in the ability to shift resources and the mobilization of the defense industrial base to support the war in Ukraine. In China, historically strong economic growth (at least until recently) has given political leaders the ability to greatly increase the People's Liberation Army's budget, and to provide stable and generous support for major modernization priorities, such as hypersonics and AI.[351] This indicates that the sheer scale of overall investment in the Chinese military over the past three decades means money is always readily available for advancing long-term strategic and modernization investments - without fear of political opposition or pushback.

The RAND Corporation research also identified many problems with the Chinese and Russian budgeting systems. Both China and Russia have terrible records in dealing with corruption or ensuring the kind of transparency and quality control that is an important part of the execution phase of PPBE. As the RAND Corporation analysis highlights, "The power dynamics and the structures of decision-making in these countries [i.e., Russia and China] provide limited guardrails for ensuring efficiency, effectiveness, or oversight of investments."[352] Chinese budgeting processes, in particular, are subject to favoritism and outright bribery, while state-owned enterprises are free to operate wastefully and inefficiently. In Russia, corruption and cronyism is pervasive. Reformers in both China and Russia have aimed to increase Western-style oversight over the budget and resource allocation process, with very limited success. In Russia, while funding is allocated annually in theory under the three-year budgeting outlay according to fiscally conservative principles, in practice there are few safeguards, little oversight, and meager quality control. Russia, however, even in relation to their military budgets are fiscally conservative at the federal level, avoiding deficits and engaging in little foreign borrowing.

Overall, the RAND Corporation concluded the U.S., Chinese, and Russian systems are so different in their political, economic, and cultural underpinnings, that the lessons to be learned applicable to DoD regarding PPBE reform are few and far between. Considering these differences, there are two takeaways from China: "(1) finding ways to ensure sustained, consistent funding for priority projects over many years, and (2) delegating more authority and granting greater flexibility to project and program managers, without compromising accountability, so that they can make changes to stay in alignment with guidance as technologies and programs advance."[353] Both points are consistent with what the Commission has heard from interviews and input from stakeholders within the current U.S. DoD PPBE process. Both the DoD and the U.S. defense industrial base desire stability of budgets over multiple years to reduce risk for their priority programs. PMs and PEOs, alike, have asked for increased flexibility to make the changes necessary to ensure budgets align with the strategy, to incorporate the newest technologies in their programs, and to adjust to unplanned or emergent requirements during the year of execution. The U.S. would surely not want to

[350] Ibid.
[351] Ibid.
[352] Ibid.
[353] Ibid.

implement these improvements to PPBE by imitating the Chinese or Russian governmental systems but should look for other ways to garner the benefits of stability and flexibility.

Looking at Allies and Partners

The Commission also asked the RAND Corporation to provide case study analyses of the defense budgeting processes of a select list of allied and partner nations. For the Interim Report, the RAND Corporation focused on Australia, Canada, and the United Kingdom (UK). The Commission also requested the RAND Corporation look at France, Germany, Sweden, Japan, and Singapore, which are included in this Final Report.

Australia, Canada, and the United Kingdom

Unlike China and Russia, Australia, Canada, and the UK have shared Western democratic values with the U.S. As with the U.S., each country struggles to balance the needs of:

- Keeping pace with strategic threats,
- Executing longer-term plans,
- Employing deliberation processes with sufficient oversight,
- Encouraging innovation.[354]

The U.S. and its allies also enjoy convergent strategic visions. Accelerating DoD's agility in resource allocation would benefit allied and partner nations, as well.

Taken as a group, the Australian, Canadian, and British parliamentary political systems shape the roles and contours of resource planning in similar ways. In all three countries, the Executive Branch is directly responsible to the Parliament for its power of the purse, which greatly reduces political friction over appropriations. Largely as a result, Australia, Canada, and the UK have less legislative intervention in budgeting processes, compared to the U.S. For example, "Canada's government is never at risk of a shutdown due to funding lapses"[355] because they have mechanisms in place that allow them to either continue with prior year funding levels or, if a government falls and an election is called before a budget is passed, special warrants can be issued. These special warrants require approval by the Treasury Board and Cabinet but not by the House of Commons. The warrants cover normal operations, ongoing programs, and contractual obligations.[356] Australia institutes what is known as a "double dissolution." This can occur when a budget (or any bill) presented by the House is rejected twice by the Senate and leads to a dissolution of both Houses in Parliament and calling of new elections. Parliamentary intervention in the specifics of the Ministry of Defence's (MoD) budget, or delaying budget approval, is largely unknown in the UK.[357] In general, the Australian, Canadian, and UK resource management systems are less subject to partisan interference than in the U.S.[358]

Australia, Canada, and the UK place a higher priority on budget predictability and stability than on agility. Australia's Department of Defence is assured of sustained funding for four years and plans investments as far out as 20 years. The UK MoD programs are normally guaranteed funding for three to five years, with estimates stretching out to ten years. In contrast, the U.S. Congress must revisit and vote on DoD's entire budget every year.

[354] McKernan et al. 2024b.
[355] Ibid.
[356] Ibid.
[357] Ibid.
[358] Ibid.

"Despite the common emphasis on stability," the RAND Corporation notes, "each [Partner Nation] system also provides some budget flexibility to address unanticipated changes."[359] The Australian Parliament can boost the defense budget in periods of national emergency or overseas military operations; in Canada, regular supplemental parliamentary spending helps to close unforeseen Department of National Defence (DND) funding gaps. The UK MoD has mechanisms (e.g., a virement process) for moving money between accounts and accessing additional funds within the same fiscal year.

An important mechanism for enhancing strategic convergence between the U.S. and its allies has been the U.S. Foreign Military Sales (FMS) program. Australia, Canada, and the UK rely on U.S. FMS to promote strategic convergence, as well as interconnectedness and interoperability. The RAND analysis found that one downside to this reliance is that exchange rate volatility can require budget adjustments.[360] Another downside is that relying on U.S. strategic guidance reduces the ability for allied countries to act independently and flexibly to perceived threats, in ways that could also relieve the U.S.'s own strategic burden.

"Jointness" in resource planning also appears to be easier in Australia, Canada, and the UK given the smaller size of their militaries. In each country, there is a greater level of joint financial governance than in the U.S., with less focus on meeting service-centric views and more focus on cross-governmental mechanisms and joint funds.

In recent years, all four countries including the U.S., have looked for ways to support agility and innovation despite the shared cultural aversion to risk. For example, after issuance of the latest Defence Strategic Review in April 2023, Australia launched the Australian Strategic Capabilities Accelerator (ASCA). The "ASCA is focused on supporting and assessing innovative defense solutions at relatively high [Technology Readiness Levels], where progression through acquisition into service has had limited success in the past. The ASCA will utilize governance arrangements to ensure that truly innovative systems can be introduced into service to enhance defense capabilities and will supersede and expand upon Australia's extant defense innovation processes and industry engagement, such as the Next Generation Technologies Fund and the Defence Innovation Hub."[361] In addition to the UK MoD's new Innovation Fund, which will "allow the department's chief scientific adviser to pursue higher-risk projects as part of the main research and development (R&D) budget," the MoD also uses "incubators, accelerators, and novel contracting practices" to foster innovation.[362] While, there is no specific, established innovation fund for Canada, their strategic plan states "exploit[ing] defense innovation" [363] is a priority and they have been participating with the U.S. in the modernization of the North American Aerospace Defense Command (NORAD).

However, despite the push to accept additional risk as the price of increased flexibility and agility in resource allocation, the Australian, Canadian, and UK budgeting processes leave little room for experimentation or outputs outside the department bureaucracy. For example, Canada's political structure does not allow Parliament to drastically change funding for any departments, including the DND, beyond what has been requested. The UK MoD's attempts at innovation have also fallen flat in the persistently risk-averse culture.

Australia, Canada, and the UK all have independent oversight bodies for ensuring transparency, audits, or "contestability" of budgeting processes. In Australia it is the Australian National Audit Office, the Portfolio Budget Statement, the contestability function, and other reviews; in Canada it is the Auditor General, the Parliamentary Budget Officer, and at times the Library of Parliament; while the UK's MoD is externally vetted

[359] Ibid.
[360] Ibid.
[361] Ibid.
[362] Ibid.
[363] Ibid.

by the House of Commons Public Accounts Committee, National Audit Office, Comptroller, and Auditor General every year.

While the U.S., Australia, Canada, and the UK all have shared values and goals, there are distinct differences in the systems of government that change how each country approaches and executes the overall budgeting process for its militaries. These allied nations have a shared interest in how the U.S. will reform the PPBE process, as many of their programs rely on FMS solutions with the U.S. Overall, the RAND Corporation report concludes: "The Commission on PPBE Reform will find many similarities across the U.S., Australia, Canada, and the United Kingdom, but one particular similarity that is ingrained in resource planning will be very tough to change: The risk-averse resource planning culture across these countries will need to adapt to allow additional ways to innovate to counter threats."[364]

France, Germany, Japan, Singapore, and Sweden

France, Germany, Japan, Singapore, and Sweden do not have governments that are as similar in structure, nor are they as closely aligned politically with the U.S., as are the governments of Australia, Canada, and the UK. Nevertheless, according to RAND, "France, Germany, Japan, Singapore, and Sweden represent highly capable U.S. partners who converge on some common strategic concerns."[365] Along with the U.S., France and Germany are both part of NATO, while Sweden has applied for NATO membership and is currently in 'invitee' status, and is "gradually being integrated into NATO's political and military structures."[366] The U.S. and Japan have been allies since 1951 with the signing of the U.S-Japan Mutual Security Treaty; the alliance has changed and grown over the decades,[367] and both countries are currently working to strengthen that alliance.[368] The U.S. and Singapore have a security relationship through the U.S.-Singapore Strategic Framework Agreement (SFA), an agreement that "builds on the U.S. strategy of 'places-not-bases' - a concept that aims to provide the U.S. military with access to foreign facilities on a largely rotational basis, thereby avoiding sensitive sovereignty issues."[369] This agreement is a great strength to the U.S. with its Indo-Pacific partners as it allows for logistical strategic support in the region.

Unlike the similar parliamentary systems of government shared by Australia, Canada, and the UK, France, Germany, Japan, Singapore, and Sweden have diverse political systems. The RAND Corporation research found that across all of these diverse systems, "the interactions between executive and legislative bodies over budgetary priorities appeared to be streamlined, relative to the United States."[370] In France, there are features built into the constitution that allow the government to bypass Parliament when a majority cannot be reached in enacting legislation, this also comes with the National Assembly's ability to call a vote of no confidence that would dissolve the government, though this is hard to achieve. Combined, this makes for easy enactment of the finance laws. Germany has extensive parliamentary involvement both in the approval of the budget as well as the upfront planning that is done. This includes representation from the 16 states and experts from independent institutions like the Council of Economic Experts that provide input on fiscal policy and budget planning. The RAND Corporation analysis concludes that this high level of involvement early in the budget formulation process has led to the relatively seamless enactment of the budget.[371] However, there is a limitation in Germany during execution for procurement and development contracts of $27 million or more; these require separate approval from the Bundestag's Budget Committee before the contracts can take effect.[372]

[364] Ibid.
[365] Young et al. 2024a.
[366] "Sweden and NATO" Government Offices of Sweden.
[367] Maizland and Cheng 2021.
[368] Garamone 2023.
[369] Dolven 2023.
[370] Young et al. 2024a.
[371] Ibid.
[372] Ibid.

Much of the negotiation and amending of the budgets in Japan is done upfront between the Ministry of Finance and the respective ministries whose budgets are in question, which allows for smooth approval of the budget by the Diet (legislative branch). This is made even smoother since the approval of the budget predominantly rests with the House of Representatives (HOR); if the HOR approves the budget, and the House of Councillors (HOC) fails to approve the budget within 30 days of receiving it, the HOR vote prevails. If the HOC votes against it and they cannot resolve the differences with the HOR, the HOR vote again prevails.[373] Processes in Singapore value a single line of communication with the legislature. The Defence Policy Office acts as both the advisor and gatekeeper for the Minister of Defence's investment priorities and communicates these to the legislature. The Singapore Armed Forces are prohibited from proposing unfunded requirements to Parliament and ministers are prohibited from forcing earmarks into the Ministry of Defence budget.[374] Each of these countries has mechanisms in place that effectively assure the passage of a regular budget year after year and avoid a potential shutdown.

For all of the partner and allied countries that the RAND Corporation researched, there is more emphasis on budget stability than agility. France has its LPM (Military Programming Law) that sets a multi-year budget, typically spanning 4-7 years; while the law is not binding, it does provide the public and industry with a framework for budget and program planning.[375] Japan adopted three strategy documents - a Hierarchy of National Strategy, Defense Strategy, and Defense Buildup Program - in December 2022 that lay out a long-term plan (10 years) along with five year program of capability targets and funding expectations. Although the budget still needs to be approved annually by the Diet, this framework provides industry and the public with some level of confidence in planning. The Swedish Parliament outlines long-term defense planning by voting on the Defense Bill every five years. This keeps stability in the budget even if there is a change in political leadership. While the arrangement may appear to be overly restrictive and the antithesis of agile, the Swedish Armed Forces (SwAF) do have opportunities twice a year to amend the budget,[376] allowing them to respond to changes in overall defense posture and fact of life changes within the programs themselves.

For more information on the timeframes involved in the allied and partner nation processes, see Figure 5 *Programming: U.S. and Comparative Nation Resource Allocations and Time Frames* at the end of this paper.

Even though their focus is on stability, the systems employed by the other countries do allow for some budget flexibility. As mentioned previously, SwAF can submit amendments to their budget twice during the year. In addition, they also have some realignment authority when funds are being used for the same purpose but need parliamentary approval to move outside the originally intended purpose. Japan has carryover authority, allowing them to carry forward funds from one fiscal year to another with some constraints. This carryover is only allowed in four cases when: (1) carryforward is for unavoidable problems preventing execution within the year; (2) accidents or external events prevent the ministry from executing within the year; (3) continuation of expenses for multi-year projects, where leftover funds from that budget year continue to be spent until exhausted; and (4) special budget accounts that are separate from the general budget account and restricted to manage specific programs, such as running the national hospital.[377] France's virement process allows for broad reprogramming of funds within programs, across programs, and even across ministries. Germany has both carryover funds as well as a virement process that allows them to move funds within a ministry, subject to thresholds and other constraints once the money is moved beyond the chapter (account) in which it was funded. The war in Ukraine highlighted the use of special funds in two of the countries that are outside of the regular budget process and its fiscal constraints. France amended its finance law in 2022 to assist with the

[373] Young et al. 2024a.
[374] Ibid.
[375] Ibid.
[376] Ibid.
[377] Ibid.

acquisition of equipment though a special fund, and Germany used the Special Fund (*Sondervermögen*) to support wartime contingencies in Ukraine.[378]

For more information on the flexibilities in the allied and partner nations, see Figure 6 – *Execution: U.S. and Comparative Nation Budgetary Flexibilities and Reprogramming* at the end of this paper.

The five allied and partner nations discussed in this section face some challenges in fostering innovation differently from what was noted for Australia, Canada, and the UK. France's budget is controlled "at the top level of the state and is not conducive to genuine democratic debates on defense budget priorities, especially concerning equipment and innovation decisions."[379] Germany is trying to foster innovation in defense and has strengthened its position on innovation in their National Security Strategy by promising greater investment in innovation. They have also sought to promote innovation by establishing the Federal Agency for Disruptive Innovation and the German Agency for Transfer and Innovation,[380] though significant cultural barriers are hampering the success of these institutions. There is a reluctance on the part of German Ministry of Education and Research to consider military applications for state-of-the-art technologies, therefore most of the innovation comes from within the Defense Ministry, often resulting in duplicative efforts and wasted investment.[381] Also, while Singapore has established its Future Systems and Technology Directorate to shape R&D investments, innovation has been stifled by a risk-averse culture coupled with strict procedures to minimize risk and maximize accountability.[382]

Turning to program evaluation and oversight, the RAND Corporation concluded that the evaluation of spending information by independent audit agencies can be effective oversight mechanisms; however, there is still difficulty evaluating whether funds spent achieve the intended strategic outcomes.[383] Japan has established an elaborate system of internal and external review to carry out oversight. Singapore uses a three-line system of accountability: (1) individual and peer responsibility; (2) conventional internal regulatory processes; and (3) internal and external audits.[384] The Auditor General's Office and the Corrupt Practices Investigation Bureau carry out the third line, the latter of which can conduct criminal investigations when necessary.[385] Germany does measure performance against "clearly defined, measurable, and impact-based indicators with fixed evaluation deadlines"[386] established during the planning and programming stages of the budgeting process. This is in addition to the Federal Court of Audit's annual report and the "mirror units" in the Federal Ministry of Finance that monitor and track spending.

Unlike the conclusion reached during the review of Australia, Canada and the UK, the additional countries included in this Final Report did not all have common values and goals. As RAND notes, "the postwar history of Germany and Japan have given these U.S. partners unique political cultures relative to defense spending and the scale of their military ambitions, which shapes the legal frameworks and domestic politics around resource planning for defense."[387] All of the countries reviewed vary in their perception of the threat environment, the overall size of their militaries, what functions should or should not be performed by their military, how they engage with industry, and their decision-making in regards to modernization and what to maintain. Even with all these differences, there are similarities with the U.S. PPBE processes to include:

- The processes are structured, formalized, and include a well-defined cadre of decision-makers and stakeholders.

[378] Ibid.
[379] Ibid.
[380] Ibid.
[381] Ibid.
[382] Ibid.
[383] Ibid.
[384] Ibid.
[385] Ibid.
[386] Ibid.
[387] Young et al. 2024c.

- Strategic planning is a key input that is used to explicitly connect priorities to how much is spent to address military threats.
- Ongoing discussions between defense departments and decision-makers who control the "power of the purse" are held to justify how forces and programs will use the funding.
- Defense departments receive and spend funding according to agreed-upon appropriations rules and then use certain mechanisms, if plans change, to move or carry over funding.
- Oversight is a key mechanism for ensuring that what is budgeted is appropriately spent, even if mechanisms for exercising oversight vary significantly.[388]

With these similarities, and differences, innovation to counter threats will still be difficult to achieve in the risk-averse and military adverse cultures that have become ingrained in these countries.

The RAND Corporation's full research results are, or will be, published separately on their website but some tables are included at the end of this paper.

Given the wide variety of partner and allied nations, strategic competitors, and other U.S. federal agencies discussed in this section, the Commission focused the most on lessons to be learned from the non-DoD federal agencies because they face the same executive and legislative environment the DoD does. Comparisons to how the other agencies have additional flexibility not currently available to the Department are included throughout various sections of this Final Report.

Other Federal Agency and Country Comparative Analysis[389]

Other Federal Agency Comparative Tables

Figure 1 – Planning and Budget Systems of DoD and Comparative U.S. Agencies

Agency	Planning and Budget System
DoD	Planning, Programming, Budgeting, and Execution (PPBE) Process
DHS	Future Years Homeland Security Program (FYHSP)
HHS	No direct analog at departmental level; operating divisions (OPDIVs) have individual approaches to annual budget planning and formulation
NASA	PPBE System
ODNI	Intelligence Planning, Programming, Budgeting, and Evaluation (IPPBE) System
VA	No direct analog at departmental level; ad hoc process relying on governance boards and internal reviews that focuses on budgeting and execution, with strategic planning not well aligned with related processes
NNSA	PPBE Process

SOURCE: Reproduced from McKernan, Young, Consaul, et al., 2023
NOTE: Information in this table is derived from multiple sources and materials cited in volume 3 and this current volume

Figure 2 – Funding Categories and Funding Availability for DoD and Comparative U.S. Agencies

Agency	Funding Categories	Funding Availability
DoD	➢ Discretionary budget includes MILPERS, O&M, Procurement, RDT&E, and MILCON, Family Housing, and Base Realignment and Closure Program account categories	➢ Varies by account type; multiyear or no-year appropriations for limited programs as authorized by Congress
DHS	➢ Discretionary budget includes component-level accounts organized by four common categories	➢ Varies by account type; multiyear or no-year appropriations for certain programs as authorized

[388] Ibid.
[389] Young et al. 2024c.

	➢ Mandatory funding for some functions, such as Coast Guard benefits ➢ Some activities funded through discretionary fees and collections	
HHS	➢ Discretionary budget organized under 12 OPDIVs ➢ Mandatory funding is ~90% of budget ➢ Some activities funded through discretionary fees	➢ One-year appropriations for most of discretionary operational budget; multiyear and no-year appropriations for certain programs
NASA	➢ Discretionary budget with output-oriented appropriations allocated at program level	➢ Six-year appropriations, construction ➢ Two-year appropriations (except OIG and CECR), all other account types
ODNI	➢ Discretionary budget for National Intelligence Program (NIP) activities managed by ODNI ➢ Discretionary budget for Military Intelligence Program (MIP) activities managed through DoD	➢ Varies by account type; one-year appropriations for ODNI operations
VA	➢ Budget organized by function; mix of mandatory and discretionary funding ➢ Mandatory funding is ~60% of budget and includes veterans disability compensation, pensions, life insurance, living allowances, and burial benefits ➢ Discretionary funding includes ongoing medical care programs and operating activities (construction, EHR modernization, IT, and other operating expenses)	➢ Varies by function; discretionary budget includes mix of one-year, multi-year, and no-year appropriations ➢ Discretionary and mandatory accounts receive advance appropriations for certain veterans medical care and benefits programs, available one year after appropriation
NNSA	➢ Discretionary budget includes Weapon Activities (WA), Defense Nuclear Nonproliferation (DNN), Naval Reactors (NR), and Federal Salaries and Expenses (FSE) account categories ➢ No "colors of money" allows movement of funds within each program or project under the account categories without reprogramming	➢ No-year appropriations for majority of operational budget

SOURCE: Reproduced from McKernan, Young, Consaul, et al., 2023
NOTE: Information in this table is derived from multiple sources and materials cited in volume 3 and this current volume

Figure 3 – Carryover Funds and Restrictions for DoD and Comparative U.S. Agencies

Agency	Carryover Funds	Restrictions During Continuing Resolutions
DoD	➢ Limited carryover authority in accordance with OMB Circular A-11	➢ Various; no new programs, increases in production rates, etc.
DHS	➢ Authority to carry over one-year O&S funding into the next FY; can expend up to 50% of prior-year lapsed balance	➢ Various; no new programs, new hiring, or new contract awards for discretionary programs
HHS	➢ Limited carryover authority in accordance with OMB Circular A-11	➢ Various; new contract awards and grants have been suspended for discretionary programs.
NASA	➢ Limited carryover authority in accordance with OMB Circular A-11	➢ Minimal; two-year appropriations and 90–95% obligation goal for first year of availability allow forward funding of contracts.
ODNI	➢ Limited carryover authority in accordance with OMB Circular A-11	➢ Restrictions on ODNI/NIP operations are unclear; MIP operations are subject to restrictions on DoD activities during CRs.
VA	➢ Authority to carry forward funding related to medical care programs, subject to a celling; additional percentage-based carryover authority threshold for one-year accounts	➢ Varies by function; minimal to no impact on veteran's medical care and benefit programs receiving advance appropriations, as well as multi-year and no-year funded accounts ➢ Discretionary programs funded through one-year accounts subject to prior FY funding levels
NNSA	➢ No-year appropriations for operational budget allows carryover of unexpended funds from year to year	➢ Minimal; carryover of prior-year balances allows continued, unrestricted operations

SOURCE: Reproduced from McKernan, Young, Consaul, et al., 2023
NOTE: Information in this table is derived from multiple sources and materials cited in volume 3 and this current volume

Figure 4 – Reprogramming, Transfers, and Supplements for DoD and Comparative U.S. Agencies

Agency	Reprogramming	Transfers	Supplemental Funding
DoD	➢ As authorized; four defined categories of reprogramming actions ➢ Prior-approval reprogramming actions—increasing procurement quantity of a major end item, establishing a new program, etc.—require approval from congressional defense committees	➢ As authorized; general and special transfer authorities, typically provided in defense authorization and appropriations acts	➢ Frequent; linked to emerging operational and national security needs
DHS	➢ As authorized; request to Congress must be made before June 30 if additional support for emerging needs or crises exceeds 10% of original appropriated funding ➢ Restrictions (creation of program, augmentation of funding in excess of $5M/10%, reduction of funding by ≥ 10%, etc.) absent notification	➢ As authorized; up to 5% of current FY appropriations may be transferred if appropriations committees are notified at least 30 days in advance; transfer may not represent > 10% increase to an individual program except as otherwise specified	➢ Frequent; linked to Disaster Relief Fund for domestic disaster and emergency response and recovery
HHS	➢ As authorized; no notification below threshold of lesser of $1M or 10% of an account; notification of reprogramming actions above this threshold required ➢ Notification required above threshold of $500K if reprogramming decreases appropriated funding by > 10% or substantially affects program personnel or operations	➢ As authorized; Secretary's One-Percent Transfer General Provision allows transfer of up to 1% from any account into another account, not to exceed up to 3% of funds previously in account, maximum transfer amount of ~$900M	➢ Frequent; linked to public health crises, hurricane relief, and refugee resettlement support
NASA	➢ As authorized; reprogramming documents must be submitted if a budget account changes by $500K ➢ Within the Exploration Systems and Space Operations account, no more than 10% of funds for Explorations Systems may be reprogrammed for Space Operations and vice versa	➢ As authorized; transfers for select purposes authorized by 51 U.S.C. § 20143	➢ Rare
ODNI	➢ As authorized; Director of National Intelligence (DNI) may reprogram funds within the NIP with the approval of the OMB Director and in consultation with affected agencies ➢ Notification to Congress within 30 days for reprogramming actions > $10M or 5% when funds transferred in or out of NIP or between appropriation accounts ➢ Notification to Congress of reprogramming actions prior to June 30	➢ As authorized; DNI may transfer funds within the NIP with the approval of the OMB Director and in consultation with affected agencies	➢ Detailed funding profiles for NIP and MIP are not publicly available.
VA	➢ As authorized; annual appropriations legislation typically authorizes reprogramming actions for certain accounts, subject to limitations ($7M or 25% of an account for construction programs; $1M for IT programs) ➢ Notification to Congress required for ATR actions and certain categories of reprogramming actions	➢ As authorized; Recurring Expenses Transformational Fund allows reallocation of expired, unobligated funds to an account for department-wide purposes such as VHA facility infrastructure improvements and IT modernization	➢ Rare; post extension of authority to request advance appropriations for veterans medical care and benefits programs
NNSA	➢ As authorized; annual appropriations legislation typically authorizes internal reprogramming actions, subject to limitations ($5M or 10% of any annual funding level)	➢ As authorized by 50 U.S.C. §2745; allows transfer of up to 5% of previously authorized funds between DOE account	➢ Rare; no-year appropriations allows funding of unanticipated

	➢ Notification to Congress and 30-day waiting period required for above-threshold reprogramming actions, which must be cleared through NNSA, DOE, and OMB ➢ Reprogramming authorities do not allow creation, initiation, or elimination of a program, project, or activity ➢ Reprogramming authorities cannot be used to increase funds or personnel for any program, project, or activity for which Congress has previously denied funds	categories, subject to certain limitations and congressional notification	needs using prior-year balances

SOURCE: Reproduced from McKernan, Young, Consaul, et al., 2023
NOTE: Information in this table is derived from multiple sources and materials cited in volume 3 and this current volume

Other Countries Comparative Tables

Figure 5 – Programming: U.S. and Comparative Nation Resource Allocations and Time Frames

Country	Resource Allocation Decisions	Programming Time Frames
United States	➢ Documented in POM developed by Services and DoD components, reflecting a "systematic analysis of missions and objectives to be achieved, alternative methods of accomplishing them, and the effective allocation of the resources," and reviewed by the Director of CAPE	➢ 5 years
China	➢ Top-down planning from CMC services and commands supplemented by bottom-up requirements submitted by military unit financial departments	➢ 5 years, sometimes longer
Russia	➢ Top-down planning from Ministry of Defense for the State Defense Order (SDO), the annual appropriation for military procurement to meet the requirements of the SAP	➢ 3 years; nominal 10-year SAP, revised within 5 years in practice
Australia	➢ Portfolio Budget Statement (as informed by the IIP) for the current FY	➢ Three-tiered funding stream that provides: • current FY funding • forward-looking estimates with a high degree of confidence for the next 3 FYs • provisional funding with a medium degree of confidence for the next 10 years, as articulated in the IIP and defense strategic guidance documents.
Canada	➢ Government Expenditure Plan and Main Estimates (ME) allocate budget resources to departments and programs	➢ 3 years, as articulated in the Annual Department Plan
UK	➢ MEs for the current FY, based on spending limits set in Integrated Review, and additional estimates for 10 years out as articulated in the MoD "Defence Equipment Plan," which is updated annually ➢ Supplementary supply estimates (SEs) allow MoD to request additional resources, capital, or cash for the current FY ➢ Excess votes—although discouraged—allow retroactive approval of overruns from a prior FY, because government departments cannot legally spend more money than has been approved by Parliament	➢ 3–5 years, as articulated in the Integrated Review, which provides medium-term financial planning
France	➢ Dialogue between the Chief of Defense Staff (CEMA) and DGA within the MinArm to make resource allocation decisions, informed through engagement with the Ministry of the Economy,	➢ 4-7 years, as articulated in the LPM

	Finance, and Digital Sovereignty (MinFin), with disagreements resolved by the President in consultation with the National Defense and Security Council	
Germany	➢ Bundeswehr Office for Defense Planning -- delivers integrated planning within a 15-year horizon	➢ 5 years under the federal financial plan
Japan	➢ Top-down resource allocations decisions, with characteristics of a strategies-to-task framework, inclusive of input from staff offices	➢ 10 years, separated into two 5-year epochs
Singapore	➢ Internal SAF review and prioritization of capability gaps–service branches bring capability gaps to the Defense Policy Office, which conducts initial prioritization of requests, with prioritized capability gaps examined by the Systems Integration Office, then reviewed by the Defence Planning Office, with final approval provided by the Minister of Defence	➢ Rolling 5-year capability acquisition plans of each SAF service branch
Sweden	➢ SwAF with review and approval by Parliament	➢ 10-year operational plan (FMVP) and 12-year investment plan, reviewed and approved by Parliament every 5 years in Defense Bills ➢ Budget framework projecting 3 years into the future with annual updates

SOURCES: Reproduced from McKernan, Young, Heath, et al., 2023; and McKernan, Young, Dowse, et al., 2023
NOTE: Information in this table is derived from multiple sources and materials cited in volumes 1, 2, and 5

Figure 6 – Execution: U.S. and Comparative Nation Budgetary Flexibilities and Reprogramming

Country	Budgetary Flexibilities and Reprogramming
United States	➢ Funding availability varies by account type; multiyear or no-year appropriations for limited programs as authorized by Congress ➢ Limited carryover authority in accordance with OMB Circular A-11 ➢ Reprogramming as authorized; 4 defined categories of reprogramming actions, including PA reprogramming actions—increasing procurement quantity of a major end item, establishing a new program, etc.—which require approval from congress ➢ Transfers as authorized through general and special transfer authorities, typically provided in defense authorization and appropriation acts
China	➢ Some flexibility extended to lower-level decisionmakers to adjust spending and acquisitions; further specifics unclear
Russia	➢ Signed contract timelines shorter than SAP timelines; provides some degree of flexibility to MoD to realign procurements with changing strategic goals; further specifics unclear
Australia	➢ 10-year indicative baseline for defense spending (except operating costs) provides budgetary certainty entering into each new FY ➢ IIP includes approved capability development programs—for which funding does not expire—and unapproved programs that can be accelerated or delayed as needs arise or change to reallocate funds through biannual review process overseen by the Vice Chief of the Defence Force, including between services and for new projects ➢ IIP is 20% overprogrammed for acquisition to manage risks of underachievement or overexpenditure relative to the acquisition budget ➢ Funding for operations, sustainment, and personnel is separate from the IIP ➢ Capability managers have a high degree of flexibility for spending allocated operating funds; responsible for achieving outcomes articulated in the Portfolio Budget Statement
Canada	➢ Organizations can transfer funds within a vote from one program to another without Parliament's approval ➢ Organizations do need Parliament's approval to transfer funds between votes ➢ Canadian federal agencies allowed to carry forward a portion of unspent funds for a FY—typically up to 5% of operating expenditures and 20% of capital expenditures ➢ Government can authorize continued spending at prior-year levels if a budget has not been passed by Parliament by the beginning of the FY ➢ Special warrants can be issued to fund continued normal government operations if a government falls and an election is called before a budget can be passed; this can also be used on a short-term basis to avoid the need for a Parliament vote on funding

	➢ Interim supply bill for a new FY typically presented and voted on in third supply period of prior FY to allow continued government operations, as budget and MEs are introduced close to the beginning of a new FY
UK	➢ Defense operations funded separately through HM Treasury or (in certain circumstances) UK Integrated Security Fund (as managed by the Cabinet Office's) Joint Funds Unit ➢ Already voted funding can be moved within top-line budget programs with HM Treasury approval, provided they remain in the same commodity block ➢ MoD funds can also be directly transferred between programs within a departmental expenditure limit or annual managed expenditure in a process known as virement, subject to restrictions. ➢ Additional funding for one or more top-line budget programs can be requested from Parliament as an SE ➢ Portions of budget subject to highest degree of fluctuation treated as annual managed expenditures (with operations covered through HM Treasury and/or UK Integrated Security Fund); MoD can request additional funds from HM Treasury to support urgent and unanticipated needs
France	➢ At the program level–specific mechanisms include fungibility at the program level allowing PMs to allocate "credits" between different operations providing the ceiling for personnel expenditure is not exceeded--although "credits" for personnel expenditures can be redistributed to operational expenses ➢ Distribution of additional credits ➢ Virements of credits across programs within the same ministry (with Prime Minister decree on the advice of MinFin) ➢ Transfer of credits across programs and ministries (with Prime Minister decree on the advice of MinFin) ➢ Additional funds generated through mechanisms such as licensing of state-held IP rights ➢ Use of a precautionary reserve, which requires programs to save a fraction of allocated "credits" in order to respond to future unexpected events ➢ At the finance law level–specific mechanisms include amendments to the finance law, provision of advanced emergency funding from the next fiscal year's finance law, reallocation of funding across ministries to support the defense mission, or creation of a new finance law
Germany	➢ Bundeswehr special fund (Sondervermögen) – a type of German public financing used for programs or projects with defined objectives and predetermined timelines—with current objectives that include strengthening alliance and defense capabilities and financing significant equipment projects in order to reach an average of 2% of GDP spending on defense within a 5-year period ➢ Flexibility in disbursing funds to purposes other than those intended, as long as total spending does not exceed funding allocated to each ministry ➢ No limits associated on virement within chapters; 20% allowance for transfer of funds between chapters -- transfers above 20% threshold requires BMF approval ➢ Carryover of funds into next FY without a specified limit in situations where there is a contractual obligation to do so, or carryover authorized by Bundestag and promotes "efficient and economical use" of funds
Japan	➢ 3 mechanisms for obtaining additional funding: (1) supplementary budget, compiled by the cabinet and submitted to the Diet for approval; (2) use of emergency reserve funds included in the main budget for contingencies, with cabinet approval; and (3) reallocation of funds, through (a) changing budget implementation plan, or (b), reallocating funds within the same budget subcategory ➢ Use of multi-year contractual commitments ➢ Authority to carryover funds through four mechanisms: (1) direct carry forward of unspent allocated funds, with Diet approval; (2) carryover of unspent funds resulting from accidents or external shocks; (3) continuation expenses for a multi-year project; and (4) special account budgets, which are separate from the general account budget and used to manage specific programs
Singapore	➢ Departments are assigned a funding cap as a percentage of GDP, with exact budgets not made publicly available -- MINDEF ceilings for each fiscal year are classified, but government has publicly committed to a goal of 3-4% of GDP ➢ Additional project funding can be obtained through a centralized Reinvestment Fund, which is funded through minor spending cuts, that allows reallocation of funds after a competitive bidding process amongst ministries, with the Ministry of Finance awarding funds ➢ Annual supplementary budget requests
Sweden	➢ "Special" or "extra" budget bills that allow for additional funds in response to unanticipated needs (COVID-19 pandemic) or changes to the security environment ➢ Reprioritization of funds through a SwAF annual balancing process ➢ Flexibility for reprogramming of resources within expenditure areas; parliamentary approval required for reallocation of funds between expenditure areas ➢ Multi-year financial commitments with parliamentary approval

SOURCES: Reproduced from McKernan, Young, Heath, et al., 2023; and McKernan, Young, Dowse, et al., 2023
NOTE: Information in this table is derived from multiple sources and materials cited in volumes 1, 2, and 5

D. Key Documents, Processes, and Outputs

The Commission examined the key PPBE documents and processes directed for review in Section 1004 as well as other processes. This section discusses the documents and findings related to the current PPBE process steps that create the documents. Findings reflect research prepared for the Commission as well as Commission interviews and the professional experiences of the Commissioners and Commission staff. This section and the subsequent section benefits from research performed for the Commission by the IDA, which is published on IDA's website.[390]

Documents discussed in this section include:

- Defense Planning Guidance (DPG)
- Fiscal Guidance (FG)
- Integrated Program and Budget Review Guidance
- Program Objective Memorandum (POM)
- Future Years Defense Program (FYDP)
- Budget Estimate Submission (BES)
- President's Budget (PB)

The Commission has heard that the PPBE process tends to favor an Industrial-Age approach that better supports large capital expenditures for major weapon systems and discourages investments in software or smaller technologies. The processes and timelines discussed here, and in the next section, focus on the typical schedules; however, there can always be changes based on senior leader decisions and direction.

During Commission interviews and research, a number of concerns were raised about the planning phase of the current PPBE process including that the DPG document, produced at the end of the planning phase and due annually in February, is often delivered too late to reflect the DPG guidance in the Service and DoD Component POMs. More fundamentally, critics expressed concern with the planning phase stating that the DPG did not identify force levels and capabilities or areas where risk could be taken, or at least broad options for these fundamental issues, leaving that task to be addressed in the programming phase. Some critics also argued that the planning phase does not provide sufficient analysis of these issues, again leaving that effort to the programming phase.

The Commission did not have any access to planning materials, to include the DPG, which DoD regards as an internal pre-decisional document, so it was not made available to the legislative Commission. However, some Commissioners and staff have had access and experience with past DPGs; the Commission was told that DoD is working to address timing concerns and that the DPG developed to guide the FY 2025 PB was produced on time in February 2023.

The programming phase, and the POM submission that results from this phase, handle many of the tasks associated with translating planning guidance and strategy documents into specific programs. As discussed above, the programming phase must sometimes handle fundamental issues like determining force structure, which leaves organizations with less time to accomplish tasks like ensuring compliance with the DPG. The programming phase must sometimes accommodate changes in funding for the DoD, which can shift due to external influences like late congressional budget decisions that affect current and future budget levels. With

[390] IDA Systems and Analysis Center 2024.

its many burdens and the challenges of making difficult budgetary choices, the programming process often runs late and ends just a few weeks before the budget must be submitted to the OUSD(C) for Budget Review, leaving little time for the budgeting phase of PPBE.

Lack of time to accomplish the budgeting phase of PPBE, which starts with the Component BES justification materials and ends with the DoD input to the PB request, has forced the DoD to submit budgets that are not always as carefully priced, evaluated for executability, or documented to the degree the Department would prefer if there were more time. This challenge can be further exacerbated if there are sharp changes in funding limits that occur during the budgeting phase, which require revisiting earlier program decisions.

The last phase of PPBE, which focuses on managing execution and performance against established plans, must comply with many thousands of pages of laws and regulations. It is during this phase that factors such as technology and fact of life changes can require rapid shifts in appropriated funds through realignments and reprogramming actions. Execution reviews are conducted at various echelons and the Mid-year Execution Review with the OUSD(C) supports large reprogramming decisions submitted in the Omnibus reprogramming request due to Congress at the end of June every year, as well as informs out-year budget decisions. Programmatic and financial execution is closely monitored throughout the fiscal year, but especially during the last quarter. Annual funds must have sufficient funding in the right accounts to support a smooth fiscal year end close, and the O&M accounts must comply with the statutory 80/20 rule for execution (not more than 20 percent of one-year appropriations may be obligated during the last two months of the fiscal year).

The Commission is focused on how to provide the DoD with much needed flexibility to support adoption of innovation, faster delivery of capability to the warfighter, and respond to emergent changes while also maintaining congressional oversight. Figure 1 below summarizes information about the four phases.

Figure 1 – Primer: PPBE Process and DoD, DAU references.

Phase	Description	Lead Actor	Output(s)
Planning	Review strategic guidance Assess threats Evaluate takeaways from war games Identify capability gaps and risks	Under Secretary of Defense for Policy	Chairman's Program Recommendations (CPR) Defense Planning Guidance (DPG) Fiscal Guidance (FG)
Programming	Translate planning decisions into program and resource requirements Consider program alternatives Develop five-year projections for forces, personnel, funding	Director, Cost Assessment and Program Evaluation (CAPE)	Program Objective Memorandum (POM) Resource Management Decisions (RMDs; programmatic) Future Years Defense Program (FYDP) updates
Budgeting	Review budget justifications Consider funding alternatives Prepare budget submission	Undersecretary of Defense (Comptroller)	Budget Estimate Submission (BES) RMDs (programmatic)[a] FYDP updates (incorporating RMDs) DOD portion of President's budget request
Execution	Assess output to planned performance Adjust resources, as necessary	Multiple: Under Secretary of Defense (Comptroller) and DOD component financial managers	Assessments (internal reviews by OSD and DOD components) Reprogramming actions and transfers (including external interactions with Congress)

Source: Congressional Research Service

Defense Planning Guidance

Typically, a classified document, the DPG is developed annually by the Secretary of Defense, with the advice of the CJCS, USD(P), and OSD CAPE establishing "goals, priorities, and objectives, including fiscal constraints."[391] Due in February each year and informed by the NSS, NDS, and NMS, the DPG serves as the primary output of the planning process to inform development of the POM and BES. Specifically, the DPG includes:

- the priority military missions of the Department, including the assumed force planning scenarios and constructs;
- the force size and shape, force posture, defense capabilities, force readiness, infrastructure, organization, personnel, technological innovation, and other elements of the defense program necessary to support the [NDS];
- the resource levels projected to be available for the period of time for which such recommendations and proposals are to be effective; and
- a discussion of any changes in the strategy and assumptions underpinning the [NDS].[392]

Development typically begins with assessing strategic guidance, analytic products, and top-down guidance from the Secretary or Deputy Secretary of Defense to establish broad priorities. The process generally includes several opportunities for DoD senior leadership to provide input into what has been described to the Commission as a consensus-building process to include the input of as many stakeholders as possible.

In addition to issuing the NMS, the CJCS delivers the Chairman's Program Recommendation (CPR) to the Secretary of Defense. As described by the CRS, the CPR serves as "the CJCS's 'direct input' to the DPG and incorporates the CJCS's military advice on programming priorities…[and] is based in part on a capability gap assessment performed by the Joint Requirements Oversight Council, including priorities identified by combatant commanders (known as Integrated Priority Lists, or IPLs) and by the Chief of the National Guard Bureau."[393]

Fiscal Guidance and Integrated Program and Budget Review Guidance

The issuance of FG by the Deputy Secretary of Defense often kicks off the formal programming process with latest topline information from OMB, key leadership assumptions, and projected timelines. This provides fiscal constraints or total obligation authority (TOA) controls to each Military Department, and to the appropriate oversight stakeholders for the other DoD Components under their purview, for both the budget year and FYDP, along with any specific guidance on must-funds or priority directions. While the FG should be released in February each year, many Components begin preparation of their POM several months sooner and adjust upon receipt of a formal topline. The Army, for example, may begin their programming process and requirements validation as early as late summer or early fall prior to release of the FG.

The Director of CAPE and the USD(C) issue integrated PBR guidance that is often over 100 pages long describing how the programming and budgeting phases will be conducted. This may include requirements for any changes in process, justification materials formats or information, CAPE Select and Native Programming Data (SNaP) exhibits or data collection requirements, additional information the USD(C) may want to collect, and other goals of the Administration and the Secretary of Defense.

Program Objective Memorandum

The programming process largely seeks to balance requirements, or the DoD's wants and needs, with resources. The POM is a formal proposal from the DoD Components to the OSD identifying TOA allocations

[391] 10 U.S.C. §113(g)(2)(A).
[392] Ibid.
[393] McGarry 2022, 8-9.

by program to meet the intent of the DPG and additional Component-specific guidance. Based on toplines provided in the FG, the POM provides insight on how each Component intends to achieve intended goals and priorities across the FYDP.

The POM is typically based on a series of cost estimates and assumptions that includes requirements validation, investment or divestiture decisions, reduction options, and an analysis of alternatives. Once complete, the POM is sent to CAPE for Program Review as an electronic database with funding spreads by BLI by year across the FYDP. This submission is often accompanied by SNaP exhibits, found in the CAPE SNaP Input System, detailing specific, non-standard program and budget data information not found in the formal FYDP structure. This may include information such as total square footage, quantity of IT systems supporting a certain effort, or sub-BLI data such as expenditures on PFOS (perfluorooctane sulfonate) and PFOA (perfluorooctanoic acid) which may be funded in multiple BLIs. Decisions resulting from Program Review are documented in PDMs (they have also been called RMDs) which, during a year with normal timelines, inform Budget Review.

Future Years Defense Program

The FYDP is a forecast of recommended funding, manpower, and forces - aligned by DoD program - over a five-year period reflecting the "estimated expenditures and proposed appropriations included in that budget…cover[ing] the fiscal year with respect to which the budget is submitted and at least the four succeeding fiscal years."[394] The FYDP is a planning tool to allow the DoD to project outyear shifts in programming that may require a multi-year phased funding approach, advanced fiscal support, or funding tails. Examples may include a shift in research and development priorities, choosing a higher-priority procurement effort that may require a long lead time, or emerging priorities that may require resourcing over multiple years, such as achieving energy and climate initiatives by a certain fiscal year. The language in Title 10, U.S.C §221[395] further stipulates that the FYDP shall be submitted by the Secretary of Defense no later than five days after the PB is submitted to Congress. While the details of the FYDP, in aggregate, are classified, Section 1042 of the NDAA for FY 2018 (P.L. 115-91) -- matters relating to the submittal of the FYDP -- amended by 10 U.S.C §221, require each FYDP to be available electronically in the form of an unclassified database, and to deliver printed copies of each program to the congressional defense committees.[396]

Prior to the 1950s there was not a uniform budget structure, and the Military Departments designed their own specific appropriations. Under the Hoover administration, the Department designed a unified appropriation structure that would provide appropriate oversight and help them manage and understand the linkage between the strategy and budget request.[397] Figure 2 below, as provided by the IDA, shows a hypothetical example of the format used for the FYDP, which is made up of PEs describing the resources allocated to activities and programs.[398]

[394] 10 U.S.C. §221.
[395] Ibid.
[396] P.L. 115-91.
[397] History and Library Directorate 2022, 9.
[398] Whitley et al. 2023, 23.

Figure 2 – DoD FYDP PE Example

DOD FYDP Program Element Example
(PBR 2016 Notional Data)

F-16 Squadrons Program Element *(0207133F)*

	Prior Year (PY)	Current Year (CY)	Budget Year (BY)					*Forces Only*
	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21-23
Dollars - millions								
Research & Development	297	110	81	71	97	86	86	
Aircraft Procurement	624	240	298	542	512	298	298	
Other Procurement		0	0	0	0	0	0	
Military Construction		0	0	0	0	0		
O&M	685	830	708	703	695	690	690	
Military Personnel	595	644	687	703	713	742	742	
Total Funding	**2,205**	**1,823**	**1,774**	**2,019**	**2,017**	**1,817**	**1,817**	
Manpower								
Active Officers	1,150	1,153	1,135	1,135	1,135	1,135	1,135	
Active Enlisted	12,199	13,478	13,324	13,320	13,320	13,323		
Civilian - Direct Hire	188	185	185	185	185	185	185	
Civilian - Fgn Hire	17	17	17	17	17	17	17	
Total Personnel	13,554	14,833	14,661	14,657	14,657	14,660	14,660	
Forces/Equipment								
F-16 Aircraft (PAA)	420	420	414	414	410	400	390	390

Source: IDA

The example provides the breakdown for a single PE for F-16 squadrons; PE 0207133F includes manpower authorizations, resources for peculiar and support equipment, necessary facilities and costs for wing headquarters, tactical fighter squadrons, avionics maintenance, field maintenance, consolidated aircraft maintenance, munitions maintenance, and weapons system security.

The FYDP is aggregated under 12 formal Major Force Programs (MFP) which are each a collection of TOA, manpower, and forces data. Each MFP consists of PEs; the MFP is identified by the first two digits of the PE. The structure is further broken out by Component (military Service or DoD Component, for example), and appropriation (e.g., Procurement or MILCON). This combination of PE, Component, and appropriation includes thousands of unique values. Beyond the PE-level in the FYDP, each PE can further be broken down into BLIs, that are used to track, identify, and appropriate resources. Not all appropriations use the same BLI as their primary level of control. For instance, the O&M appropriations use Sub-Activity Groups (SAG) (e.g., SAG 131: Base Operations Support) as the BLI. In contrast, the Procurement appropriations use the P-1 Line-Item Number and the Line Item Title (e.g., P-1 #4 and Line Number 0363G85200 is Stryker Upgrade) ~~or~~ and the RDT&E appropriations use the PE as the BLI and primary means of funds control. Using RDT&E as an example, the last digit identifies the Component responsible for that PE (e.g., A is Army and BB is USSOCOM).

This crosswalk of PEs to Components and appropriations allows for a multidimensional view of the DoD FYDP that is organized by functional or organizational resources.

Budget Estimate Submission

In a year with typical timelines, the BES is submitted to the USD(C) during the late summer which kicks off a formal Budget Review. The BES serves as a translation of the POM from program level detail to the formal FYDP budget structure discussed above, which is different depending on the appropriation. For O&M, the SAG is the lowest level of detail; for RDT&E, the PE with details by project is the lowest level of detail; the lowest level of detail for Procurement is the line item; MILCON is submitted at the individual project level; and MILPERS is submitted by BA.

With guidance from OMB, the USD(C) reviews the BES for consistency with senior leadership direction and feasibility of execution within the budget year. Any resulting changes are documented in PBDs (they have also been called RMDs), which direct the Components to make changes. Similar to the POM, the BES is submitted through an electronic database from the DoD Components to the USD(C). The formal BES submission is typically accompanied with supporting budget justification materials explaining resource allocations and decisions. The BES serves as the basis for Budget Review, which in turn becomes the PB request after incorporating all program and budget decisions.

President's Budget

As described in OMB Circular A-11, Preparation, Submission, and Execution of the Budget, the PB consists of several volumes that set forth the President's financial proposal and recommended priorities for allocating resources. The DoD's portion of the PB submission is the executive branch's request and estimate of federal government spending for the upcoming fiscal year, which is supported by justification material providing additional information and context. The DoD 7000.14-R, FMR, Volume 2A, Chapter 1 outlines instructions for the preparation of justification material for presentation to the congressional defense, intelligence, and military construction committees including, but not limited to, the requirement for separate J-books for each appropriation, how to handle classified material within each volume, and designation of required reports and schedules.

A complete list of all accounts and their lowest levels of details, as well as all unclassified budget justification materials for each year, can be found on the OSD Comptroller's public website under the Budget Materials tab at https://comptroller.defense.gov/Budget-Materials/. There are thousands of pages of justification materials, links to Service budget materials, and supplementary information found on this website.

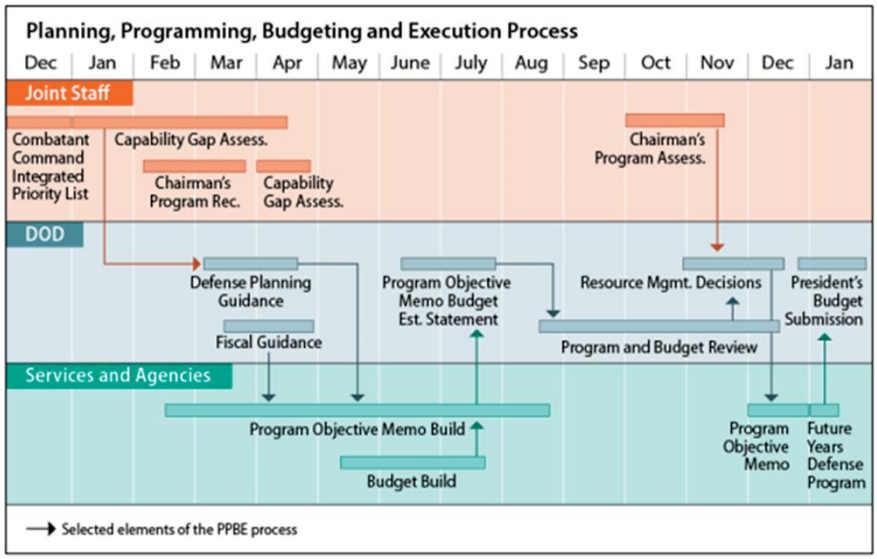
The PB is what Congress reviews, adjusts based on internal priorities published in committee markups, and then passes authorization and appropriation bills based on their conference position of those recommendations. Failure to pass appropriate appropriation measures typically results in a CR to keep the government running.

E. PPBE Timelines

The Section 1004 language also directed the Commission to conduct an analysis of the timelines involved in developing an annual budget request and the FYDP, including the ability to make changes to such request or such program within those timelines. While each year follows the same general process and timeline, no two years are identical as the needs of the Department change each cycle. This is further complicated by the fact that multiple cycles often overlap and are therefore being executed concurrently. For example, while the DoD is building its POM for FY 2027, it may also be planning for FY 2028+, finalizing the BES for FY 2026, defending FY 2025 on the Hill, and executing FY 2024 and prior year funding.

Any delay to a particular activity has impacts on assumptions and budgetary plans used in subsequent activities. For instance, a late DPG may delay program decisions or defer force structure decisions. Late appropriations or changes in administration also play a role in compounding the complexity of the PPBE process, often resulting in decisions being made on unknown toplines for the POM and budget year. Figure 1 below, from the CRS, shows a notional timeline that attempts to depict the intricacy of the annual PPBE processes and timelines by mapping the Joint Staff in comparison to OSD and select Services and Agencies.[399]

Figure 1 – DoD PPBE Process and Timelines



Source: CRS, 2022

The Commission regularly heard concerns about the time required for a program to transit the PPBE process. It often takes two years, and sometimes four years or more, for an issue to go through all PPBE phases first at the Service, then at the OSD, through Congress, and then finally the contracting process (if applicable) and execution. During this long period, technology and military requirements may change in ways that demand shifts in programs. Commission interviews suggested that selected key issues can be handled more quickly, and the PPBE process does provide the ability to make changes along the way. The DoD interviewees generally agreed that changes can be made even late in the DoD budget formulation process, but only for those issues where senior leaders believe changes are important enough and all parties agree on the nature of the change. As previously discussed, the reprogramming process provides a forum for making changes

[399] McGarry 2022: "Sources: Figure created by CRS based on Sean C. Sullivan, Planning, Programming, Budgeting and Execution Workbook, Naval War College Faculty Paper, updated 2015; and DOD, CJCSI 8501.01B, Chairman of the Joint Chiefs of Staff, Combatant Commanders, Chief, National Guard Bureau, and Joint Staff Participation in the Planning, Programming, Budgeting, and Execution Process, December 15, 2021, p. B-5, at https://www.jcs.mil/Portals/36/Documents/Library/Instructions/CJCSI%208501.01B.pdf. Note: Timeline is notional."

during budget execution but can take many months, is limited in the amount of funds that can be shifted, and ATRs must be approved by all of the congressional defense committees before the change can be implemented.

It is also important to note how much earlier the Services start their POM and budget build compared to when strategic guidance is released and when OSD does its review of the Component POM or BES. The DoD interviewees also noted another timeline challenge already discussed briefly above: the PPBE process does not provide enough time during the budgeting phase to ensure high-quality budgets and clear justification narratives are developed and there is often only two to four weeks to complete the budgeting phase whereas six to eight weeks would be optimal.

Some interviewees argued that the PPBE process, especially within programming and execution phases, hinders defense programs, particularly modernization programs, because they take too long, especially for high-tech development and acquisition programs where technology may shift quickly. In the current environment it is especially challenging to try to predict how technology may change or what may be available in the next three to six months, let alone two to four years in advance. Other interviewees believed the issue was not within the programming and execution phases but rather in the planning phase, that sometimes fails to produce a program that can fit within likely FG, forcing constant and confusing changes during the programming, budgeting, and execution phases.

F. A Review of the Sufficiency of the Civilian Personnel Workforce in the OSD and the Office of CAPE

Also required by the statute creating the Commission, the Commission has conducted "a review of the sufficiency of the civilian personnel workforce in the Office of the Secretary of Defense and the Office of Cost Assessment and Program Evaluation to conduct budgetary and program analysis."[400]

The workforce assessments looked at the organizational structure, the number of people onboard compared to authorized billets, staff skillsets, and financial resources. For CAPE, the assessment focused on the whole organization. For the OUSD(C), the focus was on the P/B portion of the organization given the nature of the direction to focus on budgetary analysis.

The Office of CAPE Workforce

The Office of CAPE provides independent analytic decision support directly to the Secretary and Deputy Secretary of Defense on all aspects of the defense program, including the size, shape, and capabilities of the future joint force, as well as the corresponding allocation of resources. The organization's origins trace back to the Office of Programming within the OUSD(C), established in 1961 by then Secretary of Defense Robert McNamara. The office, comprised of a professional civilian analytic staff, was charged with providing the Secretary with analytic decision support on all aspects of the defense program. In 1965 the organization was renamed the Office of Systems Analysis and was made a standalone direct report to the Secretary of Defense. In the mid-1970s the office evolved into the Office of Program Analysis and Evaluation (PA&E) within the Office of the Secretary of Defense. In 2001, Secretary Rumsfeld briefly moved PA&E back under OUSD(C) but reversed that decision due to the extreme cultural differences between the organizations.

The Weapon Systems Acquisition Reform Act of 2009 (WSARA) subsequently created CAPE, transferred the PA&E staff into that organization, and expanded its mission to help support WSARA's overarching goal of improving defense acquisition and strengthening the rigor and validity of Independent Cost Estimates (ICE) to support Major Defense Acquisition Program (MDAP) milestone decisions. Organizational responsibilities are laid out in numerous sections of Title 10 U.S.C and enumerated in DoD Directive 5105.84, Director of Cost Assessment and Program Evaluation.

Workforce. The entire CAPE workforce is described in this section, as CAPE's sub-organizations support each other. The statutory direction for this review; however, is focused on the sufficiency of CAPE's civilian personnel workforce for program analysis. The portion of CAPE's analytic workforce that directly supports Program Review are its Program Evaluation and Capability Enablers organizations, which collectively include 66 authorized civilian personnel. For the whole of CAPE, as of first quarter FY 2023, the staff of 314 consisted of 135 civilians against the 164 authorized billets, 21 military personnel, 11 detailees, and 147 contractors (providing executive administrative support, information technology support, data, modeling, and include on-site FFRDC personnel). Civilian personnel levels have varied from a period of growth to 150 personnel in FY 2011 with the additional missions and workload from the WSARA followed by a period of decline to a low of 120 personnel in FY 2020 due to headquarters reductions imposed by the exigencies of sequestration-driven budgets in FY 2012–FY 2021.

[400] P.L. 117-81.

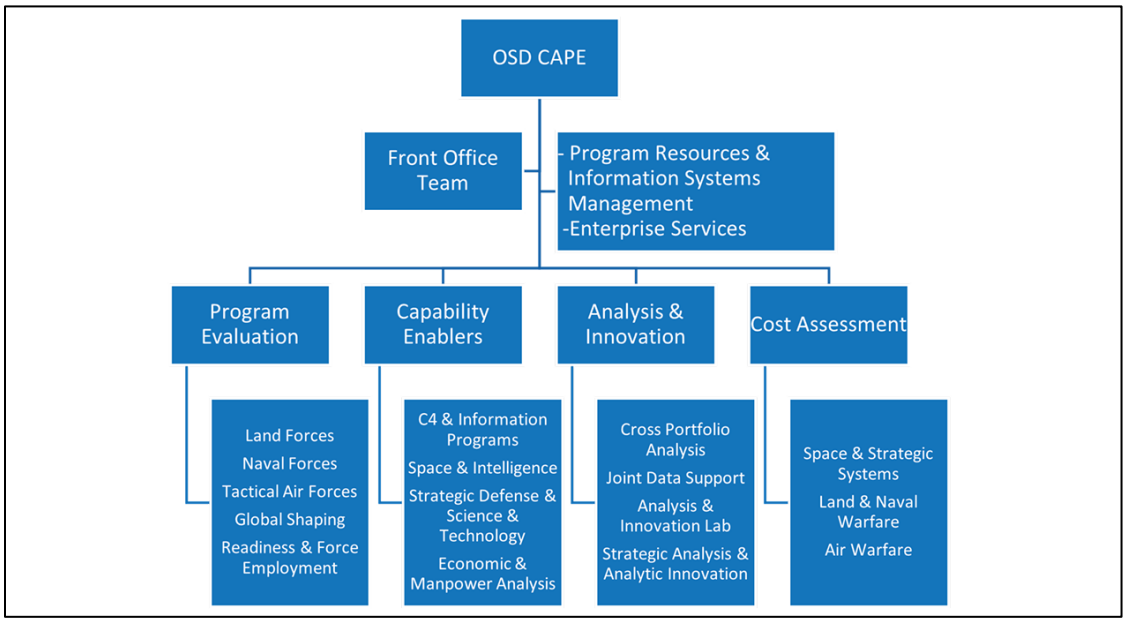
It is a very experienced staff. Of the 135 civilians on board, grades range from General Schedule (GS)-8/9 to SES but are predominantly GS-15s; 87 percent are operations research analysts, and the remainder are support staff. Nearly half of the staff have been with the organization less than five years while 38 percent have been at CAPE longer than a decade; 54 percent of the staff have a master's degree and 40 percent hold a doctorate. There has been about nine percent attrition every year and there have been some recruiting challenges. In recognition of these trends, CAPE has been strengthening its recruiting pipelines, which include greater use of American Association for the Advancement of Science Fellowships; the Presidential Management Fellows Program; the John S. McCain Strategic Defense Fellows Program; Intergovernment Personnel Act placements and details; and outreach to recent university graduates with advanced degrees.

Core Functions. The Office of CAPE has three core functions:

- Supporting the Secretary and Deputy Secretary of Defense in reviewing and recommending adjustments to the FYDP by leading the programming phase of PPBE;
- Producing strategic and operational analyses to inform development of strategic guidance such as the NDS and DPG, as well as subsequent resourcing decisions, and providing leadership in developing DoD's analytic priorities, standards, data, tools, and workforce; and
- Supporting acquisition on matters relating to cost analysis, including issuing guidance for Analyses of Alternatives (AoA) for MDAPs, producing ICEs to support MDAP milestone decisions, and leading on improving analytical skills, competencies, tools, and data in support of cost assessment activities across the Department.

The Office of CAPE is organized into four deputates and has a front office and divisions for managing enterprise support and program resources and information systems management.

Figure 1 – Office of CAPE Organizational Chart



Program Evaluation (PE) and Capability Enablers (CE). The PE and CE staffs support CAPE's role in leading the programming phase of PPBE, perform analysis supporting the planning phase, and support the acquisition system by providing guidance and sufficiency assessments of AoAs; PE and CE are organized into divisions that are each responsible for a major DoD capability area.

The workload is cyclical. In years with normal budget schedules the DoD Components submit their POM to OSD in the summer, after which CAPE leads the Program Review through the summer and fall. Analysts collaborate with stakeholders across the Department to identify issues, survey all relevant facts and viewpoints, and provide analysis and options to enable the Secretary and Deputy Secretary of Defense to adjust the FYDP to align with the defense strategy and address gaps and redundancies in POM submissions. As Program Review concludes, the workforce turns their focus to analyses in support of the planning phase of PPBE for the following fiscal year; decision support to the Secretary and Deputy Secretary of Defense as required; and providing analysis and advice for other resource and capability planning in the Department such as issues under consideration in the Joint Requirements Oversight Council.[401]

There are 31 authorized civilian personnel billets in PE and 35 in CE.

Analysis and Innovation (A&I). The A&I staff produces strategic and operational analysis and analytic leadership and support for the planning phase of PPBE. This is designed to help the programming phase link budgets to strategy. The A&I staff supports CAPE's role as co-chair of the AWG along with the USD(P), the Joint Staff, and the CDAO. The Deputy Secretary of Defense established the AWG in 2021 to reform and develop DoD's analytic expertise, set standards for joint analysis, and improve the analytic foundations for decisions. The A&I staff also develops and manages data repositories, analytical methods and tools for strategic analysis, and conducts strategic and operational analysis to support development of strategic guidance and subsequent resourcing decisions. This includes analyses called Strategic Portfolio Reviews (SPR), conducted in collaboration with the PE and CE deputates, that are directed annually by the Deputy Secretary on cross-cutting, complex, strategic, and joint issues, at a rate of roughly four SPRs per year; SPRs are completed in time to inform the annual Program Review.

There are 32 authorized civilian personnel billets in A&I.

Cost Assessment (CA). The CA staff supports the Director of CAPE's role as principal official for ICE and cost analysis and primarily supports the acquisition system. The analysis, tools, and expertise related to those analyses feed directly back into the Service POM requirements and budgets for those systems; the Department typically funds programs to the CAPE ICE. The staff conducts ICEs, reviews cost estimates and analyses related to MDAPs, reviews cost analyses of major programs to be procured using multi-year contract authority, prescribes policies and procedures for cost estimation and analysis in DoD, establishes policies and procedures for reporting and collecting cost data, manages cost data repositories and tools for DoD, leads DoD cost analysis education and training, and reviews Service POMs for full funding of major acquisition programs.

There are 38 authorized civilian personnel billets in CA.

Leadership and Support. These organizations provide overall leadership and support to the entirety of CAPE starting with the Director and Front Office Staff. The PRISM division manages the scheduling, coordination, integration, and data requirements of PPBE, along with the production and dissemination of PDMs and the FYDP to record the program level of detail in the PB. PRISM also provides support for most of CAPE's business process such as document distribution, tasking tracking, IT services coordination with service providers, audio visual infrastructure maintenance and modernization, personnel analytic tool support, and internal

[401] PE and CE also perform their duties for AoAs for MDAPs, based on when the Services initiate these programs.

business process tools support. The Enterprise Services Division oversees all CAPE's human capital, administrative, contracting, and fiscal services.

There are nine authorized civilian personnel billets in the Front Office, nine in PRISM, and 10 in ESD.

Challenges at the Office of CAPE. When WSARA established CAPE in 2009, the organization was given a larger mission than its predecessor organization. Research provided to the Commission suggests that some critics believe CAPE needs to further expand its mission to provide more analysis of broad issues such as force structure and posture. The demand for CAPE's decision support has also risen with new threats, priorities, and fiscal pressures. For example, in the annual Program Review, an average CAPE analyst presented alternatives impacting over $1.5 billion, over five times as much as in 2011 (in constant dollars). Likewise, the number of direct congressional study taskings to CAPE has increased almost fivefold since WSARA.

Staff levels have not always matched increases in mission. In the decade following the creation of CAPE in 2009, federal staff size declined, until it hit a low of 120 civilian personnel in FY 2020. This decline was part of a broader atrophy of capabilities for strategic analysis in DoD, that caused criticisms of DoD's lack of joint analytic capabilities for linking strategy to resources.[402] The Office of CAPE has since grown to 135 on board civilians and plans to continue to pursue its growth to 164 civilian personnel in FY 2023. While recent budgets have increased civilian authorizations, the process of recruiting the highly qualified individuals that CAPE requires will take time, as will the subsequent on-the-job development of these individuals.

The Commission found that the CAPE staff provides strong support to OSD leadership and to DoD as a whole, despite staffing issues. Today, the Office of CAPE plans sufficient growth to correct the challenges identified above for its current mission, but growth is hampered by recruiting challenges. The Commission believes CAPE has personnel with the right skillsets and the correct organization to support CAPE's mission for the Department. Actions to enhance recruiting and outreach, speed up the hiring process, and provide stability in civilian authorization levels will help build and sustain an effective CAPE workforce to meet the Department's needs.

Recommendations to improve the CAPE organization are included in the Commission's broader recommendations on workforce reforms in Section VIII.

The OUSD(C) P/B Workforce

Title IV of the amended National Security Act of 1947 provided for three Assistant Secretaries, one of whom was designated as Comptroller of the Department; Section 401 specified that the Comptroller would be responsible for advising the Secretary on budgetary and fiscal matters, developing and executing the Defense budget, and overseeing financial management across the Department.[403] The DoD Reorganization Act of 1986, most often identified as the "Goldwater-Nichols Act," changed the title of the position to DoD Comptroller; and the NDAA of 1985 upgraded the position to that of Under Secretary.[404]

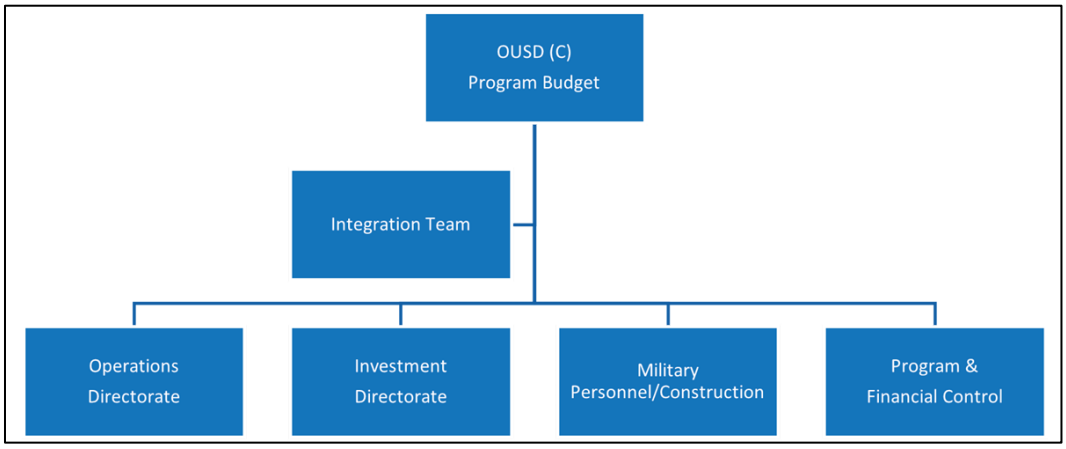
[402] For example, see NDS Commission 2018 and GAO 2019.
[403] "OUSD(C) n.d.
[404] Ibid.

The P/B organization is the component of OUSD(C) responsible for managing the review, formulation, presentation, and execution of the DoD budget while also working to achieve economy and efficiency in the operations of the Department through sound business judgment and effective fiscal planning and control.

There are four directorates, organized largely along appropriation lines, and an integration team:

- Operations Directorate – O&M and related appropriations for the Military Departments and Defense-Wide Components and contingency and international operations.
- Investment Directorate – Procurement and RDT&E appropriations.
- MILPERS and MILCON Directorate – MILPERS, Healthcare, and MILCON appropriations, and FSRM.
- P&FC Directorate – Budget formulation and execution databases, apportionments, reprogramming actions, FMR management, and other cross-cutting support functions.
- Integration Team – Provides continuity and support on the review and management of Departmental budgetary matters, such as posture testimony and external products like the annual Secretary of Defense's Budget Overview Book.

Figure 2 – OUSD(C) P/B Organizational Chart



Workforce. The current size of the organization is 76 on board civilian personnel against the 81 authorized billets. There are no permanent military billets, although there is an agreement with the U.S Air Force to host a military fellow. There are five contractors that provide administrative support, and information technology support is provided by Joint Service Provider. Civilian personnel levels have fluctuated a bit over the last 20 years, but the 20-year average is around 76 on board personnel, ranging from a high of 91 in 2002 to a low of 47 in 2009. Most of the recent reductions were driven largely by the management headquarters reductions required of the Department that affected the entire OSD staff in FY 2012-2018 and Revolving Funds personnel were realigned in 2022 to the now established EFT Office.

Overall, it is an experienced staff where the journeyman budget analyst grade levels are GS 13-15; 87 percent of the staff are budget analysts, another seven percent are program analysts, and the remaining personnel are budget technicians and a financial analyst. The predominant government experience level is 21-30 years of service with 58 percent of the P/B staff having master's degrees or higher. Recent departures have resulted in a staff with less OSD experience than has been the norm; the current average staff tenure in OSD is five years. Turnover in 2022 was relatively high at 16 percent, although that number is not inconsistent with past experience and reflects retirements from a staff whose average federal service is 20 years or more. Recruiting

is identified as a growing challenge but was generally described as manageable. However, the pool of highly qualified candidates appears to have decreased.

As with other members of the DoD financial management workforce, USD(C) analysts must have and retain the required financial management certification level. Given the persistently heavy workload, it has been an increasingly difficult challenge to achieve the 80 hours of continuing professional education every two years that is needed to maintain certification, much less seek outside training opportunities. There is currently no formal training program centered on working for the P/B organization and is largely an "on-the-job" mentor protégé style training process for new analysts.

An increasing issue in the recruiting and retention of a high-quality staff is balancing quality of life with the obligations of work, particularly as the COVID-19 pandemic placed significant emphasis on teleworking. Improved technology has offered the ability to do some classified work at home as well, which helps to ease some of the balance between work and home life; however, many other parts of the DoD and federal government can offer full-time telework positions, which is making it increasingly difficult to compete for the same talent. The USD(C) recently published a "DoD Financial Management Strategy FY 2022-2026" that established two significant imperatives for the workforce, among others. The first is to develop and sustain a skilled and inspired workforce, and the second is to empower a data-driven, fiscally informed decision-making process within that workforce.[405]

Core Function – Budget Review. One primary organizational task is the finalization of the DoD budget in support of the annual PB submission to Congress. The principal process used to achieve this function is the budget review of all BESs from the Military Departments and other DoD Components done in conjunction with the Program Review led by CAPE. The Budget Review is also conducted as a joint review with the OMB.

In years with normal budget schedules, the annual Budget Review is conducted from September to December. It begins with the BES and concludes when the PB and all supporting information has been provided to Congress. The focus is on the budget year that begins on 1 October of the following year as well as the FYDP. In accordance with 31 U.S. Code, section 1105, the President must submit a budget for the following fiscal year to Congress no later than the first Monday in February, so all tasks track to that deadline in years with normal budget schedules.[406] The staff also develops preparatory materials for the Secretary of Defense and other OSD senior leaders for the formal DoD budget rollout as well as any congressional posture hearings.

The Budget Review itself consists of the following:

- Making sure the budget conforms with current policies and strategies issued by the White House and DoD to ensure that Administration and Departmental priorities are followed; these policies and strategies are enunciated in documents such as the NSS, NDS, DPG, and other applicable policies;
- Compliance with budget policies as outlined in law, the FMR, OMB Circular A-11, and other budgetary guidance, for example ensuring the appropriate use of appropriations, known colloquially as color of money issues;
- Correct use of full funding versus incremental funding in the Procurement and RDT&E appropriations;
- Proper pricing of programs;

[405] "DoD Financial Management Strategy FY22-26" n.d.
[406] 31 U.S.C. §1105.

- Adjudication of requests for additional funding typically in the form of issue papers;
- Accommodation of the most recent congressional actions or directions, which can be challenging if Congress has not completed the NDAA or Appropriations bills until near the end of the Budget Review or even later;
- Assessment of executability of how the identified schedules, dependent events, contracts, production capacity, and other related variables support the ability to spend the money within the required fiscal year period. Adjustments to the budget profile are made in accordance with that assessment;
- Review or preparation of all general provisions and legislative proposals to accompany the PB; these typically number in the hundreds, every year; and
- Reviewing all J-books; OUSD(C) produces the Defense-Wide J-books on behalf of the Secretary of Defense.

Following PB finalization, the P/B staff takes the lead in preparing the OSD leadership for the annual posture hearings and meetings with congressional Members and professional staffs. These hearings normally take place in the February-March time frame, although they can also extend into June. This requires an intensive process of preparing testimony, fact sheets, overview books, the annual OUSD(C)-led rollout briefing, and other supporting materials, all of which falls on the P/B management and staff.

Core Function - Budget Execution. Management of the budget execution process constitutes the other primary task of the P/B staff. A persistent complexity in recent years has been the need to manage through CRs until the defense and military construction appropriations are signed into law. While under CRs, the staff works with OMB and the Components to ensure the Department continues its essential missions while ensuring adherence to CR rules on new starts, production rate increases, and other related funding limitations. Once the appropriations are enacted, the P/B staff reconciles the PB request with the congressional reductions and adds within the bills to develop the DD1414 Base for Reprogramming Actions and works with OMB and the Components to apportion and then distribute the funding as outlined in the appropriations acts, to include withholding any funds if directed by congressional language.

The P/B staff also prepares monthly reprogramming actions to address time sensitive requirements. A mid-year review is usually conducted in the April-June time frame, largely to inform the preparation of the annual Omnibus reprogramming action, due at the end of June. This requires a significant effort on the part of P/B. The staff uses information produced by the DFAS's Defense Departmental Reporting System (DDRS) to ascertain the funding status of the full range of defense programs. Increasingly, the staff uses the data analytics tool Advana to assess budget execution based on the detailed data from DDRS. In most, if not all, fiscal years, events such as international crises, natural disasters, or a pandemic response occur that demand additional funding. The P/B staff then must assess the funding requirement, assess whether a reprogramming action could satisfy the emergent need, work with the affected organizations, coordinate with OMB, and, if allowed by OMB, prepare one or more supplemental budget requests. For example, support to Ukraine has resulted in a number of supplemental funding requests.

As each fiscal year reaches its end in September, the P/B staff works with the Components to address any last-minute funding requirements and close out the expiring funds, ensuring appropriations are executed within their legal limits. Other recurring tasks and responsibilities affecting the staff's workload include a requirement to represent the OUSD(C) at a multitude of working groups. The staff must also review and gain

OUSD(C) coordination on all issues being formally debated by OSD and on all reports and responses to Congress. Lastly, the staff is tasked to update the FMR on an "as needed" basis.

Challenges at the OUSD(C). Today's P/B staff is under stress. Workload has increased while the time available to accomplish the core budget review and execution functions has decreased. Many activities and responsibilities take place at essentially the same time. For example, the Department is trying to finalize the PB submission as the appropriations acts are passed that must then be incorporated into the PB documents, which generates considerable staff work to make those changes. The mid-year review happens at the same time as budget hearings and rollout if the budget is submitted late, and the year-end review takes place simultaneously with BES and Program Review. What used to be a cyclic workload has changed in recent decades as the intensive level of workload continues throughout the entire year now, leaving little staff time for additional research, travel, training, or taking leave. Senior P/B staff personnel also stated that the workload has led to substantial overtime requirements, especially for SES personnel.

Overlap of the PBR processes is also a challenge as late program decisions limit budget analyst time to conduct a thorough Budget Review, which often occurs over just two to four weeks even though P/B staff feel that four to six weeks is needed. The lack of time for Budget Review has resulted in a reduction in technical quality of budgets submitted to Congress, though collaboration and a close relationship with their CAPE counterparts help mitigate the limits on Budget Review time.

The result of OMB review, known as Passback, is usually provided to the DoD in late November or early December and can contain unanticipated budget recommendations for specific programs, as well as changes in the DoD topline for the budget year and FYDP. Any significant change in the topline drives late program churn to accommodate the new topline, adding to workload. There has also been an impact when appropriations bills are not yet signed and the PB is held to incorporate those numbers.

It is important to note that the recommendations of this Commission, if acted upon, will require additional efforts on the part of the DoD financial management community, and many of those added efforts will lean heavily on the P/B organization. Implementation of these recommendations will help improve PPBE processes but will initially add to P/B's workload.

There are signs, including a higher-than-normal vacancy rate, that it is becoming more difficult to recruit and retain a high-quality staff. This is no doubt in part because of the amount of workload that frequently requires significant overtime hours, including weekend work, as well as work during holidays. These hours are often not compensated since many personnel are already at the federal pay cap. As previously stated, the inability to offer fulltime telework is also making it difficult to compete for talent when other organizations can offer that option. Filling existing vacancies for their authorized billets will alleviate some of that stress, and the OUSD(C) leadership has said that it is emphasizing the development and execution of a strategic human resources plan for the future that seeks to fill open billets. The "DoD Financial Management Strategy FY 2022-2026" will aid in those efforts. There may be ways to reduce non-budget workload by changing review processes and delegating decision authority to lower levels. There are also new processes and tools such as Advana that could help reduce some workload and allow staff to focus and dedicate more time to analysis.

The Commission found that the P/B staff continues to provide strong support to the OSD leadership and to DoD as a whole, despite the workload stress. The OUSD(C) leadership believes that despite the stress of added workload, it has a capable staff with the right skillsets to provide this important support but must adjust

that staff to reduce the level of workload stress in the organization. To do so, the OUSD(C) needs to continue to focus on filling vacancies and adding to its on-board staff. The Commission fully supports ongoing P/B efforts to establish special career-ladder positions designed to better retain graduates of internship programs such as the Presidential Management Fellows and the McCain Fellows. Recommendations to improve the OUSD(C) organization are included in the Commission's broader recommendations on workforce reforms.

G. A Review of New and Agile Programming and Budgeting Techniques

The Commission was also asked to examine DoD efforts "to develop new and agile programming and budgeting techniques to enable the U.S. to more effectively counter near-peer competitors."[407]

Overview

Over the last decade, and most noticeably in recent years, investment in research and development by the private sector has outpaced the Pentagon's comparable funding, with commercial industry in some cases developing relevant defense capabilities faster than the Department can adequately plan, program, or budget for them. Over this same timeframe, some U.S. strategic competitors have invested heavily in defense technology and moved quickly, leading to a mix of positive and negative outcomes in capability delivery.

To keep pace, the DoD will need to reshape its existing PPBE processes so it can respond to challenges in a more effective and timely manner while at the same time preserving the U.S. system of government with constitutional checks and balances. The Department must overhaul its processes as a whole or find ways to inject agility and speed into the current programming, budgeting, and execution phases to address urgent requirements, better adopt breakthrough and emergent technologies, and deliver trusted capabilities to the warfighter faster and more effectively.

Making these changes is complicated in part because the PPBE process starts two or more years prior to the year of execution. In many cases, commercial technologies identified today, or even those developed internally in defense research programs, can't be bought, modified for military use, or integrated into the Department's current budget request until 2026 at the earliest even though they are readily available today. Commission research found examples where Program Managers (PM) were able to take the initiative and find ways to quickly acquire priority capabilities that were necessary to preserve life and prevail in the battle space, but the Commission also heard other PMs say that these examples are the exception and not the rule. While the DoD has significant control of its budget prior to the President's delivery of the budget to Congress in February of a normal year, due to internal management and cultural constraints, the practical window to address all but the most critical emergent changes closes well before then.

Currently, the DoD has several options during the programming and budgeting phases to fund emerging technologies more flexibly in its annual budget request and in final appropriations. The DoD also has several options in the year of execution such as BTR and ATR actions. These remain important sources of agility and flexibility to address emergent threats and to support innovation within the current PPBE process even though the reprogramming process is often criticized as being too slow. While those options are further addressed in Section V of this report, this section is specifically focused on other ways the Department has adapted the current PPBE process to provide for more agile programming and budgeting.

There are clear intersections between the acquisition, requirements, and PPBE processes; however, acquisition and requirements reform lie outside of the scope of the Commission's work on PPBE reform. The Commission acknowledges and applauds the efforts made by Congress to expand flexible acquisition authorities and develop more agile acquisition pathways, for example, through the Rapid Acquisition Authority, Adaptive Acquisition Framework, Software Acquisition Pathway, and Middle Tier of Acquisition

[407] P.L. 117-81.

pathway. These acquisition pathways have proven to be a critical piece of the puzzle in rapidly delivering capability to the field.

On the other hand, the Commission has heard many concerns about the requirements process, specifically how restrictively defined or detailed the requirements are described in documents, potentially further limiting the Department's ability to adapt. In general, the formal requirements process is the most well understood and organizationally accepted way to make changes to funding strategies and priorities, but this process is often not responsive to emerging threats or capabilities. The Commission acknowledges and supports ongoing efforts by the DoD to revamp the internal Joint Capabilities Integration and Development System requirements process, also directed by Section 811 of the NDAA for FY 2024,[408] although the Commission does not have visibility into those efforts.

This section examines several categories of efforts made by the DoD to achieve more agile resourcing processes. Where information was available, the Commission sought to evaluate the success of these approaches. Categories identified in this section include:

- Programming Reform Efforts
- Budgeting Reform Techniques: the BA-08 Pilot Program
- Budgeting Reform: Innovation Funds
    - Funds to Conduct Basic and Applied Research
    - Funds for Maturation of Technology
    - Funds for Transitioning to Production
- Budgeting Reform: Funds for Operational or Joint Experimentation
- Budgeting Reform: Priority-Specific Funds
- Other Initiatives to Increase Agility in Programming and Budgeting

Programming Reform Efforts

The DoD has been working to strengthen the analysis that supports programming and focus its Program Review on strategic priorities. Programming underpinned by agile, strategically focused analysis and decision support systems has the potential to speed the redirection of DoD plans and resources toward new or improved capabilities against evolving threats.

The Analysis Working Group (AWG). To improve analytic decision support to Department senior leadership, including during the Program Budget Review (PBR), the Department has been working to reinvigorate its strategic analytic capability.

Some critics argue that the Department's previous approach to strategic analysis, known as Support for Strategic Analysis, did not adequately support senior leader decision-making because the products were overly detailed and cumbersome to use; the analysis didn't deviate significantly from programmed force structure; and there was a lack of joint force analysis.[409] In response to this, the Deputy Secretary of Defense established the AWG in 2021, co-chaired by CAPE, the USD(P), the Joint Staff, and the CDAO.

The AWG promulgated a set of principles and standards to guide the analytic community and began identifying and implementing reforms to improve DoD analytic decision support. The principles are transparency, robustness, and a well-designed/tailored approach. The standards are that joint campaign analysis should (1) use a common starting point; (2) explore ways, means, and risk; (3) use operational plans appropriately;

[408] P.L. 118-31.
[409] GAO 2018.

(4) conduct analysis informed by classified data; (5) explore possible future technologies; (6) consider cost as a variable; (7) account for the end to end mission; and (8) document and share in-stride.[410]

Section 902 of the NDAA for FY 2024 subsequently codified the AWG into law, including duties consistent with the AWG reform goals approved by the Deputy Secretary of Defense. The AWG "shall—

a. establish clear priorities and standards to focus analysts on decision support;
b. improve transparency of methodologies, tools, and tradecraft across the analytic community, including testing and validation for new or emerging methodologies, tools, and tradecraft;
c. improve quality of and expand access to data, including evaluation of new data sets, or application of existing data sets in new or novel ways;
d. evolve the methodologies, tools, and tradecraft methods and tools used in strategic analysis;
e. resolve classified access and infrastructure challenges;
f. foster a workforce and organizations that are innovative, creative, and provide high-quality strategic decision support; and
g. carry out such other activities as the Secretary of Defense determines appropriate." [411]

The AWG principals - CAPE, the USD(P), the Joint Staff, and the CDAO - are institutionalizing these reforms, including:

- Resourcing full-time personnel to carry out the duties of the AWG instead of as a collateral duty for existing personnel, consistent with the requirement in Section 902 of the NDAA for FY 2024;
- Leading peer reviews among all DoD Components with analytic missions on shared annual analytic plans to enhance transparency, collaboration, and prioritization of efforts;
- Establishing analytical toolkits for improved modeling for key topics where data and methods were less readily available, such as cyber and space capabilities, and collaborating with the Intelligence Community to improve modeling of adversary capabilities;
- Improving quality of and access to data, such as through release of the control inputs that include authoritative data, scenarios, and assumptions that enable DoD to compare analysis more easily across organizations;
- Reducing classified access and infrastructure challenges to fully inform joint strategic analysis by creating a joint classified portfolio available across organizations;
- Establishing a seminar series for AWG action officers to further train, collaborate, and provide transparency; and
- Developing a DoD Directive on Strategic Analysis.

Concurrent with these institutional reforms, initial analytic work by the AWG has included support for the 2022 NDS by identifying key strategic tradeoffs for the review. The AWG has also reconstituted and improved the Department's campaign analysis capability, so it can be more agile while also leveraging this capability to provide analytic support for spring analytic reviews known as Strategic Portfolio Reviews (SPR).

Overall, the Commission found that the AWG's role in setting analytic principles and standards, providing analytic resources, and guiding Component analysis is valuable. Also, as described in Section IV, the Commission encourages the Joint Staff, CAPE, and USD(P) to produce more independent, joint analysis. The need is particularly notable for strategic analysis that supports actionable decisions on defense resourcing guidance at the start of the Resource Allocation process. There is also a need for analysis that is more informed by and incorporates new technological developments, market, and industrial base issues, including technologies being developed within DoD, in the commercial sector, and globally.

[410] AWG 2023.
[411] P.L. 118-31.

Strategic Portfolio Reviews (SPR). Since 2013, CAPE has conducted SPRs on an annual basis. These constitute cross-cutting analytic efforts focused on complex, strategic, and joint issues, with topics that are approved by the Deputy Secretary of Defense. The SPR process uses a variety of analytical approaches and explores a range of potential futures.

The Office of the Director, CAPE leads SPRs, taking in broad input across the DoD, and has developed specialized models and tools to enable examination of hundreds or thousands of cases as part of the review process. The SPRs are now built into the planning phase of PPBE, are intended to ensure that robust analysis and programming options are able to inform each programming cycle, and may affect multiple programming cycles over several years.

Section 902 of the NDAA for FY 2024[412] also establishes new requirements related to SPRs. The Office of the Director, CAPE is now required to produce an annual report and briefing to the congressional defense committees that includes, among other reporting requirements for CAPE, a review of SPRs completed in the prior fiscal year and a description of SPRs planned for the coming fiscal year. The NDAA for FY 2024 also directs a pilot program on Alternative Analysis that establishes three analytical groups focused on programmatic analysis in year one of the FYDP, years two through five of the FYDP, and years outside the FYDP. At least one SPR or equivalent analytic effort is to be conducted each year under the pilot program. In addition, the NDAA for FY 2024 establishes a Program Evaluation Competitive Analysis Cell, independent of CAPE that reports directly to the Secretary of Defense or Deputy Secretary of Defense. Not less than once every two years, the Cell will conduct an alternative operational or strategic analysis of an analytical question identified by the CJCS from a list of operational or strategic questions previously studied by CAPE.[413] The SPRs could be among the analyses considered for this.

The Commission has concluded that SPRs are a valuable tool for providing robust analysis and driving programming decisions affecting multiple Services and capabilities that result in important operational or strategic effects. As described in Section IV, the Commission recommends that the SPR recommendations should be delivered in the spring before the Services complete their POMs. Today, the SPR recommendations are delivered after DoD Components have mostly completed their POMs, which is too late to inform the DPG or fully influence DoD Component programming in the immediate POM cycle. Instead, the SPRs primarily influence decisions in the immediate Program Review or future PPBE cycles.

Program Review. The annual Program Review includes bottom-up issues identified by DoD stakeholders and can include top-down issues reflecting leadership priorities at the time. The DoD stakeholders identify bottom-up issues by reviewing their POM and then submit requests, known as issue papers, to adjust resourcing levels. The DoD leadership can also insert top-down issues into the Program Review. The Office of the Director, CAPE then combines issues into topic areas and leads teams of stakeholders from across DoD to analyze the issues and presents resourcing options for senior leader consideration and adjudication based on alignment with strategy (e.g., NDS). Under the current Administration, DoD has implemented efforts aimed at addressing challenges that include:

- A lack of topic area alignment to strategic priorities or key operational problems, rendering strategic framing and analytically driven trade-offs across issues challenging.
- Limited opportunities for strategic-level discussion by senior leaders due to the large number of issues submitted for consideration, many of which were not of strategic importance, but were still elevated for approval, modification, or denial by senior leaders.

[412] Ibid.
[413] Ibid.

To deal with these challenges, CAPE implemented efforts aimed at elevating senior leader discussion to the strategic level and focusing on the most consequential resourcing requests. Beginning with the PBR for FY 2023, CAPE made reforms to the Program Review that aimed to shift focus away from the deliberation of many loosely connected programmatic issues, to a smaller number of strategically-aligned and analytically supported courses of action that each encompass multiple programmatic issues. These reforms consisted of process changes, supported by changes in the products used to support the process and the reinvigoration of strategic analysis as described in the section on the AWG. By PBR-24, the DoD had explicitly bifurcated Program Review into two sub-processes:

1. **A top-down process**, driven by the NDS and the DPG that defined the topics to be discussed by the DMAG in alignment with strategic guidance. These topics, known as Focus Areas, were based on NDS priorities. For each Focus Area, the DoD identified issues requiring resource decisions based on strategic and operational analysis, such as findings from SPRs or other significant analyses, and broad solicitation of stakeholder inputs, such as strategic priorities memorandums from the heads of DoD Components, strategic issue papers, and other unfunded proposals aligned to the Focus Areas. The emphasis on strategy-driven resourcing via analysis was supported by modified briefing products for the Resource Management Group (RMG) - the subordinate 3-star body to the DMAG – and the DMAG. Specifically, the content of these briefings was structured to show the link between strategy and resourcing in the following ways:
    - Strategic scene-setting via references to established guidance (e.g.,NDS);
    - Discussion of strategic and operational issues that need to be addressed in the specific Focus Area;
    - Summary of analytic results relevant to these strategic and operational issues; and
    - Resourcing options that address these issues, each comprising a bundle of strategically aligned investments.

2. **A bottom-up process**, driven by disparate resourcing issues submitted by the Services and DoD Components. This process was largely issue-driven rather than strategically guided, and the issues were not typically aligned to strategic questions and focus areas. Issues were handled in one of three forums, depending on which organization submitted the issue for consideration: Military Department compliance (i.e., adherence to previous decisions) issues, Combatant Command issues, and Defense Agencies and Field Activity issues. This process aimed to review these issues at a level no higher than the RMG so the DMAG could focus its limited time on the strategic Focus Areas.

Budgeting Reform Efforts

The BA-08 Pilot Program. The Budget Activity-08 Single Appropriation for Software and Digital Technology Pilot (hereafter referred to as the BA-08 Pilot Program or BA-08) is an effort to create a new BA inside the RDT&E appropriations for the agile development, deployment, and sustainment of software capabilities at speed. Funding for the BA-08 Pilot Program was first requested by the DoD and authorized and appropriated by Congress in FY 2021. The pilot is managed by the USD(A&S) and currently includes funding for seven software programs. It is a single appropriation which provides for seamless budget execution for activities typically divided between multiple appropriations of RDT&E, O&M, and Procurement. Under the BA-08 Pilot Program, DoD and Congress can also simplify the various laws, regulations, and management policies that govern the development, acquisition, and sustainment of technology, which were designed to support a series of sequential steps for Industrial-Age capabilities. The rise of software as a larger share of total defense spending, the importance of embedded software in defining the capabilities of weapons systems and platforms, and more specifically modern software development practices such as agile and DEVSECOPs, often finds itself at odds with the traditional linear budgeting process.

Without BA-08, programs in the pilot would be required to program and budget for RDT&E, Procurement, and O&M appropriations separately, depending on the stage of development and interpretation of guiding regulations. Such seams can create delays in capability delivery and inability to prioritize based on mission need or technological opportunity, because the program has been determined by decision-makers to have the wrong color of money for the type of activity being conducted as it continues along its development and fielding path.

Instead, for programs using the BA-08 Pilot Program, all elements of the program are executed under a single RDT&E appropriation. This streamlines the funding process and allows maximum agility within the program to address the program or project requirements across development, acquisition, and sustainment. It is important to note that the pilot does not change the fidelity of information provided to DoD leaders, congressional stakeholders, or industry partners about the program.

Commission interviews with program offices participating in the BA-08 Pilot Program argue that the single appropriation has allowed them to focus more on mission and stay on schedule. Programs have been able to deliver the required capabilities to the user and spend less time navigating arbitrary moves between RDT&E and O&M funding based on interpretations of the activities being performed or as schedules evolve and change, although it has proven difficult to quantify such benefits.

Interviewees also stated that the BA-08 Pilot Program removes the challenges with navigating the FMR investment versus expense criteria, which requires that software capabilities not part of a weapons systems be managed using expense (O&M) and investment (Procurement and RDT&E) definitions. While subject to varying interpretations across the DoD, generally the criteria requires that expenses incurred in continuing operations and current services are O&M, including software releases not involving significant performance improvements or extensive testing; modernization costs under $350 thousand are considered expenses (O&M); and costs over $350 thousand are considered investments (Procurement or RDT&E). As such, the expense and investment criteria does not accommodate agile development of an existing capability, nor does it align with how the private sector sustains and develops software within the same cycle or process.

In practice, the distinction between those two activities is blurred when it comes to software. The reality is that the individual software developer performs the same task whether it is labeled development or sustainment. Either term could appropriately or accurately describe the very same activity, yet the FMR continues to treat these efforts as two separate categories.

Some interviewees identified specific improvements associated with the BA-08 Pilot Program. According to PMs for the Navy's Maritime Tactical Command and Control, a tool that helps the Navy automate and centralize the planning that goes into its ship movements, the BA-08 program has enabled them to move at significant speed compared to other DoD software programs. To quote from their interview, "They have rolled out the new software to 15 ships since January 2023. In that same timeframe, there have been five new versions of the software, and developers are adding new features all the time. New capabilities can be developed in as little as a month, and they can be sent to ships over-the-air instead of during major shipyard maintenance events - because the container-based architecture is modular enough to allow for small, incremental upgrades without a major overhaul of the underlying system."[414]

The PM for the Navy Risk Management Information program also stated the BA-08 model has allowed the program to pivot immediately when priorities change, rather than having to wait for another fiscal year or a reprogramming action in order to get the specific color of money officials would need to meet those priorities. For example, in FY 2022, they were planning to spend 70 percent of the budget on sustainment and 30 percent

[414] Serbu 2023.

on development, but the change in customer priorities effectively reversed the funding percentages, resulting in 67 percent of the budget spent on development of new capabilities and 33 percent on sustainment, without disrupting the program.[415]

Despite these successes, recent attempts by the DoD to expand participation in the BA-08 Pilot Program have not been supported by Congress due to concerns that the DoD has not adequately detailed the quantitative benefits of the program. "Reports received to date indicate that the Department is still implementing methods to capture the appropriate data that would allow an objective analysis for how a single budget activity improves the performance of software pilot programs," stated the report language accompanying the Department of Defense Appropriations Act, 2023.[416]

One explanation for the struggles DoD has had communicating the advantages of the program is that no two programs are executed the same way, and even the same program faces differing outcomes year over year due to many variables, including a change in personnel making the decisions, availability of funds across the Department, and leadership priorities. Another explanation is that the Department had not effectively developed or communicated metrics to quantitatively measure the performance of programs using the pilot flexibilities compared to those operating under traditional financial management policies, which would illuminate the pilot's benefits. In the DoD's FY 2023 Third Quarter Report to Congress on the BA-08 Pilot Program, the DoD did establish a framework for quantitatively assessing the successes of participating programs using the DevOps Research and Assessment model (DORA)[417] which measures deployment frequency,[418] lead time for changes,[419] mean time to restore service,[420] and change fail rate.[421] The DoD also included a metric to address release frequency[422] since the DoD's cultural practice is not to release code into an operationally-relevant environment, but wait for full deployment until additional testing or approvals have occurred. The report also shared data for the current programs as they relate to industry standards.

Collectively, the programs in the BA-08 Pilot Program showed a clear improvement in deployment frequency after joining the pilot, although less frequently than industry respondents report. The DoD ascribes this difference to cultural challenges in DoD to adopt modern software practices. The metrics also illuminated BA-08 Pilot Program participants performing on par with industry participants in mean time to restore. The DoD states this is because, in general, DoD values keeping consistent - and consistently available - applications over creating new applications or updating them frequently.

According to the Third Quarter Report, the Department is developing the means to capture quantitative data of programs not participating in the pilot program to act as a control group they can compare against those in the pilot program. The HAC-D Report for FY 2024[423] recommends the DoD explore ways to minimize the reporting burden and optimize insights for BA-08 programs, specifically for Defense Innovation Unit funding. Leveraging the common platform outlined in Recommendation #20 of Section VII, could support timely data sharing for program decisions, transactions, and performance metrics related to BA-08 programs. The Commission also urges the USD(A&S) and program participants to continue to engage with Congress on the

[415] Ibid.
[416] P.L. 117-328.
[417] DevOps Research and Assessment (DORA).
[418] Deployment frequency, derived from DORA framework, is defined as calculating the number of times their application team deployed code into production over a given period. According to the DoD, programs also encounter situations where the program has a code that is ready to deploy, but the codes doesn't get deployed into production right away. The code may go through additional testing, or its eventual deployment may depend on other organizations. This explains why the DoD also uses release frequency.
[419] Lead time for changes, derived from DORA framework, is defined as the elapsed time from code commit to code running in production.
[420] Mean time to restore service, derived from DORA framework, is defined as the elapsed time from an unplanned outage or service impairment to restored service.
[421] Change failure rate, derived from DORA framework, is defined as the percentage of changes that result in degraded service or require remediation.
[422] Release frequency, as defined by the DoD, is the release of code to an operationally relevant environment, but not necessarily deployed into production.
[423] H. Rpt. 118-121.

challenges of a linear budgeting process for agile software development and deployment, and to highlight both the benefits and the limitations of the pilot program.

In sum, there are many benefits of the BA-08 Pilot Program for particular DoD programs, specifically software-intensive programs leveraging agile development practices, such as:

- No uncertainty regarding appropriation type when meeting mission needs (i.e., either sustainment activities or development activities);
- Performance Work Statements can be designed around agile continuous delivery, with less differentiation between delivery, enhancement, and sustainment; and
- The two-year RDT&E appropriation provides additional stability compared to the one-year O&M period of availability.

Through its interviews and after assessing the qualitative and quantitative data provided by the Department, the Commission concludes that the BA-08 Pilot Program provides much needed stability for software-intensive programs and encourages the DoD to continue to share data-driven metrics with Congress and conduct in-person briefings on a recurring basis to highlight these benefits. The Commission does note that the BA-08 approach may not be suitable for all programs, particularly those that have additional spending across hardware components and other mission requirements. The BA-08 model in those cases would create an additional color of money to execute, while maintaining other multiple colors of money for hardware or administrative efforts.

Due to these challenges, the Commission does not recommend a single appropriation for DoD software. Instead, the Commission provides two recommendations to address color of money challenges, particularly for software, which can be found in Section V.

1. The Commission recommends the DoD and Congress permit the use of Procurement, RDT&E, or O&M funds to be used for the full cycle of software capability development, deployment, and sustainment (Recommendation #11A, Section V). This allows organizations to use a single color of money available to them to fund lifecycle software costs and provide the opportunity to upgrade key hardware as necessary to meet mission requirements. More broadly, the Commission recommends the DoD be able to use a single color of money, aligned to the purpose or mission of the organization or capability (Recommendation #11C, Section V). For example, if an organization's mission is to conduct research and development, the organization should leverage RDT&E appropriations for the entirety of their efforts, as is current practices for several DoD organizations.
2. The Commission also recommends the use of sustainment funding to support continuous modernization of fielded systems, which may support the timelier and more continuous upgrade of system software (to include the minor hardware necessary to deploy the software) to keep pace with technological advancements (Recommendation #11B, Section V).

Whatever approach(es) are implemented, the DoD should ensure the applicable FMR language regarding software aligns with modern agile development practices and Commission recommendations, to include addressing the investment versus expense criteria, as outlined in Recommendations #11 and #12. Finally, the consolidation of RDT&E BAs, as described in Recommendation #5, will also support a software program's ability to address emerging threats, by reducing additional bureaucratic layers caused by multiple BLIs.

These recommendations will provide the greatest ability for software programs to handle emergent issues and maintain schedule across development, procurement, and sustainment activities without creating unnecessary fiscal or bureaucratic seams that can introduce program delays.

Nothing in this section should be construed as the Commission's lack of support for the BA-08 Pilot Program. On the contrary, the Commission recognizes the overall importance of minimizing fiscal complexity to meet the need for additional agility and speed during development and sustainment of DoD's software

requirements. For that reason, the Commission endorses the recommendations described above as the best way to meet the needs of the software community going forward.

Innovation Funds. Innovation funds represent another type of budgeting reform that has been a mechanism of interest in DoD for decades. They were introduced to enable year of execution spending on late breaking, cutting-edge capabilities in critical technology areas to speed delivery to the warfighter. In recent years, innovation funds have also been used to bridge the so-called valley of death between RDT&E and Procurement funding, which can without high level intervention, take two to three years to be programmed, budgeted, and appropriated before it can be put on contract.

As with other programs, capabilities can only be delivered as fast as the requirements, resourcing, and acquisition processes can support them. While specific recommendations about acquisition and requirements reform lie outside the Commission's mandate, the Commission notes that requirements reform and leveraging existing agile acquisition pathways could help realize the full agility provided by innovation funds.

At the same time, innovation funds have faced many challenges over the years, including a lack of plans and commitments by program offices and Services to continue the development and sustainment of the systems and capabilities being funded. The Commission commends OSD efforts to aid the transition of capabilities from current innovation funds through the establishment of the Director of Multi-Domain Joint-Operations (MDJO) under the USD(R&E), as well as the Deputy Assistance Secretary of Defense for Acquisition Integration and Interoperability in the USD(A&S). These offices, among others such as the DIU, are working to help with the transition of mature capabilities to the warfighter by supporting transition plan creation before experimentation begins, something which has not always been a DoD best practice in the past. The Commission urges the Services and DoD Components to ensure there is a transition plan and sufficient funding in place for successful innovation fund projects, so that critical technologies do not get delayed due to future funding challenges. The DoD should adopt the best practice of programming and budgeting funding for successful projects, whether they stem from innovation funds, successful activities in the Department's Small Business Innovation Research (SBIR) or science and technology (S&T) programs, or from commercial sector activities.

In the past, Congress has expressed concern with innovation funds being used as a way for the DoD to evade congressional oversight regarding how the DoD spends its resources. In this regard, it is also critical for DoD to assume the responsibility to more routinely communicate the successes and failures of programs to Congress, so that Congress can allow DoD to assume risks in its funding of innovative technologies without fear that the only control Congress has when things go wrong is to put the program's entire funding on the chopping block. Ultimately, the DoD must earn the trust of Congress through proactive communication and in many cases, active engagement with Congress as a partner to invest in innovation. The Commission recommends some specific approaches to improving communications with Congress in Section VI.

Historically, and especially today, in-year flexible funding provides a critical pathway in six key areas that traverse both sides of the valley of death, from development to production at scale. The following represents examples of funds covered in this Final Report and is in no way meant to be a complete characterization of all innovation funds past or present.

- **Science and Technology Accounts:** This includes the very flexible RDT&E BA-01 Basic Research funding which focuses on research at universities and academic institutions and RDT&E BA-02 Applied Research funding for the Service laboratories and the Defense Advanced Research Projects Agency (DARPA), among other organizations receiving this funding.
- **SBIR and Small Business Technology Transfer (STTR) program Phase I and Phase II awards**: There is more financial flexibility in these programs than in many other equivalent research programs within

the DoD. These programs can fund activities across a range of technology readiness levels (TRL) and support activities ranging from basic research to prototyping to evaluation of operational prototypes.

- **Maturation and De-risking for Programs:** Technology Maturation Initiative (TMI) and SBIR Phase II including Tactical Funding Increase (TACFI) and Strategic Funding Increase (STRATFI).
- **Operational or Joint Experimentation**: Rapid Defense Experimentation Reserve (RDER) and Defense Innovation Acceleration (DIA)
- **Transitioning to Production**: Rapid Innovation Fund (RIF), Accelerating the Procurement and Fielding of Innovative Technology (APFIT), and Defense Modernization Account (DMA)
- **Priority-Specific Funds**: Joint Improvised Explosive Device Defeat Fund (JIEDDF); Manufacturing Technology

Commission research suggests that innovation funds have provided the DoD with significant successes, and in some cases, a shorter timeline for development and deployment than the traditional programming and budgeting processes. Innovation funds provide needed agility to support recent developments in technology without breaking an existing program by reprogramming funds. As the DoD implements Commission recommendations which provide for greater budgetary agility, including budget structure transformation and the use of a single color of money aligned to the purpose or mission of the organization, the DoD may find innovation funds are less necessary. More pointedly, a broader capability-based approach would better allow development activities to commence without the need to request bridge funds or wait for the next PPBE cycle. Instead of relying on innovation funds to address year of execution emerging threats, requirements, or transition challenges, funds could be better used to address other cultural challenges, specifically the need for more joint experimentation, which RDER and other funds are currently tasked to solve.

The following section provides a summary of funds, past and present, and analysis of how they met their intended outcomes.

Science and Technology Funds to Conduct Basic and Applied Research

Across the DoD, the defense labs, and other organizations such as DARPA, focus their work on basic and applied research (RDT&E BA-01 and BA-02 funding) both within the DoD and externally. These funds are agile and are often appropriated into RDT&E PEs to support broad research, as long as the justification materials are written in a way that permits such spending (see Section V for more information on ensuring justification materials do not create unintended consequences). This agile method of funding allows for creative research and experimentation within a context where inherent risk is tolerated as a normal part of the process. Funding is constantly reassessed as technologies mature and are tested, while priorities are able to shift to support long-range planning or address findings during technical reviews of execution. The transition of these activities requires additional follow-on funding in RDT&E BA-03 and BA-04 PEs which entails using the traditional programming and budgeting processes to develop an appropriate budget request for transition activities of specific technologies.

The Small Business Innovation Research Program

The SBIR and STTR programs, hereafter referred to as SBIR, have proven to be a useful tool to spur innovation and commercial technology adoption within the DoD. Governed by the Small Business Administration (SBA), SBIR is a federal government-wide program with the intent to stimulate technological innovation, meet research and development needs domestically, increase private-sector commercialization of innovation and support U.S. small businesses that are critical to the growth of the American economy. During the 20th century, technology improvements and innovation took whole of government approaches and required significant financial means. Today, technological innovation is much more affordable, allowing small companies and startups to achieve breakthroughs in critical technology areas (i.e., AI, small satellites, and advanced materials). Many small businesses are at the forefront of that innovation.

The DoD SBIR program is funded annually through a mandated internal transfer of funds based on the amount of extramural research and development spending after the DoD Appropriations Bill is signed. With a minimum allocation of 3.2 percent, and an additional allocation of 0.45 percent from activities taking place in the STTR program, the total budget comes to about $2.5 billion in any given fiscal year. This funding supports Phases I and II of the SBIR program and is available for obligation for up to two years like any other RDT&E appropriation.

The SBIR and STTR funding benefits from not having to be included in the traditional PPBE process, where it might be targeted for reductions by DoD decision-makers. This funding is faster than most types of DoD funding sources since it is outside the traditional programming and budgeting processes and has sole source follow-on contracting authority which can be used by DoD to leverage the developed technologies and move them quickly into further development and production. It also benefits from not being subject to congressional marks during the appropriations process and is not tied to any specific RDT&E BA, further allowing it to be used as needed with faster moving emerging technologies. Service and DoD Component leaders can allocate the funding to programs and technologies based on their need and priorities, as there are no specific legal or regulatory requirements that the program funding be returned to the programs or activities from which the allocation is derived.

The SBIR program is limited in scope; however, as it only allows small businesses to participate, and Phase I and II awards are limited in dollar value and timelines for period of performance. The SBA generally defines a small business as an independent business with fewer than 500 employees, and more specifically, defines small business for the purposes of government contracting through size standards.[424] The limitations in award sizes can be overcome by appropriately making multiple awards to the same company; the DoD has frequently used this strategy to provide funding to companies so they can mature technologies to prepare them for transition. The SBA also has procedures under which federal agencies can make larger awards to companies, which DoD has used over the years. The DoD, specifically through organizations like the U.S. Air Force's AFWERX, the innovation arm of the Department of the Air Force, has been pushing the envelope on making larger awards with follow-on Phase II efforts for successful projects. The AFWERX efforts are divided into the TACFI and STRATFI programs that require waivers from the SBA and aim to increase the size of Phase II funded contract awards and to also help bridge the gap between SBIR and STTR Phase II and Phase III scaling. Such awards also enable public-private matching and enable development of capabilities to a higher TRL that can then be picked up by a program office. The DoD has the authority to request additional funding for transition of SBIR and STTR projects or supplementing the SBIR and STTR program budget using funds outside the traditional allocation process, but rarely does so.

By comparison with other DoD programs, SBIR is an agile program and source of funding. It fully allows the DoD to conduct research and development in the year of execution without having previously programmed and budgeted for the effort. As a result, when someone in the DoD has an idea for a specific research project that is found suitable for SBIR, work can begin in a matter of months once the budget is enacted, with relatively few permissions needed to proceed.

A challenge SBIR faces is that promising Phase II projects are not deployed as often as would be preferred by the DoD, similar to the challenges experienced by the S&T efforts of organizations like DARPA and DIU, as well as the Services. There are many reasons for this. Sometimes new technologies aren't adopted because of prioritization within the programs, for example, PMs would rather spend their limited money on other approved and established priorities instead of riskier or unproven technologies. More surprisingly, some PMs are not even aware of a relevant SBIR program because of the organizational segregation of SBIR funding execution from their programs.

[424] SBA.

Another challenge is that SBIR awardees struggle to get access to buyers and the broader military acquisition ecosystem. For a SBIR technology to advance, someone with funding must either buy the technology outright or continue its development. Finding those buyers can be difficult. According to a recent Naval Post Graduate study, only "6 percent of all SBIR companies are awarded Phase III (transition across the valley of death) money after receiving a Phase I/II award."[425] The SBIR technical points of contact are government personnel that aid the companies through the process, but they do not always have additional funding to make available for successful transition of SBIR projects; nor do they always have sufficient time to concentrate on finding project buyers because this is only one small portion of their overall jobs. Once a SBIR awardee does find a government buyer, the buyer often has difficulty putting the small business on contract. Since the DoD programs and budgets over multiple years and provides detailed justification for the use of requested resources, there is little to no room for late additions or changes.

Incorporating new technology in this way may even necessitate a new start notification to Congress, which requires additional internal DoD coordination and time. All these challenges to advancing successful SBIR projects can make it difficult for the DoD to rapidly deploy new and proven capabilities. The most obvious path to buying a new proven technology is to budget for it directly in the next POM, but that can take years; time few small businesses can afford. Inserting the technology into the DoD budget in other ways can be faster and more agile, but it still may be too slow for small businesses and generally carries other costs, risks, and uncertainties as well, not to mention the delay in getting that technology to the warfighter.

The Commission recommends aligning the SBIR program to the DoD's overall S&T Strategy by ensuring that the programming and budgeting process includes specific analysis of SBIR and STTR projects as budget requests are being developed. More information on this best practice can be found on in Section V. Information on SBIR and STTR activities should also be provided to the congressional defense committees as part of budget rollout briefings on RDT&E activities that highlight how their program execution is aligned to the USD(R&E) critical technology areas, programmed transition activities for successful projects, and high priority projects with unfunded transition activities.

This planning could facilitate leveraging the SBIR and STTR programs more strategically, rather than being treated as an additional duty to other activities and offices. Another best practice would be to address the insufficient transition planning by the DoD for Phase III awards for companies that have achieved Phase II success. Raising the visibility of these successes by the program offices will be key to ensuring successful capabilities make it into the hands of the right people. The DoD could also work with the SBA to increase award ceilings and extend project timelines for SBIR to ensure technologies are developed enough for a program office to pick it up and allow for the transition of successful projects into a program of record leveraging the existing programming and budgeting process.

To further connect the acquisition community with the SBIR and STTR technology opportunities and advancements that are funded every year, the Commission encourages having dedicated acquisition personnel trained in the use of adaptive acquisition strategies placed in SBIR program offices across the Services and DoD Components to help bridge the transition gap from SBIR and STTR phases into programs where that solution can be applied. The Commission also encourages the Department to continue to build on USSOCOM, Navy, and AFWERX successes across the acquisition and innovation ecosystem to further embrace SBIR opportunities and cross the divide from these efforts into program offices to support the advancement of warfighting capabilities.

[425] NPS. 2023.

Funds for Maturation of Technology

Innovation funds also support the transition of technology from basic and applied research to advanced development and prototyping stages (RDT&E BA-03 and BA-04 funding, respectively). There are several funds, including the SBIR and STTR programs, whose primary function is to support the maturation of promising technologies that may have future application in the field.

As a rule, these technologies are often too mature to be considered basic or applied research, but not mature enough to be picked up by a program office for integration into a program or weapon system. The goal of these maturation funds is to prove technological feasibility and provide an overall assessment of operability and producibility. This is most often seen in BA-03 programs, where such technologies have already begun development and are seen as potentially promising with additional development. Some SBIR and STTR Phase II awards build on previous work by leveraging previous Phase II or Phase I activities, or in some cases DoD can use a direct to Phase II award based on the demonstrated maturity of the technology. The Air Force, specifically AFVentures, has also used additional funding mechanisms post SBIR Phase II, called STRATFI and TACFI, to bridge development of technologies that meet military needs but fall between SBIR Phase II and Phase III. This type of development can be seen across the DoD enterprise, through program specific funding lines, or more broad funding lines, such as the Army TMI, which is further described below.

Army TMI. The Army TMI PE has been in existence for well over a decade. It matures and integrates component technologies into early system and sub-system experimental prototypes for demonstration in relevant environments and operational scenarios. The goal of the program is to move the development of technologies from a TRL 6 to a TRL 7 and integrate them into technology demonstrators and experimental prototypes that will support existing requirements. These development efforts support the risk reduction of such technologies, and their integration into future acquisition programs.

The Army's Technology Maturation Board selects the efforts that will be funded prior to budget year programming to ensure that demonstrations have high potential for filling capability gaps and can transition. In addition, TMI aims to provide the Army with an improved mechanism for fulfilling the goals of the Weapon Systems Acquisition Reform Act of 2009 by enabling greater competition in the latter stages of technology maturation while also establishing a closer alignment between S&T and acquisition programs.

Funds for Transitioning to Production

The most well-known valley of death is the one created between prototyping/experimentation and becoming a program of record (POR) through the traditional acquisition process.

Program offices are often focused on meeting their requirements with the funding they have and with the contracts and efforts that are already in place. There is less incentive to focus on pulling new and innovative technologies across the valley, especially if they do not clearly align with requirements documents or the current contract structure. In short, there is little incentive for a PM to insert new technology that disrupts current plans or the budget, especially when most of the companies that conduct most of the development, test, and production of existing programs are prime contractors, leaving little room for smaller or even mid-sized innovators to enter the competition.

The Department and Congress have struggled to create a method that streamlines the process for PMs to adopt and incorporate emerging technologies into a POR. To address this challenge, the Department has leveraged the former Rapid Innovation Fund, or the current APFIT program, to continue development of a given capability and/or sustain it until a POR can pick it up and insert it into their program and budget. Realizing that such funds are at best a work-around to the greater challenge of transition, the DoD has sought to strengthen ties at the OSD level between USD(R&E) and USD(A&S), including down to the Service program offices, with

the creation of the USD(R&E) MDJO under the Mission Capabilities Directorate, and the USD(A&S) Deputy Assistant Secretary of Defense for Acquisition Integration and Interoperability.

Both offices have initiated several efforts to support transition from a budget and acquisition perspective, to include Competitive Acquisition Pathfinders, a USD(A&S) initiative to explore different authorities for transition of such RDT&E initiatives to Procurement or O&M funding within a program.

Accelerating the Procurement and Fielding of Technology (APFIT). The APFIT pilot program was authorized in Section 834 of the NDAA for FY 2022 to support the transition from development to production of advanced TRL capabilities developed by small businesses or non-traditional companies with $500 million or less in defense contracts. The APFIT goal is to provide a much-needed bridge in the process of moving technology from development to procurement to allow the PPBE cycle to catch up and fully incorporate it. As a result, DoD officials have stated that APFIT funding is helping to deliver capabilities one to two years earlier than scheduled as they are able to conduct the selection cycle in three months, speeding up the acquisition and capability delivery process. The APFIT is a Procurement innovation fund executed by the Director of MDJO in the USD(R&E), and with support from the Services and the DoD SBIR Program Offices, selects awardees with a focus on innovation, impact, and transition ability.

In FY 2022, DoD requested and was appropriated $100 million for APFIT, which allowed 10 awards for $10 million each to companies which already had procurement contracts in place. Unfortunately, the CR delayed the program and limited the USD(R&E)'s ability to select prioritized projects due to the need to get projects on contract quickly. The March 2023 APFIT Biannual Report states that the program will in the future focus on projects that demonstrate follow-on military Service/DoD Component funding, in an effort to ensure these programs continue with follow-on production activity past the initial APFIT funding.

The FY 2022 APFIT projects proved to be successful at supporting the transition of capability to production quickly. The USD(R&E) reports that they were able to provide funding to the selected program offices in under three weeks, and program offices were able to put performers on contact in under three months from the receipt of funding. Such funding ensured that promising companies maintain cash flow to retain and hire additional employees for continued development production, when a typical gap in funding post SBIR Phase II would cause a halt in activities or even prevent a small business from surviving this version of the valley of death. For example, the program supported delivery of six V-BAT unmanned aerial vehicles to the U.S. Air Force, filling a capability gap to provide resilient data transport and weapon quality targeting information.

In FY 2023, Congress appropriated $150 million, which allowed 11 awards ranging between $10 million and $20 million. For FY 2024, the DoD requested $100 million in funding for APFIT. Congressional marks signal continued support for the program, with SAC-D supporting the request, and HAC-D advocating for a $200 million increase to the program for a total appropriation of $300 million. This would significantly expand the scope of capabilities able to receive funding for expedited delivery.

The transition concerns seen with other innovation funds apply for APFIT as well. The Commission believes APFIT funds should act as a bridge to ensure production funding is available in the gap between successful prototype and Service funding for scaled production. The APFIT funds should not be used to fund lower priority efforts within the Services, but rather for high-priority time-sensitive capabilities which require a bridge to eventual Service production.

During the course of vetting program awardees, USD (R&E) should ensure that such awards meet the original intent of the fund to advance new efforts during the year of execution, that a transition partner has been identified, and funding has been programmed to sustain those efforts. The Services should also begin to program more funding in Procurement BLIs based upon the anticipated success of their own funded research and development activities, especially in emerging and disruptive technologies.

Rapid Integration and Scaling Enterprises (RISE) - formerly known as the RIF. Established in the NDAA for FY 2011, the RIF sought to support the transition of technologies developed by small businesses from prototype to production through small RDT&E awards to successful Phase I or Phase II SBIR companies. The program enjoyed significant success, reaching a 60-80 percent commercialization rate for awardees. Although never included in the DoD's annual budget requests, the program has been funded annually by congressional adds. The program ceased to exist in FY 2020 when DoD did not request a budget for the program and Congress did not provide any funding.

The DoD, specifically the Office of Small Business Programs (OSBP), submitted a FY 2024 legislative proposal[426] to reestablish the program, rebranded as RISE; however, the DoD did not request any funding for RISE in the FY 2024 PB. The legislative proposal requested an increase in the award amount from $3 to $6 million and suggested a more unified approach to the execution of the program to better support small business and was authorized as requested in Section 860 of the NDAA for FY 2024.[427] If funds are appropriated despite the lack of request, the OSBP states they have the residual infrastructure in place to immediately move out with an implementation plan to begin contracting expeditiously and PMs to execute in the Services. In contrast to APFIT which focuses on Procurement funded efforts, RISE uses RDT&E funding to ensure continued development of technologies that are mature, but not quite ready for low-rate production or transition to full-rate production. The program will be another tool in the toolbox for DoD to support the transition of small business capabilities to production, including other programs hosted by OSBP such as the DoD Mentor Protégé Program and APEX Accelerators, small business outposts, both designed to teach companies how to do business with the DoD.

Potential $1 billion FY 2024 Hedge Fund. In their markup of the FY 2024 PB, the HAC-D included $1 billion for a hedge fund.[428] The resources would be managed by the DIU and executed by the Non-traditional Innovation Fielding Enterprise (NIFE),[429] which encompasses innovation organizations such as AFWERX, SPACEWERX, NavalX, and the Army Application Labs. The DIU role and NIFEs were codified in Section 913 of the NDAA for FY 2024,[430] paving the path for a potential appropriation to establish the fund. If managed in a way that leads to speedy execution[431] and provides for transition to product for promising technology, this fund could further the Department's ability to make significant "bets" in key technologies and deep technology, that will be required to support the warfighter and deter adversaries in the future.

Defense Modernization Account (DMA). The DMA is a transfer account that was originally created by Congress in FY 1996,[432] and re-authorized in FY 2023,[433] with the intention to provide the Military Departments and Defense Agencies (hereafter referred to as the DoD Components), the ability to address acquisition challenges or to take advantage of savings in the RDT&E, Procurement, and O&M appropriations during the final 30 days of the fiscal year. Funds transferred into and from the DMA retain their fiscal year identity for expenditure purposes.[434]

To transfer into the account, the Secretary of Defense must notify Congress of the intended transfer and wait 30 days. Transfers into the account should come from savings earned through the efficient management of production and procurement programs and can later be applied against programs and projects funded with appropriated funds, not to exceed $1 billion in the account. In addition, funds transferred to a program may

[426] DoD Legislative Proposals 2023.
[427] P.L. 118-31.
[428] H. Rpt. 118-121.
[429] Ibid.
[430] P.L. 118-31.
[431] H. Rpt. 118-121.
[432] P.L. 104-106.
[433] P.L. 117-263.
[434] 10 U.S.C. §3136.

not exceed $500 million for any given fiscal year and require a 30 day notify and wait to the congressional defense committees.

Funds may be transferred from the account back to the originating DoD Component for the following reasons:

1. For paying the costs of any project to reduce the life cycle cost of a new or existing system.
2. Increasing the quantity of items and services in order to achieve a more efficient production or delivery rate for a program funded in a DoD procurement program.
3. RDT&E or Procurement efforts necessary for the modernization of an existing system, or a system being procured under an ongoing program funded from a DoD procurement program.
4. For paying costs of changes to program requirements or system configuration that are approved by the configuration steering board for a major defense acquisition program.

To date, no funds have ever been transferred into the DMA. Because the legislation authorizes the transfer of expiring funds into the account within the last 30 days of a fiscal year, DoD Components prefer to use or reprogram the available funds for other priorities to use in the year of execution. There is also a concern by PMs that transferring funds into the account would relinquish control of the money held at the program level, freeing up the funds to be used for other priorities at the headquarters level. An implementation plan for use of the account was developed and included in the FMR but was subsequently withdrawn since there was no intent to use this account and authority.

The Commission recommends the USD(C), USD(R&E), and USD(A&S) develop an implementation plan for the use of the current DMA to promote innovative new technologies to the extent current legislation allows. If this use of DMA proves of interest within DoD, the Department should seek to make recommendations to the congressional defense committees on expanded use cases for DMA, including specific authority to use the account for innovative or technological solutions for time-sensitive or urgent operational requirements, or revisiting the language to make it more effective. More information on Recommendation #16 and this discussion can be found in Section V.

Funds for Operational or Joint Experimentation

Several funds have been created to address varying challenges within the joint portfolio, particularly the DIA and the RDER. The DIA first builds the individual system/subsystems that address joint requirements. The RDER funding then leverages multiple prototypes from DIA and integrates them within an experimentation series to demonstrate broader warfighter capabilities and missions within operationally relevant environments. These individual efforts are described below:

Defense Innovation Acceleration (DIA). The DIA was created in Division C of the Consolidated Appropriations Act, 2023[435] as Congress consolidated several existing OSD PEs into one RDT&E BA-03 PE (0603838D8Z),[436] focused on prototype development at the individual system/subsystem level. The consolidation included the Defense Modernization and Prototyping PE (0603338D8Z) which contained Emerging Capabilities Technology Development and Quick Reaction Special Projects, the Joint Capability Technology Demonstration PE (0603648D8Z), and certain prototyping activities from the Technology Innovation program (0603375D8Z).

The FY 2024 PB justification materials requested $247 million for DIA to accelerate innovation capability prototypes in the TRL 5-7 range that address cross-Service and cross-domain military needs in a 24 to 36-month timeframe.[437] Projects are selected by identifying gaps in the Joint Warfighting Concept (JWC), and experiments are conducted in operationally-relevant environments through a cost sharing partnership with the Services and COCOMs. The DIA seeks to leverage innovation from all sources including Service

[435] P.L. 117-328.
[436] FY 2024 OSD RDT&E Budget Justification Materials. Vol. 3, 199.
[437] Ibid.

laboratories, FFRDCs, University Affiliated Research Centers (UARC), and the defense industry including small businesses and non-traditional vendors.

Rapid Defense Experimentation Reserve. Created by Congress in FY 2022[438] to accelerate joint experimentation in alignment with the JWC, the RDER fund is currently divided among five BA 4 RDT&E PEs, one in OSD with the USD(R&E) and the others in each of the military Services. Historically, RDER efforts were funded by the well-known and decades old Joint Capability Technology Demonstrations program. The funding supports experimentation at a system of systems level, meaning demonstrating and validating joint interoperability amongst multiple Service prototypes to close a kill chain. The RDER funds fill a necessary gap to accelerate force modernization and increase joint interoperability.

From an execution perspective, the USD(R&E) provides funding for the overall program management and the Services provide funding for execution of their program, specifically for experimentation planning, technical integration, experiment execution, and analysis. Some of the RDER funding is embedded within Service RDT&E PEs for other programs which does not allow for easily tracking all associated funding. Having funding in the Service PEs encourages Service buy-in and transition of successful experiments; however, it is unclear how well the Services are planning to transition successful RDER prototypes.

From a process perspective, RDER allows the Services to propose specific technologies for the funded experiments which are conducted at annual operational exercises. The alignment of RDER to existing operational exercises constitutes a best practice in testing and proving out higher TRL capabilities while also leveraging current assets to address real world operational scenarios. Program selection for RDER funding is made by the DMAG to ensure alignment with DoD strategy for more jointness. While this oversight adds additional time to the process, it is streamlined compared to the two-to-three-year PPBE process and ensures a focus on capabilities required to support the current and future fight.

In FY 2023, a total of six RDER technology projects successfully completed prototyping and experimentation resulting in technology acceleration and five project transitions to date.[439] In the FY 2024 PB, the DoD requested a combined $687 million to support these initiatives. Congressional marks signal mixed support for the program, with SAC-D spreading multiple cuts across the RDER PEs, and HAC-D supporting RDER at the requested level. The SAC-D report language states “The Committee remains concerned that production, fielding, and sustainment of resources for successful RDER projects have not been fully budgeted for within the FYDP. Therefore, the Committee continues to fund innovative, experimental activities of this nature through the military service technology transition funds.”[440]

The DoD reports alignment of FY 2023 experimentation results to inform the FY 2025 PB, although the Commission is unable to verify this statement as of the writing of this report. If the Services are leveraging experimentation results to make future resourcing decisions, the DoD should be able to reduce the time from successful experimentation to a fully funded capability delivery program. The Commission encourages this DoD best practice. If the Services are not budgeting for the transition of the successes of RDER, either for Procurement or RDT&E BA-05 funds for additional development, these proven capabilities could sit on the shelf for two to three years before continued development or production begins, unless they leverage some other flexible funding pathway like APFIT. Such a gap in funding could be catastrophic for small businesses who rely on cash flow to survive. As best put in a September 2023 paper published on the valley of death, “If these RDER efforts are widely successful and will provide priority capabilities, it cannot wait another budget cycle to program follow-on funding to transition and scale. While there is nothing wrong with pivoting to new

[438] P.L. 117-103.
[439] Commission interview with subject matter experts.
[440] S. Rpt. 118-81.

priorities, it also seems unwise to pursue experimentation efforts costing many millions with no clear end state."[441]

Priority-Specific Funds

Occasionally, the DoD and Congress determine it is necessary to ensure funding is provided for a particular capability or operational need through a priority-specific fund. Such funds are specific in nature, and often are limited to the life of the development and/or delivery of the capability before transitioning to traditional appropriation mechanisms. Examples of these funds are below.

Joint Improvised Explosive Device Defeat Fund (JIEDDF). In response to improvised explosive device (IED) threats in Iraq, the Army established an IED Task Force in October 2003. Over the course of more than a decade, the authority, name, and funding transitioned between organizations, culminating in the 2016 realignment of the renamed Joint Improvised-Threat Defeat Organization (JIDO) from the Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASA(ALT)) to the Defense Threat Reduction Agency (DTRA) who now falls under the purview of the USD(A&S). The JIDO had a colorless appropriation, the JIEDDF, that could be obligated over a three-year period for counter-IED efforts. These were additional resources not subject to standard transfer authorities. Funds transferred out of the JIEDDF could be returned to the JIEDDF if not used.

Use of the funds were justified in the Procurement J-books, and could be used for development, procurement, and fielding. While the JIEDDF was included in the annual budget process, it did not go through the same programming process as traditionally appropriated programs as Overseas Contingency Operations funding was separately requested and appropriated. As of FY 2018, the Joint Improvised-Threat Defeat Fund was a standalone appropriation. In 2019, the JIDO transitioned to traditional appropriation categories as requested by the congressional defense committees. It is discussed here because it provides an example of priority-specific funds that may be needed in the future.

Manufacturing Technology (MANTech). The DoD has several MANTech RDT&E PEs that are spread across OSD and the Services. The program was established as a BA-03 RDT&E PE to conduct advanced technology development in support of developing and maintaining an affordable and reliable industrial base and manufacturing capability in support of DoD priorities. While maturity is often defined as technical maturity, manufacturing readiness levels are also critical to scaling a capability to full production.[442] According to the FY 2024 PB Air Force justification materials, "The program develops and improves manufacturing technologies and processes to reduce transition risk, enable cost reduction, improve component and system quality, increase readiness and affordable mission availability, enhance industrial capability, and promote transformation through the industrial base."[443] It is discussed here because it provides an example of a category of funding that may be needed in the future.

Other Efforts to Improve Agility in Programming and Budgeting

Rapid Acquisition Authority (RAA). Section 806 of the NDAA for FY 2003 established the RAA.[444] Per DoD Manual 5000.78,[445] Rapid Acquisition Authority, the DoD Components will use all available authorities to expeditiously fund, develop, test, procure, field, and sustain urgent need solutions. In cases where sufficient authority or resources do not exist to enable timely response to a need, the DoD Components may request the use of RAA. The executor of the authority is the Joint Rapid Acquisition Cell (JRAC). In accordance with

[441] Modigliani and Macgregor 2023.
[442] Cardon et al. 2023, 12.
[443] FY 2024 Air Force RDT&E Budget Justification Materials, Vol. 1, 311.
[444] P.L. 107-314.
[445] DoD Manual 5000.78 2019.

5000.78,[446] the RAA should be considered for the rapid acquisition and deployment of supplies and associated support services that:

1. Are currently under development by DoD or available from the commercial sector;
2. Require only minor modifications to supplies described in Paragraph 3.1.a.(1), or;
3. Are developed or procured under the rapid fielding or rapid prototyping acquisition pathways under Section 804 of the NDAA for FY 2016,[447] and
4. Are urgently needed to react to an enemy threat or respond to significant and urgent safety situations.

There are four categories of urgent needs which would constitute the use of RAA:

1. Urgent needs to eliminate a documented deficiency that has resulted in combat casualties or is likely to result in combat casualties, limited to $200 million in any given fiscal year.
2. Urgent needs to eliminate a documented deficiency that impacts an ongoing or anticipated contingency operation and that, if left unfulfilled, could potentially result in loss of life or critical mission failure, limited to $200 million in any given fiscal year.
3. Urgent needs necessary to eliminate a deficiency caused by a cyber attack resulting in critical mission failure, the loss of life, property destruction, or economic effects, or if left unfilled is likely to result in critical mission failure, the loss of life, property destruction, or economic effects, limited to $200 million in any given fiscal year.
4. Compelling national security needs requiring the immediate initiation of a project under the rapid fielding or rapid prototyping acquisition pathways in accordance with Section 804 of Public Law 114-92, as amended, limited to $50 million in any given fiscal year.

The authority requires the Department notify the congressional defense committees after a determination has been made by the Secretary of Defense to use the authority. No financial resources are specifically reserved for the execution of RAA so requirements must be sourced from elsewhere within existing available funding. Congress has been notified five times on the DoD's use of the RAA since passage of the requirement to report in the Joint Explanatory Statement of the Consolidated Appropriations Act, 2018, and reportedly 38 times in total since the authority was provided in 2003.[448] Additional information on such uses can be found in Section IV.

This authority, coupled with a shortened decision chain provided to the JRAC, allows for the rapid delivery of both joint urgent operational needs and joint emergent operational needs, averaging 120 days to two years for a majority of their delivered solutions.[449] The JRAC did acknowledge challenges associated with the RAA, specifically, that while the RAA provides funding and acquisition authority to kick start the delivery of an urgent capability, the process lacks a forcing mechanism to ensure capabilities are programmed and budgeted for in subsequent fiscal years.[450]

The Office of Strategic Capital (OSC). The Secretary of Defense established the OSC in December 2022 to help the DoD partner with private capital investors.[451] The goal is to attract private capital to support national security priorities and to scale private investment as it relates to the 14 Critical Technology Areas detailed in the DoD Chief Technology Officer's Strategic Vision.[452] By and large, venture capital investment is an underutilized tool by the DoD; more than $6 to $11 billion[453] flows annually from private capital into the defense market and is a dominant source of funding for new and emerging technologies. Resources in the

[446] Ibid.
[447] P.L. 114-92.
[448] Commission interview with subject matter experts.
[449] McGinn et al. forthcoming.
[450] Ibid.
[451] DoD Memorandum 2022.
[452] DoD USD(R&E).
[453] Commission interview with subject matter experts.

private sector, which are invested into technology development activities, including through venture capital funding, private equity investments, loans, or internal corporate R&D funding, are in general a much quicker source of cashflow than is available through government processes. Meanwhile, U.S. strategic competitors have already tapped into this tool, leveraging significant amounts of public-private capital into their defense markets.

The OSC aims to increase the capital available to critical technology companies working in defense relevant areas and help them reach scaled production. Despite being newly established, the OSC has already kicked off two lines of effort and requested $99 million in the FY 2024 PB[454] to support its efforts that include:

- Public-private fund matching: The OSC will use public funds to match private funds for larger early-state investments in critical technologies. The DoD already has experience doing this, particularly through the U.S. Air Force SBIR STRATFI and TACFI programs.
- Loans and loan guarantees: The OSC will use public funds to extend loans or loan guarantees to scale production for critical technologies. Loans and loan guarantees are seen as an incredibly low risk funding mechanism to the taxpayer compared to grants or contracts, because they offer the promise of a returned dollar.

Legal authority for these activities exists in many federal agencies and was provided specifically to the DoD in Section 903 of the NDAA for FY 2024.[455] The SAC-D Report for FY 2024[456] suggests concern with the executability of the funding, and alternatively offered funding for a public-private partnership pilot, "The Defense Industrial Base Advanced Capabilities Pilot Program," to be executed by the USD A&S.[457] The NDAA for FY 2024[458] did not include a provision for the establishment of the pilot under USD A&S, and directs OSC to carry out the pilot program.[459] As of the writing of this report, it is unknown if OSC will be appropriated funding to carry out the direction of the NDAA for FY 2024. There is also still some question as to whether the use of these loans and loan guarantees creates a scoring issue[460] for DoD and Congress that must be addressed.

These financial strategies, already proven through uses outside of DoD, are intended to incentivize private capital providers to invest in national defense to scale capability from prototype to production. Successes have already been realized by the federal government in non-defense agencies using these strategies, for example, a 2010 Department of Energy loan provided $465 million to Tesla to develop manufacturing capacity and other infrastructure. The funding enabled Tesla to produce battery packs, electric motors, and other powertrain components. Tesla repaid the loan in three years, with interest.[461] In addition, the Export-Import Bank of the United States recently announced a $169 million loan to BETA Technologies, the electric aerospace company driving clean energy technological advancement and innovation, to finance a final assembly production facility. Such investments support the acceleration of national priorities and can ensure necessary development in critical sectors to defense.

The DoD does have access to restrictive loan authorities under Section 4532 of Chapter 55, U.S. Code Title 50,[462] which sets the conditions that financial assistance may only be extended if not otherwise available from

[454] FY 2024 RDT&E Budget Justification Materials, Vol. 3, 699-707.
[455] P.L. 118-31.
[456] S. Rpt. 118-81.
[457] P.L. 118-31.
[458] Ibid.
[459] Ibid.
[460] Scoring, as defined by the CBO, process of developing and recording consistent measures of the budgetary effects – changes in federal spending, revenues, and deficits – of proposed and enacted legislation. A key purpose of scorekeeping is to attribute budgetary effects to the pieces of legislation that cause them, so that rules and procedures for budget enforcement may be applied. For example, DoD, Congress, the Department of Treasury, and OMB must ensure appropriated dollars are "scored" consistent with federal top line budget for a given FY.
[461] DoE, 2010.
[462] 50 U.S.C, Ch. 55, §4532.

private sources, may not be made during periods of national emergency, must be made or guaranteed only to the extent that an appropriations act provides in advance budget authority, and must establish a limitation on the total loan principal to be guaranteed.

The Commission endorses DoD efforts to leverage these economic tools to support additional industrial investment and development in defense-enabling sectors and encourages the DoD to engage in routine communications with the congressional defense committees on program progress once the funding has been appropriated. The Commission also urges the Department, Congressional Budget Office, and OMB to clarify the rules for scoring the use of loans and loan guarantees by DoD.

To take more advantage of rapidly deployable and potentially large sources of private capital available for the development and production of emerging technologies, the Commission urges the Department to improve use of its assets and tools to become a partner in technological development and fielding in technologies of interest. This could include purely commercial technologies, dual-use technologies, or even some defense unique technologies, depending on the engagement strategies used. Engagement strategies could include:

- Transparently programming and budgeting for the procurement of technologies developed by the private sector using commercial investment or corporate R&D funds. This signaling of believable, addressable procurement opportunities for emerging technologies and services can help stimulate private sector investment.
- Programming and budgeting for activities that allow private sector firms to engage with and use DoD's world class prototyping and test and evaluation resources and ranges, and gain appropriate access to unique laboratory equipment, personnel, and intellectual property.
- Programming and budgeting for experimentation with private sector technologies and follow-on development and procurement activities.
- Providing better access to acquisition decision-makers, PMs, and companies who are receiving S&T and SBIR or STTR funding to allow private sector investors to support technology transition into DoD PORs or take advantage of technology opportunities.

Rapid Capability Offices (RCO). There are many other offices, such as the U.S. Air Force RCO and the U.S. Army's Rapid Capabilities and Critical Technologies Office, that have been established to speed delivery of capabilities, providing a reprieve from some of the constraints of the PPBE process. These offices can provide a mechanism for increased agility through a shortened decision chain, delegated authority, senior leader support, increased communication with leadership and Congress, and prioritized funding. They also frequently use many of the agile programming and budgeting mechanisms outlined in this section.

Proposed DoD Legislative Changes for Additional Agility and Flexibility. The DoD legislative proposal process provides the DoD with a formal way to ask for legislative changes via the NDAA. The Office of Legislative Counsel (OLC) is responsible for this process and hosts a repository of all proposals submitted to Congress once reviewed and approved by the OMB. This process can help the DoD formally advocate for additional agility or flexibility, or clear unnecessary legal barriers to deliver national security needs.

There are many current efforts to increase speed in delivering capability; aid efficiency and cost savings; and ensure that budgeting barriers are cleared through additional authority, increased thresholds, or increased flexibility. Examples of requested flexibilities in FY 2024 include, but are not limited to the following:

Acquisition and Technology Contingency Account (ATCA): During the Commission's research, the Commission was made aware of a DoD legislative proposal that was not delivered to Congress for consideration, but could support agility in financing urgent, out-of-cycle requirements. This proposal would have modified the DMA and established an account of non-expiring funds up to $1.5 billion, either budgeted for in the annual budget request, or transferred from RDT&E and Procurement appropriations prior to

expiration. Transfers out of the account could occur after a 15-day notify and wait period to the congressional defense committees. Transfers would be reserved for emerging and high-priority RDT&E projects identified by USD(R&E), USD(A&S), or the COCOMs, unanticipated Defense Production Act projects, and time sensitive industrial base deficiencies. Such an account with these authorities could facilitate timely access to ready funds and relieve challenges of identifying viable offsets to support high priority reprogramming requirements for emergent needs. No formal request was made by the DoD for this change, so there was no inclusion of the language in the NDAA for FY 2024.[463]

Special Construction Authority to Use O&M in Friendly Foreign Countries: This proposal would provide the DoD with authority to use O&M funding for projects up to $15 million to allow for more rapid response than traditional MILCON appropriations. This authority was provided as requested to the Department in Section 2805 of the NDAA for FY 2024.[464]

Rapid Response to Emergent Technology Advancements or Threats: The DoD proposal would expand authority provided under Section 3601 of Title 10, U.S.C,[465] which is limited to Procurement, to be used in limited circumstances where a Secretary of the Military Department deems it vital to start early engineering and development activities on an effort immediately. The requested authority was up to $300 million annually to allow engineering and development activities of an effort to get started by redirecting already programmed funds, with the intent to actively engage Congress on long-term plans to transition the project to the normal appropriations process. Section 229 of the NDAA for FY 2024[466] included a provision that would allow a Secretary of the Military Departments the use of these authorities up to one year upon the approval of the Secretary of Defense. The Secretary of the Military Department may use any funds available to the Secretary during the fiscal year for Procurement or RDT&E, and the total cost of activities under this section may not exceed $100 million annually. The Secretary of the Military Department is required to notify the congressional defense committees within 15 days of approval by the Secretary of Defense.

Increase in Approval and Notification Thresholds for Repair Projects: This proposal would increase repair thresholds from $7.5 million to $15 million consistent with inflation of construction costs since the original establishment of the threshold in 2004. Currently, packaging, reviewing, staffing, approving, and then notifying other authorities of these repair projects results in substantially greater project execution timelines as well as increased workload for personnel. No provision was included in the NDAA for FY 2024 for this authority.

Expansion of Defense Working Capital Fund Contract Authority: This proposal would allow DoD to award contracts in advance of the availability of specific working capital funds to avoid adverse operational impacts. The inability to award contracts sufficiently in advance of the availability of funding can adversely impact ship operating schedules, for example, and often leaves maintenance efforts inefficient, more expensive, and even incomplete. No provision was included in the NDAA for FY 2024 for this authority.

The Commission takes no position with respect to these legislative proposals, though generally supports the goal of speeding up the incorporation of innovative ideas into DoD programs. A complete list of DoD's legislative proposals can be found on the OLC website.[467]

As is mentioned in Section VI, the Commission notes the importance of the timely delivery of information to Congress. The DoD's legislative proposals should be delivered with the PB submission, particularly those

[463] Commission interview with subject matter experts.
[464] P.L. 118-31.
[465] 10 U.S.C §3601.
[466] P.L. 118-31.
[467] DoD OLC.

with budgetary impact. It has become practice that DoD Components are not allowed to discuss legislative proposals with Congress until they have been approved by OMB and delivered to Congress, which can happen as late as July to December. This late delivery and lack of ability to discuss budgetary impacts that have been incorporated into the PB justification materials have caused challenges with providing all of the necessary details of the DoD's budget request to the congressional committees, and results in suboptimized outcomes due to bureaucratic process. The Commission urges the Department to revisit this prohibition so that the full details of legislative proposals that have been incorporated into the PB can be discussed with the congressional committees. The Commission also urges the DoD to prioritize those proposals that have budgetary impacts so they can receive full consideration during congressional markup.

Conclusion

The Commission concludes that the DoD has established several initiatives to improve the agility of its programming and budgeting. Among those, the BA-08 Pilot Program for software programs is particularly important, and the Commission urges DoD to make every effort to make use of this initiative and to inform Congress about progress. Congress has authorized many funds designed to improve agility, and the Department should ensure that its acquisition and financial managers are familiar with these funds and find ways to increase their use, particularly in promoting the transition and adoption of innovative technologies. Finally, the Commission commends recent efforts by the DoD prior to and since the release of the Commission's Interim Report in August 2023, to address BLI consolidation to reflect a more capability-based approach and encourages the DoD to continue to seek ways to provide additional agility in the defense resourcing process by working with Congress (see Section IV).

H. A Review of the Frequency and Sufficiency of Program and Budget Execution Analysis

As required by the law that established it, the Commission has examined program and budget execution along with new approaches to these tasks. This section of the report deals with both these topics. Both the P/B staff in Comptroller and CAPE staff analyze budget execution and use execution data in support of their roles in the PPBE process.

The Office of CAPE

For its programming and planning responsibilities, CAPE uses budget and program execution data when developing analysis and options for the annual Program Review, conducting strategic and operational analysis during the planning phase of PPBE, and supporting other decisions as required. For example, analysis of prior execution, execution of analogous programs, or historical cost data may inform funding and schedule options CAPE develops for program issues, and characterization of risk. The CAPE staff works with the USD(C) and the Services to get budget execution data and manages cost data in the Cost Analysis deputate. The CAPE also uses data on the strategic, operational, or performance outcomes of program execution in its analysis. Examples include data on deployments, readiness, maintenance, and acquisition programs. Such data comes from a wide variety of sources, such as the Joint Forces Activities Dataset that provides historical deployment data, the quarterly apportionment tables the Joint Staff produces for global force management, or Defense Acquisition Executive Summary reports and Selected Acquisition Reports for weapons programs.

The CAPE staff manages a centralized repository of programming and related data through its Defense Resources Data Warehouse and with the Joint Staff, maintains centralized repositories of data for strategic and operational analysis on the Joint Data Support site. As needed, CAPE requests data from the Services and other DoD Components. For much of CAPE's analysis of systems for high end combat, real world data on performance under intended use conditions does not exist, thus requiring extensive use of modeling. Models range from custom models CAPE analysts build for specific issues, to longstanding contracted modeling tools used widely in DoD. Examples of models CAPE uses include the Synthetic Theater Operations Research Model, which is a campaign simulation model and the Analysis of Mobility Platforms, which models deployment and distribution of forces and logistics.

For cost estimation in support of the acquisition process, CAPE's Cost Analysis deputate extensively collects and uses actual cost data as inputs. This includes the Cost Assessment Data Enterprise (CADE) system, which collects actual cost information directly from internal contractor business systems, curates the data for cost estimates, and stores the data for the DoD cost community; CADE contains seven terabytes of data on some 850 weapon system programs and has over 3,000 government and industry users. The CAPE is also developing the Enterprise Visibility and Management of Operating and Support Cost system, a network-based, enterprise-level data system for operating and support cost information.

Keeping pace with developments of new analytic software and updating existing software in support of execution and program analysis has been a challenge for DoD's IT infrastructure, especially for classified networks.

The OUSD(C) P/B Organization

Each budget analyst has a portfolio of appropriations and accounts that they are responsible for monitoring and analyzing. The primary source of data to monitor budget execution is the accounting data produced by the DFAS based on input from organizations across the entire Department. A variety of budget analytic tools (i.e., trend analysis, cost analysis, etc.) and information are used to assess the execution of the wide range of DoD programs. There has been a focus in recent years on the use of modern data analytics tools to improve the quality of budget execution assessments. Budget execution is monitored on a monthly basis to identify potential issues as early as possible. For example, the accounting data can be used to ascertain whether planned events such as acquisition contract awards have occurred as planned.

The major event in the execution cycle is the mid-year review, which is normally conducted in the April-June time frame. Each DoD Component conducts its own mid-year review for the accounts under their purview, and the P/B staff conducts an independent review of all DoD accounts. The goal of this review is to ascertain which programs and efforts are executing as planned and expected; identify programs that appear to be overspending plans; and to focus attention on underperforming programs. This review then results in the Omnibus reprogramming action, statutorily due to Congress by June 30th each year, that requests realignment of resources in order to balance the Defense program for the remainder of the fiscal year. Decisions are made to add funds to programs that need additional resources and identify billpayers from underperforming or lower priority programs to cover those costs. A recent example in FY 2022 was the need to reprogram funds to cover higher than budgeted fuel costs.

Data Analytics

Data analytics is a tool that already has and should continue to improve program and budget execution analysis. A centerpiece of the current effort is the Advana data analytics platform, a data collection and reporting solution that is intended to be the one-stop system for the analysis of budget execution performance. The Advana platform currently provides reporting capabilities, including a journal voucher reconciliation tool to promote full accounting transparency. The OUSD(C) has developed and implemented an Advana-supported dashboard that provides customized reports that can track budget data from budget preparation through budget execution and has the capability to provide trend analysis at the appropriation level as well as the BLI level.

The Advana platform includes a Spend Plan Module that identifies spend plan variances. The intent is for Advana to provide budget analytic tools that can reduce the need for manual data calls and improve financial visibility while also reducing the workload on related management and staff. With these tools, analysts can focus more on the analysis instead of working to compile and then display that data; these tools and capabilities are continuing to grow. The Advana platform also has the capability to conduct an automated mid-year review. This should allow for easier assessment of performance across the entire enterprise, which will also ease workload requirements. The OUSD(C) has also implemented a daily Defense Working Capital Fund cash dashboard, which provides transactional data at the business activity level to help identify possible execution issues earlier in the review cycle.

An example of the advantages of a common platform, like Advana, brings to data analytics is its use in managing the financial management of on-going assistance to the Ukraine. All the same, the OUSD(C) leadership acknowledges more evolution in the development of Advana's capabilities is needed. The Advana platform is heavily dependent on the quality of the accounting data that feeds it. Historically that has been

challenging; however, the Services and DoD Components have taken great strides to improve the data, which is a significant improvement and a major step in the right direction.

Assessment of Execution Reviews

Overall, the CAPE and OUSD(C) staff perform their duties well in conducting program and budget reviews and using the results to inform and adjust the final OSD POM and PB submissions. However, there has been criticism that analytical capability has waned in recent years, which is largely due to decreases in manpower and limited timeframes to accomplish tasks. The requested increase to CAPE will significantly improve capability for joint strategic analysis and analytic decision support for DoD growth areas. The OUSD(C) P/B organization needs to widen its aperture for recruiting and consider offering incentives to recruit and retain personnel.

The Commission concluded that the continued development and use of data analytics and business tools will aid with speeding up the reviews and ultimately improve decision-making. In addition to the OSD level execution reviews that are the specific focus of this section, it is worth noting that the Services and DoD Components conduct their own internal program and budget execution reviews from the lowest echelon (monthly) to higher headquarters (quarterly). They then use the resulting information to finalize their POM and BES submissions to OSD.

I. Performance Measures Within the DoD

Section 1004 of the NDAA for FY 2022 requires an assessment of the Department's timelines, mechanisms, and systems for monitoring the DoD's program and budget execution, including the Department's use of performance metrics. Because of the complexity of the Department's programs and operations, no simple set of performance metrics can be adequate to assess its success or failure. The Department's ultimate objective – the fielding of a military, now and in the future, that can effectively deter war and defend the U.S. and the nation's interests – is not easily measured. As a result, the Department relies instead on metrics that enable it to assess various aspects of its operations, sometimes on the basis of outcomes, but more frequently on the basis of inputs and outputs. These metrics are specific to functional pillars or organizations and can be both varied and complex.

For example, the Department frequently uses obligation and expenditure metrics to assess budget execution. However, these metrics provide information only on the pace of spending, not on the value received for the expenditure. In the acquisition arena, the Department has developed earned value management (EVM) systems that purport to assess expenditures against established delivery benchmarks. However, EVM systems have long been criticized as easily manipulated and inadequate to the task. Within the acquisition system, individual programs monitor a wide array of metrics to assess progress and identify potential problem areas – measuring everything from procurement lead times to mean-time between failures – but these metrics are not easily encapsulated in a meaningful dashboard for leadership use.

Moreover, the reasons for trends in metrics are not always obvious. For example, under-execution of RDT&E funds may be the result of early-to-need funding for a program that is not yet mature enough to expend appropriated resources. In this case, it may be appropriate to rephase the program and utilize the excess funding for other purposes. However, there are also cases in which under execution is the result of late enactment of appropriations, government shut-downs, delays in the contracting process (for example, as a result of bid protests), and other factors external to the program. In such cases, the transfer of what are not actually excess funds out of the program may have a punitive effect, undermining the DoD's ability to execute the program in a reasonable manner and develop critical capability. For these reasons, metrics alone are unlikely to be sufficient to reach conclusions about organizational or operational performance. Rather, such metrics serve as a basis for asking informed questions about performance, which is what generally happens during reviews of funding execution.

The DoD has taken steps to assess how it is achieving the goals set out within its strategy and management plans in pursuit of maintaining its core mission. The Commission reviewed the current efforts by the Department to define metrics and measure performance. As part of this review, the Commission also asked the Acquisition Innovation Research Center (AIRC), a University Affiliated Research Center, to conduct an analysis of the current OUSD(C) obligation and expenditure benchmarks being used by the Department to determine financial and program performance. This assessment focuses on what the Department is doing with regard to performance measures, to include challenges and opportunities for improvement.

Current Performance Initiatives in the DoD

In early FY 2023, the Department established the Defense Performance Improvement Framework (PIF), enacting common definitions and categories for performance improvement and an authoritative reporting mechanism. According to Deputy Secretary of Defense Hicks, "The PIO [the Performance Improvement Officer and Director of Administration and Management (DA&M)], our Comptroller, our CDAO, and the

Director of CAPE play critical roles in implementing this framework."[468] In accordance with the PIF, the Department completed three initial tasks during 2023:

- Issued Revised Integrated Program Budget Review Guidance - the PIO included a chapter in the USD(C) and Director, CAPE Memorandum, FY 2025–FY 2029 Integrated Program/Budget Review Guidance. The PIO will continue to engage with CAPE on the guidance memorandum for subsequent PBR cycles.
- Established prioritization of performance improvement initiatives - the Department set up a process for FY 2023 that yielded a list of 11 priority cross-functional performance improvement initiatives that were formalized in an August 4, 2023 memorandum from the Deputy Secretary of Defense.
- Established authoritative and consistent reporting processes – the newly established PIF directed this task, and a report was sent to Congress on October 12, 2022 outlining this process. The first report under this new process will be submitted to Congress with the FY 2025 Strategic Management Plan (SMP).[469]

The Department established Pulse as the authoritative performance management executive analytics application within Advana for reporting to the Secretary of Defense and Deputy Secretary of Defense. Creating this application and reporting process has replaced what used to be monthly Deputy's Management Action Group (DMAG) sessions to review metrics. To do this, Pulse is compiling information from three capabilities:

- NDS Implementation (NDS-I): A capability hosted in Advana on the classified network that provides senior leaders with the ability to quickly identify critical roadblocks that require Secretary and Deputy Secretary of Defense attention, as well as a cross-cutting view of Department efforts driving NDS implementation.
- Strategic Priority Metrics (SPM): A capability hosted in Advana on the secure unclassified network that connects authoritative data to the strategic priorities and objectives outlined in the DoD SMP, the DoD's actions to realize those priorities and objectives through performance goals and measures, and the challenges and risks associated with achieving the desired results.
- Business Health Metrics (BHM): A suite of capabilities hosted in Advana that enable DoD leadership to measure performance against the core business functions that support the Department. The BHM framework is currently being revised to incorporate recommendations from the Defense Business Board, integrate lessons learned from the Executive Analytics Study, and round out an enduring view on DoD performance as strategic objectives and priorities change.[470]

While working through this process, the Department found that the BHM was too granular and too operational to support the conversation that senior leaders needed to have and has now turned its focus to the SMP because it supports the strategic dialogue at the DMAG. In November 2023, a DMAG on the SMP reviewed the iterations and improvements in terms of the quality of the metrics with a look forward to FY 2025. In response to Section 926 of the NDAA for FY 2024, the DA&M, in coordination with the Military Departments, is currently developing an updated set of BHMs along with guidance on how the metrics will be determined.

[468] DoD Memorandum 2022.
[469] Ibid.
[470] Defense Business Board 2022.

With the dissolution of the Chief Management Officer (CMO) position and reorganization directed in Section 901 of the NDAA for FY 2021[471], the Department has reestablished the DA&M, headed by the PIO; the DA&M assumed many of the former CMO responsibilities that had transferred from the DA&M to the CMO upon its establishment in the NDAAs for FY 2017[472] and FY 2018.[473] One of these responsibilities was to serve as one of the tri-chair members, along with the DoD CIO and the USD(C), of the Defense Business Council (DBC), that was rechartered in November 2021 with an expanded scope of management of defense business systems and business operations. With the NDAA for FY 2023, the DoD CIO was named the chair of the DBC.[474] The Defense Performance Improvement Council (DPIC) was then established as a result of this change, leaving the management of defense business systems with the DoD CIO, and the management of business operations with the DPIC, chaired by the PIO. The Department continues to make performance improvement a priority through the everchanging governance structures.

Current Performance Metrics within DoD

All of the DoD Components use metrics to assess the quality of their performance. There are thousands of these metrics, dealing with everything from cost and schedule to performance of specific tasks. The measures may influence funding requested and approved during the PPBE process.

The Department also captures various metrics that assess operational and business activities in functional areas that involve multiple Services and organizations. Some of these metrics directly and indirectly feed into the current PPBE process. For acquisition programs, progress is evaluated along their research and development and production schedules, to include rigorous evaluations of user-established objectives and thresholds during operational or developmental testing to determine what and when to procure. Each acquisition program has at its onset milestones that need to be met before moving on to the next phase of the acquisition process. This evaluation of program performance is continually addressed at the program level as part of the programming, budgeting, and execution phases.

A variety of readiness measures are reviewed regularly by the Services and COCOMs looking at personnel, materiel, and training criteria. Performance is measured against readiness tasks and objectives, mission essential task lists, and tactics, techniques, and procedures which are often performed and evaluated during training exercises. Performance measurement can also include evaluations of how materiel solutions perform in these environments, which is sometimes assessed as part of operational testing. Readiness measures for maintenance of weapon systems and facilities are also closely tracked against goals and benchmarks. Sustained declines in readiness or the failure to meet established benchmarks influence the amount of funds applied for training and maintenance. CAPE reviews core readiness accounts in the annual Program Review to identify options to correct deficiencies.

The Semi-annual Readiness Report to Congress (SRRC) contains many key operational and readiness performance measures inside the DoD and is required in accordance with 10 U.S.C. §482. This report is due no later than 30 days after both the second and fourth quarters of the calendar year (between July 1-30 and January 1-30, respectively) with an additional requirement for the Department to provide a briefing no later than 30 days after the first and third quarters detailing any changes since the last submission of the SRRC.[475]

[471] P.L. 116-273.
[472] P.L. 114-328.
[473] P.L. 115-91.
[474] P.L. 117-263.
[475] 10 U.S.C. §482.

The Directed Readiness Tables are another key readiness tool for balancing demand for forces from the COCOMs with the availability of ready forces from the Military Departments. CAPE reviews these during Program Review to identify options to correct any imbalances.

There are goals for recruiting and retention, and failure to meet them sometimes leads to increases in the size of military bonus levels and pay raises as well as growth in recruiting budgets. In contrast, in the 2010s the Services were exceeding their goals and, partly for this reason, there were significant congressional marks against recruiting and advertising budgets.

The OUSD(C) reviews budget execution as part of their mid-year review, evaluation of reprogramming requests, and evaluation of the BES in preparation for finalizing the PB. An annual OUSD(C) draft budget decision document is presented during the Budget Review providing an assessment of RDT&E expenditures and Procurement obligations against appropriation benchmarks to determine whether program schedules have slipped, and funding should be rephased. Funding is not automatically rephased based on failure to meet the benchmarks. Instead, programs falling short of the benchmarks are examined by financial and acquisition leaders to determine the issues that led to not meeting the benchmarks, which could include the effects of CRs. During these reviews, analysts and leadership determine if programs are behind and funding should be rephased to accommodate a revised schedule; funds from programs that are rephased can be used to support emerging senior leader priorities.

OSD Financial Execution Benchmarks

In assessing the current OUSD(C) financial execution benchmarks, the Commission asked the AIRC to conduct an analysis of actual obligations and expenditures over the past 10+ years to determine if the benchmarks are still appropriate. This section references the detailed reports that will be published by the AIRC separately at a later date. In their analysis, the AIRC also looked at the effect of CRs on meeting the benchmarks.

One of the major conclusions based on their analysis of publicly available data is that an S-curve for obligation and expenditure benchmarks more appropriately aligns to actual execution than the linear (straight-line) benchmarks used by the Department today.[476] The AIRC analysis also suggests that, even with a change in the type of curve used for the benchmarks, they should be adjusted, as appropriate when under a CR.[477] The AIRC is not the first to come to this conclusion. In 2013, the first recommendation from Tremaine and Seligman's report on OSD obligation and expenditure rates – commissioned by then Director of Acquisition Resources and Analysis in the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics (OUSD (AT&L)), Dr. Nancy Spruill – was to make a baseline adjustment to the benchmarks for any program that was affected by a delay in funding, especially a CR.[478]

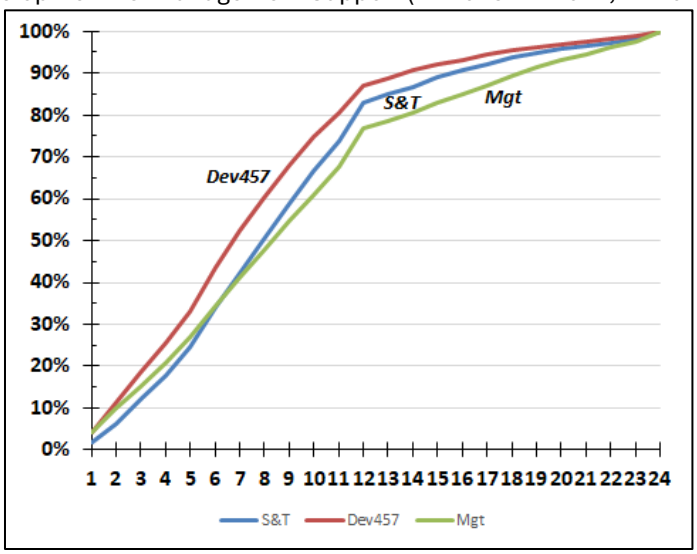
Obligations. The AIRC analysis found that in the aggregate, at a total appropriation level, obligations basically followed a linear progression. This aggregation of obligation data does not exclude programs that have large contract awards (outliers) or take into account the fact that obligations may be planned and executed to arbitrarily meet metric requirements instead of being based on true operational and contracting need. The

[476] Anton and Buettner forthcoming.
[477] Ibid.
[478] Tremaine and Seligan 2013.

AIRC did additional analysis at the BA level to determine if the linear benchmarks for the RDT&E appropriation are still a reasonable benchmark at the lower BA level.

Based on data provided by the Department, the AIRC analysis concluded that the S&T BAs (BA-01 Basic Research, BA-02 Applied Research, and BA-03 Advanced Technology Development), the Development BAs (BA-04 Advanced Component Development and Prototypes, BA-05 System Development and Demonstration, and BA-07 Operational Systems Development), and the Management Support BA (BA-06) may warrant different obligation benchmarks.[479] The distribution curve for the data from FY 2013 through FY 2022[480] in Figure 1 demonstrates the supported S-curve methodology for benchmarking obligations. The Commission did not receive any additional BLI appropriation data, and recommends the Department pursue this lower-level analysis for all appropriations, as they may also warrant a change in the established benchmarks that they are being measured against. While the benchmark may work for the appropriation as a whole, and on average, the multitude of activities within those appropriations cannot all follow that same linear obligation and expenditure path.

Figure 1 – Average Cumulative Fraction of RDT&E Obligations by Month
S&T vs. Development vs. Management Support (FY 2013–FY 2014, FY 2017– FY 2022)

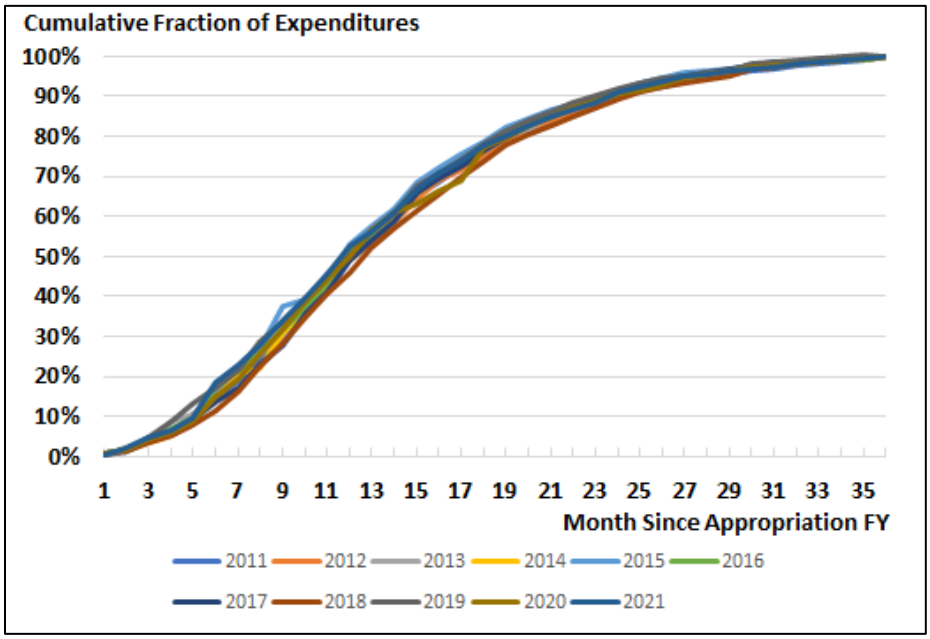


Source: Reproduced from *DoD Obligation and Expenditure Rates, More-Realistic Benchmarks, and the Effects of Continuing Resolutions and Other Events on Obligation Rates*, Anton & Buettner, forthcoming

Expenditures. The AIRC analysis also found that both in the aggregate, and across a sampling of acquisition programs, expenditures in the RDT&E, Procurement, and O&M accounts follow an S-curve. The figures below demonstrate the S-Curve for RDT&E in Figure 2, Procurement in Figure 3, and O&M in Figure 4. For reference in reading the figures, Month 1 is October of the first fiscal year of enactment.

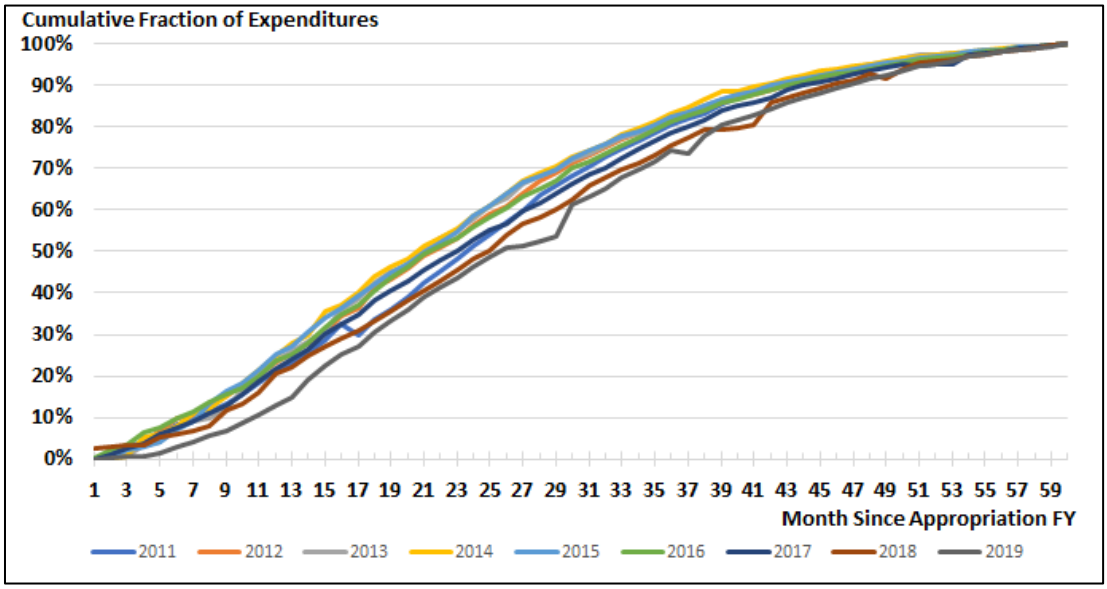
[479] BA-08 was excluded from the analysis as there is insufficient data given the nascent state of the budget activity.
[480] Dataset does not include any data for FY 2015 or FY 2016.

Figure 2 – RDT&E Expenditures



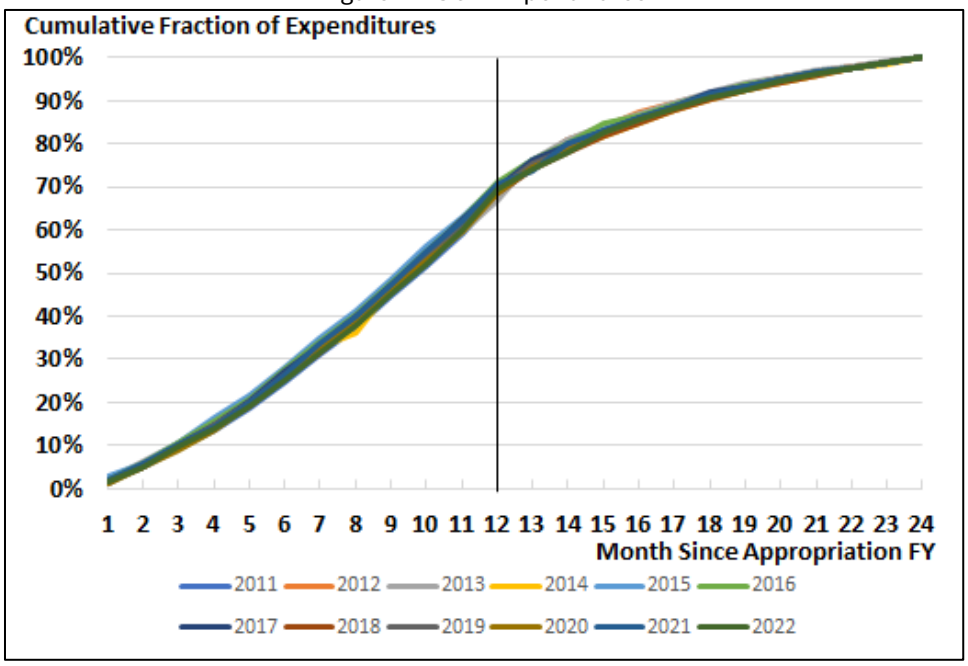
Source: Reproduced from *DoD Obligation and Expenditure Rates, More-Realistic Benchmarks, and the Effects of Continuing Resolutions and Other Events on Obligation Rates*, Anton & Buettner, forthcoming

Figure 3 – Procurement Expenditures



Source: Reproduced from *DoD Obligation and Expenditure Rates, More-Realistic Benchmarks, and the Effects of Continuing Resolutions and Other Events on Obligation Rates*, Anton & Buettner, forthcoming

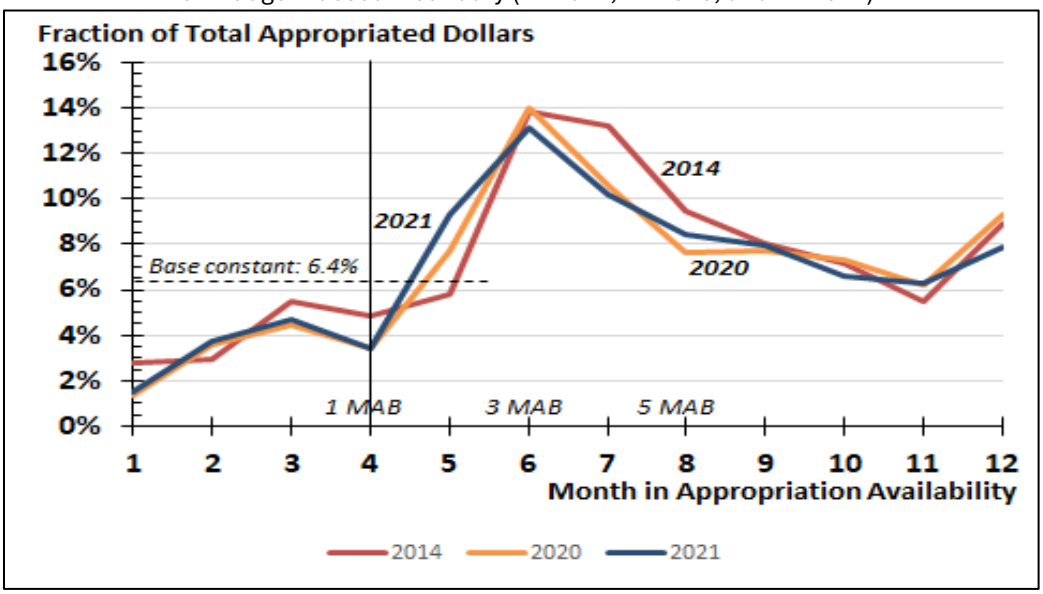
Figure 4 – O&M Expenditures



Source: Reproduced from *DoD Obligation and Expenditure Rates, More-Realistic Benchmarks, and the Effects of Continuing Resolutions and Other Events on Obligation Rates*, Anton & Buettner, forthcoming

Impacts of Continuing Resolutions. Analysis was also done on the effects of CRs on obligation and expenditure benchmarks. The AIRC research found that there was a distinct correlation between a CR and how funds were obligated once the CR(s) ended and there were full appropriations acts for DoD funding. The analysis consistently found that obligations spiked in the third month after budget (MAB) enactment; however, the analysis also found that the spike varied between BAs for RDT&E. Figure 5 demonstrates the spike in the aggregate for RDT&E when the first MAB enactment occurred in January of the fiscal year (this occurred in FY 2014, FY 2020 and FY 2021). Figure 6 demonstrates the varied effects of the CR on the different BAs and the sizes of the spikes in obligations for the same groupings considered in the obligation analysis of RDT&E BAs above. While all RDT&E BAs demonstrated a spike, the development BAs (BA-04, BA-05, and BA-07) had a much greater spike than the S&T (BA-01, BA-02, and BA-03) and Management Support BA-06.

Figure 5 – Monthly S&T Obligation Rates for Appropriation FYs with a Full Budget Passed in January (FY 2014, FY 2020, and FY 2021)



Source: Reproduced from *DoD Obligation and Expenditure Rates, More-Realistic Benchmarks, and the Effects of Continuing Resolutions and Other Events on Obligation Rates*, Anton & Buettner, forthcoming

Figure 6 – Contributions of CR and Other Variables Affecting RDT&E Obligation Rates (FY2013-FY 2014, FY 2017–FY 2022)

		1st Year of Availability				2nd Year of Availability			
		All	S&T	DEV	Mgt	All	S&T	DEV	Mgt
Avg. Base		5.9%	6.4%	6.0%	6.3%	1.7%	2.3%	1.6%	2.5%
Add CR Effects	CR		-1.0%		-1.4%				
	1 MAB		-1.6%						
	2 MAB	4.3%		3.0%	2.1%				
	3 MAB	6.3%	4.8%	7.1%	2.1%				
	4 MAB	3.7%	4.3%	4.8%					
	5 MAB		1.5%						
	6 MAB		1.8%						
Add Calendar Month Effects	Oct.	-2.3%	-3.5%	-1.9%				0.40%	-0.63%
	Nov.		-1.1%			0.91%		0.52%	
	Mar.	2.3%	1.6%	1.7%					0.68%
	Sept.		2.4%		2.9%	1.0%	1.3%	0.84%	1.3%
Time Trend	Time (mo.)					-0.10%	-0.15%	-0.10%	-0.10%
Adj. R2		63%	84%	60%	42%	32%	48%	50%	33%

MAB = month after budget is passed; CR = month under a continuing resolution (the months before 1 MAB); BA = Budget Activity; S&T = Science and Technology (BA-1, BA-2, and BA-3 combined); DEV = development (BA-4, BA-5, and BA-7 combined); Mgt = Management [Support] (BA-6); mo. = month; Oct. = October; Nov. = November; Jan. = January; Mar. = March; Aug. = August; Sept. = September.

Source: Reproduced from *DoD Obligation and Expenditure Rates, More-Realistic Benchmarks, and the Effects of Continuing Resolutions and Other Events on Obligation Rates*, Anton & Buettner, forthcoming

The data analyzed for the Commission by the AIRC researchers supports the recommendation in Section V, on the need for a rebaselining analysis of the OUSD(C) benchmarks at the BLI level. The Commission recommends the USD(C) assess baseline obligation and expenditure benchmarks based on recent historical execution at the BLI level for all appropriations and establish new benchmarks that reflect more realistic program expectations under current circumstances that include extended periods of CRs.

Challenges in Addressing Performance Measures

While some of the measures above influence budgets, there are disparate attempts to consider performance measures during budget formulation. A unified systematic approach can be especially difficult because actual data on measures often lags budget formulation by one to two years. Moreover, DoD generally does not directly assess how program spending aligns to stated performance measures. Stated another way, the Department generally does not assess whether the execution of funds results in the performance of the mission or program that was expected. There are, however, some exceptions. For example, the Department does employ EVM when assessing contractor performance, which provides insight into schedule and cost performance, but only requires it on larger contracts of a certain type, though the threshold for doing so is continuously increasing. However, as mentioned earlier, critics will say that EVM is inadequate and can be easily manipulated.

The O&M J-books include performance metrics as a part of the Part IV Performance Criteria section. However, these metrics often measure inputs to a program or a breakout of funds or inventories instead of attempting to measure program outputs. Metrics might, for example, measure XXX but not the outcome of the program YYY. Metrics in the O&M J-books, most of which are publicly available, might be limited in order to avoid including sensitive or classified information, and are also challenged with lagging data as discussed earlier. The DoD could include more metrics in O&M J-books, and those involving sensitive or classified information could be placed in a classified addendum or included in a brief to Congress or congressional staff during budget rollout. The J-books for appropriations other than O&M do not include a section for performance metrics.

As mentioned previously, the DoD has made great strides over the past two years to integrate performance measures across the enterprise. However, measures in DoD's official performance plan (the SMP) can be limited and very specific to the organization. The SMP places greater emphasis on the business of the Department than the progress made towards the mission and goals as laid out in the NDS.

Opportunities for Improving Performance Measures

The Commission encourages OSD, Service, and DoD Component leadership to continue to review performance measures on a regular basis and expand what is included to ensure that strategic objectives are addressed; the regular use of measures will improve them. The Department is currently using Pulse for metrics relating to the SMP, which could be expanded as the implementation of platforms hosted in Advana across the Military Departments continues to be developed and rolled out. Examples of efforts already underway include:

- The Department of Navy uses the Jupiter enclave in Advana to improve oversight of financial execution and overall financial management to support audit readiness activities.
- The Department of the Air Force is building the Financial Air and Space Team Resources (FASTR) enclave in Advana.
- The Department of the Army is building the Army Reporting Evaluation System enclave in Advana.

The Military Departments have shown interest in using Pulse and their metrics should be included in the platform during FY 2024.

There are many ways in which the Department could make greater use of performance metrics. The Department could select key measures every year and then devote the analytic efforts to improving them. It could, for example, pursue the Commission's recommendation to update obligation and expenditure

benchmarks based on recent data. The Department could then establish a process to revisit the benchmarks on a recurring basis, ensuring that subsequent analysis does a deep dive into the data to get the full picture regarding how well the benchmarks assess the execution of acquisition programs. The Department should also assess programs that did not meet benchmarks and were exempt from funding reductions to determine if those programs executed their funds effectively and according to plan. Program officials should also describe to OSD and Congress their planned execution strategies for the requested fiscal year during appropriate engagements.

A suggested best practice is to select a few key programs or portfolios and direct studies, with either CAPE or Service programmers as leads, to assess the cost effectiveness and identify programmatic options if they are not meeting performance objectives, considering studies that have not already been done. For example, how much do pay raises and bonuses affect recruiting and retention and what is the best mix of overall pay raises and targeted bonuses? Is there evidence that increases in funds for training and maintenance improve readiness ratings and, if so, by how much? These are just a few examples of studies that could help improve the performance of the Department.

If the Department wants to pursue assessments of the cost effectiveness of some of its programs, it could consult with the Office of the Director of National Intelligence (ODNI). According to the RAND analysis performed for the Commission, the ODNI uses Strategic Evaluation Reports (SER) to assess cost effectiveness of the intelligence programs under its purview and has gone so far as to rename its version of PPBE as the Intelligence Planning, Programming, Budgeting and Evaluation (IPPBE) process. The SERs are a backwards look at the performance of multi-year decisions or initiatives to determine the effectiveness of the resource allocation in terms of the effectiveness of the decision or initiative.[481] The ODNI uses these along with other reports such as the CFO's budget performance reports for continuous evaluation across the IPPBE cycle.[482]

Conclusion

The Commission found that the Department does utilize a wide variety of performance measures during day-to-day management. However, during the resourcing processes there is no systematic process for using outputs from the performance measures to determine what programs are funded and at what levels. The Department should move toward more systematic use of outputs from the performance measures as it formulates budget requests. The Department should also periodically revisit the metrics used to ensure that the right objectives are being set (i.e., the things that are measured and how they are being measured), as well as appropriately communicate to Congress how those measures informed the PB.

[481] McKernan et al. 2024b.
[482] Ibid.

J: Financial Management Systems and Their Relationship to Financial Auditability

As required by Section 1004 of the NDAA for FY 2022, the Commission conducted a comprehensive review of the financial management systems of the DoD, including the policies, procedures, and past and planned investments. The Commission also provides recommendations related to improving financial systems to ensure that such systems and related processes of the Department result in:

- Effective internal controls;
- The ability to achieve auditable financial statements; and
- The ability to meet other financial management and operational needs.

Overall Principles

The Commission encourages the DoD to follow a set of broad principles when improving its business and financial systems, including the systems that support the financial audit. These broad principles can be summarized as follows:

- Success in improving business and financial systems requires a sustained effort across organizations and domains. Accountability to the taxpayers needs to be a consistent priority for the Secretary and Deputy Secretary of Defense in this effort, though given the Department's mission, not the only priority.
- The DoD needs a method to track and measure progress by organization and by issue. This will indicate to the Department who is making progress and who isn't (and indicates future focus areas).
- The Secretary and Deputy Secretary of Defense need a method to ensure that issues in dispute are elevated. Many reforms require difficult choices about efforts and resources, and consensus may not be possible without their support and prioritization.

These principles should guide DoD's efforts. This section focuses on the Commission's task to provide an assessment of the financial systems, including systems that support the audit.

This assessment supports and expands upon the conclusions relating to DoD business systems highlighted in Section VII of this report–that fewer systems, continued reliance on commercial products, and increased standardization brings significant benefits in terms of improved efficiency and quality of financial information (data). The emphasis in Section VII is on all systems related to PPBE processes, and those findings apply equally well to the subset of financial and financial feeder systems that impact internal controls, financial reporting and ultimately support a positive financial statement audit.

Approach to this Assessment

The Commission sought assistance from an outside team of subject matter experts who have extensive experience with audit and the systems that support the audit, as well as with DoD business systems in general. Details on members of the team can be found in Section II. In addition to the outside team, Commission staff contributed heavily to the research and assessment.

The assessment began with a literature review, starting with the extensive work conducted by the GAO, audit findings by Independent Public Accountants (IPA) and the DoD Inspector General (DoDIG). From here, a review was conducted of the OUSD(C) and Service FM Strategic Management Plan, academic and practitioner writings on business transformation and audit readiness, current policies, and historical documentation assessing shortcomings of earlier major system implementations and related lessons learned. The Commission also collected information from the private sector on accounting and business system support to audits.

The assessment continued with a review of the six previous DoD-wide audits focusing on material weaknesses (MW) and notices of findings and recommendations (NFR), with a focus on information technology (IT) problems that have been resolved and on recurring concerns that have been identified.

Finally, and perhaps most significantly, the Commission staff and members of the outside team interviewed senior officials in the offices of the CFOs, DCMOs, and CIOs of every Military Department; senior leaders in the OUSD(C), the DoD CIO, the Deputy Performance Improvement Officer, and DoDIG leadership; key personnel responsible for assessing the DoD's audit efforts; and personnel from the IPAs under contract for the largest audit reporting entities. The team shared preliminary findings and recommendations with the GAO and others in the audit community for feedback.

Assessment Background

An assessment of the current business systems must also recognize the history and culture of the Department, as its business environment has grown in size and complexity over the post-World War II and Cold War years that occurred alongside the rapid expansion of technology and automation. As a result, this evolution most often retained and automated existing processes, producing a challenging legacy system environment that was developed along functional lines. Furthermore, the oversight and governance of these processes and systems remained within those functional communities, as there was no plan for them to be used then or in the future in the way the Department intends to use and integrate that data today. The resulting unintended consequences created a deeply stovepiped business environment, aligned by functional communities, which has impacted the development and deployment of new systems over the past two decades. During interviews with multiple Department officials, it became evident that this historical fact laid the foundation for the system consolidation efforts that many within the Department are trying to shepherd today. The following key elements of this environment are especially noteworthy:

A Warfighting Culture. The primary mission of the DoD is national security. The warfighting domain has and will continue to command the most resources and leadership attention. Defense business systems, or what is currently referred to as the business domain, will always compete poorly for resources and leadership attention, when compared to matters more directly related to contingency support, operational readiness, and equipment modernization. The DoD's warfighting culture of decentralization emphasizes flexibility and agility, empowering those at the lowest levels to execute the Commanders' intent and accomplish the mission. This does not often translate well into what is viewed as the "back-office" business domain where centralization and standardization typically produce efficient results and require consistent execution of top-down driven, well-documented processes. Finally, automation of disparate legacy processes, without a Department-wide standardized modernization approach, resulted in unique data sets within the various functional databases across the Department, making it difficult to compare, consolidate and analyze similar data or obtain an enterprise view of resources without costly and time-consuming data calls.

Functional Stovepipes

During this period, the Department's business operations developed along functional stovepipes, with processes that focused on producing specific functional outcomes and with little to no concern for how that data would be integrated across the entire business domain. As the capabilities of business automation increased, systems were developed to automate those specific functional processes, but again, just within the lens of that functional community. Financial systems emphasized key functions such as budgetary reporting, contract payments, and disbursing. Financial feeder systems within these functional stovepipes did not always carry the data elements that would be necessary for emerging requirements related to financial reporting and/or data passed between systems as they were not in a standard format, nor was there a thought that this should be a consideration. The combined impact of this environment has created "gaps" or weaknesses in the "seams" between the functional areas and the financial systems of record. During the Commission's review of the Department financial statement audit reports and discussions with external

auditors, these weaknesses continue to present themselves during financial statement audits, with many financial feeder systems identified as negatively impacting the Department's audit performance.

Business Systems Transformation and the Emergence of Commercial Enterprise Resource Planning (ERP) Systems

In the late 1990s and early 2000s, there was increased recognition of both the number of legacy systems and the need to modernize them. The new ERPs had the advantage of providing integration of functional business processes using a standard general ledger (accounting transactional core) to provide financial controls. Unfortunately, initial efforts were only marginally successful. The first implementations of this type of software tended to emphasize the legacy functional objectives and processes as compared to fully taking advantage of the software integration and optimizing financial controls. Further, while initial ERPs intended to replace many of the multiple legacy systems, the resulting implementation often included interfaces with legacy systems or even worse, customization to support the perceived needs for a process or data (i.e., making the new system look and function like the legacy system). Essentially, the Department has consistently suboptimized the potential of their ERP investments. Although, opportunities were available at the onset of these ERP programs to consolidate additional functional legacy systems and processes into a single standardized transactional core, this approach was not often implemented. The Air Force's DEAMS, as cited in a recent GAO report, is a good example of a program which relied on interfaces and customization to support business processes instead of fully integrating those requirements into their enterprise solution.[483]

Since 2001, several organizational initiatives have been implemented in the name of business systems transformation with a mission to rationalize this diverse business systems environment and develop a framework (referred to as the Business Enterprise Architecture (BEA)) to guide progress. For example, many of the Defense Agencies have begun utilizing the Defense Agencies Initiative (DAI) ERP and the military Services continue to advance their fielding of modern financial systems. Through these Department-wide efforts, the Department has taken the initiative to invest and see through to implementation various modernization efforts. While progress has been made, it has been slow, and it is unclear if the DoD is repeating the same mistakes that have plagued the Department over the past 25 years. Based on interviews conducted with OSD and military Service representatives, there is an increased level of understanding of both the requirements of a financial statement audit and of the COTS technology that they have committed to use in supporting basic business. What does not seem to have changed, or changed enough, is the fragmented approach that the Department continues to use to implement new systems and govern the process that manages an enterprise systems environment.

The Emerging Financial Audit Requirement and the Importance of a Standard General Ledger

A final and important element to support this analysis is the requirement for federal agencies to undergo annual audits of their financial statements like a commercial entity. Following the CFO Act in 1990,[484] this requirement was enacted in statute through the Government Management and Reform Act of 1994[485] with DoD continuing to operate within the type of legacy environment discussed above, using stove piped systems to manage the Department's daily operations. These processes and systems were frequently designed without considering the support to a financial audit, which requires the reporting of individual transaction detail across the full spectrum of business activities.

A financial audit provides a thorough, independent review involving a detailed examination of an organization's operations through the creation of its financial records (using sampling techniques for exceptionally large organizations like DoD), with a goal of ensuring that financial records (along with supporting documentation) are accurate, complete, and reliable. A financial statement audit is

[483] GAO 2020.
[484] P.L. 101-576 1990.
[485] P.L. 103-356 1994.

comprehensive and covers a range of topics. For example, financial statement audits include verifying the count, location, and condition of DoD military equipment, real property, and inventory; testing security vulnerabilities in DoD business systems; and validating the accuracy of personnel records and actions such as promotions and separations from duty.

The frame of reference used by the auditor is a set of financial statements. By examining the systems, processes, and controls used by the agency, the auditor's goal is to confirm that these statements present a true and fair depiction of the agency's financial standing. The process used by the auditor is governed by its own set of standards and accounting principles that follows the money through the end-to-end process as it is executed. As a result, this review covers the entire enterprise, assessing processes that cross systems and organizations.

For example, with respect to real property, the auditors asked the Navy for their database of real property–to include buildings, underground water pipes, fence lines, etc., and pulled a statistical sample from that report. A select number of bases from that list were audited to ensure that everything that was supposed to be on each base was there, as well as what condition it was in, to determine whether ownership records existed and that the information was consistent and accurate. The auditors also looked around the base for any other property and checked to see if it was properly recorded. They did the same thing with inventory, going to warehouses, pulling samples of spare parts, and looking for completeness.[486]

This requirement was quite foreign to the DoD when the initial audit pilots were conducted in the mid-1990s. The legacy systems that were designed to support budgetary reporting and functional needs were not adequate and required modification. Organizations who were familiar with unit inspections had to be re-oriented to understand how organizations outside of their chain of command impacted their (and the agency's) financial reporting. While a financial statement of the type prepared for commercial entities is not itself a useful document for the management of the DoD, the discipline required to produce such a statement is expected to result in the availability of more accurate, timely data to meet the Department's financial, business, and operational needs.

A core systems component that is critical to any financial audit is the General Ledger (GL), which is the agency's master journal of all money matters and keeps track of every financial transaction. If the transactions are coded properly, they post to this master journal in appropriate categories (or accounts) to permit summarization for reporting in the form of financial statements and traceability to the individual events triggering the transactions.

The legacy environment that evolved during the Cold War was not designed with this level of detail in mind and frequently summarized rather than tracked individual financial transactions. This approach had to change as the Department began to invest in the new ERPs and work toward a clean audit opinion.

Assessment of the Current Business Systems Environment

Progress Made. Despite the challenges inherent in the DoD business environment, there has been considerable progress made in transitioning from legacy systems to the current set of business systems. Most of the Department's core accounting systems that must track business operations at the transaction level and be consistent with GL control currently operate using commercial ERPs that are designed for this purpose. These systems require transaction level of detail, enforce strict data validations against authoritative sources, and provide for systemic controls over elements such as user access, segregation of duties, and feeder system data transmission that were previously lacking in legacy systems.

[486] Norquist 2019.

The reduction in the overall number of accounting systems containing a GL resulted in improved compliance with the U.S. Treasury's Standard GL. For example, the Department of the Navy has moved from nine previous GLs to a target environment of only three, with a plan to further reduce to two. There have been transitions from legacy accounting systems to compliant, shared service platforms such as the DAI Oracle-based ERP. The U.S. Marine Corps' (USMC) transition from their legacy accounting Standard Accounting Budgeting and Reporting System (SABRS) to DAI will better position the USMC for a positive audit opinion and set an example for an increased level of standardization.

Driving both accounting and financial feeder systems to a higher level of transaction granularity has supported practical development of enterprise repositories that gather and can link these transactions to support audit requirements and leadership decision-making, improving upon the previously fragmented views. The use of Advana, which pulls and displays data from authoritative sources, and the corresponding standardized Military Department views of this data, has also reduced the number of standalone data repositories and competing applications used to reconcile data and produce a universe of transactions. This is moving the Department closer to its goal of having a "single source of truth," critically enabled by the modernization of financial systems used across the DoD.

Improved transactional visibility has also enabled the expanded use of Robotics Process Automation (RPA). These automated applications have significantly improved the efficiency of data retrieval and reconciliation, helping to mitigate some of the current weaknesses in the current environment. For example, during interviews with Department officials, the Commission learned of over 700 automations, of which 25 percent support enhancing the effectiveness of internal controls or responding to audit requests.[487] There were also several examples of how these RPAs are enabling more analysis as part of the processes, such as flagging data elements prior to final processing for things that might be incorrect or incomplete.

While there is more work to be done in implementing enterprise controls over access and segregation of duties, annual audit results demonstrate an improved level of cybersecurity as measured by reductions in the number of audit findings relating to security and systems administration. 27 of the 37 financial and financial feeder systems used by DoD Service Providers (both COTS and Government off-the-shelf (GOTS) solutions) have been evaluated for their controls design and effectiveness under prescribed standards (Statement of Standards for Attestation Engagements No. 18 (SSAE-18)) and have received a positive opinion.[488] Auditors use the SSAE-18 to provide an opinion to management on a defined set of processes and controls as an interim measure that reflects an improved understanding of the importance of systemic controls.

The Department has slowly begun to leverage other federal systems to lessen reliance on legacy processes and enhance standardization. The best example of this is the ongoing transition from DoD unique disbursing processes to reliance on the Treasury Department disbursing process used by all other federal agencies, known as Treasury Direct Disbursing, that is explained in more detail in the case study below. It provides an example of an opportunity to reduce legacy systems and lower costs to DoD in making disbursements, but also presents challenges in reaching agreement with functional stakeholders in the contracting and contract administration communities. The Department has converted 21 percent of its disbursing operations to the process directly supported by the U.S. Treasury, with a plan to convert 49 percent in the future.[489]

[487] Commission interview with subject matter experts.
[488] OSD 2023.
[489] DoD 2024.

Case Study: The Challenge of Cross-Functional Business Transformation in the DoD–An Example of the Limitations of Existing Governance

Improving FM processes and systems on the path to achieving a clean audit requires engagement and cooperation between the FM domain and the other PSAs whose own business systems are required to seamlessly interact with FM systems to achieve an auditable result. The OUSD(C) has considerable authority to dictate policy, data, and system requirements for the Department's FM community, but has often struggled to get the other functional owners across the OSD to embrace and drive the change needed to achieve the necessary interoperability for a successful end-to-end audit. The following is an example of this kind of limitation.

After years of debate, in 2017 the USD(C) issued guidance to streamline the Department's payment processes by mandating the migration to U.S. Treasury Direct Disbursing. All other federal government agencies used this system for this purpose, and the intent was for the DoD to join as well, migrating away from the decades-long disbursing services provided by systems owned and operated by the DFAS. In the last six years, under the leadership and drive of the office of the DCFO, the Department has made noteworthy progress in this transformational migration. The result not only streamlines the E2E process and decreases points of integration failure to improve process throughput and data reliability, it also dramatically simplifies the process to reconcile the Funds Balance with Treasury (FBwT)–a key component of any federal financial audit. After shifting $20 billion in disbursements to the Treasury Direct Disbursing model in FY 2018, the DoD continued to grow this capability to top more than $200 billion in Treasury Direct disbursements in FY 2023. Despite this success, and the benefits that have been achieved in terms of reduced reconciliation time and increased data reliability, the overall benefits of the Treasury Direct model continue to underperform because of conflicts.

The Procure-to-Pay (P2P) business process is one of the largest sources of disbursements generated by the DoD, but only a fraction of DoD's P2P transactions are currently able to take advantage of the Treasury Direct model. The limitation occurs due to the upstream function of accounts payable (called "entitlement" in the DoD), where most transactions continue to occur in standalone legacy systems rather than inside the ERPs central to the Department's audit readiness strategy. When non-ERP systems are used in the P2P process, transactions must still be routed to a DFAS legacy disbursing system, breaking the direct flow to Treasury while introducing numerous points of failure and/or reconciliation. The FM Systems Tiger Team proposed streamlining the P2P process so that the entitlement occurs in the ERPs, enabling Treasury Direct disbursing on the back end (see Figure 3), yet progress toward adoption of this streamlined process has been slow.

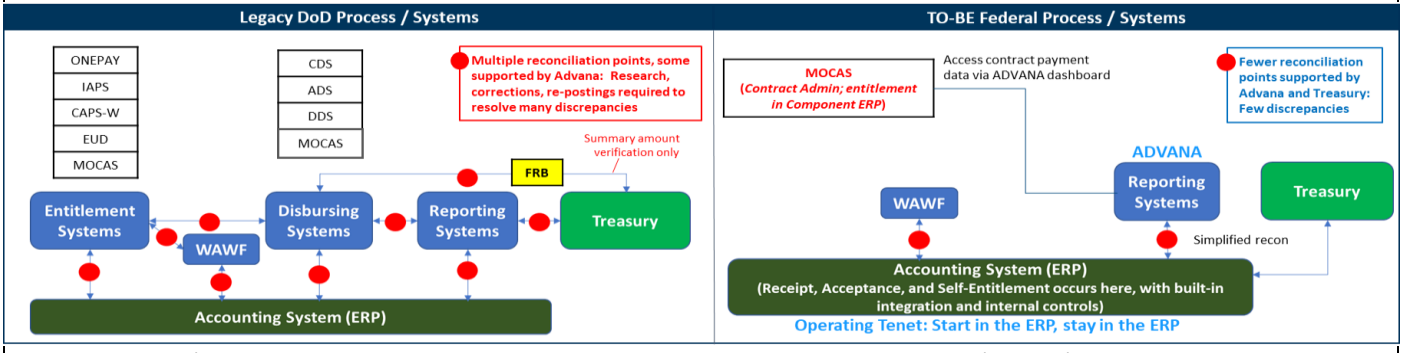


Figure 3 – Proposed Change to P2P to Accommodate Treasury Direct Disbursement

This debate between the FM and acquisition communities about where to perform entitlement has been ongoing for years. It is contracting officers, not FM officials, who select the payment office at the time the contract is signed. The acquisition community has often pointed to limitations in the ERPs and their inability to handle all of DoD's unique requirements, thereby necessitating the ongoing reliance on legacy entitlement

systems. While there are some incompatibilities between the ERPs and the way the Department currently does business, the FM community believes the majority of P2P transactions can be accommodated by the ERPs, and with some reasonable adjustments to policy and practice, that compatibility can be increased to include the vast majority of P2P transactions.

To date, little progress has been made to overcome the concerns of the procurement community, which has effectively halted all aspects of fully realizing this transformational approach. Numerous working group sessions held over the years to try to break through the impasse have yielded little in the way of tangible results. Without a forcing function to mandate change, progress always seems to stall. There has been no viable governance forum to assess the overall merits of a cross-functional proposal such as this, and there is currently no identified group or person to independently determine how adjustments by the acquisition community could yield dramatic improvements to overall process execution and audit readiness for the Department. Until the Department is willing to adjudicate this issue, the status quo will persist.

The Bottom Line: Without effective and empowered cross-functional governance over business processes and systems, the Department will continue to be limited in achieving improved outcomes as individual business functions continue to be allowed to resist their necessary contributions to E2E enhancements.

Two core financial systems appear to stand out in their ability to support (or potentially support) a positive financial audit opinion–the U.S. Army Corps of Engineers (USACE) GOTS system, Corps of Engineers Financial Management System (CFEMS), and DAI. The CFEMS has supported 16 successive clean or unmodified financial statement opinions for the USACE Civil Works audit, while DAI currently supports all the Defense Agency business, as well as providing shared support services to the USMC. In tandem with Advana, DAI provides the ability to support a complete auditable Universe of Transactions (UoT) along with the capability to reconcile available budgetary spending authority with the U.S. Treasury.

In summary, the current DoD business systems environment, when compared to the earlier legacy environment that it replaced, represents measurable progress in terms of improved controls and improved capability to support both the annual financial audit and day-to-day business. The experience gained by DoD personnel through recent years of supporting annual financial audits and in the last decade of expanded use of modern IT tools and applications has been key to this progress and continues to inform future planning.

Continuing Challenges. Knowing what needs to be done and developing and executing a viable plan to make it happen, are both critically important, and the knowledge to do so is not often held by a single organization. Specifically, the functional community (e.g., personnel, health care, acquisition, and logistics) can define the requirements for a system for their needs to complete their process and mission. The comptroller community can define needed controls for finance and accounting purposes, while the technical community is better versed in developing, acquiring, and configuring state-of-the-art technical solutions to address those requirements. Unfortunately, these organizations have not always worked together to develop solutions in a collaborative fashion, and significant issues can arise when one community attempts to fill the shoes of the other.

The Department has a poor history with the continuing use of legacy accounting systems that lack GL control. During interviews with Department offices, the Commission found legacy Air Force systems in use by organizations instead of the successor ERP system, a smaller segment of business in Navy systems awaiting Navy ERP implementation, and Army systems that have been limited because of issues related to sensitive activities. Bringing all the Department's business together under GL control, in as few systems as possible and in the appropriate security environment, needs to be a top priority at the most senior levels in the

Department. Without continued prioritization, the Department will lack an ability to manage a material amount of the Department's business with processes and systems that provide sufficient internal controls.

There is no enterprise system that provides visibility of both system access (who has an account and access to the system) and supports a segregation of duties (who is performing which functions within the system(s) and checks and balances like dual approvals). Many current business processes require the use of multiple systems and cross multiple organizations and functional communities. As a result, there needs to be a process to both validate users and to ensure the necessary and appropriate segregation of duties. The DoD has made more progress on the former than the latter, but this is an extraordinarily complex undertaking that will require dedicated focus and leadership. The Department recognizes this, and implementation of the Identity, Credential, and Access Management (ICAM) system is a Secretary of Defense audit priority, with the military Services taking on the challenging initial efforts to implement it.[490]

Several large financial feeder systems have yet to be replaced by modern and more compliant systems. Development of these feeder systems has encountered delays and extended implementation timelines. For example, ownership of the Integrated Personnel and Pay System – Army (IPPS-A) for military personnel falls outside of the purview of the financial management community. Priority was given to the development of personnel management functions over functions relating to military pay and accounting that support audit, suboptimizing the system capabilities and the Army's ability to achieve its audit goals. Commission interviews indicated that communication and collaboration between functional owners, technical program managers, and the FM community has improved; however, there is significant work that needs to be done in this area. Replacement of the largest financial feeder systems (e.g., IPPS-A, contracting, and major contract payments and administration) represent major Service endeavors, consume a considerable amount of time to plan and implement, and require appropriate governance and resources to accomplish.[491] It is critically important that lessons learned from previous programs are fully understood and applied as the Department pursues and implements replacement systems.

Many business processes are not fully understood and nor supported from an end-to-end (e.g., procure to pay; hire to retire) perspective, which requires sharing information and data across organizations and systems that are often not integrated across the Department. This sharing of information and data across processes spanning multiple organizations impedes the ability to design effective internal controls, let alone test those controls. Holistic and integrated business process reform may be required to move from legacy systems to commercial solutions.

Business systems and process issues have historically been poorly managed by a series of multi-functional governance groups or committees. They provide representation from all functional communities, but the business systems tend to be accorded a lower relative priority compared to warfighting domain issues. As a result, these receive less senior management attention and less funding; however, these are the systems that underpin successful execution of requirements critical to the Department's success. Accountability, stability, and resourcing are imperative to implementing change through the newly established governance processes.

At the OSD level, changes in responsibilities directed by law (e.g., the disestablishment of the CMO and realignment of associated functions) has hindered the kind of sustained focus necessary to manage this exceptionally large portfolio. Recent efforts to elevate the importance of management and to recharter the Defense Business Council (DBC) are steps in the right direction; however, there are various committees involved in different aspects of governance. The DBC is chaired exclusively by the DoD CIO (rather than being tri-chaired by the PIO and USD(C), as it was in the past), which may be counterproductive to reform

[490] OSD 2023 FIAR Plan.
[491] Commission interview with subject matter experts.

efforts if not appropriately executed in coordination with their functional counterparts. The DoD CIO has significant expertise in the technical domain but does not have the functional expertise or responsibility for the business process reengineering needed to enable improved systems in the functional communities.

While this structure could be effective, it has not yet matured sufficiently for proper evaluation. The DBC and Defense Performance Improvement Council (DPIC) have only just started to meet and have only recently finalized their charters. Through the course of Commission interviews, it appears the represented organizations are under-resourced for this new mission and may not have the functional expertise needed to adjudicate the challenging cross-functional conflicts that continue to represent barriers to improved operations and achieving a clean audit opinion. The DoD CIO will need to engage more actively in business systems oversight and give it priority in this new structure to help move the Department to an enhanced posture for audit. There appear to be similar challenges in the Military Departments, but their processes appear to have been more enduring and are better documented.

The GAO/oversight perspective has repeatedly highlighted a lack of clear, detailed guidance in the criteria that should be used to approve systems certification, a lack of data relating to systems costs and inventory that is required to both manage the business systems portfolio and measured progress in retiring legacy systems. The latter is hampered by the lack of a clear end state that should guide this transition and prioritize systems retirement as it relates to specific outcomes. As a result, GAO's most recent government-wide high-risk list identified this DoD area as regressing from their previous assessment.[492]

In some cases, the Department has made considerable progress in streamlining its business processes and improving audit readiness while also being limited on how much improvement can be realized due to the lack of governance to adjudicate the most complex cross-functional challenges. The case study previously presented demonstrates the effort to streamline the Department's payment processes by migration to U.S. Treasury Direct Disbursing as a current example of this progress versus the limitations challenge. The case represents a success where the OUSD(C) made transformational progress but has had to slow the next critical phase of implementation due to cross-functional conflict.

In summary, the DoD has deployed several key commercial ERPs that require a greater degree of transactional discipline and provide both improved integration and financial controls through the use of central GLs. Overall, these systems are much improved compared to the legacy systems that they are intended to replace. Complete transition to these systems, and retirement of legacy systems is imperative to address many audit challenges, and a clear vision of a target environment is necessary to sustain progress. Distributed and decentralized systems ownership among business stakeholders have made it difficult to develop an enterprise plan and roadmap for a desired end-state, including the management of legacy system retirements.

The Military Departments have a more coherent internal process than OSD does to manage business systems, that in some cases are a part of the annual PPBE process and are governed by the Service Under Secretary, but they also struggle with the fragmented nature of business systems management. Two of the three Military Departments apply a scorecard that evaluates legacy systems using criteria relating to their assessed technical fit and business value to determine a relative priority for retirement of legacy systems. This framework is being adopted by the DoD CIO in their oversight role of business systems and is also reflected in the Comptroller's FM IT Systems Roadmap.

[492] GAO 2023.

The current DoD SMP,[493] the DoD FM Strategy,[494] and the Defense Business Systems Audit Remediation Plan,[495] all highlight the need to reduce the number of legacy systems. The FM IT Systems Roadmap[496] provides a framework and a macro view of many of the elements required to reduce the number of legacy systems while also focusing on the need for increased progress in financial auditability. The USD(C) authors three of these documents and has taken a lead role in focusing on the future business environment supporting auditability. Finally, an accelerated implementation of actions responding to GAO report recommendations and emphasis on retiring all legacy accounting systems should be foundational elements of an enterprise-wide plan.

Assessment of the Current Business Systems Environment Using a Financial Audit Lens

The IT business system environment is important to an auditor. Controls designed within the system protect the integrity of transactional data executed within the system and need to be closely examined when transactions move between systems. Without systems controls, auditors could use alternative procedures to verify the integrity of the data, but that would be unwieldy and time-consuming for an entity the size of DoD. The business systems environment is on the critical path to a clean opinion and is highlighted as the first of the twenty-eight material weaknesses documented in the most recent audit report,[497] along with additional recommendations for corrective action. In short, deploying modern business systems that are relevant to financial reporting are not always sufficient to achieving a positive audit opinion. The design and effectiveness of controls within business processes also play an equal role in a positive audit opinion.

The DoD legacy business systems environment was shaped to fit the decentralized organization and culture of a warfighting enterprise that automated existing business processes along functional lines, tracked budgetary execution and basic finance functions, but did not aways provide for proper data exchanges. The Department's legacy systems may have reasonably represented a portion of the enterprise but did not provide a financial picture of the entire enterprise beyond tracking budgetary execution. This earlier legacy business systems environment for the largest entities (such as a Service or Military Department) was difficult or impossible to audit.

The CFO Act of 1990[498] emphasized improving the quality of financial information available to decision-makers and also called for the agency CFO to oversee all financial management activities and to develop and maintain an integrated agency accounting system, including internal controls over financial reporting. Several years later the Government Management and Reform Act (GMRA) established the requirement for the production and submission of audited financial statements by each agency's Inspector General.[499]

Budgetary information is and continues to be used by management for decision-making. Financial statements, whether prepared in the private or public sectors, are intended for use by an external audience. While these statements are informative, the information contained is not always directly related to the warfighting or operational mission of the Department. The Department's legacy systems, while they failed to provide the definitive holistic financial information needed for a successful audit, provided critical information

[493] "DoD SMP FY 2022 – 2026" 2023.
[494] "DoD Financial Management Strategy FY22–26" n.d.
[495] 10 U.S.C. §240g
[496] "DoD IT Enterprise Strategy and Roadmap" 2011.
[497] "DoD Agency Financial Report FY 2023" 2023.
[498] 31 U.S.C. §901.
[499] P.L. 103-356 1994.

to the functional pillars and business processes that they needed to support. The transition to a systems environment that is more favorable to the financial audit is complicated by the need to continue such critical functional mission support.

With a focus at the enterprise level, using a single set of financial statements does provide an assessment of internal controls that are in place over the processes and systems that capture business events at the transaction level and ultimately support the production of a set of financial statements, audited in accordance with Generally Accepted Accounting Principles (GAAP) and federal standards. In the minds of many, the audit opinion is a direct reflection of the quality of the financial information across the enterprise and undermines public confidence in the minds of taxpayers' elected representatives. For this reason, pursuing an agency-wide opinion will continue to be important, but there is also real value in the process itself. Ongoing annual audits serve as a catalyst for accelerating improvements in business processes, systems, and controls over financial operations and reporting.

The culture and primary focus on the national security mission shaped the business domain to support the warfighter and warfighting readiness. While this mission continues to be DoD's primary objective, pursuing a financial audit opinion has required several changes for DoD personnel and the tools that they use to support the warfighter in the following areas.

Mindset. The culture and organizational approach within DoD tend towards one that is decentralized, functionally oriented, and command focused. This approach is well suited to the warfighting mission as it provides flexibility and authority to the lowest levels. It is not as efficient as one that is aligned to a functional area requiring standardization and centralization, and financial statement audits focus on the representation of the enterprise (or individual reporting entities). For many years, the tendency was to directly associate financial audits only with the financial community. More recently, DoD leadership has characterized the audit as a commander's responsibility and an all-hands evolution. This does not place the audit as a higher priority than warfighting or operational readiness but does reinforce that empowered leadership that brings functional communities together is important. At the same time, the emphasis on commanders and an all-hands responsibility for audit is unlikely to produce results in the absence of an improved systems environment with appropriate controls to ensure sound data.

Each year since audits began in FY 2018, the Secretary and Deputy Secretary of Defense have become increasingly focused on eliminating key impediments and accelerating audit progress. Most recently, an October 13, 2023, memorandum from the Secretary of Defense directed DoD Components to "identify opportunities to simplify the DoD's financial management systems environment" [500] and noted that "Compliant, auditable business systems are a key enabler to audit success and sustainment."[501] This clear message from the most senior leaders represents a needed change; however, without the appropriate oversight and governance in place, a successful implementation of that direction throughout a large, multi-layered organization will continue to be challenging.

Processes. End-to-End (E2E) processes include an entire business cycle such as procuring commercial services or the lifecycle management of tangible assets. Historically, DoD E2E business processes tended to be non-standard, poorly documented and by necessity crossed both functional and organizational lines. To

[500] SECDEF Memorandum 2023.
[501] Ibid.

improve efficiency, centralized DoD support organizations, referred to as consolidated service providers for all of the DoD, like the DFAS, Defense Information System Agency (DISA), and Defense Logistics Agency (DLA), were created. Even these organizations; however, rarely, if ever, own an entire business process from end to end.

To be able to support a financial audit, the reporting entity needs to present documentation that reflects how business processes work from start to finish–E2E–including the controls in place to ensure that accurate information was maintained across the entire process. The DoD understands the importance of jointness and interoperability in warfighting, but collaborating across organizations and functional communities to achieve an audit opinion has been a work-in-process. Feedback from auditors reinforces the importance of compliant business systems to enforce standardization, but this also requires governance, well documented business processes, and effective process controls. They do note that some organizations have begun to apply a governance, risk, and compliance approach to align IT with business goals while managing risks relating to financial reporting.

Business Systems. This element is particularly important to any financial audit that involves a large enterprise. When it comes to size, the DoD represents a massive organization that dwarfs the rest of the federal government and the private sector in terms of budgetary resources and assets. In terms of size and complexity, the DoD is much more like a modern Western European economy than a Fortune 100 company. Because financial audits are conducted annually, and even with experienced auditors who understand the organization, being able to evaluate and rely on controls within the automated systems in use is critical to being able to complete their work and report within annual timeframes. Furthermore, as the DoD legacy systems environment has transitioned into the current state, it has been difficult to retire as many legacy systems as originally planned, and as a result the inherent controls have been, to some extent, weakened.

In summary, a sound business systems environment is necessary, but not sufficient when it comes to supporting an organization seeking a positive audit opinion of its financial statements. The larger the enterprise being audited, the more important systemic controls become due to their ability to streamline and standardize the business operations within an organization. To the extent that processes can be re-engineered to take full advantage of these kinds of controls by keeping E2E processes within an ERP, it will enable auditability as the auditor has confidence in the security of the system itself. This includes access controls for users as well as controls over anyone with access to administrative responsibilities that can change any information. The DoD currently has a hybrid environment where some of the largest legacy financial feeder systems remain in place and are still needed to support financially material business processes. In this kind of environment, minimizing interfaces between the ERP and other systems and minimizing or eliminating customizations to the core ERP also become important. Unfortunately, most of the DoD's initial commercial ERP implementations were unable to avoid some of these potential pitfalls due to the desire to support legacy systems and processes, weakening the inherent controls of the COTS product. The Military Department and DoD leadership recognize these lessons and have, to a limited extent, acted where possible to remove customization and reduce interfaces through systems retirements when the opportunities arise.

Progress on DoD Financial Audits to Date

The DoD, as well as the OMB-defined DoD reporting entities, has been producing and submitting Agency Financial Reports to include a full set of proprietary financial statements since this requirement became effective in 1997. By statute, and as a reflection of the lack of audit readiness for much of the ensuing period,

comprehensive full financial statement audits did not begin until FY 2018. Since then, six agency-wide financial statement audits have been conducted. Progress has been demonstrated DoD-wide, but moving from a disclaimed audit opinion to being fully auditable will require significant remediation effort.

Audit Opinions

Some progress at a macro level can be seen in the number of reporting entities obtaining a positive (something other than a disclaimer or adverse) audit opinion. Across the DoD, the number of reporting entities within the DoD recording positive opinions is eight of 29 auditable entities.[502] This number has remained largely unchanged, as it includes many with opinions dating from well before FY 2018.

Looking at the impact of the core business systems on audit opinions, two noteworthy examples of more successful financial audits involving large entities within DoD stand out–the USACE Civil Works, and more recently the USMC General Fund. The USACE has received 16 consecutive clean audit opinions supported by a government system that was carefully developed to minimize external interfaces and enforce the entity's financial policies, while being centrally managed by the resource management organization within the USACE. Coincident with the implementation of their core system, processes and policies were centralized, and largely placed within the control of the USACE CFO.

With the support of the Commandant, and in collaboration with the Navy financial management leadership and OUSD(C), the USMC recently migrated from its government developed SABRS accounting system to the commercially developed DAI. By moving to the DAI, the USMC reduced the number of interfaces used with SABRS and benefited from the increased systemic controls built into the DAI. While positive audit results are yet to be seen, external auditors have identified this transition as a positive move towards meeting the Department's auditability goals.

Material Weaknesses (MW)

Elements supporting the audit opinion are MWs and significant deficiencies. A MW is defined as a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the financial statements will not be prevented, detected, and corrected on a timely basis. The Department's FY 2023 Agency Financial Report (AFR) reported twenty-eight MWs, the same number reported in the FY 2022 AFR, most of which were first identified 15 or more years ago.[503] However, some limited progress was made with improvement in key MWs in Military Component audits.[504] Most noteworthy is the MW relating to the FBwT–a fundamental building block for future positive audit opinions. The severity of FBwT MWs was also downgraded in all three Military Departments, with additional MW downgraded within the DISA, and the U.S. Transportation Command.[505] The MWs that most closely relate to the systems environment include financial systems modernization, configuration management, security management, access controls, segregation of duties, and interface controls.

Notices of Findings and Recommendations (NFR)

The lowest level of granularity of feedback from the audit exists in the form of NFR. There are currently more than 2,000 active NFRs in identifying auditability issues in the Department.[506] Each year since full financial statements were initiated in FY 2018, the Department has been able to close-out several hundred NFRs, only to have several hundred more identified by auditors. After an initial rise, there has been a small but measurable decline in NFRs from FY 2020–FY 2022; over 50 percent of the total NFRs received between 2018 and 2022 were related to IT, and 77 percent of those fall into the categories of security controls like system

[502] OSD 2023.
[503] OSD 2023.
[504] Ibid.
[505] Ibid.
[506] Garamone 2023.

access, configuration management, and segregation of duties.[507] Most are related to feeder system interfaces with the core GL accounting systems. The auditors pointed out that the number of NFRs will be a moving target. For example, as the Department clears some NFRs, auditors will then be able to delve more deeply into the financial processes and controls, likely revealing new NFRs in the process.

In summary, financial audits have forced the Department to maintain a focus on the capabilities and shortcomings of business systems in general, and those systems that directly support controls in financial reporting. Progress has been made as reflected in the reduction of the total number of systems in use and the findings provided by the financial auditors, but there is much more work left to be done. Of the over 7,000 systems within the Business Mission Area domain currently recorded in DoD IT Portfolio Repository (DITPR), the DoD CIO tracking system of record, there are just over 229 systems that have direct impact of financial controls over reporting (Internal Control over Financial Reporting (ICOFR) systems) and future financial audit opinions.[508] These ICOFR systems require priority for management attention to further consolidate or improve the controls within to achieve the desired positive audit opinion. It is also important to highlight that a compliant business systems environment is necessary, but not sufficient in and of itself, to support and sustain positive financial statement audit opinions - well-documented, well-controlled business processes are also a critical element. There is not a single systems solution that provides a "silver bullet" to address financial auditability. In addition, the audit priority must be balanced against warfighting priorities and other functional priorities that must be met by DoD business systems and processes. The Department's ultimate objective is to optimize the systems environment to support the Department's business processes and enable sound decision-making for an effective national defense. The audit is only one building block toward that objective.

The Department of Defense FM Strategy[509] and the DoD SMP [510] highlight standardization and simplification of the business systems environment as strategic priorities to include targets for reduction of legacy systems. Furthermore, the OUSD(C) has developed an FM IT Systems Roadmap that provides a high-level view of the to-be systems environment that provides a credible starting point for an increased focus on this important business element. In the military Services, implementation of these plans is underway, with the Navy's "Operation Cattle Drive" being a success story for consolidation of legacy business systems.[511] In addition, the Army identified efforts underway to converge existing ERP capabilities into a single enterprise system managing all logistics and financial business.

A Perspective on the Value of the DoD Financial Audit

Prioritizing improvements in the financial systems environment, assigning clear roles and responsibilities for leadership and direction, and ensuring clarity for the criteria used to govern this portfolio and measure progress will all contribute to achieving positive audit opinions.

Beyond the audit opinion itself, and the public confidence that it can bring, there is also value in the process of preparing for and undergoing annual financial audits. Done properly, they provide a catalyst for making meaningful changes in the way DoD does business and reduce risk by maintaining well-documented processes and controls. Supporting an annual financial audit brings a level of discipline that is important in

[507] Commission interview with subject matter experts.
[508] "DoD Financial Management Strategy FY22-26" n.d.
[509] Ibid.
[510] Ibid.
[511] Williams 2022.

an organization like DoD. Finally, the annual audit provides external validation over the financial data and information for visibility and transparency of how taxpayer dollars are spent. For example, auditors tested:[512]

- Real property assets -
  - For the Navy, auditors found that about 6.5 percent of them no longer existed.
  - For the Army, who had very few errors on existence, auditors found a number of facilities erroneously listed as being in usable condition.
- Auditors used a sample of Air Force uninstalled missile motors and found that seventy-one of them, valued at $53 million, were incorrectly recorded as unserviceable assets.

One way the Department could realign audit resources and focus on the highest priority audit issues is to reevaluate the current standards related to property valuation for both large capital investments as well as thresholds for using the consumption method over operating material and supplies. While enterprise visibility and accountability (what auditors refer to as "existence and completeness") for this property should always be a part of the annual financial audit, the amount of effort required to document and maintain financial information on historical valuation may not be as cost-effective or important to the user of information on the financial statements. Commission discussions with financial auditors indicated that this would be an important consideration; however, they are required to use the current federal standards in performing their review.

Despite the past changed to standards that the DoD obtained from the Federal Accounting Standards Advisory Board (FASAB), this is an issue that deserves DoD, FASAB, and congressional consideration. Among other things, the former Comptroller General, David M. Walker, recommended this type of transformation for the federal government financial reporting and auditing in February 2016.[513] He acknowledged the considerable progress that all agencies have made since the enactment of the CFO Act and highlighted proposed changes to reporting and presentation requirements, including areas where the cost of maintaining historical cost (to include depreciation) exceeds the value to the taxpayer.[514]

Another way the DoD could realign focus and priorities is to establish a policy to align valuation with the way Congress looks at the value of a piece of military equipment. For example, what is capitalized aligns to the acquired asset using Procurement or MILCON appropriations. This approach makes the information more useful to the Department and Congress, as well as aligns to current DoD financial practices. Any proposed changes to these standards would have to be presented to FASAB for consideration.

Proposals from the External Team

The FM Systems Tiger Team offered the following proposals to the Commission, categorized as matters that can be addressed immediately and matters that will require more time to address. The Commission considered these proposals in reaching its recommendations related to business systems and data analytics. Those recommendations are presented in Section VII, along with other recommendations relating to PPBE systems.

Short Term:

- Endorse and recommend accelerated implementation of the GAO's recommendations from the following reports: GAO-20-252 "Financial Management: DoD Needs to Implement Comprehensive

[512] Norquist 2019.
[513] Walker 2016.
[514] Ibid.

Plans to Improve its Systems Environment"[515] and GAO-23-104539 "Financial Management: DoD Needs to Improve Systems Oversight."[516]
    - These recommendations have been accepted by management but have lengthy implementation timelines.
    - Implementation should include development of key information necessary to evaluate current system impediments and measure progress on legacy system reduction.
    - Develop a scorecard using metrics to evaluate and rank components in areas such as Component Financial Management Plans, oversight process, and progress in effecting remediation and retiring legacy systems per schedule.
- Implement personnel incentives for individuals/groups who achieve goals for improvements in systems related to audit such as performance awards and organizational recognition.
- Prioritize systems reported under the annual Audit Remediation Plan and assign primary responsibilities for management and oversight of the systems within this cross-functional portfolio to the OUSD(C). Responsibilities need to be clearly defined and differentiated from those of the DoD CIO, including areas where collaboration is needed for governance of cross-functional and cross-organizational business systems. The OUSD(C) should also clearly identify those functions that can be delegated to the Service financial management leadership. With the OUSD(C) in the lead, prioritize the following actions:
    - Comprehensive GL control for all transactions: Bring all DoD business under GL control using the current generation of commercial ERPs.
    - Maximize use of commercial ERPs: Evaluate these ERPs to leverage opportunities to remove customizations and minimize financial feeder interfaces.
    - System administration: Accelerate implementation of a federated process to provide visibility and management of system access controls and separation of duties.
    - A focused effort to reduce legacy systems: Prioritize investments according to systems roadmaps that support movement to an end state that will support improved financial audit outcomes.

Longer Term:

- Require development of a target business systems end state that will be used to guide legacy systems rationalization and clarify oversight responsibilities within OSD to monitor progress against this plan and hold stakeholders accountable to results.
- Establish an annual program review of the business systems portfolio, to include the ICOFR/audit remediation portfolio, as part of the programming phase of PPBE in support of the annual certification of business systems required by statute.
- Establish a centralized lessons learned repository to inform the implementation of future business and financial systems in DoD.

Conclusion

It remains clear that the business systems supporting the DoD mission and its financial management enterprise are many, complex, aging, and evolving. Progress and improvement have been uneven but forward moving over time. For the financial management domain, there is no single solution that will bring the Department quickly to auditability and an eventual clean audit opinion. Nevertheless, better prioritization, resource support, consistent organizational structures, and committed leadership can accelerate the rate of advancement over time.

[515] GAO 2020.
[516] GAO 2023.

K. Legislative Language

The Commission makes several recommendations that require legislative action by both appropriators and authorizers. To assist in development, the Commission is providing draft legislative language below. The Commission concentrated on providing draft legislative language for the recommendations below, but notes that other legislative changes may be required for implementation (for example, adoption of the guidance process under the Defense Resourcing System and budget structure transformation could include additional conforming changes to Title 10).

Recommendation #6: Increase Availability of Operating Funds:

Operation and Maintenance, [ORGANIZATION]

For expenses, not otherwise provided for, necessary for the operation and maintenance of [INSERT ORGANIZATION], as authorized by law, [$ Amount], **of which not to exceed five percent shall remain available for obligation until September 30, 202X+1.**

MILITARY PERSONNEL, [ORGANIZATION]

For pay, allowances, individual clothing, subsistence, interest on deposits, gratuities, permanent change of station travel (including all expenses thereof for organizational movements), and expenses of temporary duty travel between permanent duty stations, for members of the [ORGANIZATION]; [and for members of the Reserve Officers' Training Corps where applicable]; and for payments pursuant to section 156 of Public Law 97–377, as amended (42 U.S.C. 402 note), and to the Department of Defense Military Retirement Fund, [$ Amount], **of which not to exceed five percent shall remain available for obligation until September 30, 202X+1.**

Recommendation #8: Update Values for Below Threshold Reprogrammings:

#8A. Increase BTR Thresholds Based Upon the Nominal Growth of the Appropriation

The Commission recommends increases to below threshold reprogramming dollar amounts. This will require changes in the front matter of the appropriations reports. The proposed language adopts the SAC-D FY 2024 report language:

REPROGRAMMING GUIDANCE The Secretary of Defense is directed to continue to follow the reprogramming guidance for acquisition accounts as specified in the report accompanying the House version of the Department of Defense appropriations bill for fiscal year 2008 (House Report 110– 279). The dollar threshold for reprogramming funds shall be $15,000,000 for military personnel; $30,000,000 for operation and maintenance; $40,000,000 procurement; and $25,000,000 research, development, test, and evaluation.

#8B. Allow Reprogramming of a Small Percentage of an Entire Appropriations Account with Regular Congressional Briefings and Oversight

The Commission recommends a new approach to reprogramming. The following provides General Provision language to pilot the Commission's approach:

Sec 90XX. *As a first step toward phasing in an alternate below threshold reprogramming process to allow for emergent technology insertion, each Service may reprogram up to 1.5 percent of the total RDT&E appropriation for the Service. Provided, that this authority may not be used with regard to funds designated as congressional special interest items. Provided further, the Service Comptroller shall provide a quarterly report of all reprogramming undertaken pursuant to this authority to the congressional defense committees.*

Recommendation #14: Establish Special Transfer Authority for Programs Around Milestone Decisions:

The Commission recommends special transfer authority to allow programs to address the unpredictability inherent in the transition from the development phase to the production phase, as one phase comes to an

end and the other begins; aligning funds in the correct appropriations without disrupting the program and provides the following draft general provision appropriation language:

Sec. 90XX. *For a period of up to three years beginning with the Milestone B decision for an acquisition program and continuing through the transition of the program from development to production, the Secretary of Defense may transfer funding in any fiscal year, in an amount not to exceed applicable standards for below threshold reprogramming for that fiscal year, between the research, development, test, and evaluation and procurement appropriations for the program. Provided, that the Secretary shall notify the Congress within 30 days of each transfer made pursuant to the authority in this section: Provided further, That the authority provided in this section is in addition to any other transfer authority available to the Department of Defense and is subject to the same terms and conditions as the authority provided in section 8005 of this Act.*

Recommendation #16: Encourage Use of the Defense Modernization Account:
The Commission recommends an amendment to 10 U.S.C. 3136 as indicated in red:
§3136. Defense Modernization Account
(a) Establishment.-There is established in the Treasury an account to be known as the "Defense Modernization Account".

(b) Funds Available for Account.-The Defense Modernization Account shall consist of the following:

(1) Amounts appropriated to the Defense Modernization Account for the costs of projects described in subsection (d)(1), and amounts reimbursed to the Defense Modernization Account under subsection (c)(1)(B)(ii) out of savings derived from such projects.

(2) Amounts transferred to the Defense Modernization Account under subsection (c).

(c) Transfers to Account.-(1)(A) Upon a determination by the Secretary of a military department, or the Secretary of Defense with respect to Defense-wide appropriations accounts, of the availability and source of funds described in subparagraph (B), the Secretary concerned may transfer to the Defense Modernization Account during any fiscal year any amount of funds available to the Secretary described in that subparagraph. Such funds may be transferred to that account only after the Secretary concerned notifies the congressional defense committees in writing of the amount and source of the proposed transfer.

(B) This subsection applies to the following funds that have been appropriated for fiscal years after fiscal year 2016 and are available to the Secretary concerned:

(i) Unexpired funds in appropriations accounts that are available for new obligations and that, as a result of economies, efficiencies, and other savings achieved in carrying out an acquisition program, are excess to the requirements of that program.

(ii) Unexpired funds in appropriations accounts that are available for procurement or operation and maintenance of a system, if and to the extent that savings are achieved for such accounts through reductions in life cycle costs of such system that result from one or more projects undertaken with respect to such systems with funds made available from the Defense Modernization Account under subsection (b)(1).

(C) Any transfer under subparagraph (A) shall be made under regulations prescribed by the Secretary of Defense.

(2) Funds referred to in paragraph (1) may not be transferred to the Defense Modernization Account if the balance of funds in the account, after transfer of funds to the account, would exceed $1,000,000,000.

(3) Amounts deposited in the Defense Modernization Account shall remain available for transfer and obligation until the end of the third fiscal year that follows the fiscal year in which the amounts are deposited in the account.

(d) Authorized Use of Funds.-Funds in the Defense Modernization Account may be used for the following purposes:

(1) For paying the costs of any project that, in accordance with criteria prescribed by the Secretary concerned, is undertaken by the Secretary of a military department or the head of a Defense Agency or other element of the Department of Defense to reduce the life cycle cost of a new or existing system.

(2) For increasing, subject to subsection (e), the quantity of items and services procured under an acquisition program in order to achieve a more efficient production or delivery rate.

(3) For research, development, test, and evaluation, for procurement, and for sustainment activities necessary for paying costs of unforeseen contingencies that are approved by the milestone decision authority concerned, that could prevent an ongoing acquisition program from meeting critical schedule or performance requirements.

(4) For paying costs of changes to program requirements or system configuration that are approved by the configuration steering board for a major defense acquisition program.

(5) For time-sensitive opportunities to develop or procure modern equipment and technology, or adopt cutting-edge commercial products and services, along with associated infrastructure costs, for military adoption and fielding.

(e) Limitations.-(1) Funds in the Defense Modernization Account may not be used to increase the quantity of an item or services procured under a particular acquisition program to the extent that doing so would-

(A) result in procurement of a total quantity of items or services in excess of-

(i) a specific limitation provided by law on the quantity of the items or services that may be procured; or

(ii) the requirement for the items or services as approved by the Joint Requirements Oversight Council and reported to Congress by the Secretary of Defense; or

(B) result in an obligation or expenditure of funds in excess of a specific limitation provided by law on the amount that may be obligated or expended, respectively, for that acquisition program.

(2) Funds in the Defense Modernization Account may not be used for a purpose or program for which Congress has not authorized appropriations, unless the procedures for initiating a new start program are complied with.

(3) Funds may not be transferred from the Defense Modernization Account in any year for the purpose of-

(A) making an expenditure for which there is no corresponding obligation; or

(B) making an expenditure that would satisfy an unliquidated or unrecorded obligation arising in a prior fiscal year.

(f) Transfer of Funds.-(1) The Secretary of a military department, or the Secretary of Defense with respect to Defense-wide appropriations accounts, may transfer funds in the Defense Modernization Account to appropriations available for purposes set forth in subsection (d).

(2) Funds in the Defense Modernization Account may not be transferred under paragraph (1) until 30 days after the date on which the Secretary concerned notifies the congressional defense committees in writing of the amount and purpose of the proposed transfer.

(3) The total amount of transfers from the Defense Modernization Account during any fiscal year under this subsection may not exceed $500,000,000.

(g) Availability of Funds by Appropriation.-In addition to transfers under subsection (f), funds in the Defense Modernization Account may be made available for purposes set forth in subsection (d), but only to the extent authorized in an Act other than an appropriations Act. Funds deposited in the Defense Modernization Account shall remain available for obligation until the end of the third fiscal year that follows the fiscal year in which the amounts are deposited in the account.

(h) Secretary To Act Through Comptroller.-(1) The Secretary of Defense shall carry out this section through the Under Secretary of Defense (Comptroller), who shall be authorized to implement this section through the issuance of any necessary regulations, policies, and procedures after consultation with the General Counsel and Inspector General of the Department of Defense.

(2) The regulations prescribed under paragraph (1) shall, at a minimum, provide for-

(A) the establishment and management of subaccounts for each of the military departments and Defense Agencies concerned for the use of funds in the Defense Modernization Account, consistent with each military department's or Defense Agency's deposits in the Account;

(B) the submission of proposals by the Secretaries concerned or heads of Defense Agencies or other elements of the Department of Defense to the Comptroller for the use of Defense Modernization Account funds for purposes set forth in subsection (d);

(C) the use of a competitive process for the evaluation of such proposals and the selection of programs, projects, and activities to be funded out of the Defense Modernization Account and subaccounts from among those proposed for such funding; and

(D) the calculation of-

(i) the savings to be derived from projects described in subsection (d)(1) that are to be funded out of the Defense Modernization Account; and

(ii) the amounts to be reimbursed to the Defense Modernization Account out of such savings pursuant to subsection (c)(1)(B)(ii).

(i) Definitions.-In this section:

(1) The term "major defense acquisition program" has the meaning given the term in section 4201 of this title.

(2) The term "unexpired funds" means funds appropriated for a definite period that remain available for obligation.

Appendices

Section XI – Final Report Appendices

Appendix A – Commissioners

Bob Hale - Chair

Hon. Robert Hale is a senior fellow at the Center for Strategic and International Studies. Most recently, Hale served as Comptroller and Chief Financial Officer at the Department of Defense. Hale also served as the Assistant Secretary of the Air Force (Financial Management and Comptroller). He spent 12 years as head of the defense analysis group at the Congressional Budget Office. Early in his career, he served as a Navy officer.

Ellen Lord - Vice Chair

Hon. Ellen Lord served as the first Under Secretary of Defense for Acquisition and Sustainment from 2017-2021. Prior to her role at the Department of Defense, Lord served for more than 30 years in the automotive and defense industries, including as President and Chief Executive Officer of Textron Systems Corporation, a subsidiary of Textron Inc. from 2012-2017.

Jonathan Burks - Commissioner

Mr. Jonathan Burks is Vice President for global public policy at Walmart. Previously, he was a partner at the Brunswick Group, the global critical issues consultancy. Burks spent nearly two decades in public service culminating in his service as the chief of staff to Speaker of the House Paul Ryan. His prior positions include national security advisor to Speaker Ryan, advisor on budget and appropriations to Senate Republican Leader Mitch McConnell, and policy director of the House Budget Committee.

Susan Davis - Commissioner

Hon. Susan Davis is the former U.S. Representative for California's 53rd Congressional District of central San Diego. During her tenure in the House of Representatives from 2001-2021, she was a member of the House Armed Services Committee, where she served as the Chairperson and Ranking Member of the Subcommittee on Military Personnel from 2007-2016.

Lisa Disbrow - Commissioner

Hon. Lisa Disbrow currently serves on the Board of Directors of Mercury Systems, BlackBerry, CACI, SparkCognition, NobleReach, the National Defense Industrial Association, and the Wounded Warrior Project. She is a Senior Fellow at the Johns Hopkins University Applied Physics Lab. Most recently, Disbrow was the 25th Under Secretary of the Air Force from Jan 2015 – July 2017. She has also served as Air Force Financial Management and Comptroller and Vice Director of the Joint Staff J8 Directorate.

Eric Fanning - Commissioner

Hon. Eric Fanning is President and Chief Executive Officer of the Aerospace Industries Association (AIA). Previously, Fanning served as the 22nd Secretary of the Army. He has also previously served as Chief of Staff to the Secretary of Defense, Acting Secretary of the Air Force and Under Secretary of the Air Force, and Deputy Under Secretary of the Navy/Deputy Chief Management Officer.

Peter Levine - Commissioner

Hon. Peter Levine a Senior Fellow at the Institute for Defense Analyses and Director of the Defense Management Institute. Levine is the author of *Defense Management Reform: How to Make the Pentagon Work Better and Cost Less* (Stanford University Press, 2020). Levine has served as the Acting Under Secretary of Defense for Personnel and Readiness and Deputy Chief Management Officer. Levine served on the staff of the Senate Armed Services Committee from 1996 – 2015.

Jamie Morin - Commissioner

Hon. Jamie Morin is Vice President of Defense Strategic Space and executive director of the Center for Space Policy and Strategy at The Aerospace Corporation. Morin is also a member of the Secretary of State's International Security Advisory Board, vice-chairman of the Board of The HALO Trust, USA, an adjunct professor of international relations at Georgetown University, and serves as an advisor to DEFCON AI, LLC. Morin previously served as Director of Cost Assessment and Program Evaluation (CAPE), Acting Under Secretary of the Air Force, and Assistant Secretary of the Air Force (Financial Management and Comptroller).

David Norquist - Commissioner

Hon. David Norquist is the President and Chief Executive Officer of the National Defense Industrial Association (NDIA). Mr. Norquist previously served as the 34th Deputy Secretary of Defense from 2019 to 2021, and the Under Secretary of Defense (Comptroller) from 2017 - 2019. Norquist served for six years with the House Appropriations Subcommittee on Defense as a professional staff member and was the first Senate-confirmed Chief Financial Officer for the Department of Homeland Security.

Diem Salmon - Commissioner

Ms. Diem Salmon is currently a Senior Director at Anduril Industries, a defense technology company, where she leads growth efforts for autonomy solutions. She is also an Adjunct Senior Fellow at the Center for New American Security (CNAS). Previously, Salmon was the Budget Director and Deputy Policy Director for the United States Senate Armed Services Committee. Salmon was also previously a Senior Policy Analyst at the Heritage Foundation and worked at the Avascent Group.

Jennifer Santos - Commissioner

Ms. Jennifer Santos is currently the Principal Director for Strategic Initiatives at Draper. Most recently, Santos served as the naval research and development investment executive for the Department of the Navy. Previously, Santos served as the Deputy Assistant Secretary of Defense for Industrial Policy and as a professional staff member on the United States Senate Appropriations Committee Subcommittee on Defense.

Arun Seraphin - Commissioner

Dr. Arun Seraphin is the Director of the Emerging Technologies Institute at the National Defense Industrial Association. Between 2014 and 2021, Dr. Seraphin was a Professional Staff Member with the United States Senate Committee on Armed Services. Dr. Seraphin previously served as the Principal Assistant Director for National Security and International Affairs at the White House Office of Science and Technology Policy (OSTP) and as Special Assistant for Policy Initiatives to the Director of DARPA.

Raj Shah - Commissioner

Mr. Raj Shah is the managing partner of Shield Capital, a venture firm focused on the nexus of the commercial and defense markets and the executive chairman of Resilience, a cyber security start-up. Shah also serves as a reserve F-16 pilot in the U.S. Air Force, Air National Guard. Previously, Shah was the Director of the Pentagon's Defense Innovation Unit Experimental (DIUx). Shah was also previously senior director of strategy at Palo Alto Networks, which acquired Morta Security, where he was chief executive officer. He began his career as a consultant with McKinsey & Company.

John Whitley - Commissioner

Hon. John Whitley served as Acting Secretary of the Army January to May 2021 and Assistant Secretary of the Army (Financial Management and Comptroller) September 2018 to May 2021. From August 2019 to May 2020, Whitley was the Acting Director of Cost Assessment and Program Evaluation (CAPE) for the Department of Defense. Prior to this role, Whitley was a Senior Fellow at the Institute for Defense Analyses.

Appendix B – Commission Staff

Lara Sayer
Executive Director

Prior to joining the Commission, Ms. Sayer served as a part of the Senior Executive Service as the Comptroller for Commander, Navy Installations Command (CNIC) and Naval Facilities Engineering Systems Command (NAVFAC), where she had oversight of annual appropriations in excess of $12B. Ms. Sayer also served as the Comptroller for the Office of Naval Research (ONR) and the Deputy Chief Financial Officer for United States Special Operations Command. Ms. Sayer has also served in several senior positions in within the Air Force in the acquisition, budget, and resource management sectors throughout her career. Ms. Sayer holds a Bachelor of Music in Vocal Performance and a Master of Business Administration from Wright State University. She also has a Masters in National Resource Strategy from the Eisenhower School at the National Defense University.

Annie Crum
Director of Operations

In addition to Ms. Crum's duties on the Commission, she also serves as the Comptroller Liaison for the United States Special Operations Command in the National Capital Region. Prior to this position, Ms. Crum has held financial management positions in the United States Marine Corps Programs and Resources Department's Operation and Maintenance Branch, Contingency Coordination Branch, and served as Deputy and Director of the Budget and Congressional Coordination Branch. Ms. Crum holds a Master of Arts in National Security and Strategic Studies from the U.S. Naval War College and a Bachelor of Business Administration in Finance and graduated Cum Laude from Southern Methodist University.

Elizabeth Bieri
Director of Research

Ms. Bieri has spent her career in financial management, logistics, and as a cost and price analyst in the national defense space having served in the Army G-4, Assistant Secretary of the Army for Acquisition, Logistics and Technology, and other field commands, the Marine Corps Deputy Commandant for Programs and Resources, and the Office of the Under Secretary of Defense for Comptroller. Prior to this position, she was the Deputy Director for Budget in the Office of the Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict, Secretariat for Special Operations. Ms. Bieri holds a Master of Arts in National Security and Strategic Studies from the U.S. Naval War College and a Bachelor of Arts from Grinnell College.

Rachel Conway
Director of Outreach

Prior to joining the Commission, Ms. Conway was the Chief of Communications and Strategic Planning in the Office of the Assistant Secretary of the Air Force for Acquisition, Technology and Logistics. Ms. Conway holds a Bachelor of Arts in Government and International Politics and a Master of Public Policy from George Mason University.

Caroline Bledsoe
Senior Researcher

Prior to joining the Commission, Ms. Bledsoe served as the Growth Lead for a venture-backed Artificial Intelligence startup. Prior to that, Ms. Bledsoe served in several positions in the Office of the Secretary of Defense, to include the Joint Artificial Intelligence Center, Office of the DoD Chief Information Officer, Office of the Assistant Secretary of Defense for Legislative Affairs, and the Immediate Office of the Secretary of Defense – White House Liaison. Ms. Bledsoe holds a Bachelor of Science in political science pre-professional legal studies from Appalachian State University.

Andrew Gallotta
Senior Researcher

In addition to his duties on the Commission, Mr. Gallotta is also responsible for providing fiscal and programmatic advice to N95 leadership in support of Navy Expeditionary Warfare requirements. Mr. Gallotta served in the U.S. Navy from 1984-1996, after which he left active duty to serve as a Reservist until his retirement in 2014. Mr. Gallotta holds a Bachelor of Science in Economics from the U.S. Naval Academy, a Master of Business Administration from the University of Rochester, and a Master of Science in Applied Science from the Naval Postgraduate School.

Benjamin Klay
Senior Researcher

In addition to his duties on the Commission, Mr. Klay is also an operations research analyst for the Office of Cost Assessment and Program Evaluation in the Office of the Secretary of Defense. Prior to these positions, Mr. Klay worked in defense resourcing at the Office of the Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict and at the Office of Management and Budget. He served in the Marines from 2003-2007, holds a Bachelor of Arts in History and International Studies from Yale University, and a Masters in Public Policy from Harvard University.

Kelle McCluskey
Senior Researcher

Prior to joining the Commission, Ms. McCluskey was the Division Chief of the Advanced Intelligence Capabilities Division in the Office of the Assistant Secretary of the Air Force (Acquisition, Technology & Logistics), Special Programs. She also served as a Budget Analyst Team Lead in the Assistant Secretary of the Air Force (Financial Management and Comptroller), Budget Investment Directorate (SAF/FMBIB). Prior to entering civil service, Ms. McCluskey worked in industry supporting budget and acquisition across the federal government. Ms. McCluskey holds a Bachelor of Science in Business Administration from Salem State and Master of Science in Management, focused on Federal Acquisition and Contract Management, from the Catholic University of America.

Brooks Minnick
Senior Researcher

Mr. Minnick is a career acquisition professional who has worked on several major Department of the Air Force acquisition programs, including the F-15, KC-46, and F-35. Mr. Minnick has also held positions in Headquarters Air Force Cost and Economics, the Legislation Liaison Office for the Secretary of the Air Force, and the Office of the Assistant Secretary of the Air Force for Acquisition, Technology and Logistics. He holds a graduate certificate in legislation affairs from Georgetown University GAI, a M.S. in national defense resource strategy from the National Defense University Eisenhower School, a M.B.A. with a concentration in finance from Wright State University, and a B.A. in finance with a minor in commercial real-estate from Toledo University, along with six professional certifications.

Soleil Sykes
Senior Researcher

Prior to joining the Commission, Ms. Sykes previously served as the research assistant for the Senate Armed Services Subcommittees on Cybersecurity and Personnel and staff assistant for the Subcommittee on Personnel. Ms. Sykes holds a Master of Military Operational Art and Science (Joint Warfare Concentration) degree from the Air Command and Staff College and a Bachelor of Arts in Political Economy with a concentration in French language from Antioch College.

Jared Terry
Senior Researcher

In addition to his duties on the Commission, Mr. Terry also serves as the Chief – Resources, Acquisition, and Support at the U.S. Army Materiel Command G-8. Previously, Mr. Terry served in a range of financial management and audit oversight roles within DoD and the private sector. He holds a M.B.A with a concentration in Accounting from Brenau University and undergraduate degrees in Accounting and Finance from the University of North Georgia.

Hannah Francis
Senior Consultant

Prior to joining the Commission, Ms. Francis has worked at the Department of Defense in a variety of resource management, program administration, and consultant positions at different components, echelons, and activities. Ms. Francis holds a Doctor of Business Administration from the University of Phoenix School of Advanced Studies, and an Executive Master's in Business Administration from Troy University.

Arthur Herman
Technical Writer

Dr. Herman is a senior fellow and director of the Quantum Alliance Initiative at Hudson Institute and the author of nine books, including the New York Times Best Seller *How the Scots Invented the Modern World*, the Pulitzer Prize Finalist *Gandhi and Churchill: The Epic Rivalry that Destroyed an Empire and Forged Our Age, Freedom's Forge: How American Business Produced Victory in World War II* (which the Economist named one of its Best Books of 2012), *To Rule the Waves, Douglas MacArthur: American Warrior, and 1917: Lenin, Wilson, and the Birth of the New World Disorder*. He received his BA from the University of Minnesota and PhD from Johns Hopkins University in history and classics.

Additional Commission Staff Supporting Interim Report:

Greg Davis
Senior Researcher

Priya Harmon
Senior Researcher

Guy Weichenberg
Senior Researcher

John Roth
Senior Consultant

Appendix C – Research Partners

The Commission would like to thank Members of Congress, congressional staff, Department of Defense leadership and personnel, Federally Funded Research and Development Centers, University Affiliated Research Centers, industry professionals, academia, members of the public and all others who participated in, advised on, or supported our research, highlighted on the next page.

Broader Federal Government

- House Appropriations Committee - Full Committee and Defense Subcommittee
- Senate Appropriations Committee - Full Committee and Defense Subcommittee
- House Armed Services Committee
- Senate Armed Services Committee
- House Permanent Select Committee on Intelligence
- Senate Select Committee on Intelligence
- Various Members of Congress and their staff
- Government Accountability Office
- Office of Management and Budget

Industry

Science Applications International Corporation, Inc , AECOM, AAR Corporation, Exiger, Revere Federal Strategies, Govini, DecisionLens, Productable, Defense & Aerospace Competitive Intelligence Service, Definitive Logic, Catalyst Campus, Applied Intuition, Hermeus, Booz Allen Hamilton, Darkside Federal, UNISON, CSIS, Boeing, Palo Alto, PespiCo, Walmart, Parsons Corp, Lockheed Martin, Northrup Grumman, Huntington Ingalls Industries, Voyager Space, Battelle, Ford Motor Company, Hawkeye 360, Resilience, Mercury Systems, Anduril, Palantir, Rebellion, Arete Associates, Continuum Dynamics, Corvid Technologies LLC, Critical Link LLC, Echelon Bio Sciences, EnergYnTech, First RF, FTL Labs, Indiana Microelectronics, IRFLEX Corp, Judd Systems Technologies, LOADPATH, SI2 Technologies, Spectral Sciences, Google, Tier 1 Performance, Teqnovation LLC, Cypress International, VOXTEL, L3Harris Technolgies, CORAS, OneStream, Integrated Data Services, Metrea, Scaled Agile, Cybernet Systems, Adams and Reese LLP, Salesforce, Costco, CACI, SAP....and more!

Former Government Officials

- former Deputy Secretary of Defense
- former DoD Comptroller
- former Director, CAPE
- former Assistant Secretary of the Navy for Research, Development & Acquisition
- former Assistant Secretary of the Air Force for Acquisition, Technology and Logistics
- former Director, Air Force Rapid Capabilities Office
- former Commander, Air Force Materiel Command
- former Director, Defense Innovation Unit
- former Service Acquisition Executives and program managers
- former HASC, SASC, HAC-D, and SAC-D professional staff members
- former PPBE practitioners
- Service Design Collective
- FM Systems Tiger Team

Department of Defense

- Deputy Secretary of Defense
- Secretary of the Air Force
- Under Secretary of Defense (R&E)
- Under Secretary of Defense (A&S)
- Under Secretary of Defense Policy
- Under Secretary of Defense Comptroller
- Under Secretary of the Navy
- Director, CAPE
- DoD Inspector General
- DoD Chief Information Officer (DoD CIO)
- OSD Legislative Affairs
- Chief Data and Artificial Intelligence Office (CDAO)
- Performance Improvement Office (PIO)
- Analysis Working Group (AWG)
- Joint Staff
- Combatant Commands
- Military Department Comptrollers
- Service Programmers
- Service Planners
- Service Acquisition Executives
- NavalX, AFWERX, Office of Naval Research, PEO Digital, Office of Strategic Capital, Defense Innovation Unit, National Security Innovation Network
- Washington Headquarters Service
- Defense Finance Accounting Service (DFAS)
- Defense Technical Information Center (DTIC)
- Innovation Steering Group
- PEOs and Program Managers
- Acquisition Innovation Research Center (UARC)

Associations

- American Society of Military Comptrollers
- Association for Uncrewed Vehicle Systems International
- AGA
- Silicon Valley Defense Group
- National Defense Industrial Association
- Federation of American Scientists/ Day One Project

Academia

- George Mason University
- Naval Postgraduate School
- Duke University
- The College of William and Mary
- University of Virginia
- Defense Acquisition University
- Stevens Institute of Technology
- National Defense University

The Public

- Open Mic Session on Program Management
- Open Mic Session on Budgeting
- Open Mic Session on Valley of Death
- Open Mic Session on Programming
- Open Mic Session on Requirements
- Open Mic Session on Reprogrammings
- Social Media/Email Input

Comparative Case Studies

- Countries: Russia, China, Australia, United Kingdom, Canada, France, Germany, Sweden, Japan, Singapore
- US Federal Agencies: Department of Homeland Security (DHS), Office of the Director of National Intelligence (ODNI), NASA, Health and Human Services (HHS), Department of Veteran Affairs, National Nuclear Security Administration

Federally Funded Research and Development Centers (FFRDCs)

- RAND
- MITRE
- Institute for Defense Analyses
- Carnegie Mellon University Software Engineering Institute

Appendix D – Commission Staff Research Papers

D1. Budget Structure

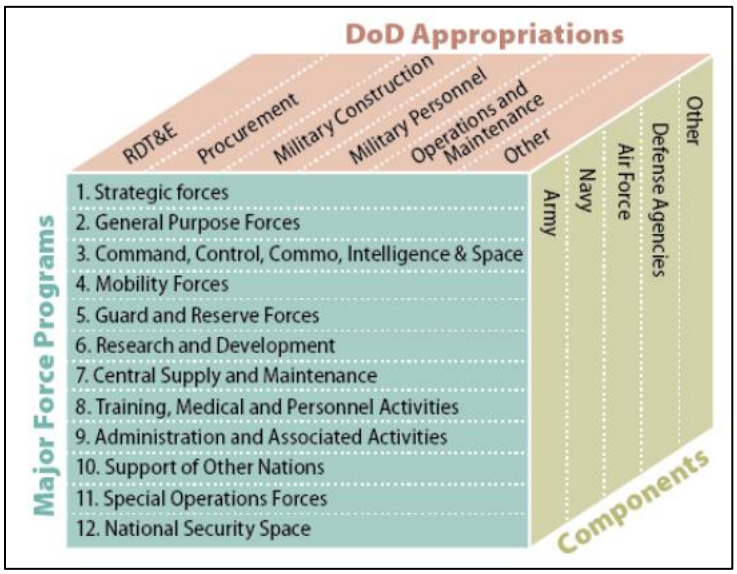
Research Approach

This research primarily used publicly available budget data from the Under Secretary of Defense (Comptroller) (USD(C)) website, historical documents provided by the USD(C), information provided from the DoD to the Commission during meetings and open mic sessions, and government and academic reports. Commission staff compiled data to analyze the budget structure over time, as well as to research specific case studies on Defense Advanced Research Projects Agency (DARPA), the U.S. Space Force, and the U.S. Special Operations Command (USSOCOM) to identify potential best practices or lessons learned.

Section 221 of Title 10, United States Code (U.S.C.) requires the Secretary of Defense to submit a Future Years Defense Program (FYDP) to Congress each year to cover the current fiscal year and at least the four succeeding fiscal years. The FYDP is a mechanism to link DoD resources to strategy through three primary categories: (1) total obligation authority (allocated funding), (2) manpower (military end-strength and civilian full-time equivalent work years), and (3) forces (identified as either items of equipment or combat units).[517] These categories are further divided under 12 formal Major Force Programs (MFP), or an aggregation of the resources necessary to achieve DoD's strategic plans or objectives (see Figure 1), that include thousands of unique codes used to track and identify resources: Operation and Maintenance (O&M) appropriations use Budget Activity (BA) (e.g., BA 01: Operating Forces) and Sub-Activity Group (SAG) (e.g., SAG 131: Base Operations Support) as the budget line item (BLI); Research, Development, Test and Evaluation (RDT&E) appropriations use the program element (PE) as the BLI (see Figure 2); Procurement appropriations use the P-1 Line Number and the Line Item Title as the BLI (e.g., P-1 #4, Line Number 3484D15501 is Ground Mobility Vehicles in the U.S. Army); Military Personnel (MILPERS) appropriations use the BA and Budget Sub-Activity (BSA) as the BLI (e.g., BA 01 and BSA 005 is Pay and Allowances of Officers/Basic Pay); and Military Construction (MILCON) appropriations use the construction project number as the BLI (e.g., Construction Project 08905700 is an FY 2022 U.S. Army project for a Dining Facility at Fort Liberty, NC). This crosswalk of varied levels of control within the MFPs to military Components and appropriations allows for a multi-dimensional view of the DoD's budget structure that is organized by functional or organizational resources.

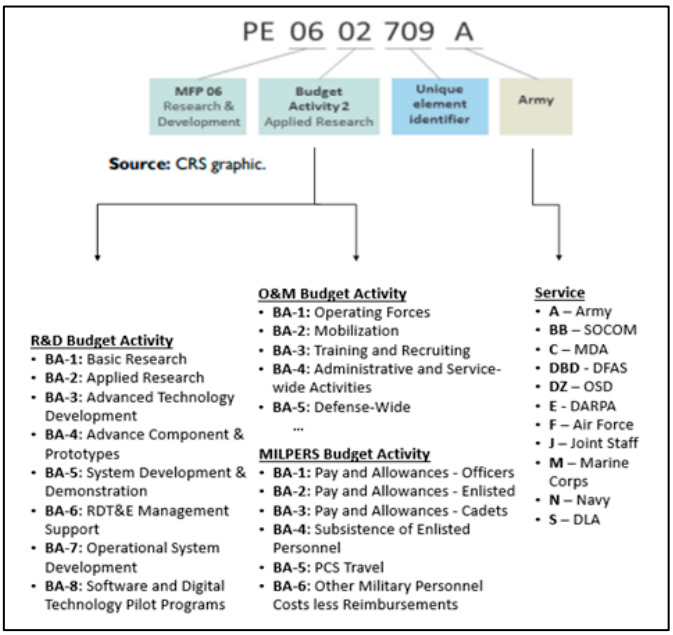
[517] McGarry and Peters 2022.

Figure 1 – Major Force Programs



Source: CRS graphic based on DAU illustration

Figure 2 – Program Element Structure



Source: PE graphic based on CRS illustration

What The Commission Heard

- The budget process is often criticized for being "not timely, not strategically aligned, not responsive, [and] not transparent."[518]
- "Transforming future concepts of operations into actionable decisions and resources requires an innovation construct that abandons the legacy lifecycle funding model where a technology moves linearly from RDT&E to Procurement, and concludes with O&M. The Department needs resource

[518] McGregor et al. 2022.

allocation mechanisms that can timely move funds to capture technology solutions and move them quickly from concept to fielded capability. This approach also forces a reevaluation of how DoD conducts oversight and management."[519]

- "Defense acquisition studies have repeatedly asserted the need to move away from program-centric stovepipes and toward portfolio-centric management…it allows organizations to adapt more quickly to changing information by making tradeoffs."[520]
- The "ultimate arbiter of the defense budget is Congress" and the defense budgeting system is a "technical approach to a political issue."[521]
- Former Secretary of Defense James Mattis – "To keep pace with our times, the Department will transition to a culture of performance and affordability that operates at the speed of relevance."[522]
- "I think it is most beneficial for "the Program Executive Officers [to have] the overall budget line for their program;" "gives the ability to reallocate funding without having to ask for permission, but [I] also understand the need to be transparent with what you are doing."[523]
- "[We] need to re-baseline to the Commander's intent" during the year of execution; "lose strategic linkage in year of execution in budget space; "should be doing outcome-based budgeting."[524]
- "[We] need predictability and stability in [the] budget process."[525]
- Need congressional support for what DoD is trying to achieve and how we need to do that – have been trying to link the changes in the budget to achieving strategy and showing members how a "cut" here can be followed with an "increase" later for things that are changing in their districts.[526] Identify where the budget can be restructured. Idea of establishing BLIs for upgrades of capabilities – this has been done to an extent, but not consistently across the DoD.[527]
- Weapon systems acquisition, science and technology (S&T), two-year budgeting requirements hinders labs, in particular; "Innovative disruptors."[528]
- PE consolidation has the potential to significantly mitigate many of the hassles. Can we reduce reprogramming needs? Endorse radical transparency. Maybe formulate the budget in a central system. Multiple lags in the FYDP database (multiple echelons). We don't adjust quickly enough with congressional marks and other changes.[529]
- Shift from programs of record to capabilities of need; capability-based programming. Too many BLIs. We need a more fluid budget process [that is] more responsive to operational needs. You have to wait two years before you can do anything new unless the budget lines have some level of flexibility."[530]

Budget Structure Over Time

RDT&E Appropriations

The RDT&E count of PEs appears to have increased slightly over time from 741 in 1999 to 934 in 2022, an increase of about 20 percent (see Figure 3). This is in comparison to an increase in the RDT&E request

[519] FAS 2023.
[520] Lofgren 2020.
[521] Bartels 2022.
[522] Mattis 2018.
[523] Commission "Open Mic" session.
[524] Ibid.
[525] Ibid.
[526] Commission interview with subject matter experts.
[527] Commission "Open Mic" session.
[528] Ibid.
[529] Ibid.
[530] Ibid.

of $68.2 billion (not adjusted for inflation), or an increase by about 60 percent. With 2022 as an example, over $39.3 billion is requested in 197 PEs (those between $100 million - $500 million), compared to 555 PEs to defend $8.6 billion (those less than $50 million) (see Figure 4). An RDT&E PE that is less than $50 million will always be subject to the "lesser" of 20 percent for below threshold reprogrammings (BTR) (Figure 5).

Figure 3 – RDT&E PE Count for Select Years from 1980 to 2022

		Request-FY								
Size (Based on Request)	Values	1980	1985	1995	1999	2001	2010	2020	2021	2022
Less than $50M	Count of PE / BLI	615	604	437	552	476	474	548	544	555
	Sum of Request	5,932,970	8,039,052	7,359,892	8,237,454	7,309,422	7,741,905	9,196,277	8,423,927	8,588,424
Between $50M and $100M	Count of PE / BLI	31	61	81	94	89	138	126	124	149
	Sum of Request	2,163,631	4,322,765	5,742,421	6,387,520	6,250,631	9,902,596	8,960,623	8,723,699	10,582,040
Between $100M and $500M	Count of PE / BLI	21	37	60	96	70	123	206	196	197
	Sum of Request	3,556,766	7,524,921	12,526,733	19,139,656	13,438,550	26,334,691	42,798,763	40,921,127	39,260,850
Greater than $500M	Count of PE / BLI	1	3	5	9	5	19	27	30	33
	Sum of Request	670,000	4,725,902	5,563,015	11,628,612	4,885,198	17,308,736	44,949,782	49,832,304	55,167,150
Total Count of PE / BLI		668	705	583	751	640	754	907	894	934
Total Sum of Request		12,323,367	24,612,640	31,192,061	45,393,242	31,883,801	61,287,928	105,905,445	107,901,057	113,598,464

Figure 4 – RDT&E PE Count and Sum of Request for Select Years from 1980 to 2022

Count of PE / BLI	Request-FY								
Size (Based on Request)	1980	1985	1995	1999	2001	2010	2020	2021	2022
Less than $50M	615	604	437	552	476	474	548	544	555
Between $50M and $100M	31	61	81	94	89	138	126	124	149
Between $100M and $500M	21	37	60	96	70	123	206	196	197
Greater than $500M	1	3	5	9	5	19	27	30	33
Grand Total	668	705	583	751	640	754	907	894	934

Figure 5 – RDT&E BTR Threshold
Amount is Cumulative Over Entire Period of Obligation Availability

Below Threshold Reprogramming

Amounts are cumulative over Entire Period of Obligation Availability

APPRN	MAX INTO	MAX OUT	LEVEL OF CONTROL	OBL AVAIL
RDT&E	Lesser of + $10 M or + 20%	Lesser of - $10 M or - 20%	Program Element	2 Years
PROC	Lesser of + $10 M or + 20%	Lesser of - $10 M or - 20%	Line Item	3 years SCN: 5 Years
O&M	+ $10 M	- $10 M	Budget Activity (or Defense Agency) Some Sub-Activity Limitations on Decreases (see reference below)	1 Year
MILPERS	+ $10 M	- $10 M	Budget Activity	1 Year
MILCON	Lesser of + $2 M + 25%	No Specific Congressional Restriction	Project	5 Years

Reference Sources: DoDFMR 7000.14-R, Volume 3, Chapter 6 (Sept 2015) and Chapter 7 (Mar 2011)
USD(C) Policy Memo Subject: DD1414 Base for Reprograming Action, Submission date 9 Jan 2020

Source – DAU

Procurement Appropriations

The number of P-1 line items appears to have remained steady over time relative to the growth in requested Procurement funds (not adjusted for inflation) (see Figure 6). A P-1 line item less than $50 million will always be subject to the lesser of 20 percent for BTRs. It appears that the Department has

reduced smaller line items over time, and that between 2001 and 2010, there was growth primarily in larger BLIs (greater than $50 million) (see Figure 7).

Figure 6 – Procurement P-1 Line-Item Sum of Request for Select Years from 1975 to 2022

Sum of ABS Value of Request	Request FY									
Size (Based on Request)	1975	1980	1985	1995	1999	2001	2010	2020	2021	2022
Less than $50M	101,327	285,035	483,098	173,013	8,340,054	8,822,007	8,733,158	8,835,887	8,697,686	8,386,269
Between $50M and $100M	2,184,660	4,190,834	6,613,349	4,819,039	6,073,402	5,798,202	11,191,326	10,234,677	10,305,752	9,746,360
Between $100M and $500M	8,437,817	9,304,259	29,985,075	14,231,324	14,159,266	18,829,702	39,107,765	41,314,246	40,697,833	38,522,598
Greater than $500M	6,786,078	17,552,442	55,202,177	20,920,295	24,225,063	32,975,064	61,878,122	107,723,582	97,342,604	73,571,531
Grand Total	17,509,882	31,332,570	92,283,699	40,143,671	52,797,785	66,424,975	120,910,371	168,108,392	157,043,875	130,226,758

Figure 7 – Procurement P-1 Line-Item Count for Select Years from 1975 to 2022

Count of Line Item	Request FY									
Size (Based on Request)	1975	1980	1985	1995	1999	2001	2010	2020	2021	2022
Less than $50M	16	20	27	7	751	695	520	516	509	479
Between $50M and $100M	30	56	97	70	84	81	155	146	144	133
Between $100M and $500M	38	51	140	71	73	84	188	199	189	195
Greater than $500M	8	18	36	11	18	18	50	57	59	56
Grand Total	92	145	300	159	926	878	913	918	901	863

O&M Appropriations

The quantity of O&M SAGs has remained relatively constant from 2001 to 2022, increasing from 340 to 393, an increase of 13.5 percent (see Figure 8). Most of the growth appears to be in the largest category (greater than $500 million) with an increase of 63 SAGs from 2001 to 2010. This was coupled with reductions in SAGs between $10 million and $500 million (see Figure 9). The O&M appropriation maintains a $10 million BTR threshold.

Figure 8 – O&M SAG Count for Select Years from 2001 to 2022

Count of SAG / Budget Line Item (BLI) Title	Column Labels					
Row Labels	2001	2010	2020	2021	2022	Grand Total
Less than $10M	57	86	75	73	79	370
Between $10M and $50M	63	35	46	47	52	243
Between $50M and $100M	47	26	26	30	23	152
Between $100M and $500M	123	104	117	114	117	575
Greater than $500M	50	113	119	121	122	525
Grand Total	340	364	383	385	393	1865

Figure 9 – O&M SAG Count and Average Request for Select Years from 2001 to 2022

	2001		2010		2020		2021		2022	
Row Labels	Average of Request	Count of SAG / Budget Line Item (BLI) Title	Average of Request	Count of SAG / Budget Line Item (BLI) Title	Average of Request	Count of SAG / Budget Line Item (BLI) Title	Average of Request	Count of SAG / Budget Line Item (BLI) Title	Average of Request	Count of SAG / Budget Line Item (BLI) Title
Less than $10M	3,076	57	1,768	86	2,220	75	2,676	73	2,206	79
Between $10M and $50M	27,234	63	25,079	35	26,124	46	27,765	47	27,815	52
Between $50M and $100M	71,966	47	74,070	26	69,236	26	70,456	30	73,707	23
Between $100M and $500M	254,695	123	252,357	104	254,333	117	252,342	114	254,294	117
Greater than $500M	1,448,869	50	2,435,238	113	2,184,102	119	2,121,423	121	2,110,205	122
Grand Total	320,719	340	836,216	364	764,578	383	750,840	385	739,220	393

MILPERS Appropriations

There appears to be very little movement in MILPERS BAs over the last decade (see Figures 10 and 11). The MILPERS appropriations maintain a $10 million BTR threshold.

Figure 10 – MILPERS BA Count for Select Years from 2010 to 2022

	2010		2020		2021		2022	
Row Labels	Budget Activity	Requested Amount	Budget Activity	Requested Amount	Budget Activity	Requested Amount	Budget Activity	Requested Amount
Less than $10M	44	128,125	53	151,784	54	161,449	51	135,031
Between $10M and $50M	38	1,110,988	36	932,188	37	1,010,515	38	1,082,467
Between $50M and $100M	26	1,743,847	33	2,368,351	30	2,270,025	27	1,983,424
Between $100M and $500M	66	15,765,039	62	15,334,251	62	15,966,321	65	16,091,392
Greater than $500M	57	131,810,185	56	138,256,966	56	145,296,389	57	149,265,395
Grand Total	**231**	**150,558,184**	**240**	**157,043,540**	**239**	**164,704,699**	**238**	**168,557,709**

Figure 11 – MILPERS BA Count and Average Requested Amount for Select Years from 2010 to 2022

	2010		2020		2021		2022	
Row Labels	Count of Budget Activity	Average of Requested Amount	Count of Budget Activity	Average of Requested Amount	Count of Budget Activity	Average of Requested Amount	Count of Budget Activity	Average of Requested Amount
Less than $10M	44	2,912	53	2,864	54	2,990	51	2,648
Between $10M and $50M	38	29,237	36	25,894	37	27,311	38	28,486
Between $50M and $100M	26	67,071	33	71,768	30	75,668	27	73,460
Between $100M and $500M	66	238,864	62	247,327	62	257,521	65	247,560
Greater than $500M	57	2,312,459	56	2,468,874	56	2,594,578	57	2,618,691
Grand Total	**231**	**651,767**	**240**	**654,348**	**239**	**689,141**	**238**	**708,226**

MILCON Appropriations

The total of MILCON project numbers has fluctuated over the last few years, with even greater fluctuations the further back you look at the data. This is more indicative of the DoD's investment in construction than the budget structure (see Figure 12). The MILCON appropriation is subject to a BTR of the lesser of $6 million or 25 percent of the funded amount, whichever is less.

Figure 12 – MILCON Project Number Count for Select Years from 2018 to 2022

Row Labels	2018_2018	2019_2019	2020_2020	2021_2021	2022_2022
AF	135	92	68	42	82
ARMY	95	70	64	52	51
DEFW	8	9	8	7	7
DHA	16	5	8	5	10
DIA	4	3	3	3	4
DISA	1	1		1	
DLA	20	20	12	9	7
DODEA	7	6	4	4	5
DTRA				1	
MDA	2	4	2	2	1
NAVY	67	78	57	49	48
NGA	1	2	1	1	
NSA	9	8	8	6	10
OSD	1				
SOCOM	28	24	17	12	7
TJS	1	1	1	1	2
WHS	4	3	4		4
Grand Total	**399**	**326**	**257**	**195**	**238**

Portfolio Budgeting

A common theme identified across academic reports, in congressional comments, and the Commission's open mic sessions was a desire to move toward portfolio budgeting to increase flexibility, though each of these sources lacked consensus of what portfolio budgeting or flexibility actually means. Former Rep. William Thornberry (R-Texas) summarized the National Security Commission on AI recommendation to develop a pilot program to test the portfolio management approach of "managing similar programs and system as a group, instead of individually, to accelerate more prototyping,

development, and integration of new technologies such as AI."[531] The Heritage Foundation also recommended pilot programs to give the DoD "more flexibility in those portfolios and programs where turbulence and change are more common."[532] The Section 809 Panel's 2018-2019 reports described a need to transition from "a program-centric execution model to a portfolio execution model."[533] The 2008 DoD Directive 7045.20, 'Capability Portfolio Management' directs the DoD to:

> "Use capability portfolio management to advise the Deputy Secretary of Defense and the Heads of the DoD Components on how to optimize capability investments across the defense enterprise (both materiel and non-materiel) and minimize risk in meeting the Department's capability needs in support of strategy."[534]

While many organizations from DARPA to the U.S. Space Force have successfully adopted variations of portfolio management, it has yet to be implemented wide scale across the DoD.

Budget Example: DARPA's S&T Portfolio

The DARPA is a DoD research and development organization that develops innovative technologies for the warfighter and national security.[535] Established in February of 1958,[536] the FY 2024 PB request for DARPA is $4.4 billion with a FY 2023 enacted budget of $4.1 billion.[537] All of DARPA's funding falls within the RDT&E appropriation, specifically within the BAs of Basic Research (BA 6.1), Applied Research (BA 6.2), and Advanced Technology Development (BA 6.3) (see Figure 13), which are further divided into 17 PEs.

The three BAs (6.1, 6.2, and 6.3) are typically referred to as the DoD S&T portfolio (see Figure 14). In FY 2023, the enacted DoD S&T budget was $22.5 billion, nearly double the FY 2017 level of $13.4 billion, and nearly ten times the FY 1978 level of $2.3 billion.[538] Defense S&T, in general, is of "particular interest to Congress due to its perceived value in supporting technological advantage and its importance to key private sector and academic stakeholders."[539] The DARPA's share of DoD S&T funding was approximately 17 percent in the FY 2022 enacted budget and has remained steady at between 21 percent and 25 percent from FY 2000 to FY 2021 (see Figure 15).[540]

[531] Thornberry 2021.
[532] Bartels 2022.
[533] Section 809 Panel 2019.
[534] DoDD 7045.20.
[535] "About DARPA" n.d.
[536] "The Sputnik Surprise" n.d.
[537] "Budget" n.d.
[538] Sargent 2018.
[539] Ibid.
[540] OUSD(C) 2022.

Figure 13 – DARPA RDT&E from FY 2020-2022 Budget Request.

BudgetActivity	Budget Activity Title	PE / BLI	Program Element / Budget Line Item (BLI) Title	FY2020	FY2021	FY2022
01	Basic Research	0601101E	Defense Research Sciences	432,284	479,958	395,781
		0601117E	Basic Operational Medical Research Science	54,122	53,730	76,018
02	Applied Research	0602115E	Biomedical Technology	97,771	107,568	108,698
		0602303E	Information & Communications Technology	442,556	435,920	430,363
		0602383E	Biological Warfare Defense	34,588	26,950	31,421
		0602702E	Tactical Technology	337,602	233,271	202,515
		0602715E	Materials and Biological Technology	223,976	250,107	317,024
		0602716E	Electronics Technology	332,192	322,693	357,384
03	Advanced Technology Developme	0603286E	Advanced Aerospace Systems	279,741	230,978	174,043
		0603287E	Space Programs and Technology	202,606	158,439	101,524
		0603739E	Advanced Electronics Technologies	128,616	95,864	116,716
		0603760E	Command, Control and Communications Systems	232,134	221,724	251,794
		0603766E	Network-Centric Warfare Technology	512,424	661,158	584,771
		0603767E	Sensor Technology	163,903	200,220	294,792
06	Management Support	0605001E	Mission Support	68,498	74,334	73,145
		0605502E	Small Business Innovative Research	-	-	-
		0605898E	Management HQ - R&D	13,208	13,434	12,740
Grand Total				3,556,221	3,566,348	3,528,729

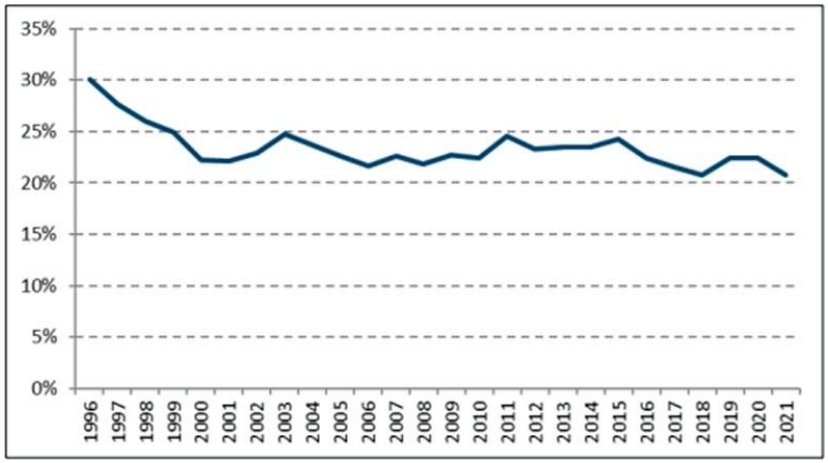
Figure 14 – Typically referred to by DoD as the Defense S&T portfolio

Table 1. DOD RDT&E Budget Activity Codes

Code	Description
6.1	Basic Research
6.2	Applied Research
6.3	Advanced Technology Development
6.4	Adv. Component Development and Prototypes
6.5	System Development and Demonstration
6.6	RDT&E Management Support
6.7	Operational Systems Development
6.8	Software and Digital Technology Pilot Programs

Source: Department of Defense, *Financial Management Regulation (DoD 7000.14-R)*, Volume 2B, November 2017.

Figure 15 – DARPA funding as a share of DoD S&T funding



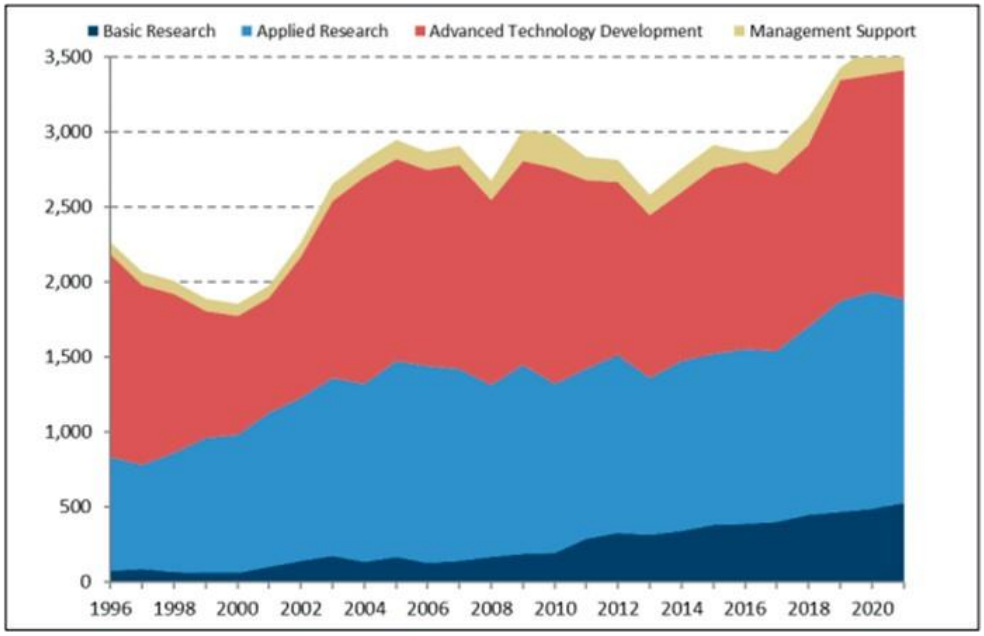
Source: CRS Analysis of data from DoD, FY 1998-2022.

The "DARPA model" is often cited as a method to spur innovation through its research and development (R&D) investments.[541] While this may be partially attributed to DARPA's condensed budget structure, DARPA's relatively flat organization and trust with Congress are also significant factors.[542] Furthermore, DARPA's funding trends of each of the BAs has remained relatively constant over time, allowing for consistency in planning and programming assumptions (see Figures 16 and 17). The organization of DARPA's budget structure provides their program managers (PM) independence to enable and protect innovation: "within broad limits, they should also be able to reallocate and reprioritize spending within the group and among projects over time."[543]

Figure 16 – DARPA RDT&E S&T PE Count and Average Amount ($M) by Service or Organization for FY 2020

Service/ Organization	Program Elements			Less than $50M		Between $50M-$100M		Between $100M-$500M		Greater than $500M	
	Count	Avg. Amount ($M)	Tot. Amount ($M)	Count	Avg. Amount ($M)	Count	Avg. Amount ($M)	Count	Avg. Amount ($M)	Count	Avg. Amount ($M)
Army	50	$73.7	$3,686.4	30	$16.0	11	$76.2	8	$171.5	1	$995.0
Navy	25	$87.9	$2,355.6	9	$17.7	8	$65.3	8	$209.3	0	$0.0
Air Force	26	$107.3	$2,789.6	8	$31.4	5	$71.8	13	$167.6	0	$0.0
DARPA	14	$245.9	$3,442.8	1	$31.4	1	$76.0	11	$250.0	1	$584.8
SOCOM	2	$69.4	$138.2	1	$44.8	1	$93.4	0	$0.0	0	$0.0
Space Force	2	$126.2	$252.4	0	$0.0	1	$76.7	1	$175.8	0	$0.0

Figure 17 – DARPA Funding by Character of Work, FY 1996-2021



Source: CRS analysis of data from DoD, FY 1998-2022.

DARPA Research Findings

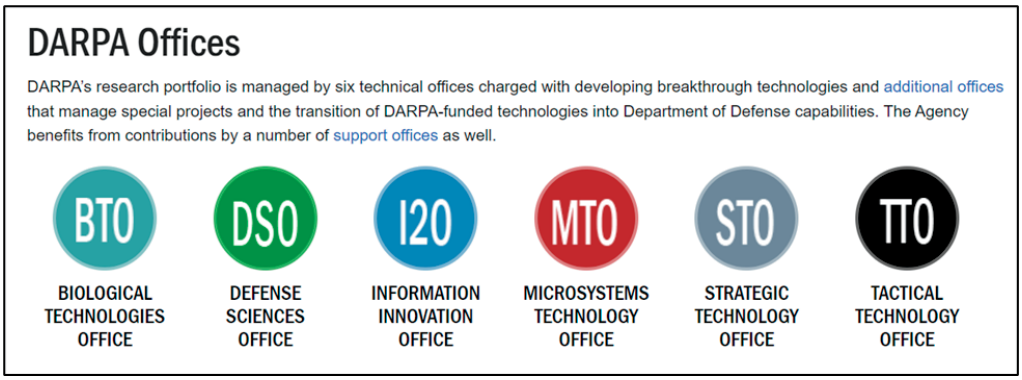
Budget Structure. The DARPA budget structure for the S&T portfolio has worked well in enabling year of execution shifts for DARPA between project-level data. They use an Enterprise Resource Planning (ERP) software that breaks down a PE by project level detail once a program is created; tracks it to the "nth degree;" and conducts a continuous optimization drill by portfolio so that funds can be realigned at a moment's notice within a portfolio, if needed. The DARPA tries to stay fluid as much as they can up until PB lock and have received support in doing so.

[541] Gallo 2021.
[542] Reinhardt 2020.
[543] Dugan and Gabriel 2013.

Management Structure and Culture. The DARPA PEs are aligned to the organization by structure and division (see Figure 18). The PMs with the greatest dollar amount take the lead for that category; extensive coordination is required to successfully execute this approach. There is an extensive learning environment (e.g., contracting folks have brown bag sessions to teach how to write a performance work statement which encourages low turnover of the Associate Director PMs (AD-PMs). The AD-PMs serves as the continuity of the organization to teach the PMs (e.g., scientists that rotate in and out of academia) how to handle the DARPA culture and budget. Because of the organization's legacy and numerous job opportunities, DARPA can recruit people to come into these term positions that wouldn't otherwise work for the government and surround themselves with science and technical advisory staff to promote success. There is a mindset of constant examination and "re-innovation."

Communication with Congress. The DARPA directors historically have been effective communicators and the DARPA has built trust within the Office of the USD for Research and Engineering (R&E) to respond to congressional requests for information with autonomy. The RDT&E exhibits clearly establish movement within BAs or PEs, for example, the 6.2 exhibit will clearly state movement "from 6.2 to 6.3," while the 6.3 exhibit will clearly state movement "to 6.3 from 6.2."

Figure 18 – DARPA Organizational Structure by Technical Office



Source: DARPA public website.

Budget Example: U.S. Space Force (USSF), specifically the Space Development Agency (SDA) and Space Systems Command (SSC)

The USSF was established in 2019 as a means to pursue "superiority in the space domain."[544] In a list of acquisition reforms submitted to Congress in 2020, then-Secretary of the U.S. Air Force Barbara Barrett requested a new space acquisition approach that "enables the USSF to rapidly leverage industry innovation to outpace space threats" through the consolidation of BLIs along mission portfolios instead of by platform.[545] At the Sea-Air-Space conference on 3 August 2021, Deputy Assistant Secretary of the Air Force for Space Acquisition and Integration Shawn Barnes further expressed a desire to manage by portfolios instead of programs of record, "instead of expecting a single platform or constellation to fulfill a mission, the Space Force should be able to pull together pieces from various organizations – the SDA, the National Reconnaissance Office and the Space Rapid Capabilities Office (SRCO), among others – to create a portfolio of capabilities for that mission,"[546] also adding "it gives me some agility that I don't have when I talk about a single program of record."[547] This would, in theory, also help limit

[544] "United States Space Force History" n.d.
[545] Strout 2020.
[546] Strout 2021.
[547] Ibid.

reprogramming requests to move funding between programs of similar capability, similar to how the SRCO operates to encourage rapid innovation. The USSF count of BLIs and enacted budget for FY 2021; however, painted a different picture that was not as aggressive and perhaps a compromise (Figure 19).

Figure 19 – USSF Count of BLIs and Sum of Enacted FY 2021 Funding by APPN

Account Title	Count of Program Element / Budget Line Item (BLI) Title	Sum of FY 2021Enacted**
Procurement, Space Force	17	2,291,892
RDTE, Space Force	46	10,540,069
Operation & Maintenance, Space Force	8	2,569,229
Grand Total	71	15,401,190

SDA Research Findings. Created in March 2019 under the USD(R&E) with a budget of about $900 million, SDA is recognized as the DoD's "constructive disruptor" for space acquisition through their motto of "Speed. Delivery. Agility."[548] They were established, much like the Missile Defense Agency or DARPA, to accelerate procurement of space capability by "rapidly deploying a threat-driven constellation of small satellites. The SDA aims to provide responsive and resilient space capabilities and support the joint force, increasing the warfighter's lethality, maneuverability, and survivability."[549] They use commercial development to deliver a "minimum viable product – on time, every two years – by employing spiral development methods."[550]

- The SDA transferred to the USSF on 1 October 2022, as part of a planned realignment mandated by Congress in the NDAA for FY 2020.[551]
- "SDA will be key to rapidly delivering space capability to our warfighters. The SDA's proliferated low Earth orbit (LEO) constellation, as an integral part of the Space Force's force design, brings resiliency, accelerated capability delivery through spiral development, and rapid technology refresh," said Frank Calvelli, Assistant Secretary of the Air Force for Space Acquisition and Integration. "I fully support their strategy, and we will maintain their structure and culture to let them continue to move fast and do what they do best. I'm excited for this dynamic organization to join the Space Force team."[552]
- "As we transfer to the USSF, SDA looks forward to continuing our important work on the National Defense Space Architecture, which will deliver critical space-based capabilities to the joint warfighter," said Dr. Derek Tournear, Director of the SDA. "Our team is committed to carry on the same dedication to speed, delivery and agility that our agency has demonstrated in the past and we're grateful for the support of leadership to carry on our mission and maintain our values as part of the U.S. Space Force team."[553]
- As part of the USSF, SDA will report to the Assistant Secretary of the Air Force for Space Acquisition and Integration for acquisition matters and to the Chief of Space Operations for all other matters.[554]

Budget Structure. The SDA utilizes a very iterative, spiral development cycle by tranche where they have not launched the previous capability when launching planning of the next generation. The SDA is already working on the next spiral or tranche of capabilities while proving out the current one; this does not align with the linear PPBE process.

[548] "Who We Are" n.d.
[549] Secretary of the Air Force Public Affairs 2022.
[550] "Who We Are" n.d.
[551] Secretary of the Air Force Public Affairs 2022.
[552] Ibid.
[553] Ibid.
[554] Ibid.

"SDA needs to be agile enough to incorporate new technologies and capabilities from the private sector within a program's lifetime through spiral development – launching new tranches of warfighting capabilities every two years, on schedule. This requires a shift away from a planning cycle that begins nearly two years before a fiscal year starts, and that locks in programs and budgets too early to accommodate the latest advances in the commercial market. The current PPBE process does not have a way to allow for capability refresh on a timeline that matches commercial innovation/agile development cycles."[555]

This inherently requires 'wedges' in the outyears, which are not well served by the traditional PPBE process. The SDA would benefit from a major change in the planning and programming portions of PPBE to encourage these spiral development cycles.

"SDA and SSC have worked together to identify major milestones/decision points where we'll have enough data about LEO and MEO [low and medium Earth orbit] tracking capabilities to help influence a decision about whether to end/replace existing legacy programs and capabilities. The discussion quickly moved to "when" we need to have those data points in order to influence the next POM process. Turns out that even with the speed at which we are getting capabilities on orbit and employing them in capability demonstrations with the warfighter, we've already missed the boat on influencing POM24, because it's being built now, and would have to have enough data by March/April 2023 in order to impact POM25. We would have to have enough data to influence a budget that starts in October 2024 by April 2023, 18 months prior to the start of FY25, if not sooner. That timeline doesn't align with the pace of innovation and commercialization we are trying to harness, and it just barely fits with our 2-year launch cycle. While there are additional opportunities to modify the POM before the budget is released to Congress, it's fairly misaligned with the Department's desire to incorporate and deploy new capabilities at the speed of industry."[556]

Through the use of commercial technology, SDA seems to have a greater ability to predict what funding will be needed in the outyears even if not well defined: "those fixed-price contracts have been reliable and proven that estimates are correct, which allows them to better predict what the outyears will look like."[557] In fact, per SDA, OSD CAPE is in the process of re-doing some of their models based on these contracts.

Through the use of portfolio management for space capability development, SDA benefits from being empowered as an organization to make cost, schedule, and technical trades throughout.

Management Structure and Culture. The SDA hosts monthly working groups at the action officer level, as well as a semi-annual 'warfighter council' at the 1-star or Senior Executive Service level that is co-chaired by the Vice Chief of Space Operations and SDA Director. The SDA has a relatively flat management structure. Each cell chief has responsibility for their specific cell. In addition, each person has direct access to the Director with the expectation that each cell chief makes decisions or strong recommendations when issues arise. "A PPBE process that can work with a spiral development approach requires a willingness to take on some risk in order to be more competitive."[558]

Communication with Congress. The SDA has multiple engagements with the House and Senate professional staffs, to include quarterly briefings with up to date spend plans with "very transparent

[555] Commission interview with subject matter experts.
[556] Ibid.
[557] Ibid.
[558] Ibid.

reporting to Congress."[559] Leadership makes these actions a priority and ensures to send both junior and senior leadership to these engagements.

SSC (and more generally, Space Force) Research Findings. The SSC, headquartered in California, is "responsible for developing, acquiring, equipping, fielding, and sustaining lethal and resilient space capabilities for war fighters. As part of fielding, the command will be responsible for launch operations, on-orbit checkout, developmental testing, sustainment and maintenance of military satellite constellations and other Department of Defense space systems."[560]

The Next Generation Overhead Persistent Infrared (Next Gen OPIR) RDT&E program (see Figures 20, 21, and 22) used to be several smaller PEs that became one larger portfolio comprised of space, ground, and space modernization initiative programs.

Figure 20 – Next Gen OPIR Budget Request by Select FY

Sum of Request		Request FY				
PE / BLI	Program Element / Budget Line Item (BLI) Title	2019	2020	2021	2022	2023
1206440SF	Next-Gen OPIR -- Ground					-
1206442F	Next Generation OPIR		1,395,278	-	-	148
	Evolved SBIRS	643,126				
1206442SF	Next Generation OPIR			2,318,864	2,451,256	3,479,459
1206443SF	Next-Gen OPIR -- GEO					-
1206444SF	Next-Gen OPIR -- Polar					-
0604441F	Space Based Infrared System (SBIRS) High EMD	-				
1206441F	Space Based Infrared System (SBIRS) High EMD	60,565				
Grand Total		703,691	1,395,278	2,318,864	2,451,256	3,479,607

Figure 21 – Next Gen OPIR Enactment by Select FY

Sum of Enacted**		Enacted FY				
PE / BLI	Program Element / Budget Line Item (BLI) Title	2018	2019	2020	2021	2022
1206440SF	Next-Gen OPIR -- Ground					542,477
1206442F	Next Generation OPIR		643,126	1,470,278	-	-
	Evolved SBIRS	71,018				
1206442SF	Next Generation OPIR			-	2,318,864	125,853
1206443SF	Next-Gen OPIR -- GEO					1,199,193
1206444SF	Next-Gen OPIR -- Polar					471,398
0604441F	Space Based Infrared System (SBIRS) High EMD	-				
1206441F	Space Based Infrared System (SBIRS) High EMD	311,844				
Grand Total		382,862	643,126	1,470,278	2,318,864	2,338,921

[559] Ibid.
[560] Talens 2022.

Figure 22 – Next Gen OPIR Budget Justification Sample from February 2019

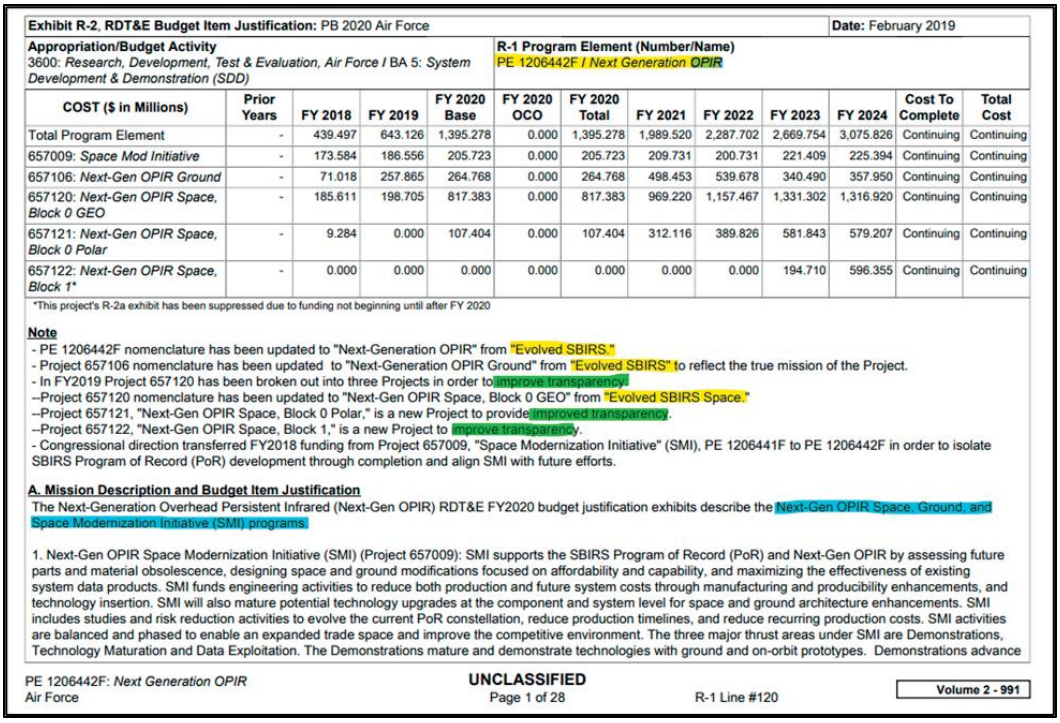


Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Air Force | **Date:** February 2019

Appropriation/Budget Activity
3600: *Research, Development, Test & Evaluation, Air Force* / BA 5: *System Development & Demonstration (SDD)*

R-1 Program Element (Number/Name)
PE 1206442F / *Next Generation OPIR*

COST ($ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
Total Program Element	-	439.497	643.126	1,395.278	0.000	1,395.278	1,989.520	2,287.702	2,669.754	3,075.826	Continuing	Continuing
657009: *Space Mod Initiative*	-	173.584	186.556	205.723	0.000	205.723	209.731	200.731	221.409	225.394	Continuing	Continuing
657106: *Next-Gen OPIR Ground*	-	71.018	257.865	264.768	0.000	264.768	498.453	539.678	340.490	357.950	Continuing	Continuing
657120: *Next-Gen OPIR Space, Block 0 GEO*	-	185.611	198.705	817.383	0.000	817.383	969.220	1,157.467	1,331.302	1,316.920	Continuing	Continuing
657121: *Next-Gen OPIR Space, Block 0 Polar*	-	9.284	0.000	107.404	0.000	107.404	312.116	389.826	581.843	579.207	Continuing	Continuing
657122: *Next-Gen OPIR Space, Block 1**	-	0.000	0.000	0.000	0.000	0.000	0.000	0.000	194.710	596.355	Continuing	Continuing

*This project's R-2a exhibit has been suppressed due to funding not beginning until after FY 2020

Note
- PE 1206442F nomenclature has been updated to "Next-Generation OPIR" from "Evolved SBIRS."
- Project 657106 nomenclature has been updated to "Next-Generation OPIR Ground" from "Evolved SBIRS" to reflect the true mission of the Project.
- In FY2019 Project 657120 has been broken out into three Projects in order to improve transparency.
--Project 657120 nomenclature has been updated to "Next-Gen OPIR Space, Block 0 GEO" from "Evolved SBIRS Space."
--Project 657121, "Next-Gen OPIR Space, Block 0 Polar," is a new Project to provide improved transparency.
--Project 657122, "Next-Gen OPIR Space, Block 1," is a new Project to improve transparency.
- Congressional direction transferred FY2018 funding from Project 657009, "Space Modernization Initiative" (SMI), PE 1206441F to PE 1206442F in order to isolate SBIRS Program of Record (PoR) development through completion and align SMI with future efforts.

A. Mission Description and Budget Item Justification
The Next-Generation Overhead Persistent Infrared (Next-Gen OPIR) RDT&E FY2020 budget justification exhibits describe the Next-Gen OPIR Space, Ground, and Space Modernization Initiative (SMI) programs.

1. Next-Gen OPIR Space Modernization Initiative (SMI) (Project 657009): SMI supports the SBIRS Program of Record (PoR) and Next-Gen OPIR by assessing future parts and material obsolescence, designing space and ground modifications focused on affordability and capability, and maximizing the effectiveness of existing system data products. SMI funds engineering activities to reduce both production and future system costs through manufacturing and producibility enhancements, and technology insertion. SMI will also mature potential technology upgrades at the component and system level for space and ground architecture enhancements. SMI includes studies and risk reduction activities to evolve the current PoR constellation, reduce production timelines, and reduce recurring production costs. SMI activities are balanced and phased to enable an expanded trade space and improve the competitive environment. The three major thrust areas under SMI are Demonstrations, Technology Maturation and Data Exploitation. The Demonstrations mature and demonstrate technologies with ground and on-orbit prototypes. Demonstrations advance

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Air Force

For the National Security Space Launch Procurement program (see Figure 23), there was a desire within the U.S. Air Force to consolidate the hardware and launch service together to gain flexibility. For example, if hardware funds were leftover, they could be used to purchase fuel. Congress requested that the line items be separated but the lines have recently been re-consolidated. When looking into what changed, the main driver is an improved rapport with the staffers by the DoD providing greater transparency by breaking out more details and including detailed contract information in staffer briefs.

Figure 23 – Next Gen OPIR Budget Justification Sample from February 2019

Sum of Request			Request FY										
PE / BLI	Program Element / Budget Line Item (BLI) Title	Organization	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
MSEELC	Evolved Expendable Launch Capability	AF				571,276	768,586	957,420	709,981	-	-		
	Evolved Expendable Launch Veh (Infrast.)	AF			750,143								
MSEELV	Evolved Expendable Launch Veh(Space)	AF	1,679,856	1,679,856	630,903	800,201	737,853	606,488	994,555	1,237,635		-	
NSSL00	National Security Space Launch	AF									1,043,171	1,337,347	2,112,266
NSSL01	Joint Capability Tech Demonstration (JCTD)	SDA										74,060	-
Grand Total			1,679,856	1,679,856	1,381,046	1,371,477	1,506,439	1,563,908	1,704,536	1,237,635	1,043,171	1,411,407	2,112,266

Budget Example: U.S. Special Operations Command (USSOCOM)

RDT&E and Procurement. The USSOCOM and USD(AT&L) hosted a SOF Acquisition Summit in 2013 and again in October of 2014, with the intent of consolidating USSOCOM Procurement and RDT&E BLIs. "The summit is a twice a year meeting between the USSOCOM and our partners in the OSD, Service acquisition offices, and other Defense Agencies so that we can synchronize acquisition, technology, and logistics activities and resolve issues which are impacting USSOCOM's ability to accomplish the mission," said James Geurts, USSOCOM's former Acquisition Executive.[561]

The objective was to pursue consolidation of BLIs to enhance funding agility without reducing budget information provided to OSD and Congress. A key to USSOCOM's effort was to maintain the same level of information in justification materials and staffer briefs; however, to provide it in fewer BLIs. The

[561] Lawrence 2014.

USSOCOM began with consolidation of non-military intelligence program (MIP) BLIs with the understanding that they were interested in further consolidation opportunities for MIP lines pending successful implementation of their non-MIP restructure.

Procurement (see Figure 24)

There were 36 BLIs that were consolidated into 26 BLIs. The USSOCOM suggested a "logical commodity grouping" of BLIs to consolidate low dollar value Procurement items into three categories: five Warrior System BLIs; two Ordnance BLIs, and six Other BLIs less than $5 million.[562] All intelligence lines remained unchanged and Special Access Programs (SAP) were appropriately separated from non-SAP efforts with a "minimal impact to stakeholders."[563]

Figure 24 – USSOCOM Procurement Request by P-1 Line Item and Relative Size for Select FYs

Organization - Normalized	Organization	Size (Based on Request)	2010	2020	2021	2022
Other/Defense-Wide	SOCOM	Less than $50M	25	14	14	15
		Between $50M and $100M	5	3	3	2
		Between $100M and $500M	6	9	9	9
Grand Total			36	26	26	26

RDT&E (see Figure 25)

The USSOCOM created logical groupings while keeping ties to Procurement BLIs and went from three PEs in BA-03 to one PE and from more than 20 PEs in BA-07 to 12 PEs. All intelligence lines remained separate, and SAP is properly separated from non-SAP. The same information was provided in J-books, just in fewer PEs.

Figure 25 – USSOCOM RDT&E Request by PE and Budget Activity for select FYs

Organization	BudgetActivity	Budget Activity Title	2010	2020	2021	2022
SOCOM	02	Applied Research	1	1	1	1
	03	Advanced Technology Development		1	1	1
		Advanced Technology Development (ATD)	3			
	07	Operational System Development		12		
		Operational Systems Development	23		12	11
Grand Total			27	14	14	13

O&M

Prior to FY 2015, the entire USSOCOM O&M budget used to be under one BA and one SAG. Due to congressional scrutiny on the growth of USSOCOM's budget, visibility of program funding, funding realignments in the year of execution, and being looked at more like a Service, USSOCOM was directed in the FY 2014 Appropriations Bill[564] to create an O&M structure that contained three BAs and formally identify and justify the budget along 14 Budget Sub-Activities (BSA) beginning in the FY 2015 PB.

In accordance with the Explanatory Statement accompanying the FY 2018 DoD Appropriations Act,[565] USSOCOM was directed to create formal O&M SAGs like the Services are structured. The end result was an O&M budget in two BAs consolidating the 14 BSAs into eight formal SAGs to better explain and defend O&M resources.

[562] Commission interview with subject matter experts.
[563] Ibid.
[564] Congressional Record—House 2014, H600.
[565] P.L. 115-141 2018.

The USSOCOM did the analysis, developed the recommendations, proposed them to OUSD(C), discussed the proposal and rationale, and with approval took that to the HAC-D and SAC-D and the HASC and SASC as a joint OUSD(C) and USSOCOM proposal for consideration, as required by law. There were conversations with each committee, discussing the rationale for this approach as well as a commitment to retaining details of the former informal BSAs. A crosswalk of the BSAs to SAGs was provided in budget justification materials so no information was lost. Discussions addressed the likely movements between SAGs to clean up anything that might not initially have been put in the right SAG. Based on approval from all four defense committees, the formal SAGs were implemented for the FY 2020 PB; those same SAGs are still in use today.

The USSOCOM also has separate O&M notification reprogramming language in the Joint Explanatory Statement every year to allow for the movement of O&M funds between SAGs for more than $10 million.[566]

Pros and Cons of BLI Consolidation

Pros:

1. Provides greater autonomy to reprioritize spending among projects as priorities adjust. Need to ensure transparency and regular updates with Congress at an agreed upon battle rhythm to provide details on these types of movements.
2. Allows empowered staff to move faster or continue current path with fewer delays. Provides greater decision-making authority to make trades within purview.
3. May result in more productive use of resources when not constrained by BLIs requiring higher-level approval to realign resources.
4. Increased internal realignments below BLI level. May increase flexibility of realigning funds, particularly if supporting the same mission- or portfolio- area. Furthermore, depending on structure, may reduce the need to submit formal reprogramming actions.

Cons:

1. Loss of historical trend analysis. Need to ensure that the crosswalk is clearly tracked and communicated within the DoD and Congress to ensure systems can appropriately reflect movement in budget structure.
2. "Lose" ability to manage program by BLI, and instead must rely on inter- organizational communication. This has the potential to cause internal disagreements on funding splits between programs, which may or may not lead to better mission outcomes. This relies on management structure and communication to enable success.
3. Perceived loss of higher headquarters or congressional visibility into lower-level details. Requires active communication and transparency to mitigate.

[566] For example, see C. Prt. 50-347, 532-533.

D2. Reprogrammings

Literature raises the issue of budget flexibility as a limitation on the DoD's ability to respond to emerging challenges or fact-of-life changes in the year of execution.[567] Reprogramming allows the DoD to transfer funds within and across appropriation accounts in the execution phase.

The DoD has a range of reprogramming actions available to transfer funds including internal, below threshold, and above threshold. Congress provides authorities and guidance related to reprogramming actions in appropriation and authorization legislation and explanatory language.[568] This includes general and special transfer authorities, reprogramming thresholds for appropriation accounts, and limitations or additional notification requirements on certain budget lines.

This appendix examines the following aspects of the reprogramming process – transfer authority, reprogramming thresholds, and reprogramming timelines. It draws primarily on publicly available data from the OUSD(C) website, information provided by the DoD to the Commission, congressional appropriation and report language, and government and academic reports.

Definitions[569]

Reprogramming: "Realignment of budget authority from the purpose for which appropriated to finance another (usually emergent, unfunded) requirement. A necessary, desirable, and timely device during execution of Defense programs for achieving flexibility in the use of DoD funds provided in appropriation acts."

Transfer: "Movement or shifting of budgetary resources from one budget account to another. Agencies may transfer budget authority only as specifically authorized by law. For budgetary accounting purposes, the nature of the transfer determines whether the transaction is recorded as an expenditure transfer, which means a transfer that involves an outlay, or as a non- expenditure transfer, which means a transfer that does not involve an outlay."

Background

Congress authorizes and appropriates money for the DoD to spend for specified purposes. It also provides the DoD with limited authority to change how money is spent through reprogramming (change within an appropriation account) or transfer (between accounts) processes.

The phrase "reprogramming" is used to describe both kinds of movements. Reprogramming authority is subject to limitations, notably annual limits on transfer authority and dollar or percentage limitations on how much money can be transferred or reprogrammed before requiring congressional prior notification. There are also limitations depending on the purpose and nature of the account, congressional interest, and if a program is a new start.

[567] McGregor et al. 2022, 17 and Lofgren et al. 2022.
[568] Reports can include formal conference reports, joint explanatory statements, and language inserted into the Congressional Record. While report language is not officially binding as statutory language, DoD customarily follows requirements in report language. See McNellis 2021, 4.
[569] DoD FMR "Glossary." G-30 and G-32.

Appropriation Account	Army	Navy	Marine Corps	Air Force	Space Force	DOD
RDT&E	2040A	1319N		3600F	3620F	0400D
Procurement					3022F	
Aircraft	2031A	1506N		3010F		0300D
Missiles	2032A			3020F		
Weapons		1507N				
Wheeled & Tracked Combat Vehicles	2033A					
SCN		1611N				
Ammunition	2034A	1508N		3011F		
USMC			1109N			
Other	2035A	1810N		3080F		
Space				3021F		
MILPERS	2010A, 2070A, 2060A	1453N, 1405N	1105N, 1108N	3500F, 3700F, 3850F		
O&M	2020A, 2020AX, 2065A, 2080A	1804N, 1806N	1106N, 1107N	3400F, 3740F, 3840F	3410F	0100D

There are four main types of reprogramming actions: (1) prior approval (PA) also commonly referred to as above threshold reprogramming (ATR); (2) internal reprogramming (IR); (3) below threshold reprogramming (BTR); and (4) letter transfers (LTR). The PA reprogrammings and BTRs are discussed in detail in this paper. The IRs are actions to facilitate execution without changes in purpose or congressional intent and do not require congressional approval.[570] The LTR actions are congressionally authorized transfers between the DoD and other agencies.

Reprogramming is governed by a mix of statute, regulation, and custom. Key documents include the annual Appropriation and Authorization Acts and accompanying report language, the DoD FMR 7000.14-R, and Title 10, U.S.C. §2214.

Transfer Authority

Congress provides the DoD with annual transfer authorities (TA) to move money between different appropriations accounts. Two of these authorities are the general transfer authority (GTA) and special transfer authority (STA). The dollar amounts for GTA and STA are established in annual authorization and appropriation legislation, as are conditions, restrictions, and exceptions on the use of the authorities. STA had traditionally been established for use with former Global War on Terror/Overseas Contingency Operations funding, which was enacted under a separate Title within Defense Appropriations Acts. As a percentage of the DoD budget, TA has trended downward since FY 2014 (Figure 1). Figures 2 and 3 contain TA use from FY 2011 to FY 2021.[571] For FY 2022 and FY 2023, Congress provided the DoD with $6 billion in GTA and $0 in STA.[572]

[570] McGarry 2022a.
[571] OUSD(C) n.d.
[572] P.L. 117-103, 125 and H.R. 2617, 139.

Figure 1 – Total TA as a Percentage of DoD Budget, Current ($B)[573]

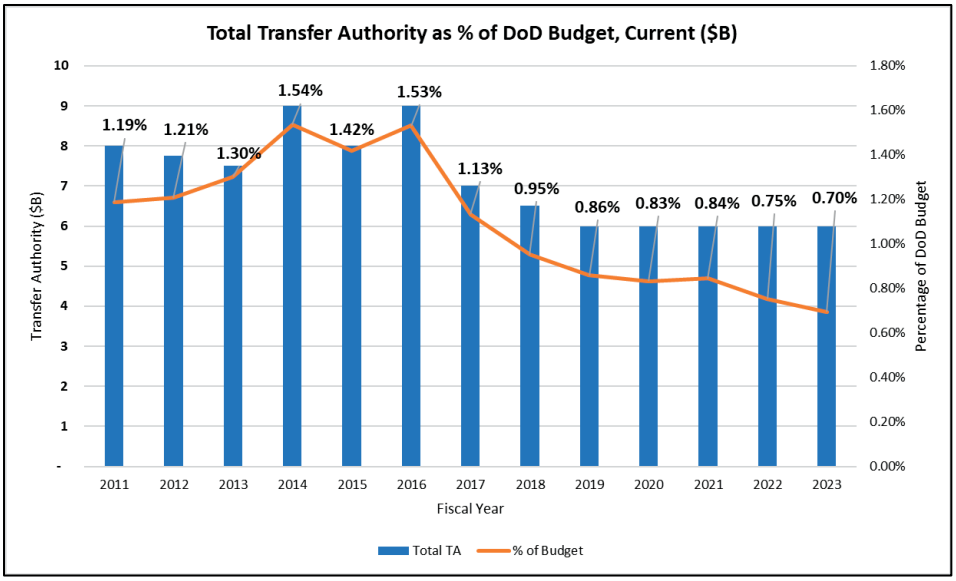


Figure 2 – General Transfer Authority, $M, FY 2011 - FY 2021

FY	GTA	GTA Used	Balance	% Used
2011	4,000	3,777	223	94.4%
2012	3,750	3,750	-	100.0%
2013	4,000	3,589	411	89.7%
2014	5,000	2,571	2,429	51.4%
2015	4,500	1,599	2,901	35.5%
2016	4,500	2,056	2,444	45.7%
2017	4,500	1,924	2,576	42.8%
2018	4,250	3,668	582	86.3%
2019	4,000	3,494	506	87.4%
2020	4,000	3,913	87	97.8%
2021	4,000	3,497	503	87.4%

Figure 3 – Special Transfer Authority, $M, FY 2011 - FY 2021

FY	STA	STA Used	Balance	% Used
2011	4,000	4,000	-	100.0%
2012	4,000	1,864	2,136	46.6%
2013	3,500	3,499	1	100.0%
2014	4,000	2,120	1,880	53.0%
2015	3,500	2,008	1,492	57.4%
2016	4,500	782	3,718	17.4%
2017	2,500	1,146	1,354	45.8%
2018	2,250	295	1,955	13.1%
2019	2,000	1,728	272	86.4%
2020	2,000	2,000	-	100.0%
2021	2,000	770	1,230	38.5%

[573] OUSD(C) 2023, 143-145. DoD budget calculation excludes MILCON and family housing. MILCON and family housing have a separate TA in the Military Construction/Veterans Affairs Appropriations Act (see OUSD(C) 2021a).

From FY 2011 to FY 2021, the Department fully used its GTA in FY 2012 and its STA in FY 2011, FY 2013, and FY 2020. The DoD used less than 50 percent of its GTA in three fiscal years and less than 50 percent of its STA in five fiscal years. From FY 2018 to FY 2021, the DoD used between 86.3 and 97.8 percent (average 89.7 percent) of its GTA. Not all reprogramming actions are subject to the GTA and STA authority. In FY 2022, the DoD received $6 billion in TA, without a distinction between GTA or STA limitations.

Reprogramming Thresholds

The BTR levels vary over time. Congress has tended to tighten threshold limits. Current thresholds were established in FY 2020: $10 million in increases or decreases for Military Personnel (MILPERS), Operation and Maintenance (O&M), Procurement, and Research, Development, Test, and Evaluation (RDT&E). Procurement and RDT&E are also subject to a 20 percent restriction, whichever is lesser. While the DoD budget has grown since 1999, thresholds have remained relatively constant (Figure 4, decreases in red, increases in green). From 2003 to 2017 and in 2019, the thresholds for MILPERS, O&M, RDT&E, and Procurement were $10, $15, $10, and $20 million, respectively.

Congress changed reprogramming thresholds during this period due to inflation, budget size and timing, and in response to executive action. Most recently, the appropriations act for FY 2020 reduced thresholds to $10 million for all accounts in response to reprogramming actions to support border wall construction, with report language decrying the flouting of "a long-standing tradition of comity and cooperation between the executive and legislative branches that exists to meet unforeseen requirements and higher military priorities."[574]

In 2000, Congress decreased the O&M threshold from $20 to $15 million, expressing concern over multiple aspects of O&M use by the Department.[575]

Figure 4–BTR Thresholds, FY 1999 - FY 2022 ($M, Current)[576]

FY	MILPERS	O&M	RDT&E	PROC	FY	MILPERS	O&M	RDT&E	PROC
1999	10	20	4	10	2011	10	15	10	20
2000	10	15	4	10	2012	10	15	10	20
2001	10	15	4	10	2013	10	15	10	20
2002	10	15	4	10	2014	10	15	10	20
2003	10	15	10	20	2015	10	15	10	20
2004	10	15	10	20	2016	10	15	10	20
2005	10	15	10	20	2017	10	15	10	20
2006	10	15	10	20	2018	10	20	10	20
2007	10	15	10	20	2019	10	15	10	20
2008	10	15	10	20	2020	10	10	10	10
2009	10	15	10	20	2021	10	10	10	10
2010	10	15	10	20	2022	10	10	10	10

[574] H. Rpt. 116-84, 4: "The Committee strongly opposes the Department's use of funds appropriated for military requirements to subsidize border wall construction. This action flouts a long-standing tradition of comity and cooperation between the executive and legislative branches that exists to meet unforeseen requirements and higher military priorities that inevitably arise between the submission of the budget request and the execution of those funds pursuant to congressional appropriations legislation. The Committee recommendation includes provisions to prevent and deter the further misuse of funds recommended by the Committee, and still allows for the meeting of urgent and emerging military requirements."

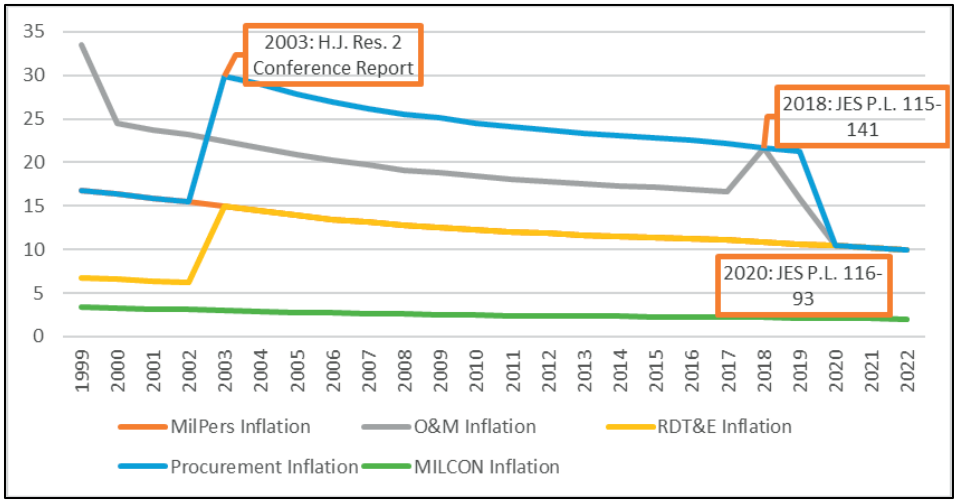
[575] H. Rpt. 106-244, 8-10, 22, 198-199.

[576] Commission staff analysis of annual appropriations and DoD guidance. Red indicates decrease in BTR authority over prior year; green indicates increase in BTR authority over prior year.

However, Congress has also increased thresholds. In the 2003 supplemental, the RDT&E threshold was increased from $4 to $10 million and the Procurement threshold was increased from $10 to 20 million.[577] The following year, while noting that the increase was intended to be temporary, Congress maintained the higher threshold, acknowledging the effects of inflation on "numerical below threshold limits" and stressing the need for the Department "to provide more convincing arguments if it expects the Committees to approve this change permanently."[578] The increased thresholds remained in effect until FY 2020. Congress also temporarily increased the O&M threshold for FY 2018 due to the "delay of the final passage of this year's appropriation bill, combined with the large funding increase made possible by the Bipartisan Budget Act of 2018."[579] The House Appropriations Committee included increased reprogramming thresholds for MILPERS and O&M to $15 million for FY 2024.[580] The Senate Appropriations Committee included increased reprogramming thresholds for O&M, Procurement, and RDT&E to $15 million for FY 2024.[581]

Reprogramming Thresholds and Inflation. Declining reprogramming thresholds relative to inflation and growing budgets have been identified as a source of reduced budget flexibility for the DoD.[582] Figure 5 illustrates the value of thresholds since FY 1999, adjusted to FY 2022 dollars. Inflation accounts for roughly a third of the decline in value, with O&M and Procurement losing 55 and 66 percent, respectively, with the FY 2020 threshold cuts.

Figure 5 – BTR Thresholds in FY 2022 Constant Dollars ($M)



Red callout boxes represent notable Congressional action on threshold levels
Source: Staff analysis of thresholds using Total DoD Deflator – Budget Authority deflators.[583]

Figure 6 provides inflation-adjusted thresholds to FY 1999 dollars, holding congressional action constant. Over two decades, adjustments have produced modest increases in thresholds.

[577] H. Rpt. 108-10, 1499.
[578] H. Rpt. 108-283, 60.
[579] C. Prt. 29-456, 342. O&M received another flexibility for FY 2018 due to the lateness and size of the budget, with the 80/20 obligation restriction relaxed to 75/25.
[580] H. Rpt. 118–121, 6.
[581] Ibid.
[582] Section 809 Panel 2019, 186.
[583] OUSD(C) 2021b, 68-69.

Figure 6 – Reprogramming Dollar Thresholds, if inflation adjusted to FY 1999 $M.[584]

FY	MILPERS	O&M		RDT&E	Procurement		MILCON
1999	10.00	20.00		4.00	10.00		2.00
2000	10.15	15.23		4.06	10.15		2.03
2001	10.36	15.54		4.14	10.36		2.07
2002	10.51	15.77		4.21	10.51		2.10
2003	10.74	16.11		10.74	21.48		2.15
2004	10.95	16.42		10.95	21.89		2.19
2005	11.22	16.84		11.22	22.45		2.24
2006	11.47	17.20		11.47	22.93		2.29
2007	11.66	17.50		11.66	23.33		2.33
2008	11.89	17.83		11.89	23.77		2.38
2009	12.01	18.01		12.01	24.02		2.40
2010	12.19	18.28		12.19	24.38		2.44
2011	12.34	18.51		12.34	24.68		2.47
2012	12.48	18.71		12.48	24.95		2.50
2013	12.61	18.91		12.61	25.21		2.52
2014	12.71	19.07		12.71	25.42		2.54
2015	12.81	19.21		12.81	25.62		2.56
2016	12.90	19.35		12.90	25.79		2.58
2017	13.08	19.61		13.08	26.15		2.62
2018	13.28	26.55		13.28	26.55		2.66
2019	13.47	20.20		13.47	26.93		2.69
2020	13.65	13.65	20.52	13.65	13.65	27.36	2.73
2021	13.82	13.82	20.77	13.82	13.82	27.70	2.76
2022	14.04	14.04	21.11	14.04	14.04	28.14	2.81

Example of Inflation Related Flexibility. Title 10, U.S.C § 2805 provides inflation-related flexibility for unspecified minor construction projects and allows the Secretary to adjust the dollar limitation ($6 million) for unspecified minor military construction in the continental U.S. each fiscal year "to reflect the area construction cost index for military construction projects," not to exceed $10 million.[585]

Findings. Congress uses reprogramming thresholds to communicate concern about the DoD's financial behavior (i.e., after border wall funding reprogrammings). Congress has also been willing to increase thresholds in response to economic and budget conditions. While the current caps reflect a decrease in trust by Congress in the DoD, future thresholds could be negotiated with adequate justification and improved relationships with the congressional committees. Since FY 1999, inflation has reduced the purchasing power of the thresholds by about a third (excluding congressional changes to thresholds). Congressional action in the FY 2024 House and Senate Subcommittees on Defense bills could signal a recognition that the DoD requires additional flexibility.

Reprogramming Actions

Reprogramming is commonly used to refer to actions that transfer funds within or between any appropriation account. Reprogramming is governed by a mixture of statutory, regulatory, and customary provisions.[586]

Three common reprogramming actions are IR, LTR, and PA. The PA actions include new starts, which require notification to the congressional defense committees, changes to congressional special interest items, and reprogramming actions above thresholds established in explanatory language accompanying appropriations acts. The DoD FMR describes actions that require congressional approval for reprogramming.[587] An IR allows the DoD to move funds for execution without affecting the purpose of the funds, reprogram to or from transfer

[584] Ibid. Staff used FY 2022 deflator data to rebaseline deflator values to FY 1999. O&M and Procurement include thresholds with and without FY 2020 related threshold cuts. Other thresholds reflect actual congressional thresholds, as provided in Figure 29, with inflation adjustment.
[585] 10 U.S.C. §2805(f).
[586] For detailed background on relevant authorities see McGarry 2022b.
[587] DoD FMR Vol. 3, Ch. 6, 6-6 – 6-16.

accounts, or make certain increases in procurement quantities.[588] A LTR is required for certain procurement, modification, research and development, and congressionally-established line item efforts and are subject to a 30-day notify and wait period prior to implementation.[589] From FY 2007 to FY 2018, there were 977 reprogramming requests for a total of around $289 billion with IRs accounting for 47 percent ($125 billion), PAs accounting for 33 percent ($134 billion), and LTRs accounting for 20 percent ($31 billion) of requests.[590]

Below-Threshold Reprogramming. Congress allows the Department to realign funding within most appropriations, if it meets certain conditions, through BTR authority.[591] The MILPERS and O&M accounts can transfer designated amounts within BAs and Sub-Activity Groups and the Procurement and RDT&E accounts can transfer designated amounts at the BLI level. The BTRs cannot change the purpose or intent, affect a congressional special interest item, initiate a new start, terminate a procurement or development effort,[592] accounts, or apply to certain restricted O&M. Congress directs the DoD to provide annual DD 1416 reports for the MILPERS and O&M accounts and quarterly DD 1416 reports for the Procurement and RDT&E accounts.[593] Based on the annual DD 1414 Base for Reprogramming Actions, these reports provide cumulative changes at the respective line-item level of each account. These reports allow Congress to identify where reprogramming actions occur, including for all BTR and ATR actions.

Between FY 2011 and FY 2020, there was an absolute value of over $29 billion reprogrammed through BTR actions, with the majority occurring in Procurement and RDT&E accounts (accounting for different data availability) (Figure 7). This is consistent with the budget structure of those accounts, with BTRs allowable at the BLI level. The BTR increases and decreases balance since they occur within accounts.

Figure 7 – Absolute Value of BTRs[594]

FY Start	MILPERS	O&M	Procurement	RDT&E	Grand Total
11			$ 2,131,739,359		$ 2,131,739,359
12			$ 2,381,058,833	$ 1,247,191,840	$ 3,628,250,673
13			$ 2,032,500,536	$ 1,039,038,890	$ 3,071,539,426
14			$ 1,441,839,482	$ 987,010,430	$ 2,428,849,912
15	$ 54,807,894	$ 300,951,016	$ 1,451,367,784	$ 1,113,630,250	$ 2,920,756,944
16	$ 94,845,996	$ 347,141,674	$ 1,598,018,003	$ 1,188,909,576	$ 3,228,915,249
17	$ 73,668,696	$ 260,345,003	$ 1,596,523,456	$ 945,488,746	$ 2,876,025,901
18	$ 99,433,028	$ 412,657,050	$ 1,203,089,621	$ 1,016,478,429	$ 2,731,658,128
19	$ 59,265,058	$ 326,249,712	$ 1,460,634,247	$ 1,060,771,750	$ 2,906,920,767
20	$ 109,289,998	$ 260,023,800	$ 892,980,411	$ 913,090,976	$ 2,175,385,185
21	$ 79,998,000	$ 227,675,826		$ 1,026,112,665	$ 1,333,786,491
22	$ 50,014,000	$ 192,058,968			$ 242,072,968
Grand Total	**$ 621,322,670**	**$ 2,327,103,049**	**$ 16,189,751,732**	**$ 10,537,723,552**	**$ 29,675,901,003**

As noted above, BLIs can have additional restrictions based on congressional action. These actions can impose additional limits on the DoD's ability to use BTR authority.

As an example, of 962 RDT&E PEs identified on the DD 1414 for FY 2022, 264 (27 percent) included at least one congressional addition requiring a PA to decrease funds and 192 (20 percent) included at least

[588] Ibid., 6-10-11.
[589] Ibid., 6-11.
[590] Fritsch et al. 2020. Dollar values rounded to nearest whole number.
[591] OUSD(C) 2021a.
[592] Ibid.
[593] For example, Congressional Record – House 2022, H1866, H1966, and H2064.
[594] DD 1416 data (available on OUSD(C) website) compiled by George Mason University and provided to the Commission. Data for all appropriations not available for all fiscal years. Table excludes data from active appropriations (i.e., FY 2021 and FY 2022 Procurement and FY 2022 RDT&E), which were active at the time of data compilation.

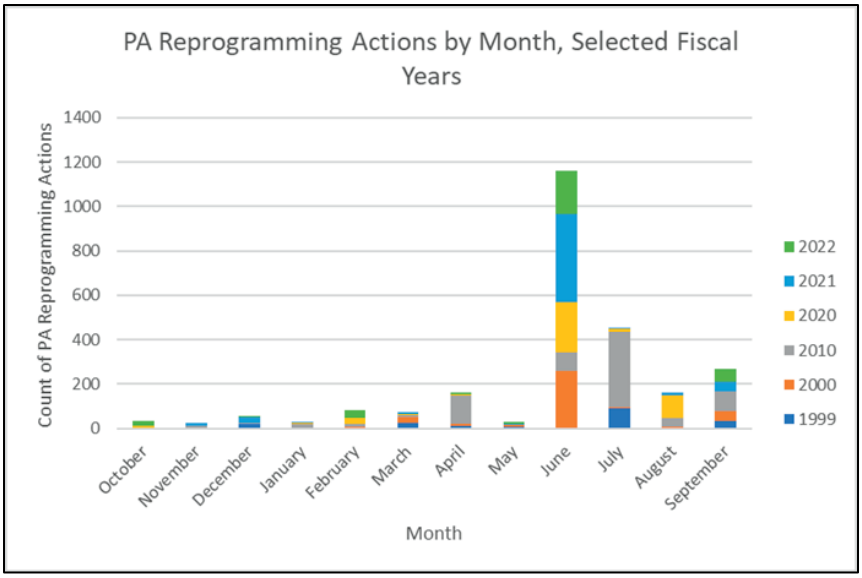
one congressional reduction that could not be restored by BTR (Figure 8). Reprogramming funds for identified programs or in program elements would require the use of a PA reprogramming.

Figure 8 – FY 2022 RDT&E Congressional Special Interest Item Restrictions[595]

RDT&E Budget Activity	Count of BLI	PA for Decrease	No BTR Restoration
BA 01: BASIC RESEARCH	17	15	
BA 02: APPLIED RESEARCH	62	33	7
BA 03: ADVANCED TECHNOLOGY DEVELOPMENT	85	45	18
BA 04: ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES	203	62	59
BA 05: SYSTEM DEVELOPMENT & DEMONSTRATION	184	26	65
BA 06: MANAGEMENT SUPPORT	134	30	6
BA 07: OPERATIONAL SYSTEM DEVELOPMENT	264	53	35
BA 08: SOFTWARE & DIGITAL TECHNOLOGY PILOT PROGRAMS	13		2
Grand Total	**962**	**264**	**192**

Above Threshold Reprogrammings. Transfers exceeding thresholds or otherwise not meeting BTR requirements are ATR actions that require the DoD to submit a PA reprogramming request, DD 1415-1, to the congressional defense committees.[596] Around 2006, the DoD transitioned from a topical to a monthly PA reprogramming request to Congress as well as an annual Omnibus, although there are still some issue- specific PA requests.[597] The DoD submits PA reprogramming requests throughout the year, with the majority in the June Omnibus request (Figure 9). The value of actions is more distributed but tends to increase beginning with the June Omnibus (Figure 10).

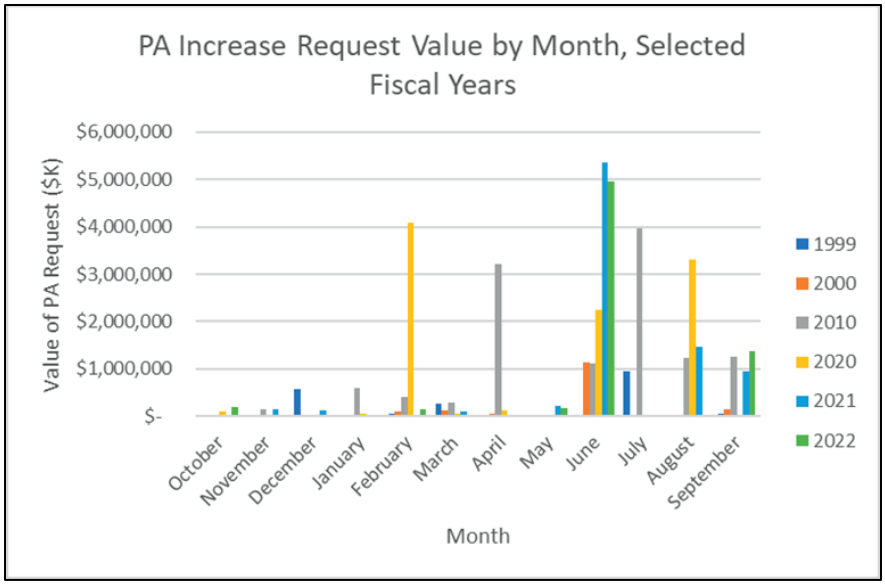
Figure 9 – PA Reprogramming Actions by Month, Selected FYs



Source: PA Reprogramming DD 1415-1s available on OUSD(C) website.

[595] Commission staff review of DD1414 (OUSD(C) 2022).
[596] The DoD provides DD 1416 reports that provide information on reprogramming actions by account and fiscal year. These reports track all ATR actions, including IRs, LTRs, and PA actions. Due to this aggregation, data on ATRs in this appendix concentrates on prior approval reprogramming data from posted DD 1415s (OUSD(C) "Budget Execution" n.d.).
[597] Commission interview with subject matter experts.

Figure 10 – PA Reprogramming Increase Request Value by Month, Selected FYs[598]



Source: PA Reprogramming DD 1415-1s available on OUSD(C) website.

Around 40 percent of PA reprogramming increase requests are for less than $10 million across the selected fiscal years; around 60 percent of PA reprogramming decrease requests are for less than $10 million across the selected fiscal years (Figures 11 and 12). Since PA reprogramming requests must balance, this suggests that smaller decreases serve as sources for larger increases.

[598] Data for selected fiscal years compiled from OUSD(C) "Budget Execution" n.d. Months are based on the date of signature on the PA reprogramming request available on the OUSD(C) website. The February 2020 value is driven by reprogramming actions in support of border construction. The April 2010 value includes three requests from January, March, and for Counter-Improvised Explosive Device Equipment. The July 2010 value is for the FY 2010 Omnibus. The August 2020 value includes two requests, including one addressing Working Capital Fund requirements due to COVID-19.

Figure 11 – Frequency Table of PA Reprogramming Increase Requests, Selected FYs[599]

Prior Approval Reprogramming Increase Request ($K)	Fiscal Year						
	1999	2000	2010	2020	2021	2022	Total
0-9,999	31	43	147	75	65	37	398
10,000-19,999	21	9	62	27	34	29	182
20,000-29,999	6	9	30	17	16	12	90
30,000-39,999	5	6	29	11	8	6	65
40,000-49,999	5	2	12	3	8	4	34
50,000-59,999	2	4	12	3	5	2	28
60,000-69,999	2	1	4	3	9	3	22
70,000-79,999		1	9	3	2	2	17
80,000-89,999	1	1	3	3	1	2	11
90,000-99,999	1		4		1		6
100,000-199,999	4	2	21	8	8	8	51
200,000-299,999			6	3	3	2	14
300,000-399,999				2	3	2	7
400,000-499,999			1				1
500,000-599,999			2	1	1		4
600,000-699,999			1		1		2
700,000-799,999				1		1	2
800,000-899,999					1		1
900,000-999,999						2	2
1,000,000-1,099,999					1		1
1,600,000-1,699,999				1			1
2,200,000-2,299,999				1			1
Grand Total	**78**	**78**	**343**	**162**	**167**	**112**	**940**

Figure 12 – Frequency Table of PA Reprogramming Decrease Requests, Selected FYs[600]

Prior Approval Reprogramming Decrease Request ($K)	Fiscal Year						
	1999	2000	2010	2020	2021	2022	Total
0-9,999	88	224	203	118	205	134	972
10,000-19,999	14	29	65	29	61	32	230
20,000-29,999	1	11	29	25	29	8	103
30,000-39,999	3	4	12	12	8	12	51
40,000-49,999	2	1	14	3	11	5	36
50,000-59,999	3	2	7	3	7	1	23
60,000-69,999	2		11	7	9	3	32
70,000-79,999			10	6	4	5	25
80,000-89,999		1	4	1	1	2	9
90,000-99,999			4	1	4		9
100,000-199,999	3	1	21	17	12	4	58
200,000-299,999			6	7	3	1	17
300,000-399,999			1	2		1	4
400,000-499,999			3	1		1	5
500,000-599,999	1		1				2
600,000-699,999				1	2		3
700,000-799,999						1	1
900,000-999,999				1		2	3
Grand Total	**117**	**273**	**391**	**234**	**356**	**212**	**1583**

[599] Ibid.
[600] Ibid.

Increasing BTR limits alone might not automatically reduce the number of PA actions if funds continue to be restricted at the appropriation structure level. For example, regardless of the BTR limit, if the use and source for a request require transferring between appropriations then a PA request will be required under current rules.

Congressional Involvement

In 1999, Congress directed the DoD to update reprogramming policy to require written approval from all four congressional defense committees prior to implementing reprogramming actions.[601] Each committee responds to DoD approving, denying, or deferring a PA reprogramming request. Committees can deny requests in part or in full. The DoD applies each committee's response equally and applies the most restrictive (e.g., if the Senate Appropriations Committee (SAC) cuts a request by $1 million and the House Armed Services Committee (HASC) denies the request entirely, the DoD will zero out the PA action). Since FY 1999, PA notifications account for 26 percent of all DoD reprogramming requests.[602]

While PA reprograming requests are balanced between requested and sourced funds, Congress does not have to balance approvals (see Figure 13). Differences between the request and approved sources require the DoD to decide what to fund with available approved sources.

Figure 13 – Difference between Requested and Approved PA Reprogramming Amounts ($K), Selected FYs

Fiscal Year	Sum of PA Increase Request	Sum of PA Increase Approved	Sum of PA Decrease Request	Sum of PA Decrease Approved
1999	$1,919,729	$1,752,643	$1,919,729	$1,752,643
2000	$1,580,219	$879,743	$1,580,219	$915,540
2010	$12,194,701	$8,707,635	$12,194,701	$8,702,096
2020	$10,013,499	$8,840,162	$10,013,499	$8,657,406
2021	$8,387,212	$6,753,677	$8,360,299	$6,704,198
2022	$6,863,314	$6,400,028	$6,863,314	$6,400,028
Grand Total	$40,958,674	$33,333,888	$40,931,761	$33,131,911

Source: DD 1415-1 data available on OUSD(C) website.

Figures 14 and 15 provide congressional outcomes on PA actions for selected fiscal years. The majority of requests are approved as requested by Congress.

Figure 14 – Congressional Outcomes of PA Reprogramming Increase Requests, Selected FYs

Outcome of PA Reprogramming Request	Fiscal Year						
	1999	2000	2010	2020	2021	2022	Grand Total
Approved	78	64	305	123	156	104	830
Approved/Rescinded							
Approved/Supplemental		6					6
Approved/Supplemental Rescission							
Deferred			3	23		1	27
Denied		4	24	7	8	5	48
Denied/Rescinded							
Denied/Supplemental Rescission							
Element deferred				2	1		3
Element denied		4	11	5	2	2	24
N/A				2			2
Rescission							
Grand Total	**78**	**78**	**343**	**162**	**167**	**112**	**940**

Source: DD 1415-1 data available on OUSD(C) website.

[601] H. Rpt. 106-244, 120. And H. Rpt. 106-371, 162.
[602] McGarry 2022b, 25. Reprogramming actions are defined as discrete notification letters posted on the OUSD(C) website.

Figure 15 – Congressional Outcomes of PA Reprogramming Decrease Requests, Selected FYs

Outcome of PA Reprogramming Request	Fiscal Year						
	1999	2000	2010	2020	2021	2022	Grand Total
Approved	104	185	335	169	293	186	1272
Approved/Rescinded		9					9
Approved/Supplemental							
Approved/Supplemental Rescission		4					4
Deferred			2	18	3	2	25
Denied	13	65	51	25	45	22	221
Denied/Rescinded		1					1
Denied/Supplemental Rescission		1					1
Element deferred				1	3		4
Element denied		8	3	3	12	1	27
N/A				18			18
Rescission						1	1
Grand Total	**117**	**273**	**391**	**234**	**356**	**212**	**1583**

Source: DD 1415-1 available on OUSD(C) website.

Congressional action on reprogramming requests is not legally binding on the DoD. However, DoD by regulation abides by congressional decisions.[603] Perceived misuse or abuse of reprogramming authority has led to congressional action on execution flexibility, most recently following 2020 reprogramming actions to support border wall construction, discussed above.

Above Threshold Reprogramming Use

The data below draws on PA reprogramming requests (DD 1415-1s) to present use trends for PA reprogramming actions.[604] Between FY 2011 and FY 2018, O&M accounted for the highest value of PA increase requests approved, followed by Procurement. In the same timeframe, Procurement narrowly accounted for the highest value of PA decrease requests approved, followed by O&M (Figures 16 and 17).

Figure 16 – PA Increase Amount Approved, FY 2011–FY 2018[605]

Account	Sum of Prior Approval Increase Amount Approved ($K)								
	2011	2012	2013	2014	2015	2016	2017	2018	Grand Total
O&M	$3,245,230	$5,911,887	$6,558,202	$2,099,482	$3,653,620	$6,656,042	$1,103,220	$834,792	$30,062,475
Procurement	$5,142,277	$1,743,178	$619,717	$2,001,405	$2,450,365	$1,299,734	$1,677,170	$1,964,123	$16,897,969
RDT&E	$1,524,142	$1,193,092	$395,228	$908,689	$399,181	$490,121	$1,169,901	$2,323,307	$8,403,661
Military Personnel	$661,103	$783,493	$831,233	$839,137	$100,297	$434,461	$358,100	$66,444	$4,074,268
WCF		$1,000,000	$1,565,005				$500,000	$690,562	$3,755,567
Defense Health Program	$18,736	$5,650		$429,800	$1,018,978	$179,740		$11,600	$1,664,504
Overseas Humanitarian, Disaster Assistance, and Civic Aid				$1,000,000				$0	$1,000,000
Shipbuilding and Conversion	$176,787	$254,700	$239,850	$0	$46,100	$24,000	$0	$62,700	$804,137
National Guard Personnel	$62,055		$0	$247,829	$92,100		$17,500	$120,365	$539,849
Joint Improvised Explosive Device Defeat Fund	$363,659		$72,386			$20,000	$0		$456,045
Afghanistan Security Forces Fund						$230,000			$230,000
Reserve Personnel	$32,500	$11,000	$25,200	$60,656	$71,800	$6,000		$4,858	$212,014
Global Security Contingency Fund		$21,800	$35,911	$45,200	$63,866	$18,720			$185,497
Cooperative Threat Reduction Account				$81,025					$81,025
National Guard and Reserve Equipment		$7,550				$30,955			$38,505
Diplomatic and Consular Programs								$20,000	$20,000
National Defense Sealift Fund	$0	$4,617							$4,617
Grand Total	**$11,226,489**	**$10,936,967**	**$10,342,732**	**$7,713,223**	**$7,896,307**	**$9,389,773**	**$4,825,891**	**$6,098,751**	**$68,430,133**

[603] Ibid., 34-35, for a discussion of constitutional and legal issues.
[604] DD 1416s include a column titled "Above Threshold Reprogramming." The column includes amounts reprogrammed via IR, PA, and LTRs per a DoD official. PA data is compiled from DD1415-1s.
[605] Data set accompanying Fritsch et al. 2020 provided to the Commission.

Figure 17 – PA Decrease Amount Approved, FY 2011–FY 2018[606]

	Sum of Prior Approval Decrease Amount Approved ($K)								
Account	2011	2012	2013	2014	2015	2016	2017	2018	Grand Total
Procurement	$2,234,535	$2,183,107	$3,636,639	$1,350,096	$1,774,556	$1,352,183	$1,525,555	$1,842,970	$15,899,641
O&M	$4,161,901	$1,489,728	$847,940	$2,569,918	$1,617,058	$1,812,161	$865,928	$594,051	$13,958,685
Military Personnel	$1,492,574	$1,149,579	$3,698,649	$1,237,244	$883,845	$877,047	$756,106	$2,179,539	$12,274,583
WCF	$1,983,000	$1,510,194		$1,155,836	$1,960,277	$3,370,025	$836,650	$58,996	$10,874,978
RDT&E	$551,707	$1,199,245	$519,374	$388,506	$322,733	$330,018	$243,454	$513,833	$4,068,870
Defense Health Program	$349,926	$707,949		$742,991	$521,478	$179,740	$98,792	$668,700	$3,269,576
Counterterrorism Partnerships Fund					$523,810	$1,374,997	$479,157		$2,377,964
Afghanistan Security Forces Fund		$2,000,000	$355,950						$2,355,950
Foreign Currency Fluctuations, Defense			$969,000						$969,000
National Guard Personnel			$494,460	$146,729	$28,100	$19,300		$70,829	$759,418
Joint Improvised Explosive Device Defeat Fund	$363,659		$176,175						$539,834
Iraq Security Forces Fund		$344,540							$344,540
Chemical Agents and Munitions Destruction		$100,851	$120,900	$89,947	$15,000	$6,347		$10,500	$343,545
Reserve Personnel	$82,400	$56,440	$49,000	$28,956			$15,249	$65,477	$297,522
Drug Interdiction and Counter-Drug Activities					$189,000	$37,000		$24,252	$250,252
Pakistan Counterinsurgency Fund		$126,298							$126,298
Shipbuilding and Conversion	$5,489	$52,856		$3,000		$0		$62,700	$124,045
Office of the Inspector General		$19,500	$29,000	$0	$5,500		$5,000		$59,000
Overseas Humanitarian, Disaster Assistance, and Civic Aid					$49,950				$49,950
National Guard and Reserve Equipment						$30,955			$30,955
National Defense Sealift Fund	$1,298				$5,000				$6,298
Space Program								$4,907	$4,907
DoD Acquisition Workforce Development Fund								$1,997	$1,997
Operational Test and Evaluation		$125							$125
Grand Total	**$11,226,489**	**$10,940,412**	**$10,897,087**	**$7,713,223**	**$7,896,307**	**$9,389,773**	**$4,825,891**	**$6,098,751**	**$68,987,933**

Between FY 2020 and FY 2022, O&M accounted for the highest value of approved PA increase requests; Procurement accounted for the highest value of approved PA decrease requests (Figures 18 and 19). Increases associated with fuel costs drove working capital fund requests in FY 2022. Impacts from COVID-19, changes in operational activity, and pay raises also drove working capital fund requests, reflecting how PA requests can be required to respond to fact-of-life changes in the year of execution. Similarly, the foreign currency fluctuations account was a significant source for working capital fund increases during this timeframe.

Figure 18 – PA Increase Amount Approved, FY 2020–FY 2022 "Border Wall" reflects FY 2020 reprogrammings into the Drug Interdiction and Counter-Drug Activities, Defense account.[607]

PAR Increase Approved ($K)	Fiscal Year			
Account	2020	2021	2022	Grand Total
O&M	$5,931,832	$3,627,089	$1,702,653	$11,261,574
Working Capital	$1,803,605	$1,309,599	$2,638,927	$5,752,131
Military Personnel	$379,785	$774,674	$833,667	$1,988,126
Procurement	$237,557	$774,064	$900,126	$1,911,747
RDT&E	$487,383	$268,251	$324,655	$1,080,289
Foreign Currency				
Other				
Grand Total	**$8,840,162**	**$6,753,677**	**$6,400,028**	**$21,993,867**

[606] Ibid. PA increases and decreases should balance. Congress is not required to balance increases and decreases. There is a FY 2012 difference of $3,445,000 related to the Omnibus reprogramming request. The FY 2013 difference reflects two requests for replacement sources for previously submitted PA requests.

[607] Data for selected FYs compiled from OUSD(C) "Implemented Reprogramming Actions" n.d.

Figure 19 – PA Decrease Amount Approved, FY 2020 - FY 2022[608]

PAR Decrease Approved ($K)	Fiscal Year			
Account	2020	2021	2022	Grand Total
Procurement	$4,369,380	$1,891,327	$1,010,213	$7,270,920
Foreign Currency	$945,000	$600,000	$2,638,927	$4,183,927
O&M	$1,564,932	$1,307,584	$1,108,292	$3,980,808
Military Personnel	$915,523	$648,015	$980,923	$2,544,461
RDT&E	$408,549	$739,568	$661,673	$1,809,790
Other	$8,255	$1,517,704		$1,525,959
Working Capital	$445,767			$445,767
Grand Total	**$8,657,406**	**$6,704,198**	**$6,400,028**	**$21,761,632**

Above Threshold Reprogramming Timelines

Background. The length of the reprogramming process is frequently raised as a challenge that limits flexibility in budget execution. A 2020 study of Navy PA requests found that the overall average for a request was 96 days, 41 days in various executive branch agencies and about 55 days with the congressional committees.[609] The Section 809 panel reported that a PA reprogramming request takes roughly 75 days to go from the OUSD(C), to the OMB, to congressional approval, with an additional month or more in a Service prior to Comptroller receipt.[610] Overall, the 809 Panel found "[f]rom a [PM's] perspective, the total time required to compete an ATR reprogramming action 'ranges from 4 to 6 months.'"[611] The BTR actions can take between 60 to 90 days on average.[612] Figures 20, 21, and 22 illustrate current PA and BTR processes.

The OUSD(C) provided Department-wide data for PA reprogramming timelines. Factors that contribute to the timeline include adherence to OUSD(C)'s schedule for submissions, proximity to the Omnibus, and delays in identifying sources. The DD 1416 reports provide BTR information quarterly for Procurement and RDT&E accounts and annually for O&M and MILPERS accounts, by Service/Agency, and for active fiscal years. Quarterly O&M execution reports also provide information about BTRs.[613]

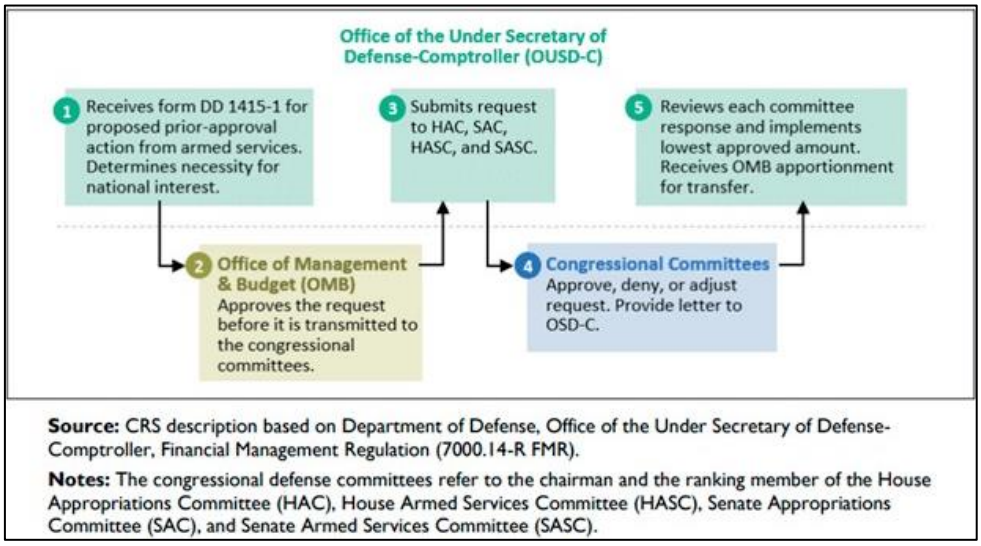
Statutory and Regulatory Guidance

Congress does not prescribe DoD's internal process for vetting and approving BTR or PA reprogramming requests. Starting in FY 2000, Congress directed DoD to update the reprogramming policy to require written approval from all the congressional defense committees.[614] The annual Appropriations Act directs the DoD to submit "a request for multiple reprogrammings of funds using [reprogramming] authority…prior to June 30."[615] The Appropriations Act also requires the submission of the DD 1414 ("the baseline for application of reprogramming and transfer authorities") not later than 60 days after enactment and prior to any reprogramming or transfer actions (with exceptions for emergencies and certain transfer accounts).[616] The FMR notes that PA reprogramming requests require "approval of the Department" and describes the requirements for Components to submit PA reprogramming requests.[617] It does not direct internal component processes for approving BTR or PA reprogramming requests.

[608] Ibid.
[609] Fritsch et al. 2020, 51.
[610] Section 809 Panel 2019, 181-2.
[611] Ibid., 182.
[612] Commission interview with subject matter experts.
[613] For example, see OUSD(C) "1416 Quarterly Reports – FY 2023" and "Operation and Maintenance (O&M) Budget Execution Reports."
[614] H. Rpt. 106-244, 120.
[615] H.R. 2617, 127.
[616] Ibid., 128.
[617] DoD FMR Vol. 3, Ch. 6, 6-5; 6-13-14.

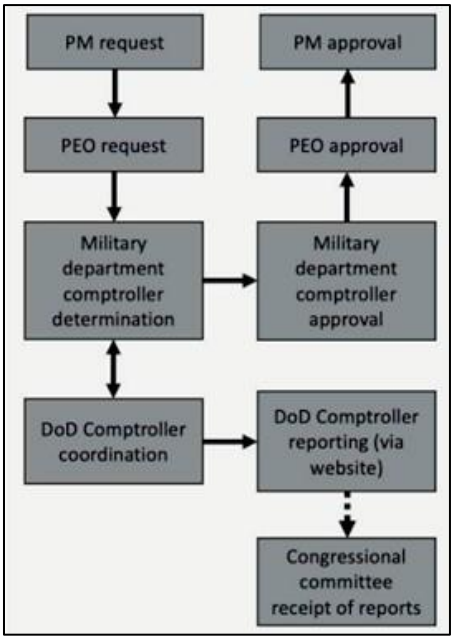
After receiving congressional responses, the DoD abides by the most "severe" action (that is, if SAC defers a $0.5 million of a $1 million source and HASC denies the entire amount, DoD does not use the entire amount).[618] If Congress denies an increase, DoD cannot use BTR actions to fund the increase.[619] BTRs cannot be used "to either restore or reduce funding from congressional special interest items" identified on the DD 1414.[620] Similarly, reprogrammings cannot be used for items denied by Congress.[621]

Figure 20 – Current PA Reprogramming Process
"Figure 1. DoD Process for Prior-Approval Reprogramming Actions"



Source: McGarry, CRS 2020, 16.

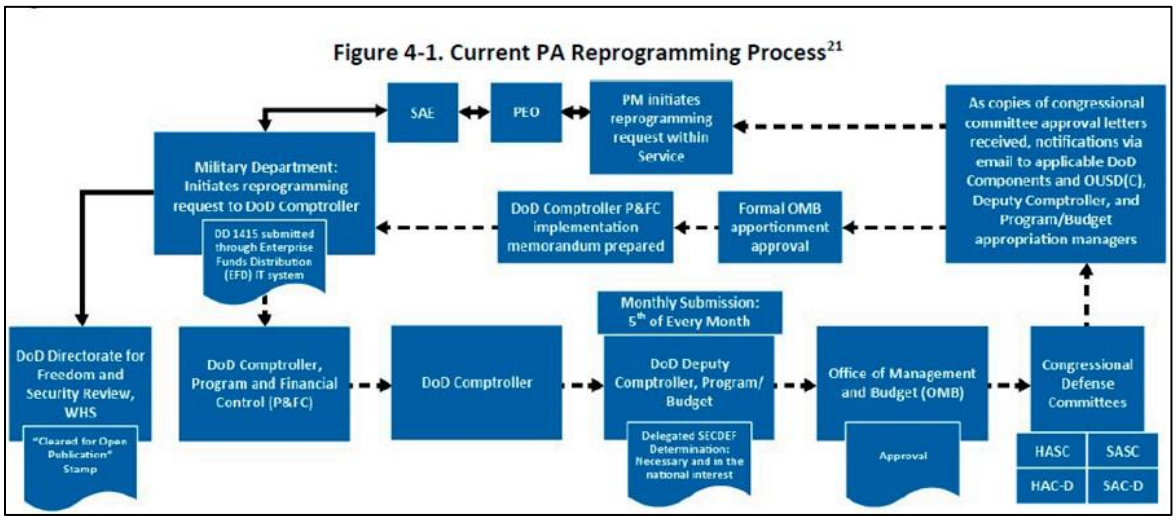
Figure 21 – Current Decision Authority Flowchart for BTR



Source: Section 809 Panel Report, 185.

[618] Ibid.
[619] Ibid., 6-15.
[620] C. Prt. 50-347, 532.
[621] H.R. 2617, 127.

Figure 22 – Current PA Reprogramming Process - DoD to Congress



Source: Section 809 Panel

Prior Approval Timelines

Figure 23 – PA Reprogramming Total Timelines[622]

	TOTAL			OMNIBUS			Non-Omnibus		
FISCAL YEAR	AVERAGE	MAX	MIN	AVERAGE	MAX	MIN	AVERAGE	MAX	MIN
2009	94	455	24	62	79	49	102	455	24
2010	53	144	3	60	60	60	52	144	3
2011	60	140	10	73	124	22	58	140	10
2012	91	347	1	141	142	140	87	347	1
2013	89	154	7				89	154	7
2014	76	177	9	80	83	76	75	177	9
2015	97	329	18	137	138	136	94	329	18
2016	97	191	20	133	133	133	94	191	20
2017	78	224	7	168	224	111	72	190	7
2018	100	251	13	173	210	135	93	251	13
2019	114	257	33	161	161	161	105	257	33
2020	126	251	21	193	251	135	116	224	21
2021	70	181	1	140	153	126	62	181	1
2022	93	169	18				93	169	18
Grand Total	**87**	**455**	**1**	**113**	**251**	**22**	**84**	**455**	**1**

Source: Commission Analysis of data provided by OUSD(C).

[622] Reflects the total number of days for reprogramming request, from earliest available DoD date at the OUSD(C) level. Data does not include time within a component to identify and request reprogramming.

Figure 24 – PA Reprogramming Timelines, DoD, and Congress[623]

	DOD Average		Congress Average		Total Average	
Fiscal Year	Omnibus	Non-Omnibus	Omnibus	Non-Omnibus	Omnibus	Non-Omnibus
2009	5	42	37	56	62	102
2010	6	22	42	27	60	53
2011	56	22	14	36	73	58
2012	53	26	85	49	141	87
2013		39		45		89
2014	4	32	76	43	137	75
2015	48	26	89	65	133	94
2016	48	18	83	73	168	94
2017	34	19	134	51	173	72
2018	55	29	117	62	161	93
2019	66	20	92	81	193	105
2020	42	44	150	71	140	116
2021	61	24	74	42		62
2022		34		52		93
Grand Total	35	28	71	53	113	84

Source: Commission analysis of data provided by OUSD(C).

Data Notes and Limitations

- There was no Omnibus reprogramming in 2013. There was no official Omnibus submission in 2017, but there were larger June requests that were coded as Omnibus in the data set by Commission staff.
- Data set is current through February 2022. Does not include reprogramming requests, including the FY 2022 Omnibus, after that date.
- DoD data begins from the date OUSD(C) received a PA request from a Component or from the date OUSD(C) signed out a PA request. This does not include the total processing time within the Component.

Lesser of 20 Percent Rule

In addition to BTR dollar limits provided in annual appropriation explanatory statements, Procurement and RDT&E line items have an additional 20 percent restriction. Referred to as the "lesser of 20 percent rule," this rule limits BTRs to the lesser of the dollar BTR limit or 20 percent of the BLI. This rule further constrains execution flexibility available in smaller lines where the 20 percent rule creates a BTR threshold below $10 million.

This research presents data, available on the OUSD(C) website and provided to the Commission, regarding BLIs to examine the implications of the lesser of 20 percent rule on Procurement and RDT&E accounts.

Background. In the FY 2004 Appropriation Supplemental Act, Congress clarified that Procurement and RDT&E lines were subject to the lesser of a dollar or a percentage threshold to protect funds from being excessively reallocated from smaller programs.[624] Current BTR thresholds for Procurement and RDT&E

[623] Reflects the longest available time for a reprogramming request (i.e., does not reflect multiple rounds of congressional approval). The DoD time measures from date of component request receipt or identification by OUSD(C) and does not include time within a component to identify and request reprogramming.
[624] H. Rpt. 108-283 and Section 809 Panel 2019, 194.

are $10 million. The BLIs below $50 million therefore have BTR limits below $10 million. The BLIs can also have additional restrictions, noted on the DD 1414 Base for Reprogramming Actions, based on congressional appropriation actions.

Data. The majority of Procurement and RDT&E lines are below $50 million dollars. Between FY 2013 - 2021, the median value of BLIs in both accounts was around $25.6 million (Figure 25). However, BLIs greater than $50 million generally contained significantly higher amounts than those under $50 million (Figure 26). Across the Department, RDT&E BLIs less than $50 million outnumbered those over $50 million for BA 03 (with one exception in FY 2020) through BA 08 (Figure 27). The RDT&E BLIs greater than $50 million were more common in BA 01 and BA 02. In terms of the lesser of 20 percent rule, this distribution indicates greater reprogramming constraints beginning with BA 03.

Figure 25 – Median BLI, FYs 2013 – 2021

Median BLI Value		
Fiscal Year	Procurement	RDT&E
2011	$25,474,000	
2012	$25,522,000	$22,990,000
2013	$23,474,000	$21,108,000
2014	$18,755,000	$20,902,000
2015	$19,676,000	$22,000,000
2016	$21,974,500	$24,887,000
2017	$28,096,000	$25,354,000
2018	$31,404,000	$29,383,500
2019	$33,513,000	$31,022,000
2020	$32,004,000	$30,179,000
2021		$30,110,000
Grand Total	**$25,566,000**	**$25,743,911**

Source: DD 1416 data (available on OUSD(C) website) compiled by GMU and provided to the Commission

Figure 26 – Count and Value of Procurement and RDT&E BLIs, FY 2011 – FY 2021[625]

Fiscal Year	Procurement BLI Count	Procurement Value	RDT&E BLI Count	RDT&E Value
2011	**921**	**$107,053,663,569**		
Less than $50M	575	$7,845,733,569		
Greater than $50M	346	$99,207,930,000		
2012	**917**	**$114,352,934,613**	**827**	**$72,648,723,000**
Less than $50M	591	$8,927,172,613	565	$8,489,956,000
Greater than $50M	326	$105,425,762,000	262	$64,158,767,000
2013	**889**	**$101,695,748,452**	**809**	**$64,452,752,286**
Less than $50M	601	$9,312,201,247	565	$8,294,189,674
Greater than $50M	288	$92,383,547,205	244	$56,158,562,612
2014	**883**	**$97,068,665,000**	**793**	**$62,854,002,000**
Less than $50M	616	$8,256,646,000	562	$8,537,565,000
Greater than $50M	267	$88,812,019,000	231	$54,316,437,000
2015	**847**	**$99,300,192,000**	**819**	**$63,797,822,000**
Less than $50M	578	$7,762,703,000	581	$9,163,230,000
Greater than $50M	269	$91,537,489,000	238	$54,634,592,000
2016	**890**	**$117,146,301,000**	**825**	**$69,780,967,000**
Less than $50M	589	$8,031,768,000	564	$9,141,073,000
Greater than $50M	301	$109,114,533,000	261	$60,639,894,000
2017	**863**	**$123,031,139,000**	**861**	**$73,547,781,000**
Less than $50M	540	$8,093,092,956	575	$9,135,014,487
Greater than $50M	323	$114,938,046,044	286	$64,412,766,513
2018	**886**	**$145,233,482,000**	**924**	**$90,277,119,000**
Less than $50M	530	$8,045,522,000	599	$10,193,399,151
Greater than $50M	356	$137,187,960,000	325	$80,083,719,849
2019	**933**	**$150,749,919,000**	**941**	**$95,939,660,000**
Less than $50M	548	$8,632,454,079	597	$10,140,819,951
Greater than $50M	385	$142,117,464,921	344	$85,798,840,049
2020	**861**	**$120,764,445,000**	**929**	**$105,455,304,000**
Less than $50M	521	$8,435,329,000	565	$8,912,465,000
Greater than $50M	340	$112,329,116,000	364	$96,542,839,000
2021			**941**	**$107,197,647,000**
Less than $50M			572	$8,702,692,000
Greater than $50M			369	$98,494,955,000

[625] DD 1416 data from OUSD(C) "1416 Quarterly Reports" compiled by GMU and provided to the Commission. RDT&E data is available starting in FY 2012. FY 2021 final Procurement data not available because funds were still available at time of data compilation.

Figure 27 – Count of RDT&E BLIs by BA, FY 2012–FY 2021[626]

RDT&E Budget Activities	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Grand Total
BA 01: BASIC RESEARCH	**1**	**16**	**17**	**17**	**17**	**17**	**17**	**18**	**17**	**17**	**154**
Less than $50M	1	7	7	7	6	6	8	7	5	4	*58*
Greater than $50M		9	10	10	11	11	9	11	12	13	*96*
BA 02: APPLIED RESEARCH	**59**	**62**	**61**	**59**	**60**	**62**	**63**	**64**	**53**	**57**	**600**
Less than $50M	26	33	32	29	26	26	28	25	16	21	*262*
Greater than $50M	33	29	29	30	34	36	35	39	37	36	*338*
BA 03: ADVANCED TECHNOLOGY DEVELOPMENT	**88**	**89**	**88**	**88**	**90**	**88**	**88**	**89**	**82**	**84**	**874**
Less than $50M	51	57	56	55	55	46	48	47	40	42	*497*
Greater than $50M	37	32	32	33	35	42	40	42	42	42	*377*
BA 04: ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES	**139**	**138**	**136**	**134**	**137**	**148**	**170**	**180**	**193**	**196**	**1571**
Less than $50M	90	90	91	86	86	87	103	104	99	103	*939*
Greater than $50M	49	48	45	48	51	61	67	76	94	93	*632*
BA 05: SYSTEM DEVELOPMENT & DEMONSTRATION	**150**	**150**	**152**	**165**	**168**	**179**	**194**	**190**	**188**	**184**	**1720**
Less than $50M	101	101	102	114	109	116	122	120	118	110	*1113*
Greater than $50M	49	49	50	51	59	63	72	70	70	74	*607*
BA 06: MANAGEMENT SUPPORT	**106**	**104**	**103**	**103**	**106**	**110**	**120**	**127**	**129**	**128**	**1136**
Less than $50M	74	82	82	84	84	89	84	92	91	91	*853*
Greater than $50M	32	22	21	19	22	21	36	35	38	37	*283*
BA 07: OPERATIONAL SYSTEM DEVELOPMENT	**263**	**243**	**235**	**252**	**245**	**256**	**271**	**272**	**266**	**266**	**2569**
Less than $50M	208	191	191	205	196	204	205	201	195	197	*1993*
Greater than $50M	55	52	44	47	49	52	66	71	71	69	*576*
BA 08: SOFTWARE & DIGITAL TECHNOLOGY PILOT PROGRAMS										**8**	**8**
Less than $50M										3	*3*
Greater than $50M										5	*5*
BA 09: 09000000	**8**	**2**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**18**
Less than $50M	7	2	1	1	1	1	1	1	1	1	*17*
Greater than $50M	1										*1*
BA 20: UNDISTRIBUTED		**1**			**1**						**2**
Less than $50M		1			1						*2*
BA 99: CLASSIFIED PROGRAMS	**13**	**4**									**17**
Less than $50M	7	1									*8*
Greater than $50M	6	3									*9*

Findings

The BLIs constrained by the lesser of 20 percent rule comprise the majority of lines in Procurement and RDT&E accounts. However, they do not comprise the majority of dollar amounts in either account (i.e., the majority of budget dollars are in larger BLIs). This means that larger dollar amounts are budgeted in BLIs that can make use of the full dollar BTR threshold. However, the prevalence of BLIs under $50 million, particularly in RDT&E BAs 03-07, presents potential challenges for execution reprogramming flexibility. As modern technology cycles become less distinct and serial from the current BA definitions, smaller PEs in these BAs could constrain the Department's ability to reprogram funds between programs as technology matures.[627]

[626] Ibid.
[627] See definitions of RDT&E BAs in Sargent 2022, 3-4.

D3. New Starts

This overview of new starts presents PA Reprogramming action new start data provided to the Commission by the OUSD(C) and publicly available on the USD(C) website. New starts requested in the PB are outside the scope of this section.

Background

New starts allow the DoD to initiate efforts not previously justified and enacted in annual appropriations. A combination of statute, explanatory statements, and regulations, as provided in the DoD FMR, govern the new start process. The DoD must notify Congress of all new starts, but Congress allows new starts below certain dollar amounts to be initiated via letter notification. Requests above the dollar threshold or that trigger other reprogramming restrictions use the PA reprogramming request process.

Definition. Program, project, and activity (PPA): "the most specific level of budget items identified in the Department of Defense Appropriations Act, 2021, the related classified annexes and Committee reports, and the P-1 and R-1 budget justification documents as subsequently modified by congressional action [for Military Personnel and [O&M] defined as the appropriations accounts contained in the Department of Defense Appropriations Act."[628]

Statutory and Regulatory Guidance

In the DoD Appropriations Act for Fiscal Year 2005, Congress established a requirement for written notification to the congressional defense committees and the OSD at least 30 days prior to initiating a new start program.[629]

The annual appropriations act includes language restricting the use of funds "through a reprogramming of funds that creates or initiates a new program, project, or activity" except in the interest of national security and only after written prior notification.[630] The definition of PPA is also provided in Joint Explanatory Statement language accompanying annual appropriations (see definition above).

The DoD FMR expands on the new start authority, linking it to the relevant justification documents and also notes that ordinary new start requests without follow-on budgeted or programmed funding will not be considered.[631] The BTR authority cannot be used to initiate new starts.[632]

Data

From FY 2015 to FY 2022:

- There were 218 new start requests with 159 approved by the congressional defense committees; approximately 73 percent of requested new starts were approved (Figure 1).
- The majority of requests are approved, and adequately resourced meaning enough sources are approved to fund the new starts; nine percent of requested dollar amounts were OUSD(C)-adjusted due to mismatches between approved new starts and sources or other implementation issues.
- New starts were requested in 68 out of 166 PA requests (about 41 percent).

[628] H. Rpt. 116-453. With updates to the years, this language is largely consistent across years. For older example: H. Rpt. 108-622, 67.
[629] Prior notification was required in statute; the 30-day notification period was directed in explanatory language (H. Rpt. 108-622, 47). The FMR allows for 30-day notify-and-wait letter notification of new starts under informally agreed upon thresholds that were established to align to the BTR thresholds at the time. The OUSD(C) does not provide these notifications to Congress. A sample of Service letter notifications provided to the Commission included the dollar amount requested, the source of the funds, and a discussion of the new start requirement.
[630] H.R. 2617, 149.
[631] DoD FMR Vol. 3, Ch. 3, 6-9.
[632] Ibid., 6-20.

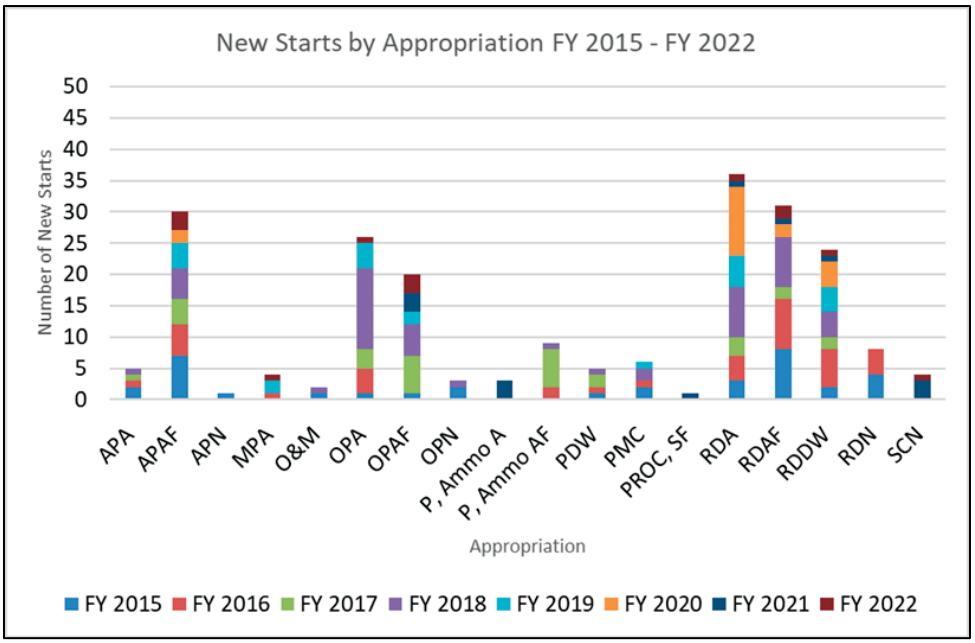
Figure 1 – Prior Approval (PA) New Start Outcomes, FY 2015- FY 2022

	Requested		Approved				Denied/Deferred				Not Implemented/Partial			
Fiscal Years	NS #	NS $M	NS #	NS $M	% NS	% $ NS	NS #	NS $M	% NS	% $ NS	NS #	NS $M	% NS	% $ NS
FY 2015	35	$760.5	22	$552.4	63%	73%	13	$197.8	37%	26%	2	$10.3	6%	1%
FY 2016	37	$475.5	22	$372.8	59%	78%	15	$59.2	41%	12%	5	$43.5	14%	9%
FY 2017	29	$402.1	16	$294.6	55%	73%	13	$107.5	45%	27%			0%	0%
FY 2018	50	$924.7	47	$777.8	94%	84%	3	$51.3	6%	6%	6	$95.6	12%	10%
FY 2019	22	$471.2	20	$332.9	91%	71%	2	$38.0	9%	8%	2	$100.3	9%	21%
FY 2020	19	$281.2	9	$135.4	47%	48%	9	$125.8	47%	45%	1	$20.0	5%	7%
FY 2021	13	$266.2	11	$141.9	85%	53%	2	$76.0	15%	29%	3	$48.3	23%	18%
FY 2022	13	$179.6	12	$171.6	92%	96%	1	$4.9	8%	3%	1	$3.1	8%	2%
TOTALS	218	$3,760.8	159	$2,779.3	73%	74%	58	$660.4	27%	18%	20	$321.1	9%	9%

Source: Commission staff analysis of OUSD(C) data and PA Requests on the OUSD(C) website[633]

New starts occur overwhelmingly in the Procurement and RDT&E appropriations (Figure 2). From FY 2015 to FY 2022, there were two requested O&M new starts: to initiate initial Syria Train and Equip Fund efforts in 2015 and a non-executable classified collection request.

Figure 2 – New Starts by Appropriation Category, FY 2015 – FY 2022[634]



- Total requested amount of new start programs in the year of request was $3,760.8 million; total costs of the new start efforts (when provided) were $33,586.9 million.
- The Department of the Air Force had the most new start requests (42 percent); the Department of the Navy had the fewest (10 percent) (Figure 3).
- Procurement appropriations accounts had the most new starts (54 percent) (Figure 4):
  - Procurement: $2,329.6 million initial request/$21,525.6 million in total cost.
  - RDT&E: $1,207.8 million initial request/$12,058.3 million in total cost.
  - O&M: $223.5 million initial request/$3 million in total cost.[635]

[633] New start data provided by OUSD(C) and staff analysis of PA requests on the OUSD(C) website. Numbers in the not implemented/partial column are not included in the sum of requested, except for the FY 2020 new start request that was pulled and not implemented.
[634] Ibid.
[635] Total cost of effort was not available for an O&M new start (initial request $220.5 million for Syria Train and Equip Activities).

Figure 3 – New Starts by Department[636]

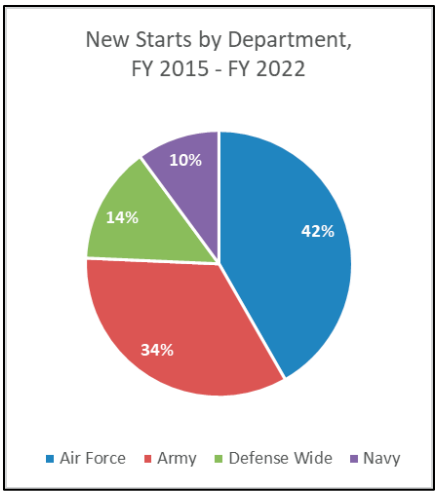
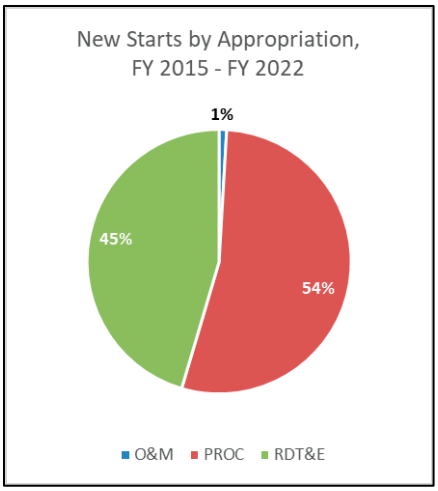


Figure 4 – New Starts by Appropriation[637]



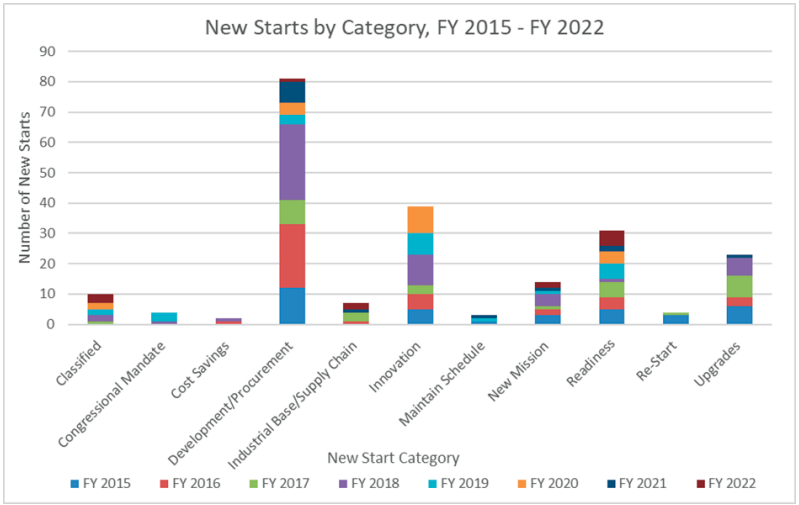
Uses of New Starts

A potential application of new starts is as mechanism to insert new technologies or respond to events in the year of execution that could not be anticipated prior to locking a PB. To examine this question, the 218 new start requests were categorized based on a staff-developed subjective taxonomy derived from the project descriptions provided in PA requests. The frequency of the development or procurement category aligns with the above finding that most new starts occur in procurement accounts.

- 81 new start requests were to initiate or accelerate development or procurement.
- 38 requests supported innovation.
- 31 supported readiness.
- 10 classified requests could include technology insertions, but sufficient information was not available in the unclassified PA request language to make a determination.
- 35 requests (~16 percent) were identified as urgent operational needs (JUONS, ONS, UONS, etc.) in PA documentation.

The remaining 23 requests fit into the categories identified below in Figure 5.

Figure 5 – New Starts by Type, FY 2015 – 2022[638]



[636] Ibid.
[637] Ibid. Defense-Wide (DW) includes an O&M new start that is counted as one DW action but includes an Air Force and Army element.
[638] New Start data provided by OUSD(C).

New Start Taxonomy

Re-Start: Re-start of a program after more than one year.

Maintain Innovation Schedule: Effort to meet schedule.

Industrial Base: Challenge or opportunity related to the industrial base or supply chain (e.g., establishing a Manufacturing Innovation Institute, production line shutting down, labor shortages).

Congressional Mandate: Action required to implement legislative requirements (e.g., tools to support background check transfer, Iron Dome procurement).

Innovation: New start supporting development, testing/experimentation, procurement, insertion, or integration of new operational concepts or emerging technology (based on 14 R&E Critical Technology Areas: Biotechnology, Quantum Science, Future Generation Wireless Technology, Advanced Materials, Trusted AI/Autonomy, Integrated Network Systems-of-Systems, Microelectronics, Space Technology, Renewable Energy Generation and Storage, Advanced Computing and Software, Human-Machine Interfaces, Directed Energy, Hypersonics, Integrated Sensing and Cyber).

Readiness: Efforts that support readiness[639] of people and systems (including training and safety) (e.g., readiness dashboard, hypoxia modification, simulators, cyber vulnerability analysis, survivability, structures).

Development/Procurement: Initiate or accelerate development, procurement, integration, and installation of capabilities/systems (e.g., software modifications from FMS to U.S. version of F-16, additional missiles, advance procurements, long-lead item procurement, procurement of COTS solutions, etc.). Could include new technologies, but PA language not interpreted as covering the areas described in the "Innovation" category.

New Mission: New start supporting a non-congressionally directed new mission (e.g., JAIC, C-sUAS Office, SFAB, Syria Train & Equip).

Upgrades: Upgrades to existing systems and associated challenges (updating, modifying existing systems; hardware and/or software-based, ship conversion).

Classified: Details classified in description/inadequate detail to classify in another category.

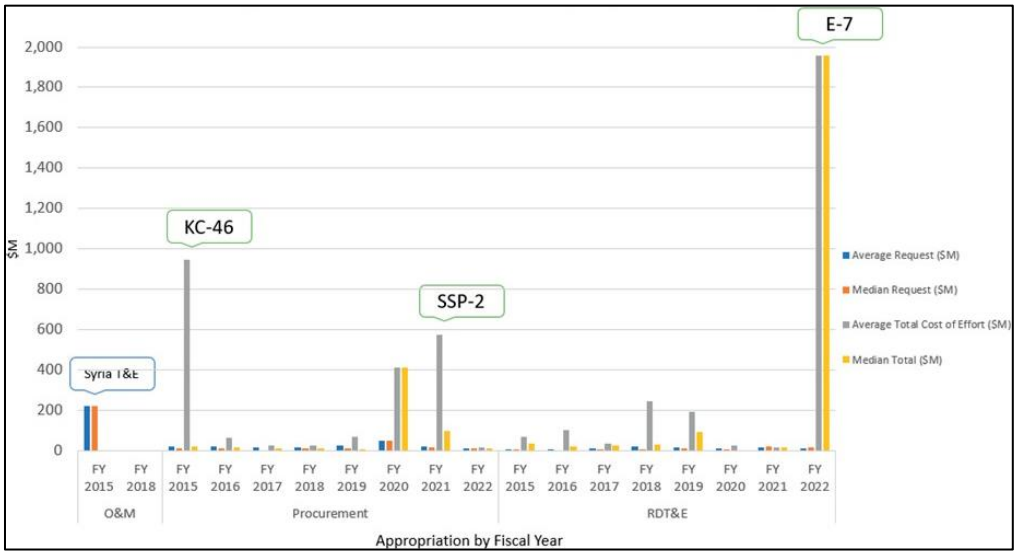
Cost Savings: New start that produces government cost savings (e.g., purchase of leased systems).

[639] As defined in USG Glossary 2019: Readiness: "The ability of military forces to fight and meet the demands of assigned missions;" "condition of being prepared and capable to act or respond as required."; Operational readiness: "The capability of a unit/formation, ship, weapon system, or equipment to perform the missions or functions for which it is organized or designed. May be used in a general sense or to express a level or degree of readiness. Also called OR."

Figure 6 – Average and Median Amount of Requested New Starts[640]

	# of New Starts	Average Request ($M)	Median Request ($M)	Average Total Cost of Effort ($M)	Median Total ($M)
O&M	***2.0***	***111.8***	***111.8***	***1.5***	***1.5***
FY 2015	1.0	220.5	220.5	0.0	0.0
FY 2018	1.0	3.0	3.0	3.0	3.0
Procurement	***118.0***	***19.7***	***10.8***	***205.0***	***12.3***
FY 2015	17.0	22.1	10.6	947.8	19.5
FY 2016	15.0	23.2	11.9	64.6	18.0
FY 2017	22.0	14.7	4.8	26.0	12.3
FY 2018	29.0	17.4	9.8	27.2	9.8
FY 2019	13.0	24.6	10.9	70.7	8.7
FY 2020	2.0	50.0	50.0	413.5	413.5
FY 2021	10.0	22.1	18.7	573.2	97.6
FY 2022	10.0	13.7	11.4	14.6	14.1
RDT&E	***98.0***	***12.3***	***6.1***	***138.6***	***25.1***
FY 2015	17.0	9.6	5.0	67.7	35.5
FY 2016	22.0	5.8	4.5	101.3	19.3
FY 2017	7.0	11.3	6.3	33.8	25.1
FY 2018	20.0	20.9	5.6	247.0	28.8
FY 2019	9.0	16.8	13.0	193.5	93.5
FY 2020	17.0	10.7	5.5	28.4	4.6
FY 2021	3.0	14.9	20.0	17.1	17.1
FY 2022	3.0	14.2	15.9	1957.0	1957.0
Grand Total	**218.0**	**17.3**	**7.8**	**173.1**	**19.0**

Figure 7 – Average and Median Amounts of New Start Requests, FY 2015-2022 ($M).[641]



Discussion of Issues

Re-starts. The FMR allows for programs to extend "into a subsequent fiscal year without constituting a new start…and could include a skip year for execution purposes."[642] A skip year allows the DoD to resume a program if there was a challenge in execution (such as a production backlog) without having to declare a new

[640] Ibid.

[641] The FY 2015 Procurement (PROC) average is driven by total effort cost based on the KC-46 program. The FY 2020 PROC average is driven by double count of total cost for two requests for the same effort; they were the only PROC new starts that year. The FY 2021 PROC average is driven by total effort cost based on the SSP-2 Life-of-Type Buy effort; not all requests included total cost in the PA request. The FY 2018 RDT&E average is driven by manned ground vehicle, JAIC, and Midterm Polar MILSATCOM System. The FY 2019 RDT&E average is driven by SDA establishment and 5G development. The FY 2022 RDT&E average and median are driven by the total cost of the E-7 AWACS replacement.

[642] DoD FMR Vol. 3, Ch. 6, 6-9: "A program effort in one year in the Procurement and RDT&E accounts may be extended into a subsequent fiscal year without constituting a new start. This is considered an extension of the effort initiated in the prior year program and could include a skip year for execution purposes."

start.[643] The CR language prohibiting new starts supersedes the skip year guidance. Absent a CR, there is no legislative language regarding a skip year.[644]

There were three new start requests in 2015 for the procurement of systems that had not been requested in the prior three to four fiscal years. In January 2017, one new start request was to restart development and testing following a two-year funding gap. In March 2022, one new start request was to restart production activities last funded in FY 2018.

New Starts and J-book Materials. Legislative restrictions on initiating new starts are based on the definition of "program, project, and activity" provided in the Joint Explanatory Statement accompanying appropriations: "…the terms "program, project, and activity" for appropriations contained in this Act shall be defined as the most specific level of budget items identified in the Department of Defense Appropriations Act, 2023, the related classified annexes and Committee reports, and the P-1 and R-1 budget justification documents as subsequently modified by congressional action. The following exception to the above definition shall apply: the Military Personnel and the operation and maintenance accounts, for which the term "program, project, and activity" is defined as the appropriations accounts contained in the Department of Defense Appropriations Act."[645] Based on this definition, the language used to describe a program, project, and activity matters for determining whether an effort should be considered a new start.

Purpose vs. Potential. New starts in PA reprogramming requests experience similar challenges as other reprogramming requests with identifying sources, DoD and congressional review and approval processes, adequate source approval by Congress, and the timelines associated with the reprogramming process. There were 70 new starts (about 32 percent) in 12 Omnibus reprogramming requests between FY 2015 and FY 2022. The FMR currently allows a 30-day notify-and-wait period for certain new starts based on cost thresholds. Congressional approval of PA reprogrammings on average takes longer than 30 days (Figure 8).

[643] The origin of the "skip year" is unclear. The 1996 FMR allows the extension of Procurement and RDT&E into subsequent years without constituting a new start. The 2000 FMR explicitly notes the ability to "include a skip year for execution purposes." In an interview with subject matter experts, a possible origin of the skip year is shipbuilding schedules. Ships require significant time to build and for a variety of reasons, it might not be possible to build a ship each year. A skip year allows DoD to build ships within a class without having to declare a new start if there is a gap in production for each ship.

[644] Commission interview with subject matter experts. For example, see P.L. 117-43, 346: "(3) The initiation, resumption, or continuation of any project, activity, operation, or organization (defined as any project, subproject, activity, budget activity, program element, and subprogram within a program element, and for any investment items defined as a P-1 line item in a budget activity within an appropriation account and an R-1 line item that includes a program element and subprogram element within an appropriation account) for which appropriations, funds, or other authority were not available during fiscal year 2021."

[645] H.R. 2617, 532.

Figure 8 – Congressional PA Timelines

	Congress					
	OMNIBUS			NON-ONMIBUS		
Fiscal Year	Average	Max	Min	Average	Max	Min
2009	37	38	29	56	354	12
2010	42	42	42	27	112	2
2011	14	20	10	36	118	1
2012	85	85	84	49	206	7
2013				45	119	1
2014	76	81	70	43	120	6
2015	89	90	88	65	288	8
2016	83	83	82	73	182	17
2017	134	190	77	51	189	5
2018	117	155	79	62	221	10
2019	92	92	92	81	181	28
2020	150	209	91	71	134	13
2021	74	91	56	42	176	5
2022				52	118	15
Grand Total	71	209	10	53	354	1

Source: Commission analysis of data provided by OUSD(C)
Averages reflect longest available time for a reprogramming request
(i.e., does not reflect multiple rounds of congressional approval).

Vignette: Interconnecting Color of Money and New Start Rules

In FY 2016, the Defense POW/MIA Accounting Agency (DPAA) O&M J-book described ongoing efforts "to develop an information technology solution to establish accounting community accessible files for each missing person that contain all available information regarding the disappearance, whereabouts, and status of missing persons."[646] In FY 2016, the DPAA had only requested O&M funding.

In April 2016, the DPAA requested $9.1 million in Procurement, Defense-Wide funding, as a new start to procure commercial-off-the-shelf (COTS) software for a Case Management System (CMS); the request was approved and later described in budget justification narratives. The PA request justified the request as "required to purchase a [COTS] software solution to deploy a single database and [CMS] containing information on all missing persons for whom a file has been established…will enable quick, efficient compilation of relevant individual missing persons case data and tracking."[647]

While the requirement was described in the FY 2016 O&M J-book, the FMR also includes a rule for determining whether something is an investment or expense, with a threshold at $250,000 in consideration of which type of funding should be used for the effort. In 2016, Title 10, U.S.C §2245a limited the use of O&M to purchase items with a unit cost greater than $250,000. This limitation was repealed in the NDAA for FY 2017. The FMR maintains a $250,000 expense/investment threshold; the FY 2023 DoD Appropriations Act increased the threshold to $350,000.

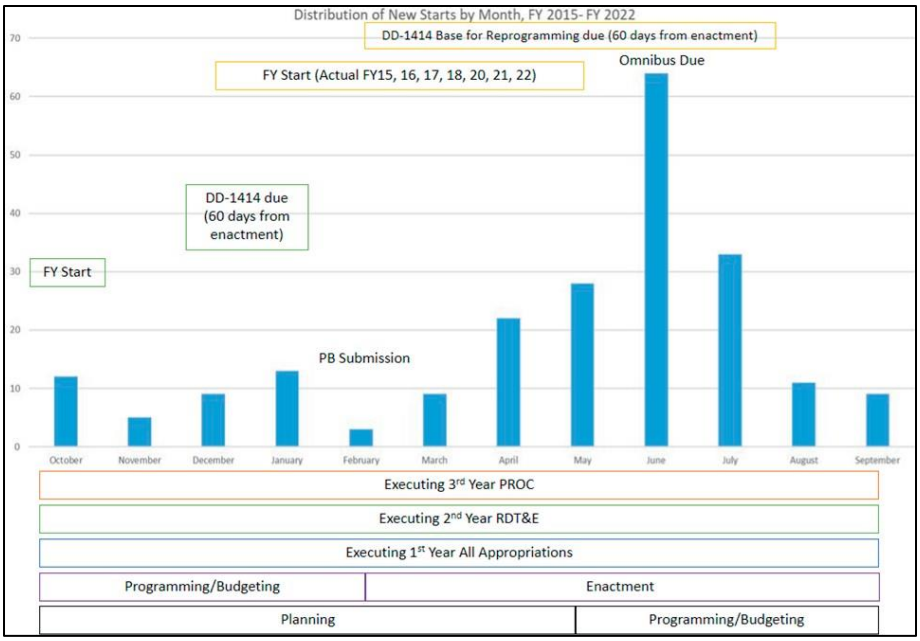
Since 2015, the DPAA has occasionally requested Procurement funding, primarily to purchase vehicles to support recovery efforts (FY 2023 and FY 2020). These requests were a new start initiated in the FY 2020 PB.

This example provides insight into the complex ecosystem of rules and regulations governing DoD spending and points to potential benefits for adjusting color of money rules for software and IT procurement. Changes to new start rules in isolation will not necessarily reduce new starts in PA reprogrammings if other rules and regulations are not clarified or amended.

[646] OUSD(C) 2015, 401.
[647] OUSD(C) 2016, 10-11.

PPBE Timelines and the Requirement to Fund Outyear Efforts in Future Years. The FMR states that, with extraordinary exceptions, "consideration will not be given to new start reprogramming requests for which follow-on funding is not budgeted or programmed."[648] In FY 2015 to FY 2022, 124 of the 218 new start requests (about 57 percent) required funds beyond the initial reprogramming request. In requesting the new start, the requestor must also take into account the need to ensure that any required subsequent funds are programmed or budgeted for in the appropriate years. Reprogramming requests with new starts tend to occur in the late spring/early summer (in proximity to the annual Omnibus request) (Figure 9).

Figure 9 – Monthly Distribution of PA Requests with New Starts, FY 2015-2022[649]



Submission of new starts in the middle of the calendar year aligns with the programming and budgeting phase of the upcoming year and the planning phase of the following fiscal year, allowing the request to provide Congress with details about future funding. Requesting a new start later in the calendar year risks not being able to insert the effort in the program and President's Budget if it requires funding beyond the initial request.

New Start Request Amounts

Most new start requests are below $10 million, with about 92 percent below $50 million (Figure 10); 89 out of 218 (~41 percent) requested new starts were for dollar amounts below the letter notification limits provided in the FMR with no funds required beyond the PA request.[650]

[648] DoD FMR Vol. 3, Ch. 6, 6-9.
[649] New Start data provided by OUSD(C). PPBE process events adapted from DAU 2022, 6.
[650] Excludes new starts without reported total cost of effort.

Figure 10 – New Start Request Amount ($M) Frequency Table, FY 2015 – FY 2022

FY Amount of Request ($M)	Count of FY Amount of Request ($M)	% of New Start Requests	% Cumulative of New Start Requests
0.2-10.2	122	55.96%	55.96%
10.2-20.2	35	16.06%	72.02%
20.2-30.2	20	9.17%	81.19%
30.2-40.2	16	7.34%	88.53%
40.2-50.2	8	3.67%	92.20%
50.2-60.2	5	2.29%	94.50%
60.2-70.2	5	2.29%	96.79%
80.2-90.2	3	1.38%	98.17%
90.2-100.2	1	0.46%	98.62%
100.2-110.2	2	0.92%	99.54%
220.2-230.2	1	0.46%	100.00%

Using a notional $50 million threshold in the request year, 201 of requested new starts would fall below that threshold and 137 would fall below the threshold for the entire effort (Figure 11). For 25 of the requests there was no information on the total cost of the effort beyond the PA request.

Figure 11 – Total Cost of New Start Efforts Frequency Table, FY 2015–FY 2022

Total Cost of Effort ($M)	Count of Total Cost of Effort ($M)	% of Total Cost Count	% Cumulative of Total Cost Count	Total Cost of Effort ($M)	Count of Total Cost of Effort ($M)	% of Total Cost Count	% Cumulative of Total Cost Count
<0.2	1	0.52%	0.52%	230.2-240.2	1	0.52%	89.18%
0.2-10.2	73	37.63%	38.14%	240.2-250.2	3	1.55%	90.72%
10.2-20.2	24	12.37%	50.52%	270.2-280.2	1	0.52%	91.24%
20.2-30.2	22	11.34%	61.86%	310.2-320.2	2	1.03%	92.27%
30.2-40.2	10	5.15%	67.01%	340.2-350.2	1	0.52%	92.78%
40.2-50.2	7	3.61%	70.62%	370.2-380.2	1	0.52%	93.30%
50.2-60.2	6	3.09%	73.71%	390.2-400.2	1	0.52%	93.81%
60.2-70.2	5	2.58%	76.29%	410.2-420.2	2	1.03%	94.85%
70.2-80.2	2	1.03%	77.32%	430.2-440.2	1	0.52%	95.36%
80.2-90.2	5	2.58%	79.90%	510.2-520.2	1	0.52%	95.88%
90.2-100.2	6	3.09%	82.99%	550.2-560.2	1	0.52%	96.39%
100.2-110.2	2	1.03%	84.02%	600.2-610.2	1	0.52%	96.91%
110.2-120.2	1	0.52%	84.54%	880.2-890.2	1	0.52%	97.42%
140.2-150.2	1	0.52%	85.05%	980.2-990.2	1	0.52%	97.94%
150.2-160.2	2	1.03%	86.08%	1740.2-1750.2	1	0.52%	98.45%
160.2-170.2	2	1.03%	87.11%	1950.2-1960.2	1	0.52%	98.97%
170.2-180.2	2	1.03%	88.14%	1990.2-2000.2	1	0.52%	99.48%
190.2-200.2	1	0.52%	88.66%	14790.2-14800.2	1	0.52%	100.00%

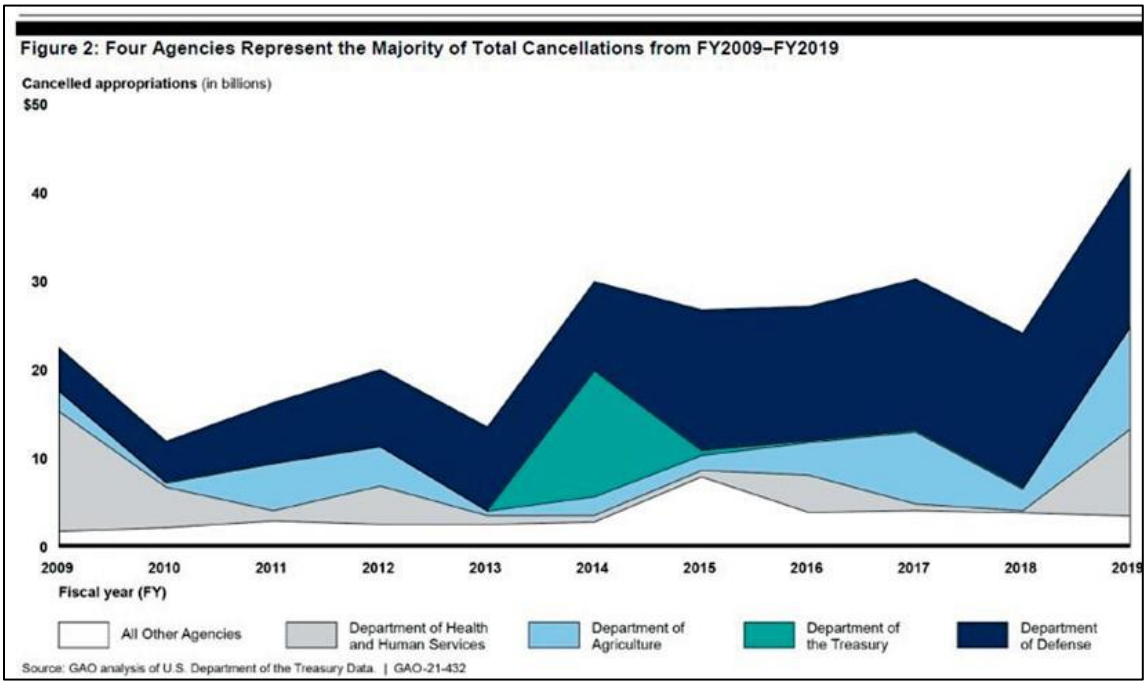
D4. Expiring, Expired, or Cancelled Funds

Appropriations have different life cycles, consisting of a period of active availability, expiration, and cancellation. The O&M and MILPERS appropriations are available for one year, RDT&E is available for two years, and Procurement is available for three years, with the exception of Shipbuilding and Conversion, which is available for five (or in some limited circumstances six) years. The MILCON appropriation is available for five years. Some accounts can receive no-year appropriations, that is, the funds that do not expire.

Expiring funds are funds at the end of their period of active availability defined as "[b]udget authority that is no longer available to incur new obligations but is available for an additional five fiscal years for disbursement of obligations properly incurred during the budget authority's period of availability. Unobligated balances of expired budget authority remain available for five years to cover legitimate obligation adjustments or for obligations properly incurred during the budget authority's period of availability that the agency failed to record."[651]

Cancelled funds are all remaining unobligated and obligated balances in an account at the end of the account's expiration period. These funds return to the Treasury.[652] From FY 2009 to FY 2019, the federal government-wide cancellation rate was 1.6 percent. The DoD's cancellation rate during that time was 1.8 percent and represented 48.5 percent ($127.61 billion) of government cancellations in dollar terms from FY 2009 to FY 2019.[653]

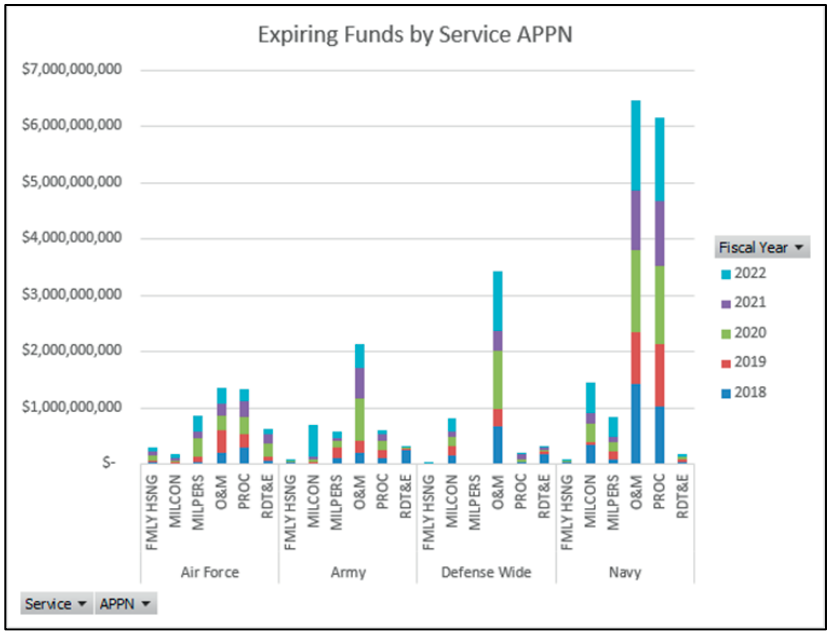
Figure 1 – Total Federal Cancellations FY 2009 – FY 2019

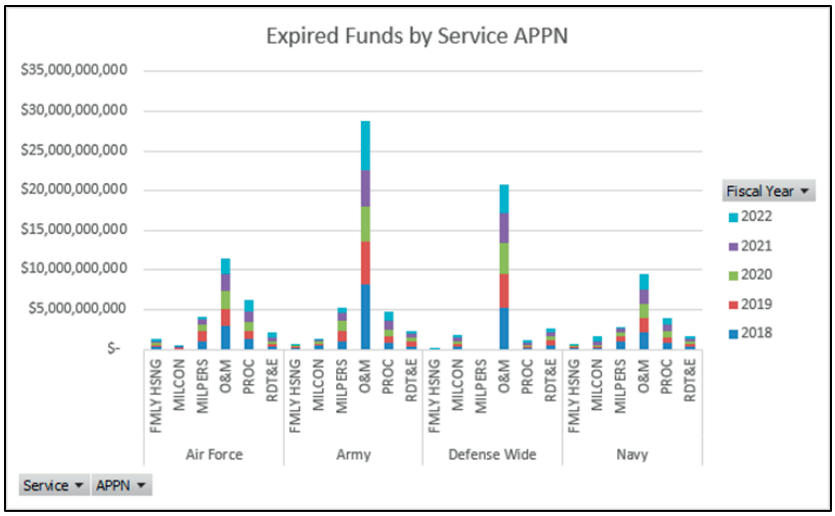


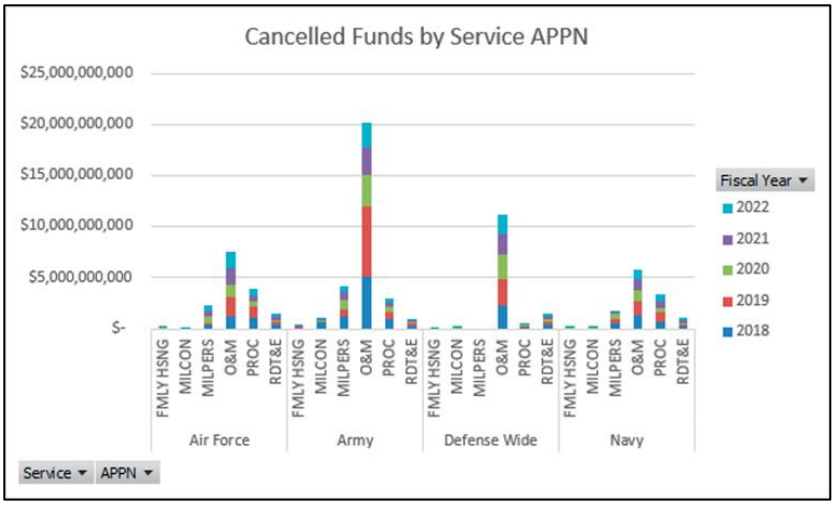
Source: GAO-21-432

[651] GAO 2005, 23.
[652] Ibid.
[653] GAO 2021.

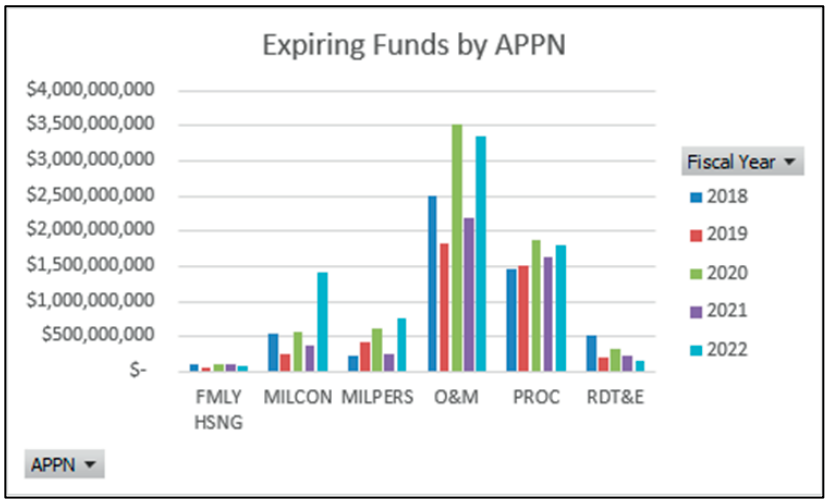
The figures below present data on expiring, expired, and cancelled funds by Service and appropriation for the DoD. This data was provided to the Commission by OUSD(C) based on SF-133 data for FY 2018 to FY 2022.

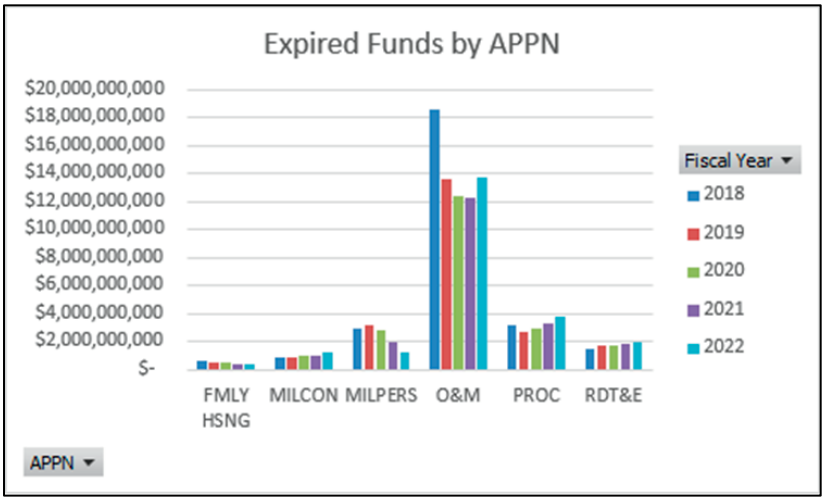


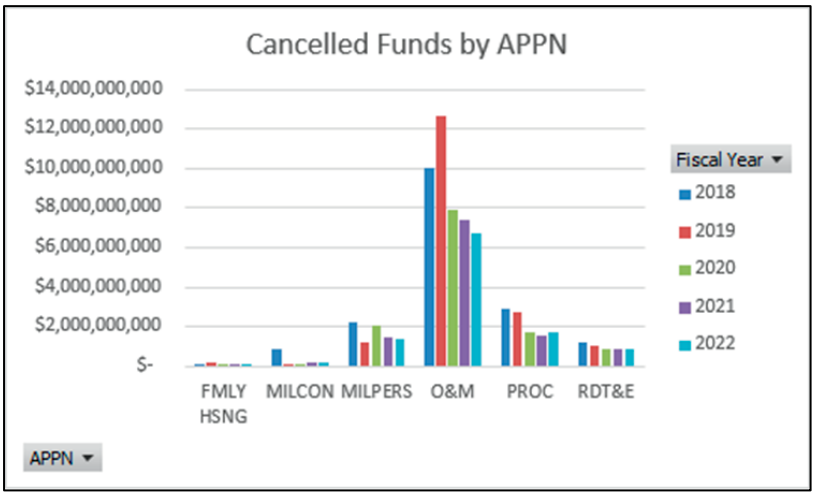




The figures below present data on expiring, expired, and cancelled funds by appropriation for the DoD. Data was provided to the Commission by OUSD(C) based on SF-133 data for FY 2018 to FY 2022.







D5: President's Budget, Appropriation Acts, and NDAA Release Dates

The last three years, from FY 2022–FY 2024, the PB has been submitted an average of 63 days late based on "Budget of the United States Government" data from the Government Publishing Office.[654]

Other data notes:

- Appendix Date: date that detailed appendix is released; "primarily for the use of the Appropriations Committees."
- Appropriation: based on Presidential approval.[655]
- NDAA: based on dates from Pentagon Library linked NDAAs.[656]

Figure 1 – Delivery of PB and Associated Materials[657]

President's Budget Delivery					
Fiscal Year	PB released	PB Due	Appendix Date	PB Days Late	Appendix Days Late
2024	3/9/2023	2/6/2023	3/13/2023	31	35
2023	3/28/2022	2/7/2022	3/28/2022	49	49
2022	5/28/2021	2/8/2021	5/28/2021	109	109
2021	2/10/2020	2/3/2020	2/10/2020	7	7
2020	3/11/2019	2/4/2019	3/18/2019	35	42
2019	2/12/2018	2/5/2018	2/12/2018	7	7
2018	5/23/2017	2/6/2017	5/23/2017	106	106
2017	2/9/2016	2/8/2016	2/9/2016	1	1
2016	2/2/2015	2/2/2015	2/2/2015	0	0
2015	3/4/2014	2/3/2014	3/4/2014	29	29
2014	4/10/2013	2/4/2013	4/10/2013	65	65
2013	2/13/2012	2/6/2012	2/13/2012	7	7
2012	2/14/2011	2/7/2011	2/14/2011	7	7
2011	2/1/2010	2/1/2010	2/1/2010	0	0
2010	2/26/2009	2/2/2009	5/7/2009	24	94
2009	2/4/2008	2/4/2008	2/4/2008	0	0
2008	2/5/2007	2/5/2007	2/5/2007	0	0
2007	2/6/2006	2/6/2006	2/6/2006	0	0
2006	2/7/2005	2/7/2005	2/7/2005	0	0
2005	2/2/2004	2/2/2004	2/2/2004	0	0
2004	2/3/2003	2/3/2003	2/3/2003	0	0
2003	2/4/2002	2/4/2002	2/4/2002	0	0
2002	4/9/2001	2/5/2001	4/9/2001	63	63
2001	2/7/2000	2/7/2000	2/7/2000	0	0
2000	2/1/1999	2/1/1999	2/1/1999	0	0
1999	2/2/1998	2/2/1998	2/2/1998	0	0
1998	2/1/1997	2/3/1997	2/6/1997	-2	3
1997	2/5/1996	2/5/1996	2/5/1996	0	0
1996	2/1/1995	2/6/1995	2/1/1995	-5	-5

[654] GPO n.d.
[655] CRS "Appropriation Status Tables."
[656] Pentagon Library 2024.
[657] Post 1998, GPO n.d. The appendix is provided "primarily for the use of the Appropriations Committees." Pre-1998, U.S. Senate 1996, 1997, 1998.

Figure 2 – Dates of House and Senate Action on Defense Appropriations Legislation[658]

	Appropriations						
Fiscal Year	HAC-D	SAC-D	HAC	SAC	House Passed	Senate Passed	Presidential Approval
2024	6/15/2023		6/22/2023	7/27/2023	9/28/2023		
2023	6/15/2022		6/22/2022				12/29/2022
2022	6/30/2021		7/13/2021				3/15/2022
2021	7/8/2020		7/14/2020		7/31/2020		12/27/2020
2020	5/15/2019	9/10/2019	5/21/2019	9/12/2019	6/19/2019		12/20/2019
2019	6/7/2018	6/26/2018	6/13/2018	6/28/2018	6/28/2018	8/23/2018	9/28/2018
2018	6/26/2017		6/29/2017		1/30/2018		3/3/2018
2017	5/11/2016	5/24/2016	5/17/2016	5/26/2016	6/16/2016*		5/5/2017
2016	5/20/2015	6/9/2015	6/2/2015	6/11/2015	6/11/2015		12/18/2015
2015	5/30/2014	7/15/2014	6/10/2014	7/17/2014	6/20/2014		12/16/2014
2014	6/5/2013	7/30/2013	6/12/2013	8/1/2013	7/24/2013		1/17/2014
2013	5/8/2012	7/31/2012	5/17/2012	8/2/2012	7/19/2012		3/26/2013
2012	6/1/2011	9/13/2011	6/14/2011	9/15/2011	7/8/2011		12/23/2011
2011	7/27/2010	9/14/2010		9/16/2010			4/15/2011
2010	7/16/2009	9/9/2009	7/22/2009	9/10/2009	7/30/2009	10/6/2009	12/19/2009
2009	7/30/2008	9/10/2008					9/30/2008
2008	7/12/2007	9/11/2007	7/25/2007	9/12/2007	8/5/2007	10/3/2007	11/13/2007
2007	6/7/2006	7/18/2006	6/13/2006	7/20/2006	6/20/2006	9/7/2006	9/29/2006
2006	5/24/2005	9/26/2005	6/7/2005	9/28/2005	6/20/2005	10/7/2005	12/30/2005
2005	6/2/2004	6/22/2004	6/16/2004	6/22/2004	6/22/2004	6/24/2004	8/5/2004
2004	6/18/2003	7/8/2003	6/26/2003	7/9/2003	7/8/2003	7/17/2003	9/30/2003

Figure 3 – Dates of House and Senate Action on Defense Authorization Legislation[659]

	Authorization				
Fiscal Year	HASC	SASC	House Passed	Senate Passed	Presidential Approval
2024	6/22/2023	7/11/2023	7/14/2023	7/27/2023	12/22/2023
2023	7/1/2022	7/18/2022	7/14/2022		12/23/2022
2022	9/10/2021	9/22/2021	9/23/2021		3/15/2022
2021	7/9/2020	6/23/2020	7/21/2020	7/23/2020	1/1/2021
2020	6/19/2019	6/11/2019	7/12/2019	6/27/2019	12/20/2019
2019	5/15/2018	6/5/2018	5/24/2018	6/18/2018	8/13/2018
2018	7/6/2017	7/10/2017	7/14/2017	9/18/2017	12/12/2017
2017	5/4/2016	5/18/2016	5/18/2016	6/14/2016	12/23/2016
2016	5/5/2015	5/14/2015	5/15/2015	5/14/2015	11/25/2015
2015	5/13/2014	6/2/2014	5/22/2014		12/19/2014
2014	6/7/2013	6/20/2013	6/14/2013		12/26/2013
2013	5/11/2012	6/4/2012	5/18/2012	12/4/2012	1/2/2013
2012	5/17/2011	6/22/2011	5/26/2011		12/31/2011
2011	5/21/2010	6/4/2010	12/17/2010		1/7/2011
2010	6/18/2009	7/2/2009	6/25/2009	7/23/2009	10/28/2009
2009	5/16/2008	5/12/2008	5/22/2008	9/17/2008	10/14/2008
2008	5/11/2007	6/5/2007	5/17/2007	10/1/2007	1/28/2008**
2007	5/5/2006	5/9/2006	5/11/2006	6/22/2006	10/17/2006
2006	5/20/2005	5/17/2005	5/25/2005	11/15/2005	1/6/2006
2005	5/14/2004	5/11/2004	5/20/2004	6/23/2004	10/28/2004
2004	5/16/2003	5/13/2003	5/22/2003	5/22/2003	11/24/2003

** 1st NDAA was vetoed
*** Figure as of February 14, 2024

[658] CRS "Appropriation Status Tables."
[659] Pentagon Library 2024.

D6. Justification Materials

In support of the FY 2024 President's Budget (PB) Request, DoD formally submitted over 43,600 pages of unclassified justification book materials (J-books) for its approximately $842 billion budget (DoD's portion of the overall $6.9 trillion PB request). There are also thousands of additional classified volumes of data and J-books submitted as part of the budget request. The J-books provide detailed budget justifications and rationale for increases and decreases in the requested funding for a given fiscal year and include costs, schedules, and performance metrics to provide additional clarity as to why the funds are needed and how programs plan to execute. While additional materials are also provided (including Service or DoD Component formal press rollout briefings and overview/highlights books, detailed acquisition program briefings, amplifying execution data, contracts and service provider information, and specific program or project performance details), they are not formally required nor publicly available like the J-books and supporting data books. The J-books are the official legal submission from the Department, and when combined with congressional marks and language, define how the Department is allowed to spend authorized and appropriated dollars.

The requirements for submission and formatting outlines for J-book materials are codified in OMB Circular A-11, "Preparation, Submission, and Execution of the Budget," and the DoD FMR.[660] Additional direction on development of BES and PB exhibits is issued annually by the OUSD(C) prior to POM development and upon completion of the Program Budget Review (PBR). Congress also provides direction to the Department on the creation of specific exhibits or changes to current formats, as warranted, in the annual appropriation and authorization Joint Explanatory Statements and Chairman's marks, respectively.

The J-book materials are prescribed in specific formats for each appropriation (MILPERS, O&M, Procurement, RDT&E, etc.) and are transmitted via electronic and hard copy to the appropriate congressional committees with jurisdiction for each appropriation. Unclassified materials are posted to the USD(C) public website and under the Military Department Financial Management and Comptroller (FM&C) publicly accessible websites.

Research Approach

This research utilized in depth interviews with subject matter experts from the Military Department FM&C offices, Acquisition PMs and PEOs, OUSD(C), USD(I&S), USD(A&S), and PSMs from the Defense Authorization Committees, Appropriations Sub-Committees on Defense, Senate Select Committee on Intelligence, House Permanent Select Committee on Intelligence, and Military Construction Appropriation Sub-Committees. Commission staff compiled feedback and used their own existing extensive expertise in J-book formulation and narrative development to analyze the exhibits formally provided to Congress. This paper discusses the results of those interviews and is focused on the following J-book topics:

- Build (process and timeline)
- Review – Internal to DoD (approval level and timing)
- Formats (appropriations differ)
- Feedback (from Congress and the DoD)
- J-book Development Systems (writing and producing the exhibits)
- Delivery
- Utilization
- Training
- Best Practices

[660] OMB 2023 and DoD FMR Vol 2A, Ch. 1.

J-Book Build: When and How It Occurs

Development of the thousands of pages of J-book material takes time, especially to ensure the quality and accuracy of the data being provided. The first draft of formal J-books occurs when the Services and DoD Components submit the BES to the OUSD(C) and OMB in the August/September timeframe, which provides a narrative justification of the programmatic and budgetary increases and decreases required to a program's resources during and post submission of the POM. Prior to that, the J-books have undergone significant review inside the Military Departments and DoD Components. The J-book draft submitted with the BES provides OSD and OMB with an opportunity to dive more deeply into the major budget changes, primarily for the upcoming fiscal year which Congress will review and mark up once the PB is submitted. The Services and DoD Components typically have approximately 30 days after the POM submission to develop the BES exhibits. Depending on how much effort the Services and DoD Components apply to the BES, it can give them a significant head start into narrative development for the PB. However, interview feedback highlighted that the programming process of PPBE takes too long and limits development of a quality BES, which is a critical starting point for articulating the budget year position Congress will receive in February.[661] Commission recommended changes to this development timeline are discussed elsewhere in this Final Report under the redesigned Defense Resourcing System (DRS) (Section IV).

The Department does significant planning and internally publishes a timeline to meet the PB directed suspense in February each year with several weeks planned to develop the J-books. However, delays in final PBR decisions made by OSD and late topline and Passback issues directed by OMB significantly compress the actual timeline available to conduct detailed analysis on the budget year narratives, develop quality exhibits, and conduct a thorough review of J-books prior to publication and submission to Congress. As one interviewee commented – "volume, detail, and time are inherently in conflict with each other"[662] – leading to the quality of exhibits suffering for the PB being requested.

The Commission consistently heard that the OSD timelines between final decisions being made in the PBR and development of the final PB request are not realistic nor routinely met.[663] Specifically, as PBR decisions and budget lock timelines can extend into late December and sometimes into January or later, the submission date for the PB is not always delayed or extended enough to provide additional time to finalize J-books and develop quality narratives. Also, since some decisions are made late in the process the Services may have to challenge decisions made by their own senior leadership or OSD, driving additional changes in the J-books at the last minute. For example, late decisions occurring near the end of the process sometimes requires reopening program decisions to distribute adds or reductions directed by OSD and OMB or to address impacts of final appropriations for the current budget year.[664] These delays throughout the process do not typically extend the timelines for J-book development enough, putting significant pressure on budget formulation offices, PMs, and PEOs to adjust and complete J-books in just a matter of a week or two, impacting their quality. The sooner OSD can finalize and lock decisions made during the PBR, the earlier those issues can be incorporated into budget database controls and narrative development can begin. The OUSD(C) leadership needs to be clear about due dates and stay on schedule as much as possible to give the Services and DoD Component analysts quality time to develop budget narratives; Service and DoD Component representatives

[661] Commission interview with subject matter experts.
[662] Ibid.
[663] Ibid.
[664] Ibid.

interviewed stated that a minimum of four weeks from the time of budget lock is preferred to complete development of J-books, but six to eight weeks is best.[665]

Delays in enactment of the budget currently under review in Congress also create additional challenges when it comes to J-book quality. Ideally, J-books should include enacted funding levels from the budget Congress recently enacted. For example, the J-book for the FY 2025 PB submission should include funding levels for the FY 2024 budget enacted by Congress. Depending on the timing of an enacted appropriations bill, OMB has sometimes delayed the PB submission in order to incorporate the enacted position as this is the baseline from which Congress prefers to see programmatic and budgetary changes explained.[666] However, given the challenges with CRs and historical delays in the enactment of appropriations, J-books have often had to use prior requested positions for that year's PB request (for example, the J-books for the FY 2025 budget might have to use funding levels requested for FY 2024 rather than the enacted levels), or an annualized CR amount (for example, J-books for FY 2025 might have to use CR levels for FY 2024). However, Congress will want updates to the submission based on enacted levels as soon as they are available (that is, enacted levels for FY 2024 in the FY 2025 J-books), creating significant rework for the Department to ensure the enacted position is used, resulting in budget narrative rewrites, sometimes within a matter of a week or two after initial submission of the J-books. This again impacts the quality of the J-books as much of the work must be redone to incorporate changes from the enacted position. Timelines for congressional markup typically do not change to accommodate a later PB submission or a late enactment; although an earlier J-book delivery is preferred by PSMs to give them more review time on the current fiscal year PB Request. Some committees often complete their markup before official receipt of the J-books from the Department. They understand the challenges that delays in enactment can have on the PB submission, but receiving the information on time, with appropriate caveats, is better than a delay.[667]

The Commission interviews also highlighted variability about who is developing J-book narratives. The acquisition program Procurement and RDT&E exhibits are often drafted at the PEO/PM offices, with higher level reviews and edits occurring at the headquarters budget office. However, many O&M narratives and exhibits are written at the Comptroller level within a Service or DoD Component or at the Headquarters budget office, making it critically important to ensure that program and budget offices are reviewing J-book materials together to accurately describe the rationale behind a change from the POM that was then incorporated into the BES and PB justification narratives.[668] The Commission heard, and the staff's own experiences reinforced, that most field and Component offices that execute O&M funding have never seen their J-books, nor do they know where to find them. Some PMs or PEOs have never even seen the Investment J-books submitted to Congress, nor do they participate in the drafting or review of the narrative statements describing the programs and projects they are held accountable to execute. This is a significant training and education gap that must be addressed as it is imperative to have the offices responsible for executing the funds be part of the J-book narrative build and review. This is further addressed in Section VIII on improved training.

J-book Review – Internal to DoD

The Services review J-books at various levels but the majority commented that reviews and approvals are typically held at the GS-15/Appropriation Director level.[669] Some exhibits, especially those for programs that

[665] Ibid.
[666] Ibid.
[667] Ibid.
[668] Ibid.
[669] Ibid.

are highly visible, contentious, are congressional interest items, or affect multiple appropriations, are reviewed at the SES or General/Flag Officer (GO/FO) level within the Services, but there is no set standard across the Department. Military Intelligence Program (MIP) exhibits are the only ones that are always reviewed at the GO/FO/SES level before being released by the OUSD(I&S). One interviewee commented that "some exhibits just don't get reviewed and it's a matter of prioritization given the workload and volume to review."[670] The Army's process to review O&M J-books appears to be the most formalized as it includes a review board chaired at the O-6/GS-15 level and involves a complete review of every Sub-Activity Group (SAG) OP-5 exhibit with the appropriate functional stakeholders. The OP-5 exhibit is the core of the O&M J-book and its purpose is "to provide a summary of and justification for changes in the level of resources required for each SAG."[671] The OP-5 provides a detailed reconciliation and justification of increases and decreases from the prior budget year to the current PB request; personnel information to include number of civilians, military, and contractors supporting programs funded within each SAG; performance criteria that provides amplifying justification and metrics for the changes in resources requested; as well as a detailed breakout of costs and inflation changes by type of expense. This review occurs from the end of June through the beginning of August, post submission of the POM in support of BES development and is conducted prior to the submission of the PB to the OUSD(C).[672]

The acquisition program PSM rollout briefs are developed by the program offices and headquarters elements and are typically reviewed at more senior levels (SES/GO/FO) but again, these are informal justification materials that are not formally required to be submitted as part of the PB. However, they are sometimes preferred by congressional PSMs more than the formal J-books because they typically display all the different colors of money associated with a program or project.[673] Since these briefs are not made publicly available, they can include significantly more details at whatever classification is required on a program's: key performance parameters; key accomplishments; contractor related information; contain more detailed schedules; performance milestones; and spend plan information. Service PMs/PEOs typically handle the J-book build for the Investment portfolios but consistency is lacking across the Services on format and the information included. Some military Services include O&M resources associated with the platform/program as part of the rollout briefings while others do not include them at all, which can create challenges for PSMs when trying to understand the full costs of a weapon system or what is changing in terms of costs and why.

Many Service interviewees commented that reviews of justification materials are limited given the need to complete work on budget databases and produce all the associated J-book and budget rollout materials at once, typically under compressed timelines, leaving little time to actually conduct quality control checks and review input.[674] This can lead to the submission of numerous RFIs from Congress post rollout due to the lack of detail or relevant information included in justification narratives. Service interviewees noted they typically receive hundreds of RFIs from congressional PSMs and member offices each year based on information presented during hearings and rollout, their analysis of the J-books, and specific member interests.[675] Congressional PSMs also noted that the assumptions and basis of estimate behind the requested funds are important to understand and, without additional clarity beyond what the J-books provide, leads to extensive RFIs.[676]

[670] Ibid.
[671] DoD FMR Vol. 2A, Ch. 3, 19.
[672] Commission interview with subject matter experts.
[673] Ibid.
[674] Ibid.
[675] Ibid.
[676] Ibid.

J-book Formats

Each appropriation has a specific prescribed format that identifies relevant information as to what is driving the programmatic or budget change to a program's funded resources. Exhibits for one year availability accounts (MILPERS and O&M) are built differently from the Investment (Procurement and RDT&E) and MILCON appropriations.

- MILPERS exhibits articulate rate and compensation driven changes based on the total force size from one year to the next.
- O&M exhibits highlight only true programmatic increases or decreases from the previous fiscal year (most recent requested or enacted year depending on which is available at the time of build) as price inflation is addressed for the entire SAG before the program changes are articulated (and at the end of the OP-5 exhibit), and not within a specific program. Not all programs funded by O&M may be discussed each year if they do not have programmatic growth beyond inflation.
- Investment (Procurement and RDT&E) exhibits identify changes from the previous enacted year to what is funded in the PB submission (new platform or effort, increase in quantity, development efforts, integration costs, modifications, etc.), changes to a program's planned cost or schedule, and include resourcing details across the FYDP. Inflation costs are also kept within a program's total resource allocation within the Budget Line Item (BLI) but are not separately identified.
- MILCON exhibits provide detailed construction costs and information to describe each project requested in the PB.
- MIP exhibits provide program descriptions, change explanations, and include inflation as part of a program's total resourcing, like the Investment exhibits. The MIP exhibits also report total program cost across the FYDP but do not include a year by-year breakout of those costs.

The format for these exhibits has not substantially changed in many years. Small changes have been made and additional exhibits have been directed by Congress, but an overarching review or overhaul of content included in the displays of the main appropriation exhibits has not occurred. Thus, there has not been a formal review conducted by the DoD nor Congress to see what parts of the J-books are still of value. The OUSD(I&S) has made a concerted effort to engage with Congress on the format for MIP J-books to discuss what is useful information and what is no longer required and has made changes based on those conversations; but this practice has not been consistent across the Department.[677]

J-book Feedback: From Congress and the DoD

Feedback received from congressional PSMs highlighted the following major challenges with today's J-book structure and content:

- Overall – quality and accuracy of narratives are the most important issue for PSMs, and this is where they see the largest challenge in data and the justifications provided.[678] The PSMs also articulated that the J-books range across the spectrum on quality; they highlighted the use of clear and concise language and providing more details than required as examples of a best practice. Narratives lacking detail or relevant information as to what is being purchased and why the resources are needed were highlighted as a needed improvement.[679] Poor quality and not providing useful information increases the analytical workload on the PSMs as data is not as readily available or necessitates the need to ask a litany of RFIs to get the additional information required to complete their analysis.

[677] Ibid.
[678] Ibid.
[679] Ibid.

- Some narratives contain language and explanations that are too similar from year to year (cut and paste with minor edits) and do not provide clarity or detail into what is being purchased, why costs are changing, or what is driving the increase or decrease.[680] Utilization of footnotes, particularly in the Investment exhibits, could also help reduce the occurrence of congressional reductions for unit cost by highlighting what has changed in any calculations of the per unit costs.[681]
- The overall organization of exhibits creates a challenge to find specific information and the PSMs have to review hundreds of pages to find specific programs within the BLIs; naming conventions are not used consistently from year to year, making finding program changes and explanations even more difficult.[682] The O&M appropriation is particularly challenging because not all program changes are highlighted in the narratives since they may only contain small changes that are absorbed within inflationary price changes. Several authorization and appropriations committee PSMs articulated that a reorganization or display change for O&M would be helpful based on program or capability areas with more details being provided within the SAG structure, or improved use of the Part IV Performance Criteria section would aid in providing clarifying programmatic details.[683] The Commission's recommendation on restructuring the budget in Section IV addresses some of this concern.
- While the Investment exhibits are found to be more useful to many PSMs, they indicated that the provided schedules can be hard to read and do not always contain useful information such as major test events, planned progress payments, etc.[684] Authorization and appropriations PSMs articulated that they tend to find the informal Investment staffer day briefs more useful as they typically include more detailed information and provide additional details to support efforts leading up to major milestone events.[685]
- Consistent comments received during interviews highlighted inconsistencies and errors between the formal J-books and staffer day briefs, leaving PSMs to question the validity of the PB request and providing them with opportunities for easy marks that should have been prevented. Service interviewees also highlighted that, with the limited time typically left to compile the J-books, errors are not always caught, and discrepancies do occur.[686]
- Appropriation and authorization PSMs utilize the Joint Explanatory Statement to direct changes to exhibits or reporting requirements; however, this language is not always followed by the Department. This forces Congress to incorporate directive language into the Bill, which is considered law, to enforce directed changes.[687] One PSM stated that "getting the Services to change the way they do business is like turning an iceberg; they are stuck on the same format."[688] Lack of attention to changes requested by the PSMs leads to RFIs, many of which are asked year after year, as well as frustration. If DoD incorporated the answers to the RFIs into the J-books directly or provided answers during rollout briefings to these anticipated questions, workload for both PSMs and the DoD could be avoided.[689]
- Overarching high level budget rollout summaries are not as useful as they should be. This is an opportunity to articulate the PB's overarching budget themes, key resourcing changes, priorities, and challenges more clearly but PSMs find that DoD "takes staffer days as an opportunity to give an 'earth to the moon overview' and it is very difficult to get them to understand that we want them to talk about

[680] Ibid.
[681] Ibid.
[682] Ibid.
[683] Ibid.
[684] Ibid.
[685] Ibid.
[686] Ibid.
[687] Ibid.
[688] Ibid.
[689] Ibid.

the specific priorities in that PB request and how it ties to the overarching strategy moving forward."[690] A majority of PSMs also commented that the use of "NDS lingo" is just that and does not tie programs to outcomes and priorities.[691] They commented on this being a missed opportunity to tie budget outcomes to the strategy in a more relatable way and to show the Department is "doing things right and is doing the right things."[692]

- Some narratives are too long and not substantive, whereas others are too short with little to substantiate what is driving the requested resources or what had changed.[693]
- The MILCON DD Form 1390 exhibits are not used except for cost factor information.[694] The DD Form 1391 exhibits; however, are found to be extremely useful to PSMs and are read in detail. One noted improvement area is the level of detail provided within the project narratives, in particular for the supporting activities. The PSMs noted there are inconsistencies in the quality provided and some are more challenging to read than others.[695]
- Justifications and discussions during rollout highlight the critical importance of programs and why marks cannot be taken, but PSMs then see that funding realigned on reprogramming requests during the year of execution;[696] part of this is unavoidable given the lead time to build the PB submission. However, articulating a critical need and then repurposing funds later reduces the Department's credibility and reliability from a PSM perspective.[697]

Feedback received from Service and OSD interviewees highlighted the following challenges with today's J-book structure and content:

- The MILPERS exhibits are still mostly manually developed from spreadsheets and should be more automated. The Services commented that it still takes over 30 days to get through modeling and J-book build for an account that is primarily calculated and driven by rate changes (pay, basic allowance for housing, subsistence, etc.) times the number of personnel entitled to receive each.[698]
- The Services highlighted that there are a lot of exhibits required as part of the PB submission, but it is not clear how valuable they are in supporting the PSMs' analyses.[699] New exhibits get added but exhibits never drop off the list of what is required. It is also unclear whether exhibits directed by specific PSMs are still needed once those PSMs have left the committee. For example, the PBA-4 and PBA-22 depicting FSRM and base operating support details are duplicative to what is already contained in the OP-5 and the Services spend too much time trying to deconflict numbers in multiple places, increasing the opportunity for errors to occur.[700] The Procurement P-20 "Requirements Study Investment" is an example of an exhibit that is no longer required but some PSMs continue to ask for it. Other PSMs also ask for the P-5 (program cost analysis broken out by work breakdown structure) and P-21A (production schedule for all ammunition types by major end item) exhibits for one Service but not for others.[701]

[690] Ibid.
[691] Ibid.
[692] Ibid.
[693] Ibid.
[694] Ibid.
[695] Ibid.
[696] Ibid.
[697] Ibid.
[698] Ibid.
[699] Ibid.
[700] Ibid.
[701] Ibid.

- The O&M exhibits are built around the SAG and not all programs funded and executed within each are discussed because only those operation, sustainment, and readiness programs that have programmatic change outside of inflation are justified. Performance criteria can be utilized to assist in highlighting specific programs funded within the SAG but are not used consistently across the Services; nor do they still give complete insight into what programs are being funded and what is changing within the SAG.
- Appropriations PSMs also articulated that the prior year baselines and enacted funding levels identified in the J-books are not always accurate or consistent across the exhibits or other rollout materials provided, leading to the misrepresentation of total funding heading into the next fiscal year and identify easy marks for PSMs.[702]
- Utilization of the OSD CAPE Select and Native Programming Data Input System (SNaP), which is used to develop the MIP exhibits and collect other program and budgetary information for designated programs supporting the Department's overview exhibits submitted with the PB, creates additional challenges and opportunities for disconnects between exhibits. The information in SNaP is primarily collected via manually developed spreadsheets that are then uploaded into the system. Functional leads typically do this work, and it is not necessarily coordinated across the appropriate financial offices to ensure accuracy or consistency with PB exhibits before submission. This creates the opportunity to inadvertently misreport numbers and may not accurately capture relevant and appropriate data. Service representatives said that SNaP exhibits, particularly the Information Technology exhibit, should be captured through more authoritative data collection, as numbers are sometimes "hand jammed,"[703] which reduces accuracy.[704]

The Services and DoD Components do formally and informally provide updated exhibits when errors occur and do engage with appropriate congressional PSMs. These engagements; however, occur on an ad hoc basis, and there is no standard engagement process to address lessons learned or opportunities to review or pass along best practices from other Services. Many of these conversations are based on specific relationships formed between Department liaisons, appropriation leads, and PEOs/PMs directly with the PSMs. Congressional PSMs are also not hesitant to reach out directly to appropriate analysts to ask questions. As outlined in one of the Commission's recommendations (Section VI), a cross-functional team developed within the Department to work with Congress to establish a more consistent battle rhythm of engagements on specific content and format of exhibits will prove useful and help shape desired changes for future budget requests.

J-book System Development

The Services and DoD Components under the Defense-Wide appropriations utilize different software systems to support the development of appropriation J-books:

- The Army uses the Exhibit Automation System (EAS) for O&M; the Military Personnel Financial Management System module within the Integrated Resource Management Information System (IRMIS) for MILPERS and uses IRMIS as a feed into their P and R Form System for Procurement/RDT&E; and the Programming, Administration, and Execution System (PAXS) for MILCON.
- The Navy and Marine Corps use the OP-5 Automated Reporting System (OARS) for O&M; PBISWeb for Procurement/RDT&E; the Navy uses the MPN Appropriation Justification Book Input and Compilation

[702] Ibid.
[703] Ibid.
[704] Ibid.

system and the Marine Corps uses data derived from the TM1 system to build MILPERS; and the Electronic Project Generator (EPG) for MILCON but are planning to move to the PAXS for the development of the FY 2026 PB.

- The Air Force and Space Force use the EAS for O&M; the Integrated Budget Documentation and Execution System for Procurement/RDT&E; the MILPERS Integrated Data Analytics System to build MILPERS; and the EPG for MILCON.
- The Defense-Wide Components use the EAS for O&M; DTIC for Procurement/RDT&E; and use a Microsoft Word template for MILCON although a transition to the EAS is planned for the FY 2026 PB submission.

Many of these systems have not been updated in years, if not decades (like the web-based interface the OUSD(I&S) uses to develop MIP J-books),[705] and are limited in analytical capabilities to support J-book development or are manually modified once the initial format is produced. The Navy indicated that they intend to update their PBISWeb/OARS systems in the near future.[706] The Marine Corps' Oracle based TMI system has not been updated in over 10 years and is only being upgraded to a 2012 version, opening the door to not catch errors and rely more heavily on manual reviews, input, and need for corrections.[707] Many of these systems can pull in control data directly from associated program/budget databases, but that is typically all they do to automate the building of J-books. The build and input of actual J-book narratives still requires time consuming manual entry and validation.

In discussions related to the idea of providing committee staff with a digital enclave of the Department's PB submission in database form that can be manipulated offline, congressional PSMs were extremely supportive.[708] This digital enclave would allow them to see more details than what is currently provided in the Dash-1 account and appropriations overview tables and J-book exhibits. Once accessed, data in the enclave could be manipulated to provide the information that is most relevant to their portfolios and would not require piecing together multiple spreadsheets and documents, as is currently required. Congressional PSMs also indicated that access to the OSD(LA)'s Congressional Hearings and Reporting Requirements Tracking System (CHARRTS) would be beneficial to tracking the status of congressional reporting requirements, help deconflict reports required across committees, and ensure the Department stays on track with meeting reporting timelines.[709] The PSMs stated that the information requested within directed reports is important to their analysis and loses its value when not submitted in time to influence their markup. The Department does not have a formal mechanism to provide status updates on congressional reports and only provides spreadsheets or updates on an ad hoc basis, increasing the opportunity to miss deadlines.[710] Additional discussion of providing access to CHARRTS is included in Section VII.

J-book Delivery

The Commission received mixed feedback on this specific topic. With the usually compressed timeline to develop J-books once the budget controls lock, delivery of the J-books and supporting information can take weeks following the formal PB submission. However, the committee markup schedules don't shift to accommodate when the J-books are finally delivered. For authorization committees, whose markup starts in

[705] Ibid.
[706] Ibid.
[707] Ibid.
[708] Ibid.
[709] Ibid.
[710] Ibid.

earnest in the March/April timeframe, this leaves little time to review J-books once they are delivered. Electronic copies are preferred and PSMs usually download them from the public OUSD(C) website as soon as they are posted, which typically occurs before hard copies are delivered.[711] Even the OUSD(I&S) has begun utilization of electronic distribution through CapNet, but not all PSMs have accounts or access to this system with even fewer DoD personnel having access to transmit the volumes of exhibits.

For appropriations committee PSMs, the opposite it true–while electronic copies provide value in searchability and physically saving storage space, many PSMs prefer to have an actual hard copy to be able to write in and take notes based on their comparison of the current PB exhibits to prior PB J-books.[712] They typically have more time to review J-books but with HAC-D markups typically occurring in May, long delays in delivery of J-books can impact what information they have available to support their markup. The Senate has the most time available, with their markups typically occurring in July, which makes reviewing hard copies more desirable. Service interviewees, however, said they would prefer to see hard copy distribution discontinue completely or be reduced to a minimum, as this also limits how much time they have to review, finalize the J-books, and fix errors discovered before having to go to print.[713] The Commission identifies this as an opportunity for the Department to engage with Congress and address the delivery needs based on specific committee desires, saving time and resources on printing copies that some committees do not want nor use while focusing on committees that specifically want hard copies.

J-book Utilization

Each congressional committee finds different utility in the J-books. Authorization committee PSMs rarely consult the J-books in detail to inform their markups, unless it is to review a program of interest, but do find RDT&E, classified, and MILCON exhibits to be the most useful to support their analysis.[714] They tend to look for specific programs affecting policy decisions or interest areas and utilize the staffer day briefs more than the volumes of formalized J-books. In contrast, appropriations committee PSMs do consult the J-books in detail. They write in, tab, track programs through multiple appropriations, and even use prior year J-books while reviewing the current PB J-books to inform their markups.[715]

J-book Training

The feedback the Commission received was consistent throughout the Services, DoD Components, and OSD–there are no formalized training programs within the Department to focus on J-book narrative development.[716] Some outside courses and programs are leveraged for training, but those are limited in scope to addressing specific elements and key attributes of writing useful J-book narratives. Former PSMs provide classes on an ad hoc basis and some current PSMs engage with specific DoD offices when asked, but this practice is not consistent; nor is the availability of such classes communicated openly and widely enough by the hosting budget or program offices to ensure maximum attendance for those needing the training. One Service FM office commented during the interviews that they found out, after the fact, that one of their program offices was hosting a PSM at their command to conduct J-book training. The FM personnel at the headquarters, however, weren't invited, creating a missed opportunity for others to gain knowledge and ask questions.[717]

[711] Ibid.
[712] Ibid.
[713] Ibid.
[714] Ibid.
[715] Ibid.
[716] Ibid.
[717] Ibid.

Each analyst typically learns J-book development skills while working on the job or relies on former analysts' expertise, if they still reside elsewhere within the command. Due to the challenges with hiring lags and the time it takes to bring personnel on board (further discussed in Section X), there is typically little to no turnover with outgoing personnel. In addition, there are typically little to no analyst user manuals or standard operating procedures (SOP) built for new analysts to utilize as guides.[718] The Services have also seen noteworthy turnover in their FM workforce in recent years as well, with one Service stating they've had 100% turnover within the last two years for their MILPERS analyst positions,[719] and others have seen continuous turnover in O&M and Investment divisions, exacerbating the loss of budget formulation knowledge resident in the commands.[720]

Most Military Department FM&C offices have developed some O&M training materials and do engagements with lower echelon and field program and comptroller offices several times a year, as an additional duty as assigned. These training sessions are targeted towards development of the BES and PB submissions but are typically limited in focus and time and are not institutionalized. It is also hard to customize training because of the large number of people involved in executing the budget build.[721] The Services also pointed out that the timing of the release of OSD's BES and PB Program/Budget Guidance is too late to assist in their training efforts as they have already met with Component stakeholders.[722] A more formalized and routine training curriculum, delivered by a small, dedicated staff or tied into existing FM/Acquisition certification programs (as addressed in Section VIII) will improve the quality of the information being provided in J-books.

Best Practices

While the Commission heard many challenges with the current structure, quality, timeliness, and content of the J-books, best practices were highlighted as well as areas where improvements are already being made. Examples include the following:

- Focusing on thoughtful development and having the end customer (i.e., Congress) in mind, beginning with the BES build, will give the Services and DoD Components a head start in J-book narrative development and help minimize some of the changes required post PBR for the PB.[723]
- Continue the USD(A&S) and OUSD(C) reform effort to use DoD Construction Agent assessments when comparing MILCON exhibits against Service Construction agent assessments to identify disconnects and make corrections to reduce congressional marks in the future.[724]
- The OUSD(C) leadership directed all budget directorates to develop SOPs for the divisions to use that include pertinent information associated with all facets of the PPBE process related to their specific appropriations. These SOPs include information such as directive guidance, points of contact, associated congressional language applicable to their specific appropriations or programs, reprogramming guidelines, funding authorization documents, etc., and are posted within an internal SharePoint site for everyone to access. To ensure compliance with these SOPs, OUSD(C) has directed they be incorporated into personnel performance plans to ensure completion.[725] The Services and DoD Components should look to replicate this best practice in their own FM and acquisition organizations.

[718] Ibid.
[719] Ibid.
[720] Ibid.
[721] Ibid.
[722] Ibid.
[723] Ibid.
[724] Ibid.
[725] Ibid.

- Create and use data dictionaries to standardize nomenclature, wherever this action is applicable and makes sense. Not all appropriations should have standardized language, per the PSMs, but some of the BLI and major program nomenclature could be reviewed and updated across the Services. The MILCON directorate has already implemented this effort and is looking to standardize narratives more towards the construction industry terminology.[726]
- Use quarterly briefing updates with congressional PSMs, particularly for O&M, to identify good news and potential execution challenges in order to develop and continue an open and more routine dialog with Congress. Congressional PSMs noted that not all Services utilize this opportunity, both to inform them and proactively provide information, and issues tend to be brought to them at the last minute when a reprogramming is required, etc. This approach to communication with PSMs is not consistent across the DoD and is dependent on the culture of risk tolerance within a given military Service and DoD Component.[727] The Services and DoD should engage with Congress more frequently to pass information in a timely manner to support congressional markup timelines (further discussion on this topic is found in Section VI).
- Identifying or presenting cross cutting issues affecting multiple appropriations during budget rollout is helpful to PSMs, so they do not have to dig across multiple sets of exhibits to find the totality of funding required to execute the program or initiative–examples highlighted included the European Deterrence Initiative exhibit, the Pacific Deterrence Initiative exhibit, and the newly directed Department-wide CIVPERS exhibit.
- Consulting with committee PSMs before making changes to J-book exhibit formats or consolidating BLIs is the key to success.[728] This open dialog builds transparency and trust on both ends.
- While not a specific issue related to J-books, congressional appropriation and authorization of MILCON funding for natural disasters in one lump sum, by installation to the affected Service, allows execution to be timely, reduces costs, and gives the Services flexibility within a location to adjust as projects and costs are defined. Funding was authorized and appropriated this way for construction needs in China Lake, CA; Camp Lejeune, NC; and Tyndall Air Force Base, FL after natural disasters and allowed the Services to address critical infrastructure shortfalls and start rebuilding efforts as soon as possible. It is recommended that this practice continue as it allows for more efficient management of MILCON resources and the Services can react and adjust to changes in materiel or labor costs for all reconstruction and rebuilding projects more rapidly.

Based upon the Commission's findings and feedback received during these interviews, there is a significant opportunity available to the Department and Congress to help shape and transform formal and informal J-book exhibits and the associated budget materials to ensure usefulness to both parties and contain the information needed to conduct appropriate analysis. Specific recommendations are highlighted throughout this Final Report, as highlighted in this Appendix. The Commission also encourages the Department and Congress to work together to identify what information is useful and needs to continue being provided and what information is no longer required. Eliminating unneeded information will free up time that should be used to conduct the necessary analysis to strengthen the quality of information provided in the Department's J-books.

[726] Ibid.
[727] Ibid.
[728] Ibid.

D7. Facilities Sustainment, Restoration, and Modernization (FSRM) Funding and Upward Obligation Adjustments

The DoD has "over 550,000 buildings and facilities all over the world, with an estimated value of approximately $1.3 trillion."[729] On occasion, the DoD has made the news for not having managed the risks associated with deferred facility maintenance. For example, the recent mold in the barracks at Fort Stewart, Georgia[730] and leak at the Red Hill fuel storage facility in Hawaii,[731] or the facility conditions in Building 18 of the Walter Reed Army Medical Center in Maryland in the early 2000s all made news.[732] The Department typically uses FSRM funding to renovate facilities and address facility maintenance issues, unless MILCON funding has been requested to build an entirely new building. The FY 2024 PB request includes $19.557 billion for FSRM projects, including demolition, to improve critical operational infrastructure (Figure 1).

Figure 1 – FSRM Funding in the FY 2024 PB

FACILITIES SUSTAINMENT, RESTORATION, AND MODERNIZATION (FSRM) AND DEMOLITION PROGRAMS

FSRM Summary
$ in Millions

	FY 2022[1] Actual	Delta	FY 2023[2] Enacted	Delta	FY 2024[3] Estimate
Army	4,876.2	384.9	5,261.1	120.6	5,381.8
Navy	4,008.3	15.6	4,023.9	382.3	4,406.2
Marine Corps	1,338.4	3.8	1,342.2	-131.0	1,211.2
Air Force	4,969.8	-685.0	4,284.9	-32.1	4,252.8
Space Force	222.1	71.3	293.4	385.3	678.6
Army Reserve	391.4	-0.8	390.6	104.9	495.4
Navy Reserve	67.3	-17.5	49.8	13.9	63.7
Marine Corps Reserve	52.7	-2.2	50.4	-3.8	46.6
Air Force Reserve	153.2	-9.4	143.8	-21.5	122.3
Army National Guard	1,028.3	81.3	1,109.5	-28.0	1,081.6
Air National Guard	424.0	108.5	532.4	-162.3	370.2
Subtotal	**17,531.6**	**-49.6**	**17,482.0**	**628.4**	**18,110.4**
Defense-Wide	292.6	25.7	318.4	23.6	342.0
Defense Health Program	952.1	199.6	1,151.7	-47.4	1,104.3
Total	**18,776.4**	**175.8**	**18,952.1**	**604.6**	**19,556.7**

Numbers may not add due to rounding

1\ FY 2022 includes Base funding, Direct War and Enduring Requirements, and $895.0 million to aid in disaster recovery efforts.
2\ FY 2023 includes Base funding, $398.6 million in Overseas Operations Costs (OOC) enacted, and $172.9 million to aid in disaster recovery efforts.
3\ FY 2024 includes Base funding and $423.2 million for the OOC budget estimate.

Source: USD(C) FY 2024 O&M Overview Book, USD(C) Public Website

Research Approach

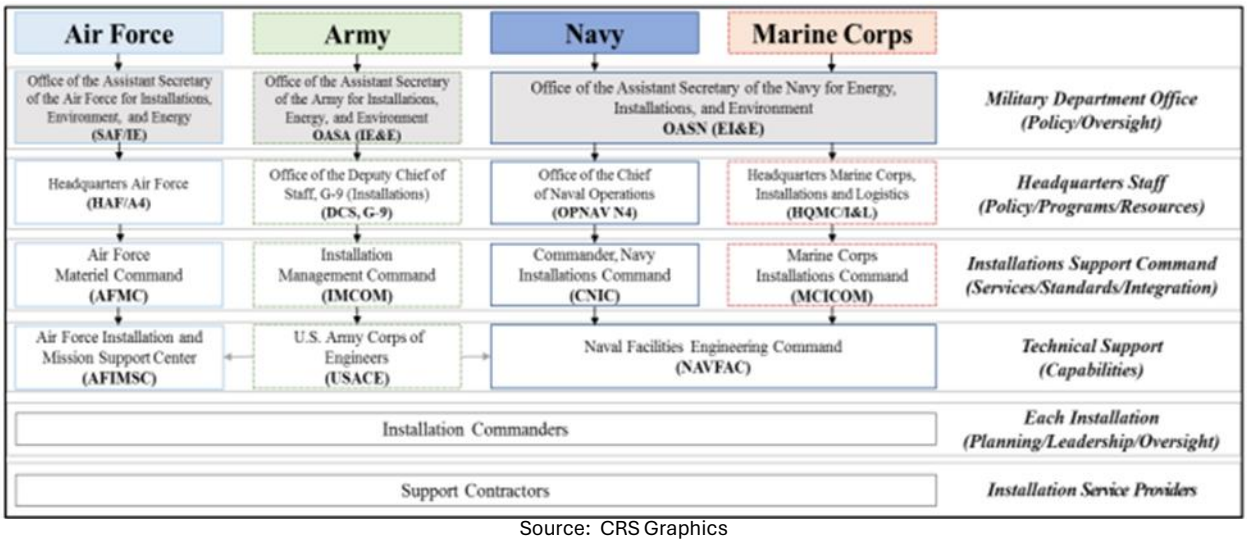
This research was comprised of historical case studies and interviews as the primary data collection methods in addition to secondary research readily available through sources such as the Congressional Research Service (CRS), U.S. Government Accountability Office (GAO), and National Academies Board on Infrastructure and the Constructed Environment (BICE). This research also used publicly available budget data from the USD(C) website.[733]

Key individuals at each echelon of the military installation management structure[734] from the USD(C) to technical support offices (e.g., Headquarters, U.S. Army Corps of Engineers) were interviewed to gain insight

[729] GAO 2022.
[730] Beynon 2022.
[731] Liebermann 2022.
[732] Milbank 2007.
[733] OUSD(C) "DoD Budget Request."
[734] Figure 1 from Herrera 2021.

into the Department's infrastructure investment, challenges, and cost barriers. Figure 2 below shows the Service organizations involved in FSRM oversight.

Figure 2 – DoD Organizations Involved in FSRM Oversight



Source: CRS Graphics

Definitions

For clarity, the definitions of sustainment, restoration, modernization, demolition, and upward obligations are described in the "Additional Information and Data" section at the end of this paper.

How Facility Sustainment Requirements are Calculated

Every fiscal year the DoD requests funding for individual FSRM projects via the President's Budget submission. The DoD uses a Facility Sustainment Model (FSM) as the standardized model to estimate the funding required to sustain DoD facilities worldwide. The FSM accounts for facility quantity (e.g., size), average sustainment cost factors, location factors, and inflation.[735] The DoD FMR also contains additional details on the definitions and planning factors for FSM. These metrics also address recent real property audits and how those are incorporated into the planning factors. A review of the FSM data indicates the Services are often challenged to provide sufficient funding for DoD's infrastructure. In FY 2020, the GAO identified a DoD deferred maintenance backlog of $137 billion.

Starting in 2020, the "DOD required the military Services to use the Data Analytics and Integration Support (DAIS) system for reporting real property inventory data" to enable a common sight picture, "better capture real property data, and correct discrepancies."[736] The DAIS includes the inputs necessary to calculate key infrastructure metrics such as facility deferred maintenance or plant replacement value, among others.

What the Commission Heard

Based on numerous inputs received from DoD interviews and open mic sessions, we heard repeatedly about two main challenges associated with executing the FSRM program. More specifically, the one-year availability of FSRM funding (in the O&M account) and the upward obligation process. Many FSRM projects are large,

[735] DoD FMR Vol. 2B, Ch. 8, 8-2.
[736] GAO 2021. For example, in 2020, DOD required the military services to use the DAIS system for reporting real property inventory data. According to DoD, this system will provide a common platform for DoD real property inventory, connecting individual military service real property systems to a web-based interface. DoD intends DAIS to replace the manual, annual data call to populate the Real Property Asset Database, which we have found contains inaccurate and incomplete data.

complex, and fraught with unexpected repair or remediation issues (asbestos removal, excess corrosion), which makes it challenging for construction agents and contracting officers to obligate the entirety of the annual FSRM program within twelve months or less, especially if there is a CR. In many cases these unforeseen issues arise well after an FSRM project has been awarded and the vendor has initiated the work. When this happens, the vendor will engage with the DoD construction agent or program manager to increase the funding necessary to accomplish this work. If the funds are still active, this change can usually be made before the funds expire. However, if the FSRM funds have expired, then the DoD program manager and supporting team will have to use the upward obligation process to obligate the expired funds.

Availability of O&M FSRM Funds

Funding for FSRM in the Service O&M sub-activity groups (SAG) is not tied to a specific project during the year of execution in the way that MILCON funds are linked to each individually authorized and appropriated project. Each Service builds a prioritized planning model based on detailed cost estimates to execute specific projects for a fiscal year; the planned project list can change based on fact-of-life changes that occur between development of the funding request, appropriation enactment, and obligating funding on a contract. Given how far in advance the estimates and budget requests are built, and the time between request to appropriation to execution, funds are allocated to the highest priority projects during the year of execution. This can include facilities damaged by storms or other emergent needs that were not part of the original budget request but have significant operational impacts for the Service.

Limitations of One-Year O&M Appropriation

As previously mentioned, the size, complexity, and technical scope of FSRM projects makes it challenging to obligate the entirety of the annual FSRM program according to plan. The cost of a project can run from the tens of thousands of dollars to several hundred million dollars depending upon the need. While large $100 million projects are not the norm; however, in the Navy's case there are FSRM projects to address the significant work and funding required for dry dock or shipyard repairs that do not fit the requirement for using MILCON funding. Furthermore, because the appropriated O&M funds for FSRM expire at the end of that fiscal year, there is a significantly shorter cycle to ensure funds are put on contract for that year's projects. There can also be substantial cost fluctuations in FSRM projects due to things like discovering asbestos or unanticipated corrosion and damage that was previously unknown until work could start, or contract modifications for increases in the price of materials. The reality of regular CR periods further exacerbates an already difficult situation, with contracting actions piling up during the last two months of the Fiscal Year. Construction managers and contracting officers are moving quickly in order to preserve the funding and not lose it, which impacts their ability to negotiate the best possible contracts. As one DoD official stated, "One-year money generates a number of other issues… believe that's why we see the cost increases on the bids."[737] And another further clarified that "Contractors have us over the barrel when they know it's 30 September. [We] need some control to have those projects 'design-ready' to be executed the beginning of the second year. When you get backed up by a CR, that really does crunch the period of time you can award – we need a better bidding environment."[738] Further detailed input can be found in the "Additional Information and Data" section at the end of this paper.

Each Service addressed the issue of CRs, asserting that having two-year availability for FSRM funding would help create a "better bidding environment"[739] and alleviate some of the end of year burdens associated with one-year funding. There was a general sentiment that more funding is executed in the fourth quarter for FSRM projects than the Services would like as senior leaders prefer to reserve final decision space on the list of projects to award until the last few weeks of the fiscal year, which can further exacerbate the problem of rushing to get things on contract prior to fiscal year end. Having "two-year money would allow us to deliver

[737] Commission interview with subject matter experts.
[738] Ibid.
[739] Ibid.

the plan for facilities investment items that are important to us operationally."[740] If FSRM funds were given two years of availability, the Services suggested the need for benchmarks to award a certain amount or percentage by the end of the first fiscal year to discourage shifting the problem from the end of year one to the end of year two. Additional time could alleviate concerns about how "the construction world gets very busy toward the end of the fiscal year… if you had that type of authority, you wouldn't necessarily see such a push in that fourth quarter which may not drive pricing up as it historically has. It may also result in not asking for bids to be open as long, which also tends to result in better pricing."[741]

When asked about carryover authority for FSRM funds, the response was that carryover would certainly help but not be as effective as two years of FSRM funds availability. This could alleviate some challenges with bid expiration that can have significant cost impacts and could also generate cost savings. Carryover was generally viewed as a compromise to two years of funds availability, and would need to be greater than one-to-three percent to have a positive effect on costs and potential savings.

The intent of either carryover or two years of funds availability is not to just shift the year-end crush to award projects to a different deadline, or to extend the availability of funds, but to provide extended time to put the best contract in place. Neither option should be viewed as having provided funds early to need. Not all FSRM projects are equal in terms of complexity of effort, so some will reasonably take longer to put together a more thorough scope of work, review complex bid proposals, and put that effort on contract. Having the additional time (carryover or two years of availability) to obligate funds could eliminate some of the need for upward obligations during the year of execution, further enabling work to continue without needing to adjust the cost for changes that are still within the scope of work, avoid some project delays, and not incur the additional costs associated with the delays.

Upward Obligation Process

Given the complex nature of many FSRM projects and the one-year availability of funding, many "within scope" issues arise while a contracted effort is ongoing, but after the associated funds have expired. Some examples of unforeseen circumstances are increases in the cost to renovate a building due to an unexpected requirement to do asbestos remediation or address mold that could not be seen during the estimate development process; or the cost of raw materials increasing significantly after a natural disaster in the area; or other market factors due to unanticipated cost impacts on the planned material costs for that effort. The upward obligation addresses unforeseen costs within the scope of the contract that were not initially part of the cost estimate. The FMR states that "Upward adjustments to obligations in expired appropriation accounts, caused by contract changes that exceed certain thresholds, are subject to additional reporting and approval requirements. A contract change represents an order relating to an existing contract under which a contractor is required to perform additional work. A contract change does not include adjustments related to an escalation clause."[742] Depending upon when the upward obligation need is determined, and the year in which the original funds were obligated, the increased costs may be funded with the current appropriation or also with expired funds that are still available for expenditure. Project, contract, and legal analyses by many subject matter experts from base level through higher headquarters and sometimes OSD (construction agent, program manager, contracting officer, financial manager, and general counsel) are required in order to determine the appropriate way forward, to include identification of the appropriate fiscal year for the cost increase.

Through the Commission's research, we have learned that the time taken to process upward obligations on FSRM projects can be lengthy and often results in additional expenses to the DoD due to schedule delays. The average time for the Navy to identify, develop, submit, and process the upward obligation was 123 days

[740] Ibid.
[741] Ibid.
[742] DoD FMR Vol. 6A, Ch. 4, Paragraph 4.6.

for internal coordination approval. The timeline becomes particularly challenging when the FSRM upward obligation is greater than $4 million during a fiscal year, since Title 31 U.S. Code §1553 requires head of agency approval at that threshold; that is the OUSD(C) for the DoD. Delays while waiting for internal and/or external organizational approval for upward obligation adjustments can add unintended costs to the FSRM project.

Each Component creates its own guidance and process for how to address upward obligations. Upward obligations that exceed $4 million during a fiscal year are governed by Title 31 U.S. Code §1553; upward obligations over that amount "may only be made if the obligation is approved by the head of the agency (or an officer of the agency within the Office of the head of the agency to whom the head of the agency has delegated the authority to approve such an obligation)."[743] For upward obligations over $25 million, "the obligation may not be made until (A) the head of the agency submits to the appropriate authorizing committees of Congress and the Committees on Appropriations of the Senate and the House of Representatives a notice in writing of the intent to obligate such funds, together with a description of the legal basis for the proposed obligation and the policy reasons for the proposed obligation; and (B) a period of 30 days has elapsed after the notice is submitted."[744] For the DoD, the head of agency is the USD(C).[745]

In the NDAA for FY 2021, Congress modified Title 10, U.S. Code §8683 to allow for a change in the upward obligation threshold approval authority in §1553. For "funds appropriated in the Operation and Maintenance, Navy account that are available for ship overhaul, the Secretary of the Navy may treat the limitation specified in paragraph (1) of such section to be '$10,000,000' rather than '$4,000,000'."[746] This change allowed Navy to approve these increases directly instead of having to staff them through the OUSD(C), eliminating that additional time and any costs incurred during that timeframe.

Using the Navy process as an example, an initial FSRM upward obligation request typically comes from the public works quality construction manager to the Contracting Officer's Representative (COR). The COR is responsible for providing subject matter expertise during the acquisition planning and contract formation process and is therefore best suited to determine if the upward obligation request is within scope of an existing contract.[747] Based on analysis of eleven upward obligation requests within Navy Region Europe, Africa, and Central (EURAFCENT), each packet spends an average of 26 days with the Contracting Officer (KO) for a detailed review (Figure 3); similar data for other regions was not readily available.

After initial COR and/or KO review,[748] the upward obligation request package is submitted to a contracting counsel for a legal review, then to the Office of the Chief of Naval Operations (OPNAV N4) for program review and prioritization, and lastly to the regional comptrollers (N8) to confirm a bona fide need and that all required supporting information is included, such as the funding document, project details and other legal reviews. This means, in accordance with Title 31, U.S. Code § 1502(a), "The balance of an appropriation or fund limited for obligation to a definite period is available only for payment of expenses properly incurred during the period of availability or to complete contracts properly made within that period of availability and obligated consistent with section 1501 of this title. However, the appropriation or fund is not available for expenditure for a period beyond the period otherwise authorized by law."[749]

If the upward obligation request is less than $50 thousand, the regional comptrollers have been delegated the authority to approve the request. If the request is above $50 thousand but less than $4 million, the package

[743] 31 U.S.C. §1553.
[744] Ibid.
[745] DoD FMR Vol. 6A, Ch. 4, Paragraph 4.6.2.
[746] 10 U.S.C. §8683.
[747] DoDI 5000.72.
[748] FAR 1.602-2(d).
[749] 31 U.S.C. §1502.

is submitted to the Comptroller of Commander, Navy Installations Command (CNIC) to ensure compliance with policy and certify final approval.

When the request is less than $4 million, the entire Navy process takes an average of 123 days from KO review to CNIC Comptroller endorsement (Figure 3). After approval of the upward obligation request, it typically takes an additional 30-60 days to complete contract negotiations and issue the contract modification, assuming the prior year or current year funding is available and does not have to be reprogrammed to fund the increase. If the upward obligation request is not approved, there can be significant costs to either terminate the contract for convenience or issue another contract to complete the work. The CNIC staff sends requests that exceed $4 million through the Navy, Office of Budget (FMB) to the OUSD(C) for endorsement and approval, as required by Title 31 U.S. Code §1553.

Figure 3 – Navy Region EURAFCENT Upward Obligation Process and Timelines

Description	Average Duration (Days)	Minimum Duration (Days)	Maximum Duration (Days)
Days with Contracting Officer (KO)	26	1	104
Days with Contracting Counsel	2	1	6
Days with Program Office (N4)	3	1	11
Days with Regional Comptroller (N8)	81	33	133
Days with Policy Review (HQ)	32	Insufficient Data	Insufficient Data
Average Days in Process	**144**	**36**	**254**

While waiting for the appropriate level of upward obligation request approval, the DoD often incurs significant increased costs resulting from the schedule delay. For CNIC, the delay in receiving funds (from when the request is initially put together to when final approval is received) often "leads to contractors demobilizing or incurring additional overhead that the Navy is obligated to pay. We have cases where the cost for additional delays has been more than the original upward obligation."[750] For example:

> A New London, Connecticut Bachelor Enlisted Quarters project was initially awarded on May 15, 2020, at a cost of $27.1 million. Upward obligations of $1,298,655.00 in FY 2021 and $3,096,401.18 in FY 2022 were necessary to complete to the project. While waiting for formal upward obligation approval, the contract was extended 309 days resulting in an additional $1.1 million (3.27 percent) in project growth and phasing costs to the Navy.
>
> A generator repair contract at Naval Station Everett, Washington was initially awarded in FY 2021 at a cost of $216,867.67. After contract award, survey of the generator determined that additional components required repair beyond those initially identified in the contract and an upward obligation adjustment was submitted in June 2022 for $137,778.67. The original contract proposal expired, the revised proposal submitted in July 2022 that was good for 90 days included a delay cost increase of an additional $8,192.54 for contractor proposed material and fuel cost escalation, and the Navy now had a new total upward obligation request for a total of $145,971.18. A third and final upward obligation request was submitted in December 2022 and signed in January 2023 requiring an additional $49,912.91 in increased costs resulting from the delays.

Challenges with the $4 million threshold can arise when Navy projects for repairs at a dry dock, or similarly large-scale efforts, routinely cost in the hundreds of millions of dollars. The other Services did not highlight

[750] Commission interview with subject matter experts.

any concerns with the $4 million threshold as their FSRM projects "are not large enough"[751] to be significantly impacted by that threshold. However, one Service indicated it experienced some internal upward obligation and congressional notification delays when dealing with recovery efforts after a hurricane had affected installations.[752] While none of the requests exceeded the $4 million threshold, they were considered congressional high interest items as congressional staff and Members wanted to be kept abreast of disaster recovery efforts.

Upward Obligations Process Timeline at the OUSD Comptroller

The upward obligation requests submitted to OUSD(C) are largely administrative in nature (Figure 4). In most cases, pending legal approval, the full revised value of each project is approved as requested to support the needed facility rehabilitation, safety compliance, replacement contracts, or other essential activities to minimize disruption costs to the DoD. The OUSD(C) review includes an assessment from the Office of General Counsel (OGC) (Fiscal) lawyers because "there is an oversight requirement that OUSD(C) needs to continue to provide to protect the Department."[753] From FY 2020-2023, the only formal rejection of an upward obligation from OUSD(C) was in 2022 for flooding damage at Offutt Air Force Base, Nebraska as the change was determined to not be within the scope of the contract. During that same timeframe, an Army request for an additional $10.7 million for a replacement contract in 2021 from a bid protest and termination for convenience contract was later withdrawn when the OGC (Fiscal) determined that OUSD(C) approval was not required. The OUSD(C) emphasized repeatedly that "these requests are often complex and require both Service and OGC (Fiscal) legal review."[754]

This process, based on the twelve upward obligation requests from FY 2020-2023 that OUSD(C) processed during that timeframe, takes an average of 25 days at OUSD(C)[755] since each request is often unique and complex.[756] A common cause for delay occurs when additional information is required or was missing from the initial request package, which can take time for the Service to gather and route back through a formal approval chain prior to submission to OUSD(C).[757] Examples of issues that are resolved include incorrect initial obligation amounts, unsigned legal memos, or funding availability not clearly being stated within the designated comment sections. The average FSRM upward obligation request to OUSD(C) during that period was $9.8 million, which is more than double the existing $4 million threshold requiring OUSD(C) review; the minimum request was $4.1 million and the largest was $24.3 million (see Figures 4 and 5).

[751] Ibid.
[752] "Marine Corps Installations Begin Recovery Operations after Hurricane Dorian" 2019.
[753] Commission interview with subject matter experts.
[754] Ibid.
[755] Note: this excludes the average time that the packet may stay with Navy FMB. This is believed to be an average of 32 days, though there is insufficient data to draw any conclusions.
[756] Commission interview with subject matter experts.
[757] Of note, OUSD(C)'s average time and tracking begins upon receipt of a complete package.

Figure 4 – Summary of FY 2020-2023 OUSD(C) FSRM Upward Obligation Requests

Upward Obligation requests					
Fiscal Year	Date Received	Date Adjudicated	Description and Result	Days at OSD	$M
2020	6/9/2020	6/19/2020	$6.5 million in expired FY 2018 Army O&M for Grant Barracks to support part of the overall Cadet Barracks Update Program at the United States Military Academy. The full revised value was $63.8 million, approved.	10	$ 6.50
2020	9/2/2020	9/24/2020	$6.1 million in expired FY 2018 Air Force O&M for a comprehensive rehabilitation of building 1102 to bring the facility into compliance with applicable building/safety codes and to serve as the Program Executive Office (PEO) for the U.S. Air Force Nuclear Command, Control, and Communications (NC3) Directorate, including specialty (secure) spaces to support the NC3 mission at Hanscomb AFB, MA. The full revised value was $25.2 million, approved.	22	$ 6.10
2021	11/5/2020	12/1/2020	$12.5 million in expired FY 2020 Army O&M to replace failed and failing culverts that allow passage of Clover Creek under McChord Airfield at Joint Base Lewis/McChord (JBLM). The full revised value was $91.2 million, approved.	26	$ 12.50
2021	12/8/2020	1/11/2021	$11.8 million in expired FY 2016 Army O&M for additional repairs and newly discovered structural issues during construction at building 4554 renovation at project at Fort Meade. The full revised value was $47.4 million, approved.	34	$ 11.80
2021	2/1/2021	2/10/2021	$10.7 million in expired FY 2020 Army O&M for a replacement contract needed from a bid protest and termination for convenience contract. After review by OGC Fiscal, it was determined that OUSD (Comptroller) approval was not required, and Army could take the requested action. Withdrawn.	9	$ -
2021	2/4/2021	2/12/2021	$8.7 million in expired FY 2020 Navy O&M for maintenance dredging at Portsmouth Naval Shipyard. The full revised value was $24.9 million, approved.	8	$ 8.70
2021	9/7/2021	9/30/2021	$4.1 million in expired FY 2019 Army O&M for an antecedent liability for renovation and repair of a communications center on Fort Belvoir, VA. The full revised value of this action was $34.5 million, approved.	23	$ 4.10
2022	3/8/2022	4/11/2022	$4.3 million in expired FY 2018 Army O&M for a renovation and repair of Building 29813, Allen Hall, located on USAG Fort Gordon. The full revised value was $30.8 million, approved.	34	$ 4.30
2022	5/5/2022	6/3/2022	$6.1 million in expired FY 2021 Navy O&M for complete recapitalization of the submarine dry dock at Naval Submarine Base, Kings Bay, Georgia. The full revised value was $376.2 million, approved.	29	$ 6.10
2022	6/23/2022	7/11/2022	$11.7 million in expired FY 2016 Army O&M for to complete repairs needed on buildings damaged in the 2019 flooding at Offutt Air Force Base. The full revised value was $91.4 million. OGC (Fiscal) determined that request was not within scope of the contract. Withdrawn.	18	$ -
2022	7/20/2022	8/23/2022	$13.0 million in expired FY 2021 Navy O&M for complete recapitalization of the submarine dry dock at Naval Submarine Base, Kings Bay, Georgia. This adjustment is in addition to the upward obligation adjustment package in the amount of $6.1 million that approved on June 3, 2022. The total approved is $19.1 million. The full revised value was $389.2 million, approved.	34	$ 13.00
2022	8/2/2022	8/29/2022	$24.3 million in two upward obligations: $8.6 million in expired FY 2018 Navy O&M and $15.7 million in expired FY 2019 Navy O&M for cost growth for complete recapitalization of the Explosive Handling Wharf 1 at Naval Submarine Base, Kings Bay, Georgia. The full revised value was $165.8 million, approved.	27	$ 24.30
2022	8/23/2022	9/23/2022	$4.9 million in expired FY 2020 Air Force O&M for within-scope changes to oversight and inspection services on pavement repairs at Ascension Island Auxiliary Airfield. The full revised value was $22.2 million, approved.	31	$ 4.90
2023	10/14/2022	11/4/2022	$15.8 million in expired FY 2021 Navy O&M to renovate existing spaces at Aliamanu Military Reserve to provide necessary administrative spaces to support the operational requirements of Commander, Pacific Fleet (PACFLT) on O'ahu, Hawaii. The full revised value was $101.8 million, approved.	21	$ 15.80

Figure 5 – OUSD(C) Timeline and Process Data for FY 2020 – FY 2023 FSRM Upward Obligations

Action Measured	Value
Minimum Request	$4.1 million
Maximum Request	$24.3 million
Average Increase Requested	$9.8 million
Minimum Days at OSD Comptroller	8 days
Maximum Days at OSD Comptroller	34 days
Average Days at OSD Comptroller	25 days

O&M FSRM Execution

An analysis of several years of DoD O&M budget execution reports from FY 2020 – 2022 shows that the Services obligated from 15 percent (Marine Corps Reserve in FY 2020) to 74 percent (Air National Guard in FY 2022) of their FSRM funds within the last quarter of the fiscal year. The Space Force reported obligating 99 percent of its $223.347 million in FSRM funds in the last quarter of FY 2022 as the first year in which the Space Force was separated from the Air Force reporting. On average, the Department obligated 34 percent, 35 percent, and 42 percent of the FSRM funds in the fourth quarter of FY 2020, FY 2021, and FY 2022 respectively. Figure 6 provides the aggregated information by Military Department and for the total DoD. Details by Service are provided in the data set at the end of this appendix.

These percentages reflect a variety of conditions to include when funds were enacted that fiscal year. In contrast, anywhere from zero percent (Marine Corps, Marine Corps Reserve, and Space Force in FY 2022) to 39 percent (Air Force Reserve in FY 2020) of FSRM funds have been obligated in the first quarter of the fiscal year. As discussed earlier, this is a likely reflection of being under CRs for that quarter in those fiscal years. On average, the Department obligated 11 percent, 16 percent, and 14 percent of the FSRM funds in the first quarter of FY 2020, combined first and second quarter of FY 2021, and first quarter of FY 2022 respectively.

Figure 6 – Details by Component

FY 2020 - 2022 FSRM Obligations by Quarter						
Component	Fiscal Year	QTR	Net	Obligations	% Obligated (Cumulative)	% Obligated (Quarter)
Total Army	2020	Q1	$ 5,719,591,955	$ 565,779,000	10%	10%
		Q2	$ 5,718,489,725	$ 2,152,986,000	38%	28%
		Q3	$ 5,685,241,297	$ 3,953,866,000	70%	32%
		Q4	$ 5,681,629,828	$ 5,675,768,000	100%	30%
	2021	Q1 & Q2	$ 4,826,122,498	$ 350,882,000	7%	7%
		Q3	$ 4,770,439,693	$ 2,863,255,000	60%	53%
		Q4	$ 4,788,841,089	$ 4,788,438,000	100%	40%
	2022	Q1	$ -	$ 678,885,000	11%	11%
		Q2	$ 5,961,479,000	$ 1,565,744,000	26%	15%
		Q3	$ 5,964,160,278	$ 3,471,572,000	58%	32%
		Q4	$ 5,960,435,187	$ 5,960,091,000	99%	41%
Total Department of the Navy	2020	Q1	$ 5,446,137,300	$ 511,979,000	10%	10%
		Q2	$ 5,445,267,164	$ 2,210,702,000	34%	24%
		Q3	$ 5,437,275,524	$ 3,716,760,000	65%	31%
		Q4	$ 5,454,698,100	$ 5,438,748,300	100%	35%
	2021	Q1 & Q2	$ 4,545,339,292	$ 941,569,000	46%	46%
		Q3	$ 4,535,499,574	$ 3,313,117,000	73%	27%
		Q4	$ 4,547,177,279	$ 4,544,400,000	100%	27%
	2022	Q1	$ -	$ 699,948,000	0%	0%
		Q2	$ 5,436,202,000	$ 1,654,535,000	27%	27%
		Q3	$ 5,432,797,626	$ 3,133,467,000	70%	43%
		Q4	$ 5,477,228,676	$ 5,473,208,000	100%	30%
Total Air Force	2020	Q1	$ 4,684,552,000	$ 591,311,000	13%	13%
		Q2	$ 4,684,552,000	$ 1,572,742,000	34%	21%
		Q3	$ 4,684,552,000	$ 2,779,932,000	59%	26%
		Q4	$ 4,809,668,000	$ 4,904,814,000	102%	43%
	2021	Q1 & Q2	$ 3,796,298,000	$ 821,719,000	22%	22%
		Q3	$ 3,796,298,000	$ 2,411,462,000	64%	42%
		Q4	$ 3,912,395,354	$ 3,925,610,000	100%	37%
	2022	Q1	$ -	$ 730,391,000	14%	14%
		Q2	$ 5,297,592,000	$ 1,940,074,000	37%	23%
		Q3	$ 5,298,211,000	$ 3,102,978,000	59%	22%
		Q4	$ 5,419,224,000	$ 5,484,893,000	101%	43%
Total DoD	2020	Q1	$ 15,850,281,255	$ 1,669,069,000	11%	11%
		Q2	$ 15,848,308,889	$ 5,936,430,000	37%	27%
		Q3	$ 15,807,068,821	$ 10,450,558,000	66%	29%
		Q4	$ 15,945,995,928	$ 16,019,330,300	100%	34%
	2021	Q1 & Q2	$ 13,167,759,790	$ 2,114,170,000	16%	16%
		Q3	$ 13,102,237,267	$ 8,587,834,000	66%	49%
		Q4	$ 13,248,413,722	$ 13,258,448,000	100%	35%
	2022	Q1	$ 15,062,998,000	$ 2,109,224,000	14%	14%
		Q2	$ 16,695,273,000	$ 5,160,353,000	31%	17%
		Q3	$ 16,695,168,904	$ 9,708,017,000	58%	27%
		Q4	$ 16,856,887,863	$ 16,918,192,000	100%	42%

Note: if there was no enacted position for the quarter, obligations were calculated against the PB request

Source: USD(C) Budget Materials; each Service includes Guard and Reserve Components;
'Net' refers to enactment adjusted for any ATRs, BTRs, or other adjustments within that quarter

Conclusions

Availability of FSRM O&M Funding. The Commission considered the execution challenges associated with FSRM projects and concludes that a modest amount of carryover authority is necessary to support the most effective execution of the DoD FSRM program. Further discussion and details on the recommended 5% carryover authority for both O&M in MILPERS funding, can be found in Section V.

Upward Obligation Thresholds. Based on the data from FY 2020–FY 2023, and acknowledging the unplanned cost increases resulting from delays while waiting for upward obligation requests to be approved, an increase to the current $4 million threshold during a fiscal year could accelerate a Service's ability to reduce additional contract costs during that period of delay. However, the Commission believes that a 5 percent carryover authority would greatly reduce the need for upward obligations and should mitigate the need to increase the $4 million dollar threshold. If the carryover authority is not provided, then an increase to the $4 million threshold should be considered. Any change to the $4 million threshold would require legislative language to amend Title 31, U.S. Code §1553, *Availability of appropriation accounts to pay obligations*.

Additional Information and Data

Definitions

Sustainment. "Sustainment means the maintenance and repair activities necessary to keep an inventory of facilities in good working order. It includes regularly scheduled adjustments and inspections, preventive maintenance tasks, and emergency response and service calls for minor repairs. It also includes major repairs or replacement of facility components (usually accomplished by contract) that are expected to occur periodically throughout the life cycle of facilities. This work includes regular roof replacement, refinishing of wall surfaces, repairing and replacement of heating and cooling systems, replacing tile and carpeting, and similar types of work. It does not include environmental compliance costs, facility leases, or other tasks associated with facilities operations (such as custodial services, grounds services, waste disposal, and the provision of central utilities).

The DoD facilities sustainment model (FSM) is used as the standardized model for forecasting facilities sustainment resource requirements. The FSM uses the following formula to develop the sustainment requirement: Annual sustainment requirement = facility quantity x sustainment unit cost x location factor x inflation.

- Facility quantity–the facility size expressed in the Facility Analysis Category (FAC) unit of measure (such as square feet).
- Sustainment unit cost–the average annual unit cost (in current year dollars) for sustaining the average size facility in the given FAC.
- Location factor–a location adjustment based upon the local costs for labor, equipment, materials, and currency exchange rates (overseas) compared with an overall base-city average.
- Inflation–factor to adjust current year prices to the target future year.

The Department uses a sustainment metric which is the comparison of sustainment funding to the requirement for a given year, expressed as a rate.

Sustainment rate (%) = sustainment funding/FSM requirement."[758]

[758] DoD FMR Vol. 2b, Ch. 8.

Restoration. "Restoration means the restoration of real property to such a condition that it may be used for its designated purpose. Restoration includes repair or replacement work to restore facilities damaged by inadequate sustainment, excessive age, natural disaster, fire, accident, or other causes." [759]

Modernization. "Modernization means the alteration or replacement of facilities solely to implement new or higher standards, to accommodate new functions, or to replace building components that typically last more than 50 years (such as the framework or foundation)."[760]

Demolition and Deconstruction. "Demolition is the process of tearing apart and removing any feature of a facility together with any related handling and disposal operations. Deconstruction is the process of taking apart a facility with the primary goal of preserving the value of all useful building materials, so that they may be reused or recycled. It should be considered when adaptive reuse of a building is not an option, and may be used in conjunction with demolition. Deconstruction minimizes demolition landfill materials and reduces material costs for the converted facility. Diverting demolition waste from the landfill contributes to meeting Federal requirements for waste diversion." [761]

Upward Obligation. An upward obligation is a financial increase to an obligation of expired year funding for work and cost growth that is within the scope of that prior year obligation, such as a larger utility bill than estimated or unforeseen corrosion or asbestos in a FSRM project. The upward obligation approval process has many steps involving program managers, contracting officers, financial managers, legal counsel, and other subject matter experts. The total number of steps and level of approval varies depending on the dollar value involved. The upward obligation for an effort has to be fully approved at the right level before the contract or other obligating document can be increased and funds eventually paid to the performer.[762]

Figure 7 – Summary Table of Upward Obligation Requests Submitted to OUSD(C) from FY 2020–FY 2023

Fiscal Year	Service	Original Cost ($ in M)	Upward Obligation ($ in M)	Full Revised Value ($ in M)	Percent increase
2020	Army	$ 57.3	$ 6.5	$ 63.8	11.3%
2020	Air Force	$ 19.1	$ 6.1	$ 25.2	31.9%
2021	Army	$ 78.7	$ 12.5	$ 91.2	15.9%
2021	Army	$ 35.6	$ 11.8	$ 47.4	33.1%
2021	Navy	$ 16.2	$ 8.7	$ 24.9	53.7%
2021	Army	$ 30.4	$ 4.1	$ 34.5	13.5%
2022	Army	$ 26.5	$ 4.3	$ 30.8	16.2%
2022	Navy	$ 370.1	$ 6.1	$ 376.2	1.6%
2022	Navy	$ 376.2	$ 13.0	$ 389.2	3.5%
2022	Navy	$ 141.5	$ 24.3	$ 165.8	17.2%
2022	Air Force	$ 17.3	$ 4.9	$ 22.2	28.3%
2023	Navy	$ 86.0	$ 15.8	$ 101.8	18.4%
				Average Cost Increase	**20.4%**

Additional Input from Interviews with Subject Matter Experts

Limitations of One-Year O&M Appropriation:

- There is a problem in trying to execute larger projects with one-year money: "we know it's one-year money. Contractors know that Restoration and Modernization (R&M) projects are funded with one-year money, and that we [the government] are looking to get those funds spent by the end of the year. Contractors are building in 'get healthy' money [to their estimates]. Carryover authority would help with this particular issue, and we could see some cost decreases."[763]

[759] Ibid.
[760] Ibid.
[761] "UFGS-02.41.00 Unified Facilities Guide Specifications" 2008.
[762] Commission interview with subject matter experts.
[763] Ibid.

- "One-year money generates a number of other issues…believe that's why we see the cost increases on the bids."[764]
- From my experience, "contractors have us over the barrel when they know it's 30 September. [We] need some control to have those projects 'design-ready' to be executed the beginning of the second year. When you get backed up by a CR, that really does crunch the period of time you can award–we need a better bidding environment."[765]
- There is "always a premium for last minute awards. Recommend flexibility in one-year money [to maybe two-year], but with constraints to execute at least X percent by the end of the first year. There needs to be some mid-point obligation requirement."[766]
- "[We] need to allow for a reasonable amount of contingency carryover."[767]
- "The one-year funding, the low threshold for prior year funds approvals, and the low threshold for congressional notification for R&M projects create non-value-added delays and increases costs in FSRM projects. Additional non-value-added processes include the Economy Act requirement to return funds at the end of their availability (i.e., the prohibition against carrying over expired contingency funds), the requirement to fund Supervision and Administration (S&A) for prior year contract modifications with current year funds, and the prohibition against carrying over S&A funds for appropriations other than Defense Health Program and O&M."[768]

<u>Upward Obligation Challenges:</u>

- The upward obligation process is "unnecessarily cumbersome and complex."[769]
- The process encourages "a history of bad behaviors" and instead we should "force folks to get it right the first time."[770]
- The process is lengthy and time-consuming: "from the time the installation notices the work [requirement] to be done, [the] majority of the time is on the front end (approximately 6 months) in negotiating with the contractor, getting supporting documentation in place, and submitting the request. Once the request is submitted in the system and all of the supporting documentation is provided, the process is much more streamlined."[771]
- "The quality of packages sent up to HQ [higher headquarters] can cause delays," such as inconsistent technical information or premature stationing approvals.[772]
- Without approval to complete an upward obligation, "[we] have to find a way to get out of the contract. [This is] a huge loss to the government to terminate… and go in with another contract to complete the work."[773]
- Potential solutions to the upward obligation process are "eliminating the process itself, increasing thresholds, and acquisition reform. [There is] not enough emphasis on the planning piece."[774]
- "The lack of prior-year funds has impacted several projects across [the organization] … The delay in receiving funds often leads to contractors demobilizing or incurring additional overhead that [DoD] is obligated to pay. We have cases where the cost for the additional delays has been more than the original UPOB [upward obligation]."[775]

[764] Ibid.
[765] Ibid
[766] Ibid.
[767] Ibid.
[768] Ibid.
[769] Ibid.
[770] Ibid.
[771] Ibid.
[772] Ibid.
[773] Ibid.
[774] Ibid.
[775] Ibid.

- "Request engagement with [higher headquarters] to more quickly provide prior year funds or allow additional flexibility to use current year funds in order to ensure contracts can proceed without incurring needless and costly delays."[776]
- If we "end up with three projects and can only afford two [because of costs coming in higher than expected], then one gets bumped and added to the backlog of projects."[777]

[776] Ibid.
[777] Ibid.

Obligations Breakout by MILDEP Component – FY 2020–FY 2022

FY 2020 - 2022 FSRM Obligations by Quarter						
Component	Fiscal Year	QTR	FSRM Funding	Obligations	% Obligated (Cumulative)	% Obligated (Quarter)
Army	2020	Q1	$ 4,181,054,000	$ 417,878,000	10%	10%
		Q2	$ 4,181,054,000	$ 1,472,726,000	35%	25%
		Q3	$ 4,170,993,460	$ 2,821,984,000	68%	32%
		Q4	$ 4,171,515,177	$ 4,169,505,000	100%	32%
	2021	Q1 & Q2	$ 3,587,751,298	$ 31,479,000	1%	1%
		Q3	$ 3,579,754,393	$ 2,309,623,000	65%	64%
		Q4	$ 3,576,984,392	$ 3,576,724,000	100%	35%
	2022	Q1	$ -	$ 435,094,000	10%	10%
		Q2	$ 4,551,558,000	$ 1,112,166,000	24%	15%
		Q3	$ 4,553,219,918	$ 2,348,530,000	52%	27%
		Q4	$ 4,540,773,013	$ 4,540,446,000	100%	48%
Army National Guard	2020	Q1	$ 1,102,969,000	$ 112,651,000	10%	10%
		Q2	$ 1,101,580,100	$ 471,263,000	43%	33%
		Q3	$ 1,078,840,400	$ 801,310,000	74%	31%
		Q4	$ 1,053,904,971	$ 1,050,656,000	100%	26%
	2021	Q1 & Q2	$ 901,191,200	$ 287,924,000	32%	32%
		Q3	$ 853,505,300	$ 276,816,000	32%	0%
		Q4	$ 865,654,117	$ 865,511,000	100%	68%
	2022	Q1	$ -	$ 196,277,000	19%	19%
		Q2	$ 1,027,488,000	$ 307,595,000	30%	11%
		Q3	$ 1,028,507,360	$ 851,678,000	83%	53%
		Q4	$ 1,028,233,286	$ 1,028,216,000	100%	17%
Army Reserve	2020	Q1	$ 435,568,955	$ 35,250,000	8%	8%
		Q2	$ 435,855,625	$ 208,997,000	48%	40%
		Q3	$ 435,407,437	$ 330,572,000	76%	28%
		Q4	$ 456,209,680	$ 455,607,000	100%	24%
	2021	Q1 & Q2	$ 337,180,000	$ 31,479,000	9%	9%
		Q3	$ 337,180,000	$ 276,816,000	82%	73%
		Q4	$ 346,202,580	$ 346,203,000	100%	18%
	2022	Q1	$ -	$ 47,514,000	12%	12%
		Q2	$ 382,433,000	$ 145,983,000	38%	26%
		Q3	$ 382,433,000	$ 271,364,000	71%	33%
		Q4	$ 391,428,888	$ 391,429,000	100%	29%
Total Army	2020	Q1	$ 5,719,591,955	$ 565,779,000	10%	10%
		Q2	$ 5,718,489,725	$ 2,152,986,000	38%	28%
		Q3	$ 5,685,241,297	$ 3,953,866,000	70%	32%
		Q4	$ 5,681,629,828	$ 5,675,768,000	100%	30%
	2021	Q1 & Q2	$ 4,826,122,498	$ 350,882,000	7%	7%
		Q3	$ 4,770,439,693	$ 2,863,255,000	60%	53%
		Q4	$ 4,788,841,089	$ 4,788,438,000	100%	40%
	2022	Q1	$ -	$ 678,885,000	11%	11%
		Q2	$ 5,961,479,000	$ 1,565,744,000	26%	15%
		Q3	$ 5,964,160,278	$ 3,471,572,000	58%	32%
		Q4	$ 5,960,435,187	$ 5,960,091,000	99%	41%

Component	Fiscal Year	QTR	FSRM Funding	Obligations	% Obligated (Cumulative)	% Obligated (Quarter)
Navy	2020	Q1	$ 3,469,403,000	$ 306,570,000	9%	9%
		Q2	$ 3,468,532,864	$ 1,540,380,000	44%	36%
		Q3	$ 3,458,767,424	$ 2,430,848,000	70%	26%
		Q4	$ 3,468,238,000	$ 3,453,541,000	100%	29%
	2021	Q1 & Q2	$ 3,521,525,484	$ 489,346,000	14%	14%
		Q3	$ 3,511,761,776	$ 2,575,227,000	73%	59%
		Q4	$ 3,510,364,769	$ 3,507,785,000	100%	27%
	2022	Q1	$ -	$ 692,763,000	17%	17%
		Q2	$ 3,984,573,000	$ 1,264,376,000	32%	14%
		Q3	$ 3,981,168,626	$ 2,120,536,000	53%	22%
		Q4	$ 4,016,899,676	$ 4,014,855,000	100%	47%
Navy Reserve	2020	Q1	$ 35,184,300	$ 2,915,000	8%	8%
		Q2	$ 35,184,300	$ 10,937,000	31%	23%
		Q3	$ 37,658,100	$ 22,571,000	60%	29%
		Q4	$ 41,610,100	$ 41,008,000	100%	40%
	2021	Q1 & Q2	$ 52,088,808	$ 9,063,000	17%	17%
		Q3	$ 52,019,633	$ 27,590,000	53%	36%
		Q4	$ 53,331,826	$ 53,320,000	100%	47%
	2022	Q1	$ -	$ 7,185,000	11%	11%
		Q2	$ 67,311,000	$ 17,277,000	26%	15%
		Q3	$ 67,311,000	$ 49,661,000	74%	48%
		Q4	$ 67,311,000	$ 67,305,000	100%	26%
Total Navy	2020	Q1	$ 3,504,587,300	$ 309,485,000	9%	9%
		Q2	$ 3,503,717,164	$ 1,551,317,000	44%	35%
		Q3	$ 3,496,425,524	$ 2,453,419,000	70%	26%
		Q4	$ 3,509,848,100	$ 3,494,549,000	100%	30%
	2021	Q1 & Q2	$ 3,573,614,292	$ 498,409,000	14%	14%
		Q3	$ 3,563,781,409	$ 2,602,817,000	73%	59%
		Q4	$ 3,563,696,595	$ 3,561,105,000	100%	27%
	2022	Q1	$ -	$ 699,948,000	17%	17%
		Q2	$ 4,051,884,000	$ 1,281,653,000	32%	14%
		Q3	$ 4,048,479,626	$ 2,170,197,000	54%	22%
		Q4	$ 4,084,210,676	$ 4,082,160,000	100%	46%

Component	Fiscal Year	QTR	FSRM Funding	Obligations	% Obligated (Cumulative)	% Obligated (Quarter)
Marine Corps	2020	Q1	$ 1,894,034,000	$ 201,937,000	11%	11%
		Q2	$ 1,894,034,000	$ 653,499,000	35%	24%
		Q3	$ 1,893,334,000	$ 1,223,097,000	65%	30%
		Q4	$ 1,897,334,000	$ 1,896,829,300	100%	35%
	2021	Q1 & Q2	$ 928,063,000	$ 442,054,000	48%	48%
		Q3	$ 928,056,165	$ 675,361,000	73%	25%
		Q4	$ 939,818,684	$ 939,710,000	100%	27%
	2022	Q1	$ -	$ -	0%	0%
		Q2	$ 1,331,616,000	$ 365,571,000	27%	27%
		Q3	$ 1,331,616,000	$ 920,684,000	69%	42%
		Q4	$ 1,340,316,000	$ 1,338,382,000	100%	31%
Marine Corps Reserve	2020	Q1	$ 47,516,000	$ 557,000	1%	1%
		Q2	$ 47,516,000	$ 5,886,000	12%	11%
		Q3	$ 47,516,000	$ 40,244,000	85%	72%
		Q4	$ 47,516,000	$ 47,370,000	100%	15%
	2021	Q1 & Q2	$ 43,662,000	$ 1,106,000	3%	3%
		Q3	$ 43,662,000	$ 34,939,000	80%	77%
		Q4	$ 43,662,000	$ 43,585,000	100%	20%
	2022	Q1	$ -	$ -	0%	0%
		Q2	$ 52,702,000	$ 7,311,000	14%	14%
		Q3	$ 52,702,000	$ 42,586,000	81%	67%
		Q4	$ 52,702,000	$ 52,666,000	100%	19%
Total Marine Corps	2020	Q1	$ 1,941,550,000	$ 202,494,000	10%	10%
		Q2	$ 1,941,550,000	$ 659,385,000	34%	24%
		Q3	$ 1,940,850,000	$ 1,263,341,000	65%	31%
		Q4	$ 1,944,850,000	$ 1,944,199,300	100%	35%
	2021	Q1 & Q2	$ 971,725,000	$ 443,160,000	46%	46%
		Q3	$ 971,718,165	$ 710,300,000	73%	27%
		Q4	$ 983,480,684	$ 983,295,000	100%	27%
	2022	Q1	$ -	$ -	0%	0%
		Q2	$ 1,384,318,000	$ 372,882,000	27%	27%
		Q3	$ 1,384,318,000	$ 963,270,000	70%	43%
		Q4	$ 1,393,018,000	$ 1,391,048,000	100%	30%
Total Department of the Navy	2020	Q1	$ 5,446,137,300	$ 511,979,000	10%	10%
		Q2	$ 5,445,267,164	$ 2,210,702,000	34%	24%
		Q3	$ 5,437,275,524	$ 3,716,760,000	65%	31%
		Q4	$ 5,454,698,100	$ 5,438,748,300	100%	35%
	2021	Q1 & Q2	$ 4,545,339,292	$ 941,569,000	46%	46%
		Q3	$ 4,535,499,574	$ 3,313,117,000	73%	27%
		Q4	$ 4,547,177,279	$ 4,544,400,000	100%	27%
	2022	Q1	$ -	$ 699,948,000	0%	0%
		Q2	$ 5,436,202,000	$ 1,654,535,000	27%	27%
		Q3	$ 5,432,797,626	$ 3,133,467,000	70%	43%
		Q4	$ 5,477,228,676	$ 5,473,208,000	100%	30%

Component	Fiscal Year	QTR	FSRM Funding	Obligations	% Obligated (Cumulative)	% Obligated (Quarter)
Air Force	2020	Q1	$ 4,157,004,000	$ 521,335,000	13%	13%
		Q2	$ 4,157,004,000	$ 1,387,830,000	33%	21%
		Q3	$ 4,157,004,000	$ 2,532,017,000	61%	28%
		Q4	$ 4,275,120,000	$ 4,275,120,000	100%	39%
	2021	Q1 & Q2	$ 3,339,279,000	$ 736,105,000	22%	22%
		Q3	$ 3,339,279,000	$ 2,196,646,000	66%	44%
		Q4	$ 3,455,279,000	$ 3,454,761,000	100%	34%
	2022	Q1	$ -	$ 703,390,000	16%	16%
		Q2	$ 4,535,065,000	$ 1,790,461,000	39%	24%
		Q3	$ 4,535,684,000	$ 2,872,019,000	63%	24%
		Q4	$ 4,645,684,000	$ 4,684,613,000	101%	38%
Air Force Reserve	2020	Q1	$ 128,746,000	$ 50,836,000	39%	39%
		Q2	$ 128,746,000	$ 95,040,000	74%	34%
		Q3	$ 128,746,000	$ 117,381,000	91%	17%
		Q4	$ 135,746,000	$ 210,614,000	155%	64%
	2021	Q1 & Q2	$ 108,414,000	$ 15,664,000	14%	14%
		Q3	$ 108,414,000	$ 93,396,000	86%	72%
		Q4	$ 108,511,354	$ 111,228,000	103%	16%
	2022	Q1	$ -	$ 5,684,000	4%	4%
		Q2	$ 144,987,000	$ 76,923,000	53%	49%
		Q3	$ 144,987,000	$ 96,624,000	67%	14%
		Q4	$ 155,000,000	$ 153,227,000	99%	32%
Air National Guard	2020	Q1	$ 398,802,000	$ 19,140,000	5%	5%
		Q2	$ 398,802,000	$ 89,872,000	23%	18%
		Q3	$ 398,802,000	$ 130,534,000	33%	10%
		Q4	$ 398,802,000	$ 419,080,000	105%	72%
	2021	Q1 & Q2	$ 348,605,000	$ 69,950,000	20%	20%
		Q3	$ 348,605,000	$ 121,420,000	35%	15%
		Q4	$ 348,605,000	$ 359,621,000	103%	68%
	2022	Q1	$ -	$ 21,317,000	5%	5%
		Q2	$ 395,193,000	$ 72,690,000	18%	13%
		Q3	$ 395,193,000	$ 132,183,000	33%	15%
		Q4	$ 395,193,000	$ 424,442,000	107%	74%
Space Force	2020	Q1	$ -	$ -	0%	0%
		Q2	$ -	$ -	0%	0%
		Q3	$ -	$ -	0%	0%
		Q4	$ -	$ -	0%	0%
	2021	Q1 & Q2	$ -	$ -	0%	0%
		Q3	$ -	$ -	0%	0%
		Q4	$ -	$ -	0%	0%
	2022	Q1	$ -	$ -	0%	0%
		Q2	$ 222,347,000	$ -	0%	0%
		Q3	$ 222,347,000	$ 2,152,000	1%	1%
		Q4	$ 223,347,000	$ 222,611,000	100%	99%
Total Air Force	2020	Q1	$ 4,684,552,000	$ 591,311,000	13%	13%
		Q2	$ 4,684,552,000	$ 1,572,742,000	34%	21%
		Q3	$ 4,684,552,000	$ 2,779,932,000	59%	26%
		Q4	$ 4,809,668,000	$ 4,904,814,000	102%	43%
	2021	Q1 & Q2	$ 3,796,298,000	$ 821,719,000	22%	22%
		Q3	$ 3,796,298,000	$ 2,411,462,000	64%	42%
		Q4	$ 3,912,395,354	$ 3,925,610,000	100%	37%
	2022	Q1	$ -	$ 730,391,000	14%	14%
		Q2	$ 5,297,592,000	$ 1,940,074,000	37%	23%
		Q3	$ 5,298,211,000	$ 3,102,978,000	59%	22%
		Q4	$ 5,419,224,000	$ 5,484,893,000	101%	43%

FY 2020 - 2022 FSRM Obligations by Quarter						
Component	Fiscal Year	QTR	FSRM Funding	Obligations	% Obligated (Cumulative)	% Obligated (Quarter)
Total DoD	2020	Q1	$ 15,850,281,255	$ 1,669,069,000	11%	11%
		Q2	$ 15,848,308,889	$ 5,936,430,000	37%	27%
		Q3	$ 15,807,068,821	$ 10,450,558,000	66%	29%
		Q4	$ 15,945,995,928	$ 16,019,330,300	100%	34%
	2021	Q1 & Q2	$ 13,167,759,790	$ 2,114,170,000	16%	16%
		Q3	$ 13,102,237,267	$ 8,587,834,000	66%	49%
		Q4	$ 13,248,413,722	$ 13,258,448,000	100%	35%
	2022	Q1	$ 15,062,998,000	$ 2,109,224,000	14%	14%
		Q2	$ 16,695,273,000	$ 5,160,353,000	31%	17%
		Q3	$ 16,695,168,904	$ 9,708,017,000	58%	27%
		Q4	$ 16,856,887,863	$ 16,918,192,000	100%	42%

Notes:

1. If there was no enacted position for the quarter, obligations were calculated against the PB request
2. Source is O&M Budget Execution Reports posted on the OUSD(C) website under Budget Execution https://comptroller.defense.gov/Budget-Execution/OM_Reports/

D8. Service Programming and Military Department Budgeting Workforce Analysis

The Commission focused on the programming and budgeting workforce of OSD in its Interim Report and this analysis for the Final Report addresses the programmer workforces in the Services and the budget workforces in the Military Departments. The Service Secretary has overall responsibility for both programming and budgeting. The staff responsible for managing the programming function that produces the POM reside in the organizations of the Service Chiefs, while those responsible for managing the budgeting function are at the Secretariat level in the Military Departments. The functions performed in the Services and the Military Departments are what produce the products that the OSD reviews for the PBR; the POM goes to the Office of CAPE for the Program Review and the BES goes to the OUSD(C) for the Budget Review. Changes from PBR eventually culminate in the decisions reflected in the PB that is then sent to Congress. Many of the same workforce process and personnel challenges discussed in the P/B portion of OUSD(C) and CAPE workforce sufficiency analysis also exist in the Services and Military Departments as discussed in Section X.

Research Approach

This research utilized in depth interviews with subject matter experts from the Service programming offices as well as the Military Department budget offices. Commission staff compiled feedback and used their own expertise in programming and budgeting to develop questions and analyze the information provided in the interviews.

Programming Workforce

The Service workforce assessments looked at the organizational structure, onboard personnel compared to authorized billets, and staff skillsets constructs for the Army, Navy, Marine Corps, Air Force, and Space Force. The primary function of the Service programmers is to develop and prioritize program requirements to produce the final Service POM. There are many personnel who propose, determine, adjudicate, and prioritize program requirements throughout the Military Departments and Services, as well as throughout the Service functional and warfighting commands and the program managers (PM) and Program Executive Officers (PEO).

The term programmer is often used interchangeably to describe many personnel in hundreds of different organizations across the globe from the individual at an installation developing their specific program requirements that are then submitted up the chain of command and compete for funding in a larger program line like base operating support costs, to PMs and PEOs who use their cost estimates to determine funding for their program lines, and to the staff in the Service Headquarters who do the integration of all those requirements. All of these functions, and more, support the programming process. The analysis in this section focuses on the Headquarters staffs who integrate and prioritize all the Service's program requirements to produce the Service POM submitted to OSD as well as a discussion of how the Services organize their program requirements for the POM that the Service Headquarters staff then integrates.

Service Program Organizations and Workforce

The programming workforce ranges in size across the Service Headquarters, as does the distribution of personnel among the different echelons of command and staff organizations. The Army has the largest headquarters programming workforce at about 175 personnel, while the Marine Corps and Space Force are the smallest, at 32 and 26 respectively. The Service programmers who integrate all the requirements for POM funding are part of the Service Headquarters staff. The cost estimating functions that support the POM development for the acquisition programs are typically part of the Military Department or Service Secretariat staff. Requirements are typically built from the bottom-up and are significantly scrutinized as they go through the review process.

The organizations and staff sizes for each Service vary based on how they have decided to task-organize functions in support of the Service Secretary and Service Chief at the headquarters level; sometimes dividing and delegating some functions among these respective staffs. Some Services further distribute workload to lower-level commands who produce products that combine and feed into larger portfolios and programs that are then integrated and prioritized in the POM and BES by the Service headquarters staff. For example, the Space Force and Marine Corps are part of the Military Departments of the Air Force and Navy, respectively, who have the ultimate responsibility for their POMs. There are also differences due to how the Service programs are organized by capability areas, which then dictates who is responsible for those functions and where they are in the Service headquarters organization and other parts of the command structure, to include how those programs are built and coordinated into a Service POM or BES.

Each Service Headquarters programming staff is comprised of both military and civilian personnel. The split tends to be about 50-50 in terms of military and civilian billets, with the military providing technical warfighting expertise and civilians generally providing programming and financial management and process expertise as well as organizational continuity.

Across all the Services, civilian expertise is a result of many years of experience in the occupational career field (upwards of 10 years in programming is not uncommon), while military staff generally brings a lot of operational experience and operations research background, but likely less programming and financial management experience. Military programmers in all Services are largely warfighting technical experts who initially learn about programming and how to execute its functions on-the-job. Beyond the extent to which various PPBE training courses provide overviews of the Programming phase of PPBE, there are no formal courses in Programming. Each Service has instructions or directives on the PPBE process, but the mechanics of programming are often learned on-the-job.

Service Organizations and Workforce

Army

The Army is organized into six Program Evaluation Groups (PEG) that are co-chaired by leadership of the Army Secretariat and the Army staff (G-staff), except for the Organizing and Installations PEGs that are co-chaired by other Army Secretariat personnel, who interact with numerous stakeholders throughout the Army to develop, validate, and prioritize program requirements inside the PEG. The PEGs are functionally aligned by mission for Manning, Training, Equipping, Organizing, Sustaining, and Installations. For example, the Sustainment PEG functional lead is the Deputy Chief of Staff, G-4 which is Logistics. Figure 1 below is an extract from Army Regulation (AR) 1-1, *Planning, Programming, Budgeting, and Execution*, dated May 23, 2016, that governs Army PPBE. Of note, the Installations PEG is now administered by the Army G-9 and co-chaired by the Assistant Secretary of the Army (Installations, Energy and Environment) (ASA (IE&E)) and the Commanding General, Army Materiel Command (AMC).[778]

Figure 1 – Army PEGs [779]

Program Evaluation Groups	
Title	**Co-chairs**
Manning	ASA(M&RA) an DCS, G-1
Training	ASA(M&RA) and DCS, G-3/5/7
Organizing	ASA(M&RA) ad AASA
Equipping	ASA(ALT) an DCS, G-8
Sustaining	ASA(ALT) an DCS, G-4
Installations	ASA(IE&E) and ACSIM

[778] "Resource Integration Directorate" n.d.
[779] "AR 1-1 Administration: Planning, Programming, Budgeting, and Execution" 2016.

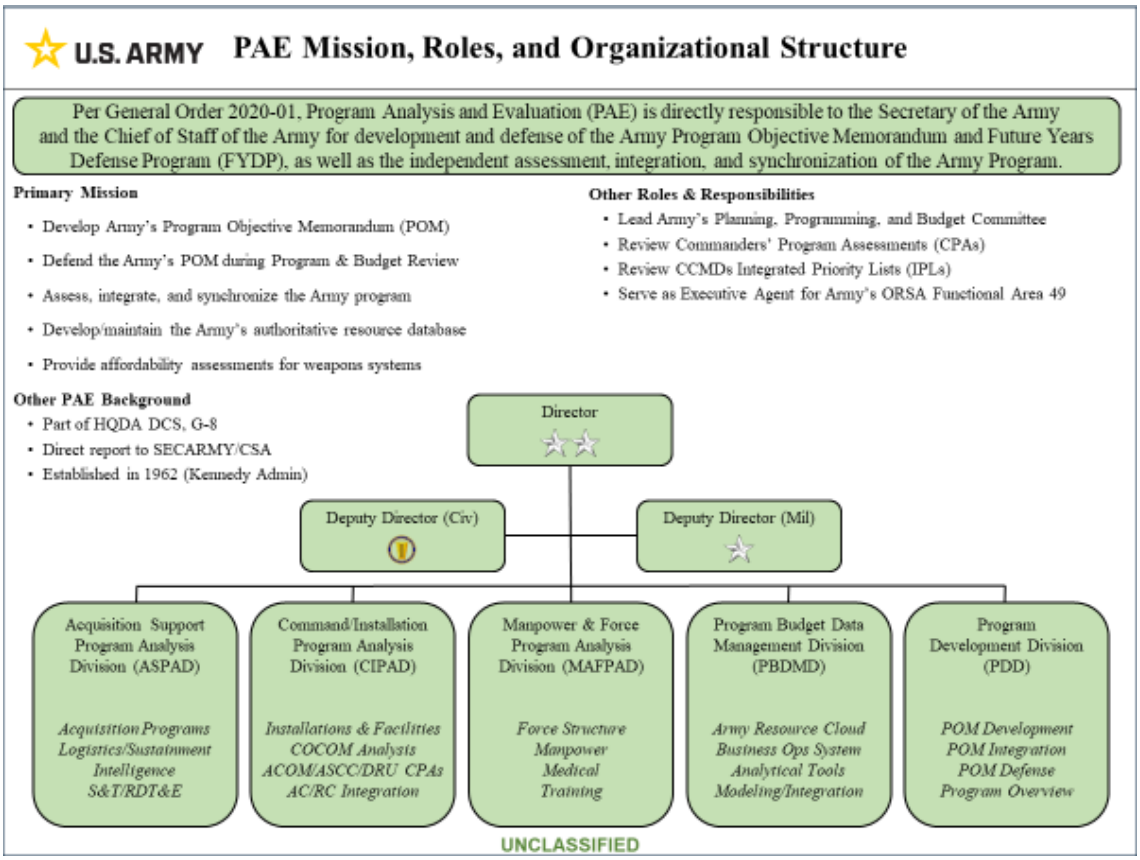
Each PEG is led by an O-6 on behalf of the co-chairs. Much of the programming support comes from the PEG staffs. Functional owners of the Army programs inside that PEG present requirements to the PEG to validate. Reviews and discussions follow that presentation at each of the O-6/GS-15, 1-star/SES, and 3-star/SES levels as decisions are completed inside the PEGs on resource and prioritization recommendations.

The results from all the PEGs are then integrated into the Army POM by the Director, Program Assessment & Evaluation (PA&E) who is part of the Army G-8 organization. The Army's PAE Directorate is directly responsible to the Secretary of the Army and the Chief of Staff of the Army for development and defense of the Army POM and FYDP, as well as the independent assessment, integration, and synchronization of the Army Program. The G-8 staff is responsible for integrating all the results into an Army POM, presenting that POM to OSD, developing issue papers, participating in the CAPE-led Program Review, and determining the impacts from proposed PDMs.

The staff of the Army PA&E organization is authorized a total of 64 personnel including 31 military and 33 civilian employees. These authorizations include a leadership team of two General Officers and one Tier 2 SES position. Against these authorizations PAE currently has 28 military officers, 27 government civilians and 5 contractors. The manning levels have remained relatively consistent over the last 10 years, outside of FY 2019 when the directorate lost 17 authorizations primarily from its civilian workforce due to headquarters reductions. Contractor personnel provide data support for the program database and data analytic support to the Program Development Division.

Personnel assigned to PAE are highly educated and experienced personnel with nearly all personnel holding STEM doctorate or masters degrees. The military workforce ranges from Majors to General Officers but is primarily composed of Majors and Lieutenant Colonels from the Army's functional area 49- Operations Research and Systems Analysis (ORSA) who generally arrive at PAE on their second or third tour in that functional area. The civilian workforce draws from a variety of backgrounds including program managers, operations research analysts, and IT specialists. Positions range from GS-7 to SES with the preponderance of personnel in the grade of GS-14. Complementing the organization, the directorate annually receives a fellow from the Army's Bradley Fellowship, which ensures consistent and recent Joint Staff experience in the organization. In addition, field grade officers from the Army Reserve and National Guard serve within PAE on a rotational basis to assist with developing total Army solutions to programming challenges. Figure 2 shows the Army's PAE organization.

Figure 2 – Army PAE Organization[780]



Navy

The Navy relies on 3-star led Resource Sponsors (RS) from staff organizations outside the Deputy Chief of Naval Operations (DCNO) for Integration of Capabilities and Resources (N8) to submit RS program proposals to the N8 for integration; the N8 gets input from subordinate commands and support from embedded N80 programmers. The Navy RSs are the DCNO for Personnel, Manpower, and Training (N1), DCNO for Information Dominance (N2/N6), DCNO for Operations, Plans and Strategy (N3/N5), DCNO for Fleet Readiness and Logistics (N4), DCNO for Warfighter Development (N7), and the DCNO for Warfare Systems (N9). Secretary of the Navy Instruction 7000.30, *The Planning, Programming, Budgeting, and Execution Process*, dated August 26, 2021, governs the Navy PPBE process.[781]

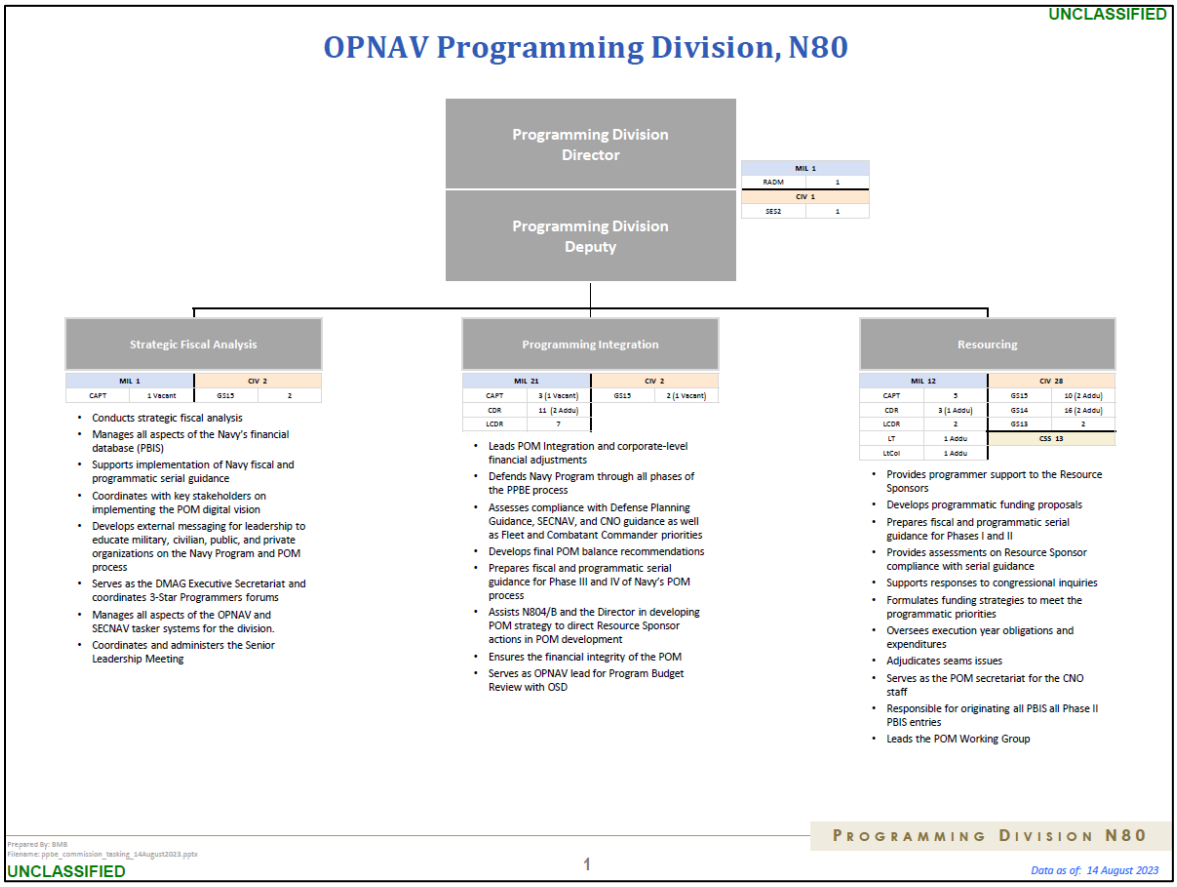
Integration of the RS programming recommendations is conducted by a separate O-6 led branch in the N80. Approval of programmatic recommendations runs through a series of 1- and 2-star, and 3-star review fora. The 1 and 2-star forum is known as a Program Review Board (PRB) and the 3-star forum is the Navy Corporate Forum (NCF). The PRBs provide review at different points in the programming process, with recommendations for follow-on or for decision-making by the higher-level NCFs. The Vice Chief of Naval Operations (VCNO) chairs the NCF and provides endorsement of Navy's Programming recommendations to the CNO. Navy NCF meetings are also attended by the Assistant Secretaries of the Navy, with the Under Secretary of the Navy (UNSECNAV) co-chairing with the Vice Chief of Naval Operations.

The Navy programming workforce is part of the Navy N8 Directorate. Specifically, Navy programmers work in the Programming Division, OPNAV N80 that is led by a two-star flag officer and is part of the Navy's Resources

[780] Provided by the Army.
[781] "SECNAVINST 7000.30 The Planning, Programming, Budgeting, and Execution Process" 2021.

and Requirement Directorate, OPNAV N8. There are a total of 78 programmer billets in the N80, including 36 military personnel, 33 civilians, and 13 contractors; there are currently no vacancies. These staffing levels have remained stable since a 2017 reorganization of the programmers, which was directed and overseen by the Vice Chief of Naval Operations. Prior to that reorganization, Navy programmers were dispersed around the Navy's Headquarters staffs, received minimal formal programming and financial management training, and enjoyed very little day-to-day integration into the CNO's Programming Division. Under the post-2017 reorganization, Navy programmers are all part of the Navy's Programming Division, resulting in better process control and consistency, and there are defined initial and continuing training requirements. Figure 3 shows the Navy's Programming Division organization.

Figure 3 – Navy Programming Division (OPNAV N80) Organizational Chart[782]



Marine Corps

Marine Corps programming recommendations are developed in nine Enterprise Programming Teams (EPT) that are assigned to Headquarters Marine Corps Deputy Commandants (DC) or a Marine Forces (MARFOR) Commander. The Marine Corps EPTs are Warfighting Investment, Fleet Marine Forces, Aviation, Installations, Sustainment, Training, Information, Manpower, and Headquarters. Marine Corps Order 7000.1, *Marine Corps Planning, Programming, Budgeting, Execution, and Assessment (PPBEA) Process*, dated August 23, 2022, governs the Marine Corps PPBE process.[783]

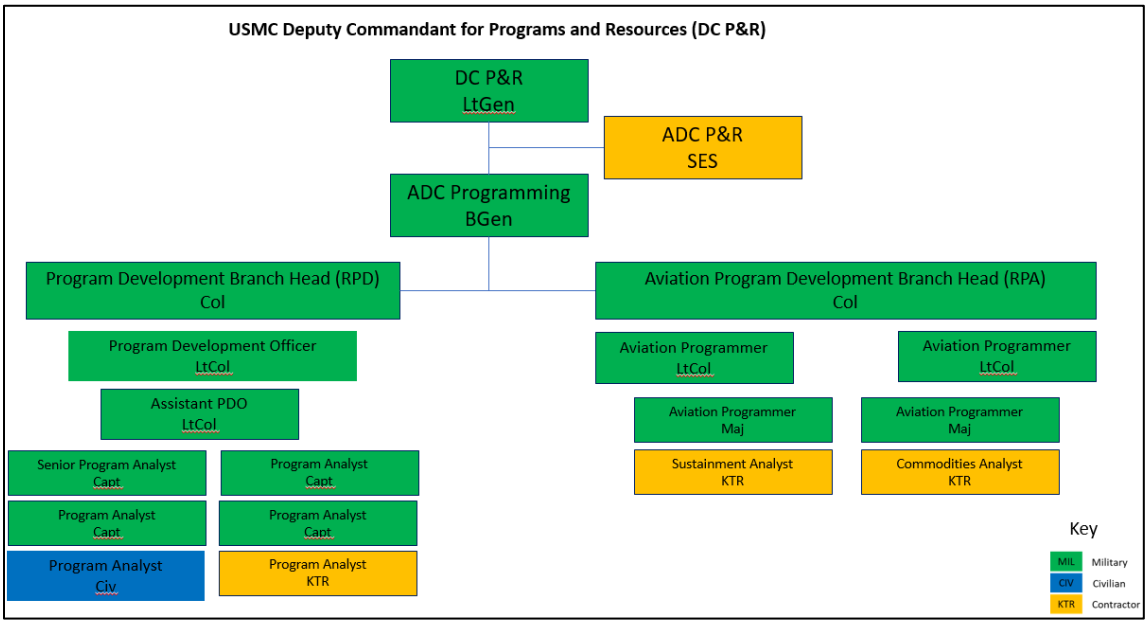
The Marine Corps EPTs are domain and warfighting focused. The EPT managers and their assigned enterprise programmers serve as enterprise capability subject matter experts, data aggregators, and programmers for their assigned portfolio of programs. Functional owners of each program inside the EPT present requirements

[782] Provided by the Navy.
[783] "MCO 7000-1 Marine Corps Planning, Programming, Budgeting, Execution, and Assessment (PPEA) Process" 2022.

to the EPT manager to be validated and to justify the requested resources. Each EPT manager participates in all the EPT requirements briefings so that priorities can be determined after the conclusion of all requirements presentations to the EPTs. The integration and prioritization of all requirements from the EPTs is done by the group of EPT managers with oversight and input from the DC for Programs and Resources (P&R) programmers, culminating in the final USMC POM submission. Requirements for aviation and ship development, procurement, and sustainment are addressed through the Navy POM process and funded with "blue dollars." The DC P&R is responsible for the overall programming function and integrates the EPT inputs to produce the Marine Corps POM that is then submitted to the Commandant of the Marine Corps for approval, followed by approval by the Secretary of the Navy.

There are 20 EPT programmers across the nine EPTs who manage and run the activities to generate the requirements inside that EPT. There are also 12 programmers in the DC, P&R organization, split between Aviation (five programmers) and Ground (seven programmers) portfolios, who serve the DC P&R in his role of developing, directing, and supporting the process for Marine Corps planning, programming, budgeting, execution, and assessment. Figure 4 shows the DC P&R organization.

Figure 4 – Marine Corps DC P&R Program Integration Organization Chart[784]



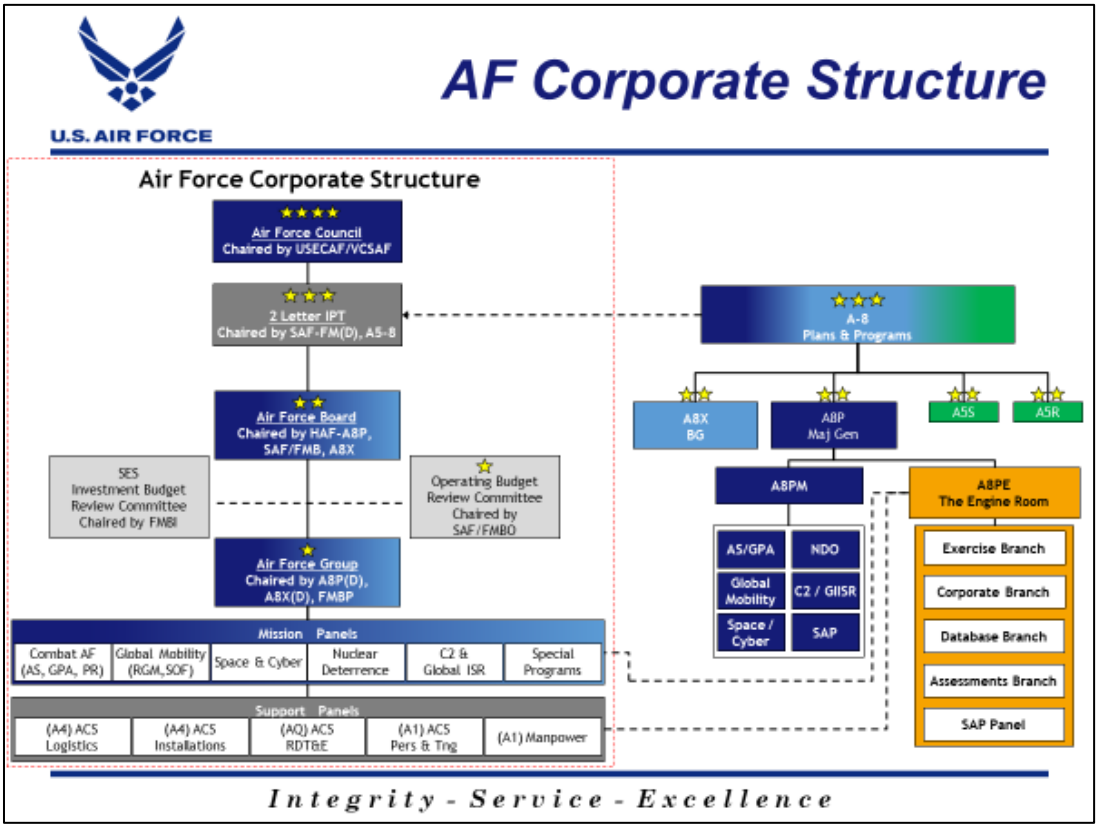
Air Force

The Air Force Corporate Structure is shown in Figure 5. The Plans Directorate (A8X) develops programming recommendations, leveraging a series of O-6 led Mission Panels (MP) for Combat Air Force, Global Mobility, Space and Cyber, Nuclear Deterrence, Command and Control and Global ISR, and Special Programs. There are also Mission Support Panels (MSP) for Logistics, Installations, RDT&E, Personnel and Training, and Manpower. There are six MPs and six MSPs. The MPs are part of the A8 Air Force Headquarters Staff, while the MSPs are based in the Major Commands (MAJCOM). Air Force Policy Directive 90-6, *Air Force Strategy, Planning, Programming, Budgeting, and Execution (SPPBE) Process*, dated June 26, 2019, governs the Air Force PPBE process.[785]

The A8X staff work closely with the A8P and MAJCOMs to integrate recommendations from the MPs and MSPs. The Air Force decision-making bodies incorporate the Air Force Secretariat staff into that process.

[784] Provided by the Marine Corps.
[785] "AFPD 90-6 Air Force Strategy, Planning, Programming, Budgeting, and Execution (SPPBE) Process" 2019.

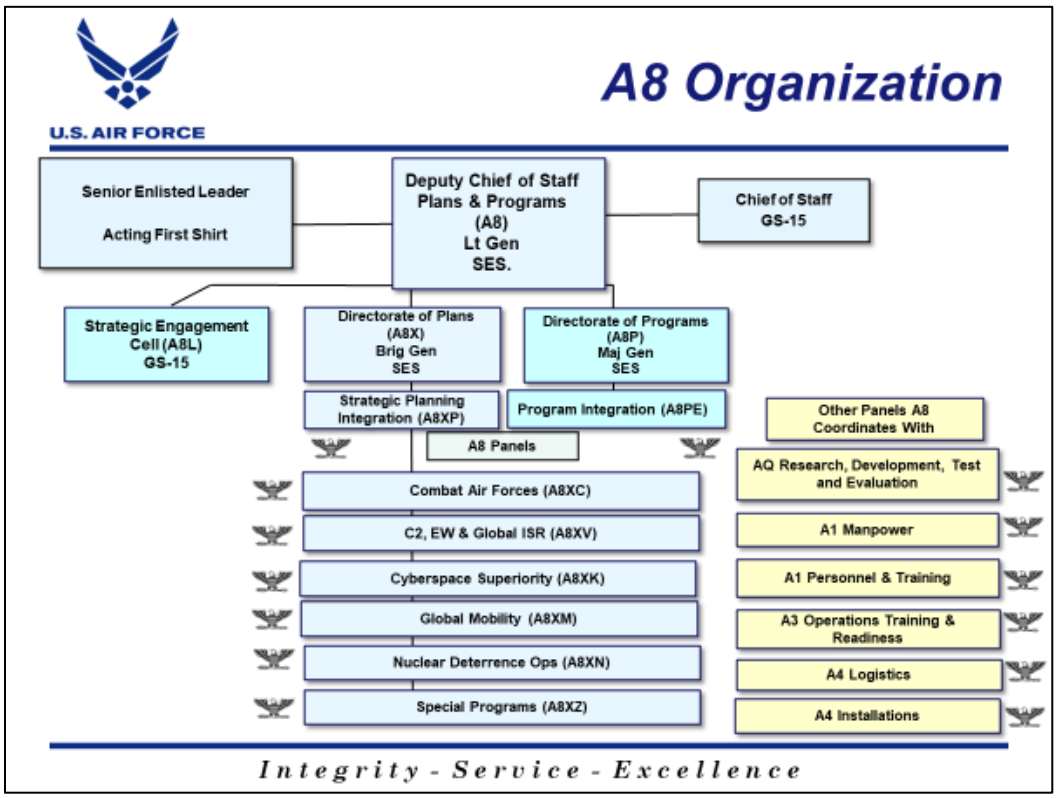
Figure 5 – Air Force Corporate Structure[786]



Generally, Air Force programmers are part of the Air Force A8 Directorate. Other than programmers working in the MSPs, Air Force programmers work in the A8 Plans Directorate (A8X) and Programs Directorate (A8P). The A8X programmers support one of six Panels within A8X, while the A8P programmers are primarily in the Program Integration Division (A8PE). There are a total of 50 programmer billets in A8PE, including 33 military personnel and 17 civilians; there are no contractors performing programming tasks in A8P. There are currently 18 vacancies in A8P; 15 are military billets, and three are civilian. All Air Force civilian programmers are GS-0343 Management and Program Analysis job series. Figure 6 shows the A8 programming organization.

[786] Provided by the Air Force.

Figure 6 – Air Force A8 Organizational Chart[787]



Space Force

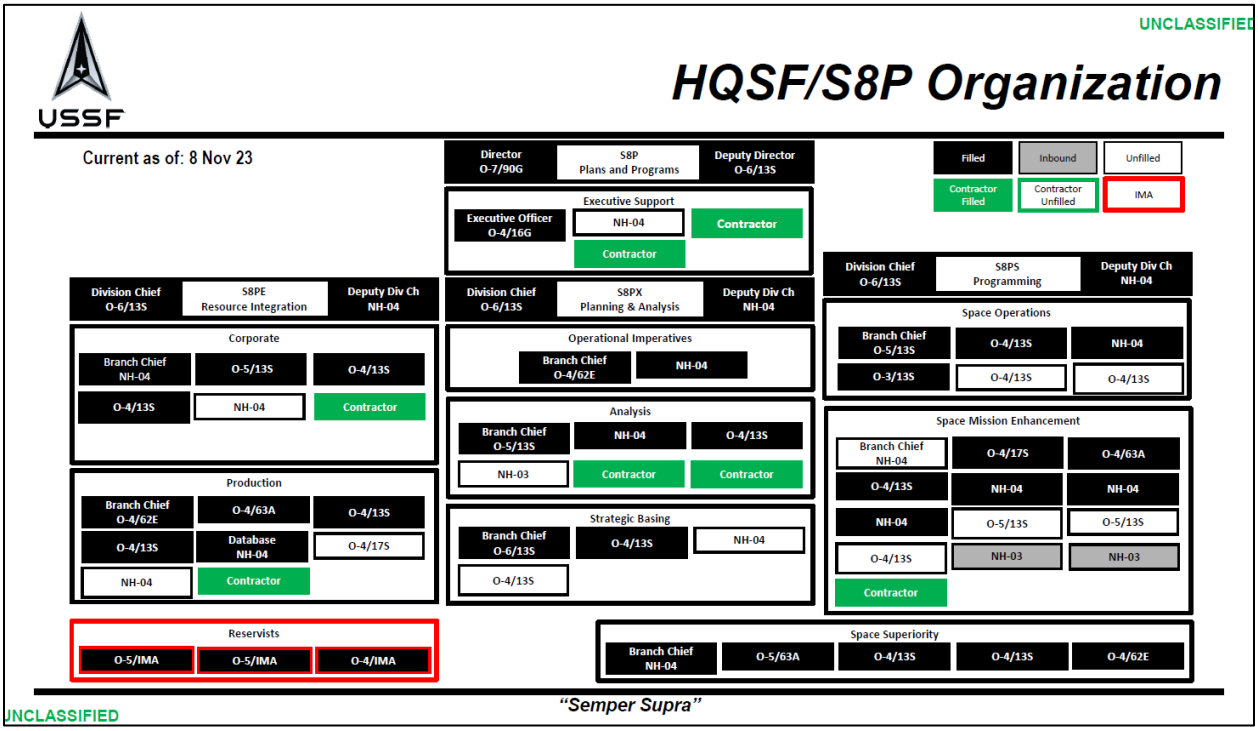
The Space Force and Air Force have similar Corporate Structures. The Planning and Analysis branch (SF/S8PX) develops and provides strategic guidance used by the three Space Force Field Commands (FLDCOM). The Space Force also follows Air Force Policy Directive 90-6, *Air Force Strategy, Planning, Programming, Budgeting, and Execution (SPPBE) Process*, dated June 26, 2019, that governs the Air Force PPBE process.

The FLDCOMs work with the S8 Programming Division (SF/S8PS) of the S8P Plans and Programs Directorate to develop programming recommendations. The programming recommendations are integrated by the Resource Integration Branch (S8PE) and provided to Space Force leadership for review and approval at the Secretary of the Air Force/Headquarters Space Force level. The S8PE is responsible for executing the Space Force Corporate Programming Processes.

The Space Force has 26 personnel in the S8PS Division, including 16 military, nine civilians, and a single contractor. Like most of the Services, military staff in the S8P organization generally do not have PPBE expertise when entering the assignment. The S8PS works with the Space Force's three FLDCOMs to provide programmatic assessments and issue management. The Space Force S8PE Division develops and executes Space Force corporate programming and budgeting processes. Figure 7 shows this organization.

[787] Ibid.

Figure 7 – Space Force S8P Organization Chart[788]



Core Functions

The primary function for the programming workforce is producing the POM. A critical enabler for the POM is cost estimation, which is often performed by cost estimators within the financial management community, particularly with regard to the acquisition programs.

POM Development

The programming function that produces the POM is managed by the Military Services and falls under the responsibilities of the Service Chief. The Services perform programming functions in very similar ways - they all provide top-down strategic guidance to subordinate organizations who then review portfolios and develop resourcing recommendations that are reviewed and approved by their Service Headquarters and Secretariat organizations that are then combined into a Service POM. After approval by the Secretary of the Air Force, the POM is submitted to OSD.

It all starts with guidance from the Service Secretary or Service Chief in the Fall timeframe that lays out priorities, follows the processes identified earlier in the workforce sections, and then culminates with approval by the Service Secretary and the presentation of that POM to the OSD. Following that submission, in conjunction with their budget counterparts, the programmers participate in the Office of CAPE-led Program Review teams during Program Review and the adjudication of any issues raised there.

Cost Estimation

Service cost estimators all perform essentially the same task – estimation of detailed costs for system development, acquisition, operation, and sustainment that are used to support the funds by type of appropriation that are requested. Cost estimates are validated and used to determine funding for programs during the POM build and finalization of the PB. For major acquisition programs, Independent Cost Estimates (ICE) are developed at the Service Secretariat level for the Army, Air Force, and Space Force. In the Navy and

[788] Provided by the Space Force.

Marine Corps, ICEs are currently done at the Service level but that will change to the Navy Secretariat beginning in FY 2026.

Readiness cost estimates (RCE) for operations, sustainment, and support are independently developed in most Services, with Marines being the sole exception. The Air Force and Space Force RCEs are developed by the Air Force Cost Analysis Agency (AFCAA), while the Deputy Assistant Secretary of the Army (Cost Estimation) (DASA (CE)) develops cost factors used by program offices and MAJCOMs to develop their RCEs. Navy RCEs are developed by the OPNAV staff. Figure 8 below summarizes Services cost estimation sources.

Figure 8 – Cost Estimation (CE) Sources by Service

Service	Acquisition CE	Readiness CE	ICE	Comments
Navy	Program Office	OPNAV	N/A	ICE by NCCA in POM-26
Air Force	Program Office	AFCAA	AFCAA	
Army	Program Office	Program Office	DASA(CE)	DASA (CE) validates Army CE
Marine Corps	Program Office	Program Office	N/A	DCMC P&R validates USMC CE
Space Force	Program Office	AFCAA	AFCAA	

AFCAA is part of Secretary of the Air Force for Financial Management and Comptroller
DASA (CE) is part of Secretary of the Army for Financial Management and Comptroller
NCCA = Naval Center for Cost Analysis (part of Secretary of the Navy for Financial Management and Comptroller)
OPNAV = Office of the Chief of Naval Operations

Budgeting Workforce

Each Military Department has within its Secretariat a designated organization with responsibility for the formulation, justification, preparation, and execution of the annual budget. In the Departments of the Army and the Air Force, this is the Assistant Secretary for Financial Management and Comptroller (FM&C); in the Department of the Navy, this is the Assistant Secretary for FM&C, who coordinates with the Marine Corps Deputy Commandant for Programs and Resources (DC P&R). These organizations, through their political leadership and their career staffs, are typically responsible for presenting the public rollout of the DoD's portion of the PB request and all that entails - writing, approving, printing, and delivering their budget J-books; budget database management and reconciliation with the OSD Comptroller's NGRMS; developing or coordinating on all the related congressional questions on the budget; preparing the Unfunded Priorities List; all funds allocation and distribution tasks once received from OUSD(C); managing and tracking above and below threshold reprogramming actions; and execution reviews on a monthly basis, as well as the mid-year review and other execution tracking.

Organization

Each organization consists of a workforce that includes military, civilian, and contractor personnel that are typically organized by appropriation and function. The staff consists of career financial management professionals on the civilian side. Many military personnel have financial management expertise as well, some having been in billets at a lower rank who then return later in their careers to a billet at the headquarters budget offices, but with increased responsibility. Each Military Department has a manpower management organization that is responsible for recruiting and retention activities, and the overall training and education of the financial management workforce that works at all organizations within the entire department.

The size of the headquarters budget offices vary due to how the Military Departments are organized to execute budget formulation and execution responsibilities, as well as based on the makeup of their budget. For example, the Marine Corps and Space Force are part of the Departments of the Navy and Air Force, respectively, who have the ultimate responsibility for the Military Department budget. A significant portion of the Marine Corps budget is dedicated to military personnel costs, and funds for aircraft and ship procurement nest inside Navy Procurement BLIs; the Marine Corps will support Navy in preparing and justifying those J-books. Budget execution is an even more distributed function throughout the Military Department as funds

are executed by personnel stationed at installations around the globe supporting operations and the warfighter.

The background of the civilian workforce within the headquarters typically includes experience working at subordinate or field activities throughout the DoD, preferably within the Military Department, with those who are interested moving up to higher headquarters activities as their careers progress. The OUSD(C) has typically looked to recruit from the Military Department and DoD Component budget offices given their familiarity with programs and how those organizations formulate and execute their budgets.

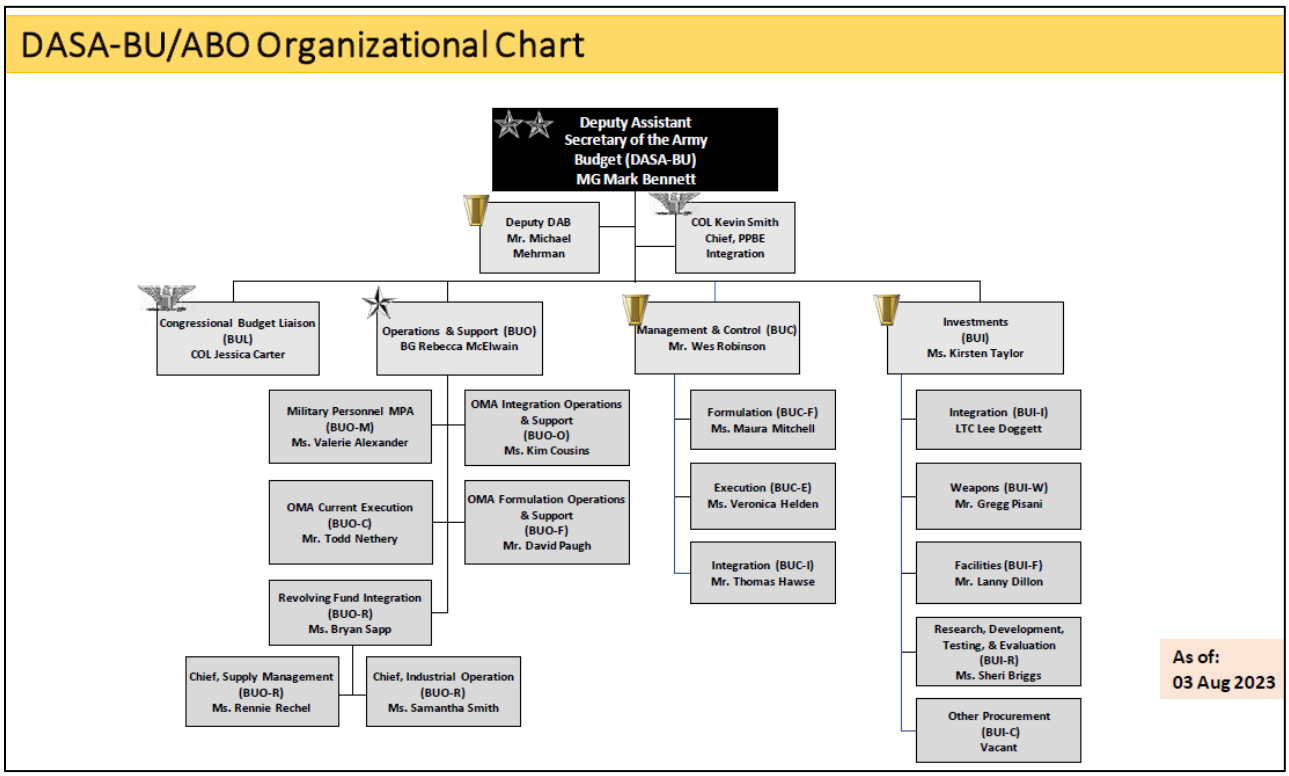
Department of the Army

Within the Assistant Secretary of the Army (FM&C) organization, the Deputy Assistant Secretary of the Army for Budget (ABO) is responsible for the budget functions. The Army National Guard and the Army Reserve maintain their own budget organizations that are not part of this analysis; however, the ABO does review their BES and PB justification materials. The ABO has 196 onboard personnel (95 against an authorized 110 civilian billets, 51 military against an authorized 19 billets (20 are detailed from the Office of the Chief, Legislative Liaison (OCLL)), and 50 contractors). Civilian personnel levels have fluctuated some over the last 20 years ranging from a low of 101 in 2020 and 2024 to a high of 106 in 2022. Figure 9 depicts the ABO organization.

The predominant civilian grade level in the Office of the Budget is GS 13-14, with other grades ranging from GS-11 to GS-15; of the 101 onboard civilians, 59 percent of the staff are financial management administration and program analysts (56 personnel), with the others as budget analysts (36 personnel) and operations research analysts (three personnel). The average length of civilian tenure within the ABO organization is 7 years and civilians have on average 21 years of Federal service; the turnover rate was 16 percent in FY 2023. Education is also important, with 82 percent of the staff having a bachelor's degree or higher; 58 percent of those personnel have a master's degree or higher, and two percent of those hold a doctorate.

Military personnel range from Seargent First Class (one servicemember) to Major General (one servicemember) with most at the rank of Lieutenant Colonel. Education is also important among military personnel, with 98 percent of military personnel having a bachelor's degree and a further 75 percent with a master's degree. Contractor personnel perform a range functions that include operation and maintenance of Army financial management (FM) feeder systems and data such as data integration services to include verification, validation, and resolution of issues; develop dashboards, analytical tools, and SharePoint applications to support senior leader reporting requirements; provide local support and training on FM systems and Microsoft Office 365 capabilities; and support the Military Personnel, Army (MPA) appropriation for Active Component permanent change of station orders.

Figure 9 – Deputy Assistant Secretary of the Army for Budget Organization Chart[789]



Department of the Navy - Navy

Within the Assistant Secretary of the Navy (FM&C) organization, the Office of Budget (FMB) is responsible for the budget functions. The Navy Reserve maintains its own budget organization that is not part of this analysis; however, the FMB does review their BES and PB justification materials. The FMB has 206 onboard personnel (131 onboard civilians against an authorized 160 civilian billets, 31 military, and 44 contractors). Civilian personnel levels have fluctuated some over the last 20 years ranging from a low of 119 in 2013 to a high of 131 in 2023; there was a recent addition of 18 billets in the FY 2024 PB request to stand up and reestablish the Naval Cost Division.

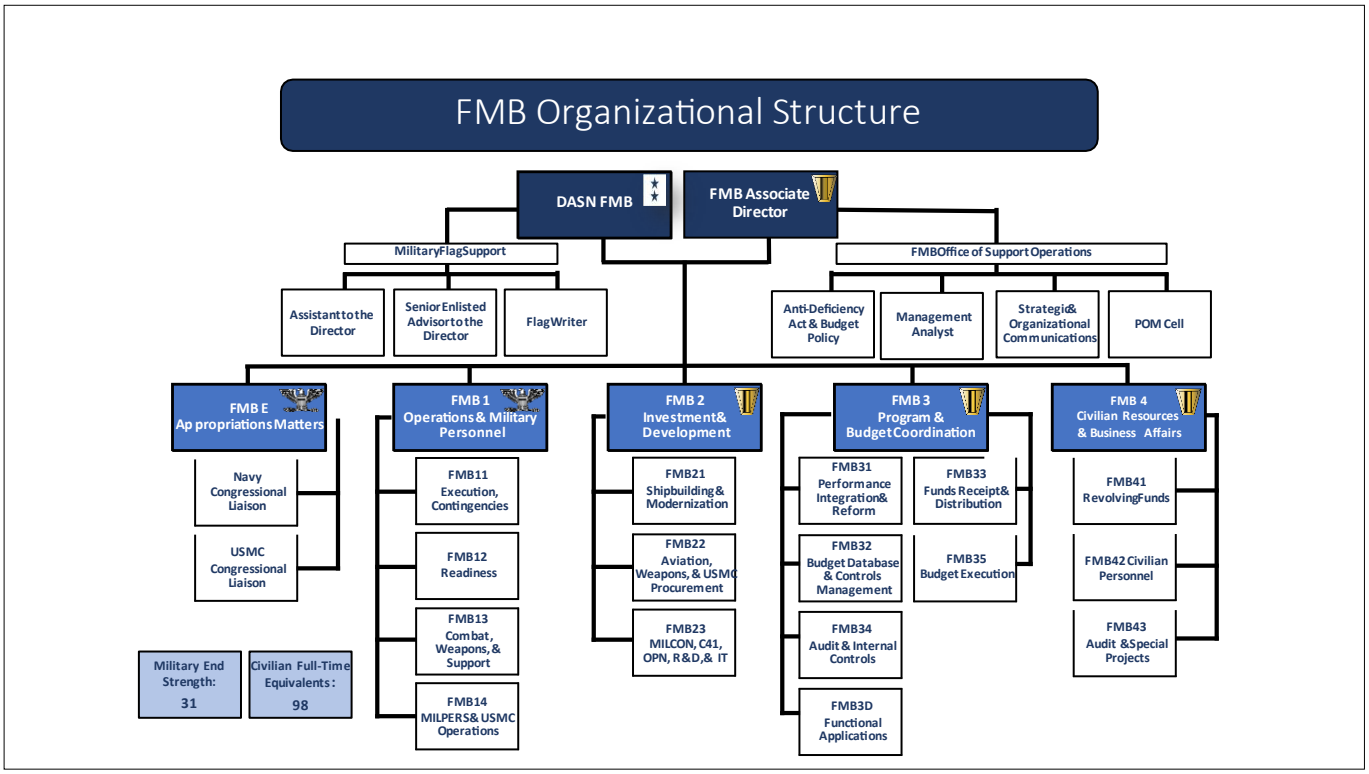
The predominant civilian grade level in the FMB organization is GS 14-15, with other grades ranging from GS-09 to SES; of the 131 onboard civilians, 97 percent of the staff are financial management analysts (95 personnel), with the others as administrative support (one person), management and program analysts (three personnel), financial managers (five personnel), accountants (seven personnel), operations research analysts (16 personnel), and information technology specialists supporting systems analysis (four personnel). Civilian staff vary from those who are just starting their careers to those who have 40 years of service. The average length of civilian tenure in the FMB organization is 5.4 years and civilians have on average 15 years of Federal service; the turnover rate was 15.3 percent in FY 2023. Education is also important, with 91 percent of staff having a bachelor's degree or higher and, of those, 47 percent hold a master's degree.

Military personnel range from Petty Officer First Class E-6 (one servicemember) to Rear Admiral (one servicemember) with most at the rank of Lieutenant Commander and Commander. Education is also important, with 85 percent of military personnel having a bachelor's degree or higher and a further 70 percent

[789] Provided by the Army.

with a master's degree. Contractor personnel perform support and technical functions like administrative and audit support, software developer, and system support, with the majority providing rate or visibility and management of operating and support costs support to the FMB. Figure 10 shows the overall Navy FMB organization.

Figure 10 – Navy FMB Organization Chart[790]



Department of the Navy - Marine Corps

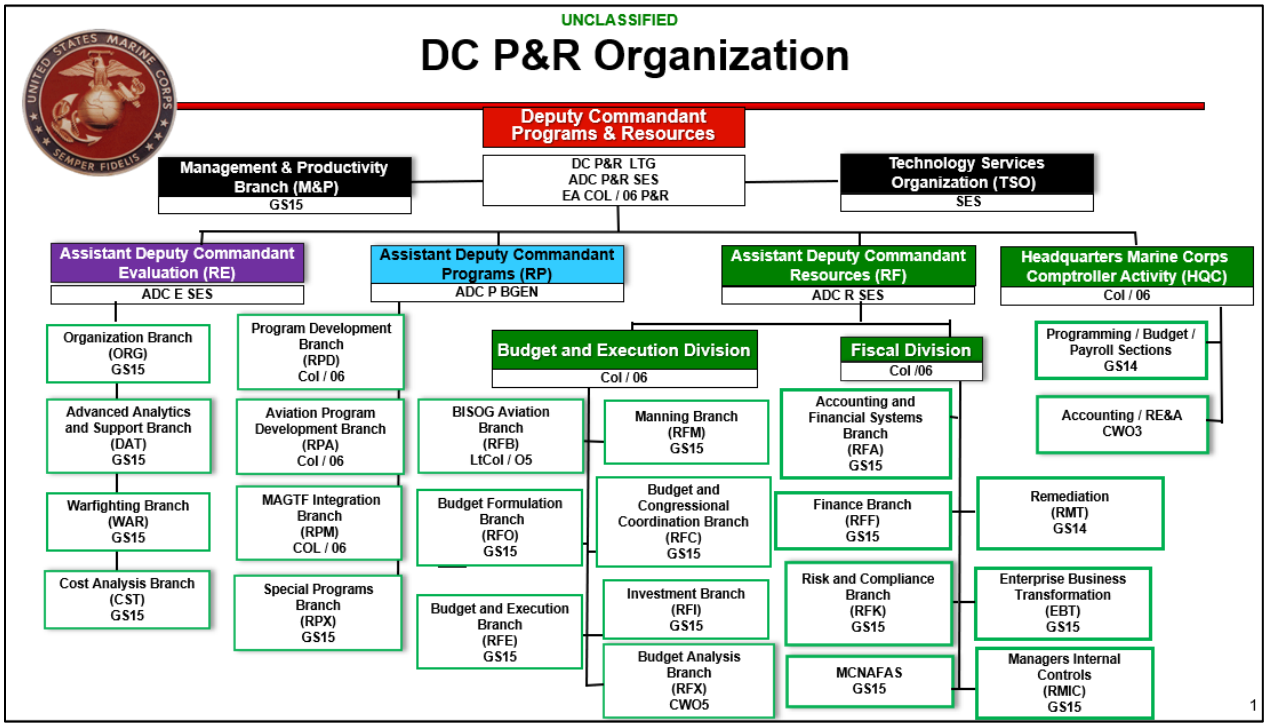
In the Marine Corps, the DC, P&R organization is responsible for the budget functions. The Marine Corps Reserve maintains its own budget organization that is not part of this analysis; however, the DC P&R does review their BES and PB justification materials. One unique process for the Marine Corps is their submission of a BES to the Navy FMB, like all of the other Navy budget submitting offices, prior to the Department of the Navy's submission of a BES to the OSD. The Marine Corps BES submitted to the FMB will go through the full rigor of Navy review, analysis, and markup before it is locked as a final BES position. The DC P&R consists of approximately 403 personnel. There are 223 on board civilian personnel against the 273 authorized billets (82 percent); 143 military personnel on board against 184 authorized billets (78 percent); and 37 contractors that provide financial and audit support. Civilian personnel levels have fluctuated a bit over the last 20 years, but the 20-year average is around 219 on board personnel (there is typically about a 20 percent hiring gap), ranging from a high of 238 in 2021 to lows of 203 in 2022 and 2023. Most of the recent reductions were largely driven by the 15 percent reductions required of the Department that affected the entire Headquarters Marine Corps staff in FY 2023-2026.

Overall, it is an experienced staff where most personnel are GS-12s through GS-15s. The 0501 Financial Management Analysts are GS 09s-15s (60 percent), 0511 Auditors are GS 12s-15s (eight percent), 0510 Accountants are GS 12s-15s (five percent), 0343 Program Analysts (eight percent), and the remaining personnel are 0080 Security Specialists and 1515 Operation Research Analysts. The predominant

[790] Provided by the Navy.

government experience level is three-14 years of service with 43 percent of the Financial Management staff having bachelor's degrees or higher. Recent departures have resulted in a staff with less Marine Corps experience than has been the norm; the current average staff tenure in DC P&R is three years. Turnover in 2022 and 2023 was relatively high at 40 percent, although that number is not inconsistent with past experience and reflects retirements from a staff whose average federal service is 20 years or more. Recruiting is identified as a growing challenge, which the Marine Corps is working hard to address. Figure 11 shows this organization.

Figure 11 – Marine Corps DC P&R Organization Chart[791]



Department of the Air Force

Within the Assistant Secretary of the Air Force (FM&C) organization, the Deputy Assistant Secretary for Budget (FMB) is responsible for the budget functions. The Air National Guard and the Air Force Reserve maintain their own budget organizations that are not part of this analysis; however, the FMB does review their BES and PB justification materials. The FMB has 133 onboard personnel (82 onboard civilians against an authorized 103 civilian billets, 31 military against an authorized 29 billets, and 20 contractors). The Space Force does not have its own Financial Management organization, and the Department of the Air Force executes the financial management functions for the Space Force. The FMB civilian onboard personnel levels have fluctuated some over the last 12 years ranging from a low of 68 in 2018 to a high of 94 in 2015; authorized civilian billets have ranged from a low of 85 in 2021 to a high of 103 in FY 2023. The FY 2015 data reflects Air Force Organization reductions and realignments. The FY 2023 data reflects the realignment of the congressional and budget liaison from FMB to FML; this impacted four civilian billets and 14 military personnel billets.

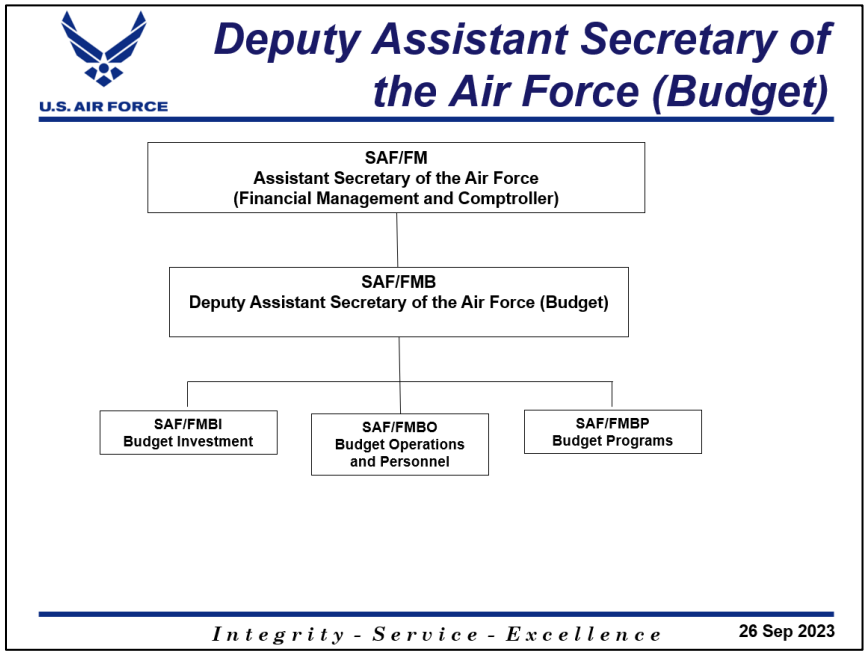
The predominant civilian grade level in the FMB organization is GS 13-14, with other grades ranging from GS-09 to SES; of the 82 onboard civilians, 84 percent of the staff are budget analysts (69 personnel), with the others as financial administration and program analysts (nine personnel), miscellaneous administration and program support (two personnel), and management and program analysts (two personnel). The average length of civilian tenure within the FMB organization is 1.4 years (does not account for personnel who move within the organization and a different billet) and civilians have on average 14.4 years of Federal service. The

[791] Provided by the Marine Corps.

turnover rate was about 12 percent in FY 2023. Education is also important, with 91 percent of staff having a bachelor's degree or higher, 69 percent hold a master's degree, and nine percent who hold another degree.

Military personnel range from Technical Sergeant E-6 (one servicemember) to Major General (one servicemember) with most at the rank of Lieutenant Colonel. Education is also important, with 99 percent of military personnel having a bachelor's degree and, of those 89 percent holding a master's degree. Contractor personnel perform support and technical functions like business area process re-engineering, performance improvement, and change management projects; support the J-book writing systems and produce budget documents; provide cost modeling and pricing support; and provide other support such as administrative professionals, business analysts, information system security management, program management, and system development and data analytics. Figure 12 shows this organization.

Figure 12 – Air Force FMB Organization Chart[792]



Core Functions

The Military Departments identified their two primary responsibilities as budget formulation and budget execution, to include all the tasks involved that support those functions.

Budget Formulation

Once the Service POM is locked, that position is formally turned over to the Military Department FM&C organizations to turn the POM into the BES. For the most part, the POM and BES database positions are done in the same system, only Army uses a different database for the POM and BES positions. See Section XI for additional details on the systems used to build J-books.

Budget formulation activities include all the tasks required to prepare the annual BES that is submitted to the OUSD(C) for their budget review. In turn, that BES and others become the basis of DoD's portion of the PB and for other steps that follow: developing all the budget rollout materials, reviewing and developing formal justification materials, presenting that budget to Congress through hearings and rollout to professional staff, and supporting that budget request through congressional markup and enactment of the NDAA and appropriations bills. All PB exhibits and testimony for the Department are cleared through the OMB.

[792] Provided by the Air Force.

Preparation of the BES is largely a process of consolidation of inputs from subordinate organizations and involves close coordination with the Service programming organizations (the Service 8s) as budget J-books are developed for each BLI translating those programming decisions into a BES. This can be particularly challenging because the way the POM is developed and analyzed does not always easily map to the BLIs in which the budget must be presented. As discussed in Section VII, the building blocks of the POM build often take a much more functional capability area approach (for example, surface ships or tactical aviation) that the budget offices must align to the BLIs by appropriation (Procurement, RDT&E, etc.). The POM may look at things at a much more granular level or by functional owner – for example, the base operations funding for all installations worldwide that is then consolidated into one O&M sub-activity group (SAG) exhibit for the BES and PB. It is very important for the budget offices to understand all the details of how the programs were built and the decisions that were made so the budget personnel can appropriately explain the story and justify the necessary resources.

Ideally, budget J-books that constitute the BES and PB are done by the functional owners of that program. For example, the Procurement and RDT&E exhibits will be written by financial managers within program offices or the PEO staff, the construction engineers will develop and write the MILCON exhibits, and the manpower personnel will develop and write the MILPERS exhibits. For O&M exhibits, a variety of organizations may contribute to writing the narratives as things are often consolidated from the individual base or command level to reflect the Service's position. The PMs and PEOs will also have input to the O&M BLIs that contain contractor logistics support that is centrally funded or other such efforts in support of fielding and sustaining their capabilities. The Military Department budget offices review all the exhibits to ensure they reflect the correct position, describe the requested funds, validate that documents are written properly in the correct format, review them for compliance with decisions, and look them over for other editorial issues. For the PB, the FM&C budget offices are also responsible for developing the budget rollout briefings presented during the official rollout of the PB. They also develop the summary books of that year's PB, which are not official budget documents but are supporting materials often used by the Hill, industry, and the public to get a more strategic understanding of what is funded and how funding has changed in that PB cycle.

It is the FM&C and their supporting budget office personnel that interact with the OUSD(C) and the OUSD(C) P/B personnel to submit the BES, lead the adjudication of issues proposed by the OUSD(C) during the Budget Review (such as PBDs and Passback changes), record and maintain control over their budget database, and then finalize or approve final budget J-books for submission as part of the PB. The FM&Cs themselves also have regularly scheduled meetings with the USD(C) and Assistant Comptroller for P/B to discuss issues and keep an open line of communication.

The FM&C organizations are also the lead when it comes to supporting their Service Secretary and Service Chief in preparation for their annual testimony to the appropriations subcommittees on the PB; the legislative liaisons will lead the effort with the FM&C staff for the authorization subcommittees. The same FM&C organizations and leadership will also conduct the detailed staffer briefs to the congressional PSMs in conjunction with the functional experts like PMs and PEOs for acquisition programs and the construction personnel for MILCON projects. For anything related to the budget, they will coordinate on all the formal Questions and Inserts for the Record from those hearings and on any RFIs from rollout and throughout the year. As discussed in Section XI, there are typically hundreds of RFIs from the PSMs and congressional Members throughout the year. The RFIs and their responses will influence the authorization and appropriation marks and final bills, as well as continue throughout the execution year asking for updates on how programs are executing and remain on schedule or have slipped, which can then lead to questions in the next budget cycle.

Any formal budget amendments or supplemental requests will be coordinated and led by the budget offices in accordance with direction from the OUSD(C). They will also provide any J-book corrections that are identified after delivery of the PB. Previously, there were a number of supplemental Global War on Terror and

subsequent Overseas Contingency Operations requests submitted. In recent years, there have been a number of supplemental requests in response to natural disaster events like flooding or hurricanes, as well as to provide support to Ukraine and Israel. All supplemental funding must be properly recorded and tracked in the accounting systems.

Budget Execution

Once there is an appropriations enactment of any kind, to include a CR, the FM&C budget offices manage the budget execution process. This includes distributing the funds within the Military Department once the Funding Allocation Documents are received from the OUSD(C) appropriations managers; each appropriation is typically managed by a separate individual. The appropriation manager will also oversee the crosswalk of the PB with all the appropriations marks to develop the DD 1414 Base for Reprogramming Actions, which is then used as the basis for reprogramming actions. The appropriation managers will also track any financial direction or restriction from the NDAA, such as language that directs funds must be spent for a specific purpose or that some funds may not be spent until a set condition(s) have been met. If there are any events that warrant development of a supplemental request or a budget amendment, this process is led by the FM&C organizations.

Throughout the fiscal year, the budget offices will manage the flow of money by account for as long as that account is available for obligation, as well as through the following years of expenditure, until it completely cancels. They monitor budget execution performance, to include following programs that have schedule delays and might provide resources to fund any critical emerging requirements. They also measure obligations and expenditures against the OUSD(C) benchmarks by appropriation, monitor the transfer authority realignments are using (for BTRs and ATRs), track unfunded requirements that arise throughout the fiscal year, submit ATR requests to the OUSD(C), and submit quarterly execution reports to the OUSD(C) that includes BTR information.

The formal DFAS accounting reports (1002) provide financial data reports on a monthly basis; however, the Enterprise Resource Planning accounting and general ledger systems can often provide much more timely information such as daily or hourly if needed. Timely information can be particularly important at year end when trying to close out the books for the fiscal year. For appropriations that can no longer be obligated, they will continue to monitor expenditures, deobligations, and requests for upward obligation adjustments due to an unforeseen increase in the scope of work (see Section XI D7: FSRM and Upward Obligations) for additional information). Revolving funds must also be monitored to track cash balances and anticipated and actual net operating results to determine rate impacts that could require an increase or decrease if warranted. No-year appropriations must also be monitored for execution or closure when warranted.

The budget offices will monitor all accounts to identify potential problems, to include preparing any formal ATR actions that might be necessary. They will also review and approve any BTR realignments as they manage the appropriations for the Service. Any requirements that must be addressed and sources to be used must be identified and worked with the affected organizations. This can be a lengthy and contentious process that adds to the lead times involved with any reprogramming action (See Appendix XI for additional information).

While funds are continually monitored throughout the year, particular emphasis is placed on the monthly, quarterly, and end of year actuals. The mid-year review is typically what supports Service requirements that are included in the Omnibus reprogramming action, which by law is due at the end of June every year. Management of the year-end process is also a significant budget execution event. The appropriation managers must ensure that all must-pay bills are funded while also ensuring that none of the accounts exceed their legal limits. At year end, there is also the additional challenge of ensuring that accounts remain within BTR limits as the ability, because there may not be time to request a formal ATR. The Service's ability to execute funds within the remaining time before they expire must also be monitored. The goal is to appropriately obligate all funds while recognizing that some bills (like utilities and transportation) may not be

final until after the fiscal year end has closed, so some funds must be left available for expenditure in case of greater than anticipated actuals or final negotiated contract costs. This is a delicate balance, as leaving too much funding available can lead to reductions in funding due to under execution. But one hundred percent of all funds should not be obligated, which would leave no room to accommodate changes after the year has closed.

Budgeting Workforce Challenges

Much like what was discussed in the OUSD(C) P/B organization workforce challenges, there are many of the same overlaps of budget formulation and execution events and timelines leading to what has become an effectively continuous budget cycle. The budget offices are a mix of personnel including some who are newer to financial management along with some with 40 years or more of service, leading to an environment where those with expertise can be relied upon to help those with less experience. None of the Military Departments have a formal training program for their budget officer personnel. However, there are very strong financial management training programs (Department of the Navy Financial Management Career Program that hires people at the trainee level and has a mid-career associate program [793] and the Air Force Palace Acquire Intern program that includes the financial management career field[794]) and well-defined functional management career paths (Departments of the Army and Air Force) for military and civilian personnel that lay out training, education, and types of progressively more responsible assignments that can be used to plan a career in financial management. The financial management career field is one that exists at every installation worldwide and consists of positions at lower grades all the way through to General Officer and the most senior SES levels. The financial management career field also falls under the FM Certification Program requirements that vary depending upon grade. The organizations also depend heavily on mentor-protégé on-the-job training given some of the unique aspects for each position and challenges of working in a Military Department budget office.

The budget offices are also a reflection of many of today's human resource challenges in a post-COVID work environment. Not all budget office positions have the same requirements or work at the same classification level. Someone who processes documents may be more able to telework more frequently than someone who works classified and special access budget formulation. As discussed earlier, the turnover rates remain consistent among the Services and OSD financial organizations based on data provided to the Commission. As part of other discussions, one Service did mention that their telework policy led to losing interview candidates who wanted to work more remotely, rather than being in the office as much as what that Service required. For those organizations that do not allow teleworking, or as much telework, some personnel are choosing to take positions in other organizations that do allow significant or even 100 percent telework. Some Services also indicated that it is becoming increasingly difficult to attract the best candidates to come to the Pentagon. The most prevalent concerns they noted are work/life balance and the cost of living in the Washington D.C. area.

Human Resource Challenges Today

As part of this research, the Commission staff reached out to discuss hiring challenges with the Washington Headquarters Services (WHS) Human Resources Directorate (HRD) which provides the human resources (HR) support for the OSD staff. A recurring theme with OSD organizations, as well as in the Military Departments, was how long it takes to hire personnel.

A hiring action in the federal government starts with the identification of a need, continues with a request for personnel action, finalization of the job announcement and releasing it for a specified period of time to solicit applicants. After that, many other actions must still be completed including compilation of all applications

[793] "Financial Management Career Program (FMCP)" n.d.
[794] "Recent Graduates" n.d.

by the servicing HR office, transmittal of applications to the hiring authority, selection of a candidate (this includes the time to review resumes, schedule and complete interviews, make a selection(s), and provide a final decision to the HR office), issuance of a tentative job offer (TJO) by the HR office, initiation and completion of the required security clearance for that billet, scheduling and completion of a drug test if required, and then issuance of a final job offer (FJO) to the candidate. These activities constitute significant and time-consuming wickets to clear as part of the process to hire someone, and that person has not yet even started in the new position.

In FY 2023, the average time from request for personnel action to an open job announcement was 47 days; the time from TJO to FJO was a further 50 days; and the time from FJO to that person's entry on duty at the new position was a further 24 days.[795] Data provided by one Service indicated it took an average of 184 days (pre-COVID) from the identification of the hiring need to having the selected person report to duty.[796] Senior leaders throughout the Department have indicated they lost good candidates to other job opportunities because it can take so long to initially bring people into the Department or reassign onboard personnel into vacant positions.

The goal for the WHS HRD is 60-day time to hire,[797] which seems like a long time but is a challenge given all the activities that must occur within that timeframe. Direct hiring authority is available for financial management positions, which allows faster action for personnel being hired from outside the DoD or existing qualified personnel who are current DoD employees inside or outside the organization. Direct hiring authority does not avoid all of the activities required to finalize hiring. For example, all OSD billets require a drug test and a security clearance. Nonetheless, direct hiring authority can help. In FY 2023, the WHS HRD reported that 33 percent of the hiring actions used direct hire authority and another 18 percent were non-competitive hires.[798]

As in many career fields, the WHS HRD has also had challenges in the last several years with attrition and hiring replacement HR specialists and HR information technology personnel. There has been recent improvement with a lower time to hire and shorter timeframes to accomplish HR activities, due to a reorganization of the HR workload and other improvements. The HR specialists now own each hiring action from start to finish; the WHS HRD instituted a dashboard that provides visibility into how each action is moving through all those wickets; and WHS HRD cited a recent local hiring event where they were able to issue TJOs on the spot.[799]

In addition, the financial community has been doing a lot of work on talent management across the DoD. There is still an overall DoD attrition rate of 15 percent, which does not include individuals who are moving inside the financial management community (seven percent),[800] but efforts are underway to make improvements. It was reported that DoD is trying to structure moves inside the financial management community, so that personnel movements reflect a more long-term strategic approach to personnel management and career progression. The Department is also working to increase telework, remote employment opportunities, and flexible work schedules for financial management personnel. Inside the OUSD(C), a new hire program was established in 2023 with four GS-9/11/12 billets with a two-year structured development plan, and recently brought on two McCain Fellows.[801] There is also an FM Stars program that "expands opportunities for FM [financial management] members to gain new professional experiences and

[795] Commission interview with subject matter experts.
[796] Data provided by the Service.
[797] Commission interview with subject matter experts.
[798] Ibid.
[799] Ibid.
[800] Ibid.
[801] Ibid.

increase their knowledge and proficiency by offering assignments in other functional or organizational areas."[802]

Civilian talent management is also a focus area for the Deputy Secretary of Defense, with an emphasis on how to build long-term workforce plans, improve the hiring experience for candidates, build civilian pipelines, and reduce the time to hire.[803]

Conclusion

The Commission found that the programming personnel in the Services and the budgeting personnel in the Military Departments continue to provide strong support to their leadership despite the continuous workload and hiring challenges. Despite the vacancies in the programming and budget staffs, leaders reported having a very capable workforce with the right skillsets to support the significant variety of tasks within these functions that are critical to developing and prioritizing requirements, writing thousands of pages of budget justification materials, and presenting, defending, and executing appropriated funds. Efforts and focus on improving the efficiency of the hiring process, training improvements, and better business systems will also assist in closing the gaps and workload challenges impacting the programming and budget organizations, as discussed in the Section VII and Section VIII recommendations.

[802] OUSD(C), 12.
[803] Commission interview with subject matter experts.

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Acronym List

Acronym	Meaning
A8P	A8 Programs Directorate
A8PE	A8 Program Integration Division
A8X	A8 Plans Directorate
A&I	Analysis and Innovation
AAI	Agency Accounting Identifier
ABO	Army Budget Office
ACDP	Advanced Component Development and Prototypes
ACRN	Accounting Classification Reference Number
ADA	Anti-Deficiency Act
AFB	Air Force Base
AFCAA	Air Force Cost Analysis Agency
AI	Artificial Intelligence
AI2	Acquisition Integration and Interoperability
AIRC	Acquisition Innovation Research Center
AoA	Analyses of Alternatives
AOP	Annual Operating Plan
AOR	Area of Responsibility
APFIT	Accelerating the Procurement and Fielding of Innovative Technologies
API	Application Program Interface
APQ	Advanced Policy Question
ARES	Army Reporting Evaluation System
ASA(ALT)	Assistant Secretary of the Army for Acquisition, Logistics, and Technology
ASCA	Australian Strategic Capabilities Accelerator
OSD(LA)	Assistant Secretary of Defense for Legislative Affairs
ATCA	Acquisition and Technology Contingency Account
ATO	Authority to Operate
ATR	Above Threshold Reprogramming
AUKUS	Australia-United Kingdom-United States Partnership
AWG	Analysis Working Group
BA	Budget Activity
BAA	Budget and Appropriations Affairs in OUSD(C)
BEA	Business Enterprise Architecture
BES	Budget Estimate Submission
BHM	Business Health Metrics
BLI	Budget Line Item
BOD	Board of Directors
BPA	Blanket Purchase Agreement
BSA	Budget Sub-Activity
BTR	Below Threshold Reprogramming
C2	Command and Control
C4	Command, Control, Communications, and Computer Systems
CADE	Cost Assessment Data Enterprise
CAPE	[Office of] Cost Assessment and Program Evaluation
CapNet	Capitol Network
CBO	Congressional Budget Office

CDAO	Chief Data and Artificial Intelligence Office
CDO	Chief Development Officer
CE	Capability Enablers
CECR	Construction and Environmental Compliance and Restoration
CEMA	Chief of Defense Staff (France-*Chef d'Etat-Major des Armées*)
CEO	Chief Executive Officer
CFEMS	[Army] Corps of Engineers Financial Management System
CFO	Chief Financial Officer
CHARRTS	Congressional Hearings and Reporting Requirements Tracking System
CIO	Chief Information Officer
CJCS	Chairman of the Joint Chiefs of Staff
CJCSI	Chairman of the Joint Chiefs of Staff Instruction
CLIN	Contract Line Item Number
CMC	Central Military Commission (China)
CMO	Chief Management Officer
CMS	Case Management System
CNO	Chief of Naval Operations
COCOM	Combatant Command
COR	Contracting Officer's Representative
COTS	Commercial-Off-The-Shelf
COVID	Coronavirus Disease
CPR	Chairman's Program Recommendation
CR	Continuing Resolution
CRS	Congressional Research Service
CUI	Controlled Unclassified Information
DA&M	Director of Administration and Management
DAFA	Defense Agencies and DoD Field Activities
DAI	Defense Agencies Initiative
DARPA	Defense Advanced Research Projects Agency
DASA(CE)	Deputy Assistant Secretary of the Army (Cost Estimation)
DAU	Defense Acquisition University
DBC	Defense Business Council
DC	Deputy Commandant
DCFO	Deputy Chief Financial Officer
DCNO	Deputy Chief of Naval Operations
DC P&R	Marine Corps Deputy Commandant for Programs & Resources
DDRS	Defense Departmental Reporting System
DEAMS	Defense Enterprise Accounting and Management System
DEVSECOPS	Development, Security, and Operations
DFARS	Defense Federal Acquisition Regulation Supplement
DFAS	Defense Finance and Accounting Service
DGA	Directorate General of Armament (France-*Direction générale de l'armement)*
DHS	Department of Homeland Security
DIA	Defense Innovation Acceleration
DITPR	Department of Defense Information Technology (IT) Portfolio Repository
DIU	Defense Innovation Unit
DLA	Defense Logistics Agency
DMA	Defense Modernization Account
DMAG	Deputy's Management Action Group
DMS	Diminishing Manufacturing Sources
DNI	Director of National Intelligence

DND	Canadian Department of National Defence
DNN	Defense Nuclear Nonproliferation
DoD	Department of Defense
DoDD	Department of Defense Directive
DoDIG	Department of Defense Inspector General
DoDIN	Department of Defense Information Network
DOE	Department of Energy
DORA	DevOps Research and Assessment
DPAA	Defense POW/MIA Accounting Agency
DPG	Defense Planning Guidance
DPIC	Defense Performance Improvement Council
DRG	Defense Resourcing Guidance
DRRS	Defense Readiness Reporting System
DRS	Defense Resourcing System
DTRA	Defense Threat Reduction Agency
E2E	End to End
EAC	Estimate at Completion
EBC	Enhanced Budget Control
ECTD	Emerging Capabilities Technology Development
EFT	Enterprise Financial Transformation Office
EHR	Electronic Health Record
ELT	Executive Leadership Team
EPT	Enterprise Programming Teams
ERP	Enterprise Resource Planning
ESD	Enterprise Services Division
ESG	Environmental, Social and Governance
EVAMOSC	Enterprise Visibility and Management of Operating and Support Cost
EVM	Earned Value Management
FAR	Federal Acquisition Regulation
FASAB	Federal Accounting Standards Advisory Board
FASTR	Financial Air and Space Team Resources
FEDRAMP	Federal Risk and Authorization Management Program
FFRDC	Federally Funded Research and Development Center
FG	Fiscal Guidance
FJO	Final Job Offer
FLDCOM	Space Force Field Commands
FM	Financial Management
FM&C	Financial Management and Comptroller
FMB	Navy, Office of Budget
FMR	DoD Financial Management Regulation
FMS	Foreign Military Sales
FMVP	Operation Plan (Sweden-*Försvarsmaktens verksamhetsplan*)
FP&A	Financial Planning and Analysis
FSE	Federal Salaries and Expenses
FSRM	Facilities Sustainment, Restoration, and Modernization
FY	Fiscal Year
FYDP	Future Years Defense Program
FYHSP	Future Years Homeland Security Program
GAO	Government Accountability Office
GAAP	Generally Accepted Accounting Principles
GOTS	Government Off-the-Shelf

GDP	Gross Domestic Product
GL	General Ledger
GPRA	Government Performance and Results Act
GS	General Schedule
GTA	General Transfer Authority
HAC	House Appropriations Committee
HAC-D	House Appropriations Committee Subcommittee on Defense
HASC	House Armed Services Committee
HHS	[Department of] Health and Human Services
HM	His/Her Majesty's
HOC	House of Councillors (Japan)
HOR	House of Representatives (Japan)
HR	Human Resources
HRD	Human Resources Directorate
IC	Intelligence Community
ICAM	Identity, Credential, and Access Management
ICE	Independent Cost Estimate
ICI	Integrated Commercial Infrastructure
ICOFR	Internal Control over Financial Reporting
IDA	Institute for Defense Analyses
IED	Improvised Explosive Device
IG	Inspector General
IIP	Integrated Investment Program (Australia)
IL	Impact Level
IOC	Initial Operating Capability
IPA	Independent Public Accountant
IPL	Integrated Priority List
IPPBE	Intelligence Planning, Programming, Budgeting, and Evaluation
IPPS-A	Integrated Personnel and Pay System – Army
IPT	Integrated Product Team
IRAD	Independent Research and Development
IRIS	Intelligence Resource Information System
IT	Information Technology
J-book	Justification Book
J8	Force Structure, Resources, and Assessment Directorate
JADC2	Joint All Domain Command and Control
JCIDS	Joint Capabilities Integration and Development System
JCOFA	Joint Country Operating Force Assessment
JCTD	Joint Capability Technology Demonstration
JEON	Joint Emergent Operational Need
JES	Joint Explanatory Statement
JIDO	Joint Improvised-Threat Defeat Organization
JIEDDF	Joint Improvised Explosive Device Defeat Fund
JRAC	Joint Rapid Acquisition Cell
JS	Joint Staff
JSON	JavaScript Object Notation
JSPS	Joint Staff Planning System
JUON	Joint Urgent Operational Need
JWC	Joint Warfighting Concept
KPI	Key Performance Indicator
LPM	Military Programming Law (France-*Loi de programmation militaire*)

MAB	Month After Budget
MAJCOM	Major Command
MANTech	Manufacturing Technology
MARFOR	Marine Forces
MCAA	Major Capability Activity Area
MDAP	Major Defense Acquisition Program
MDJO	Multi-Domain Joint-Operations
ME	Main Estimates
MFP	Major Force Program
MILCON	Military Construction
MILPERS	Military Personnel
MinArm	Ministry of Armed Forces (France-*Ministère des Armées*)
MinFin	Ministry of the Economy, Finance, and Digital Sovereignty (France)
MIP	Military Intelligence Program
MP	Mission Panel
MPA	Military Personnel, Army
MoD	Ministry of Defence
MOSA	Modular Open Systems Approach
MS	Milestone
MSAR	Modernization of Selected Acquisition Report
MSP	Mission Support Panel
MTA	Middle Tier of Acquisition [Authority]
MW	Material Weakness
MYP	Multiyear Procurement
NASA	National Aeronautics and Space Administration
NCCA	Naval Center for Cost Analysis
NCF	Navy Corporate Forum
NDAA	National Defense Authorization Act
NDS	National Defense Strategy
NEF	Non-Recurring Expenses Fund
NFR	Notice of Finding and Recommendation
NGRMS	Next Generation Resource Management System
NIFE	Non-traditional Innovation Field Enterprises
NIP	National Intelligence Program
NIS	National Intelligence Strategy
NMS	National Military Strategy
NNSA	National Nuclear Security Administration
NORAD	North American Aerospace Defense Command
NR	Naval Reactors
NSIN	National Security Innovation Network
NSS	National Security Strategy
OASD(IBP)	Office of the Assistant Secretary of Defense (Industrial Base Policy)
OCLL	Office of the Chief, Legislative Liaison
OIBP	Office of Industrial Base Policy
OIG	Office of the Inspector General (NASA)
O&M	Operation and Maintenance
ODNI	Office of the Director of National Intelligence
OLC	Office of Legislative Counsel
OMB	Office of Management and Budget
OPDIV	Operating Division
OPNAV	Office of the Chief of Naval Operations

OPR	Office of Primary Responsibility
O&S	Operation and Sustainment
OSBP	Office of Small Business Programs
OSC	Office of Strategic Capital
OSD	Office of the Secretary of Defense
OTA	Other Transaction Authority
OUSD(A&S)	Office of the Under Secretary of Defense for Acquisition and Sustainment
OUSD(C)	Office of the Under Secretary of Defense for Comptroller
OUSD(P)	Office of the Under Secretary of Defense for Policy
OUSD(R&E)	Office of the Under Secretary of Defense for Research and Engineering
P&FC	Program and Financial Controls Directorate
P2P	Procure-to-Pay
P3I	Preplanned Product Improvement
PA	Prior Approval
PA&E	Program Analysis and Evaluation
PB	President's Budget
P/B	Program/Budget
PBD	Program Budget Decision
PBR	Program and Budget Review
PCS	Permanent Change of Station
PDF	Portable Document Format
PDM	Program Decision Memorandum
PE	Program Element; Program Evaluation
PEO	Program Executive Officer
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctane Sulfonate
PIF	Performance Improvement Framework
PIO	Performance Improvement Officer
PM	Program Manager
POM	Program Objective Memorandum
POR	Program of Record
PPBE	Programming, Planning, Budgeting, and Execution
PPBEA	Planning, Programming, Budgeting, Execution, and Assessment
PPBS	Planning, Programming, and Budgeting System
P&R	Personnel and Readiness
PRB	Program Review Board
PRISM	Program Resources and Information Systems Management
PSA	Principal Staff Assistant
PSM	Professional Staff Member
QFR	Questions for the Record
QRSP	Quick Reaction Special Projects
R&D	Research and Development
R&E	Research and Engineering
RAA	Rapid Acquisition Authority
RAD	Resource Allocation Decision
RAS	Resource Allocation Submission
RCE	Readiness Cost Estimate
RCO	Rapid Capability Office
RDER	Rapid Defense Experimentation Reserve
RDT&E	Research, Development, Test and Evaluation
RFI	Request for Information

RIF	Rapid Innovation Fund
RISE	Rapid Integration and Scaling Enterprises
RMD	Resource Management Decision
RMG	Resource Management Group
ROI	Return on Investment
RS	Resource Sponsor
S8PE	Resource Integration Branch
S&T	Science and Technology
SaaS	Software-as-a-Service
SABRS	Standard Accounting Budgeting and Reporting System
SAC	Senate Appropriations Committee
SAC-D	Senate Appropriations Committee Subcommittee on Defense
SAG	Sub-Activity Group
SAP	State Armaments Program (Russia)
SAR	Selected Acquisition Report
SASC	Senate Armed Services Committee
SBA	Small Business Administration
SBIR	Small Business Innovation Research
SCIF	Sensitive Compartmented Information Facility
SDO	State Defense Order (Russia)
SE	Supply Estimate
SEC	U.S. Securities and Exchange Commission
SER	Strategic Evaluation Report
SES	Senior Executive Service
SF/S8PX	Planning and Analysis Branch
SFA	Strategic Framework Agreement
SKU	Stock-keeping Unit
SLC	Senior Leadership Council
SMP	Strategic Management Plan
SNaP	Select and Native Programming Data Input System
SPM	Strategic Priority Metric
SPPBE	Strategy, Planning, Programming, Budgeting, and Execution
SPR	Strategic Portfolio Review
SRRC	Semi-Annual Readiness Report to Congress
SSA	Support for Strategic Analysis
SSAE	Statement of Standards for Attestation Engagements
SSC	Space Systems Command
STRATFI	Strategic Funding Increase
STTR	Small Business Technology Transfer
SwAF	Swedish Armed Forces
SUnet	Secure Unclassified Network
TACFI	Tactical Funding Increase
TINA	Truth in Negotiations Act
TJO	Tentative Job Offer
TOA	Total Obligation Authority
TMI	Technology Maturation Initiative
TRL	Technology Readiness Level
UARC	University Affiliated Research Center
UK	United Kingdom
UNSECNAV	Under Secretary of the Navy
UPL	Unfunded Priority List

U.S.	United States
U.S.C.	United States Code
USACE	United States Army Corps of Engineers
USAF	Unites States Air Force
USAFCENT	United States Air Forces Central
USCENTCOM	United States Central Command
USEUCOM	United States European Command
USCYBERCOM	United States Cyber Command
USINDOPACOM	United States Indo-Pacific Command
USMC	United States Marine Corps
USN	United States Navy
USD	Under Secretary of Defense
USD(A&S)	Under Secretary of Defense for Acquisition and Sustainment
USD(I&S)	Under Secretary of Defense for Intelligence and Security
USD(C)	Under Secretary of Defense for Comptroller
USD(P)	Under Secretary of Defense for Policy
USD(P&R)	Under Secretary of Defense for Personnel and Readiness
USSOCOM	United States Special Operations Command
VA	[Department of] Veterans Affairs
VCNO	Vice Chief of Naval Operations
WA	Weapon Activities
WHS	Washington Headquarters Services
WSARA	Weapon Systems Acquisition Reform Act
XML	Extensible Markup Language