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June 2023

RESEARCH AND DEVELOPMENT

DOD Benefited from Financial Flexibilities but Could Do More to Maximize Their Use

Accessible Version

GAO-23-105822

GAO Highlights

Highlights of GAO-23-105822, a report to congressional committees

June 2023

RESEARCH AND DEVELOPMENT

DOD Benefited from Financial Flexibilities but Could Do More to Maximize Their Use

Why GAO Did This Study

DOD receives about $95 billion annually to support research and development efforts. Questions have been raised about whether the process used to request and allocate those funds is fast and flexible enough to respond to evolving threats.

Senate Report 117-39 includes a provision for GAO to review DOD financial flexibilities. This report addresses (1) the extent to which DOD communicated information within the department about budget and financial management flexibilities; (2) DOD's use of selected flexibilities, including factors that enabled DOD's use; and (3) whether a selected flexibility that is a pilot effort met leading practices for pilot programs.

GAO reviewed U.S. Code, relevant legislation, and DOD documents to identify flexibilities available during the last five complete fiscal years at the start of this review. GAO selected a nongeneralizable sample of five flexibilities, chosen to provide variation in what they allowed DOD to do, and 25 activities as illustrative examples and to assess their use. GAO interviewed DOD and military department officials.

What GAO Recommends

GAO is making three recommendations to DOD to (1) designate an organization responsible for collecting information about available flexibilities and ensure it shares this information, (2) develop guidance for the lab modernization flexibility, and (3) implement an evaluation plan for the software pilot. DOD concurred with all three recommendations.

View GAO-23-105822. For more information, contact William Russell at (202) 512-4841 or RussellW@gao.gov.

What GAO Found

Congress provided the Department of Defense (DOD) at least 26 authorities related to budgeting and financial management that allowed DOD flexibility in its use of funds to support research and development (R&D), innovation, and modernization activities during fiscal years 2017 through 2021. For example, one flexibility allows laboratory (lab) directors to use a small portion of lab funds to support early research. However, DOD has not communicated information across the department about these flexibilities, which could have limited their use. DOD also does not maintain centralized information on them, but DOD and military department officials GAO spoke with said such a resource would be useful. Army, Navy, and Air Force officials responsible for R&D efforts said they were generally familiar with the five selected flexibilities GAO reviewed, but not others. Responsibility for implementation is dispersed among organizations.

DOD used the five flexibilities GAO reviewed to accelerate R&D efforts. For fiscal years 2017 through 2021, DOD reported making about $4.5 billion available to begin research, construct test centers, and support technology and software development, among other efforts related to these flexibilities.

Examples of Army and Air Force Activities Supported by Two Selected Flexibilities

Army Research Laboratory development of uncrewed aircraft technology and rendition of a test facility at Edwards Air Force Base

Source: Army and Air Force | GAO 23-105822

GAO identified three factors that helped enable DOD officials' use of the five financial flexibilities.

- **Planning** helped officials propose uses of the flexibilities that aligned with agency priorities and structure their use to better meet agency needs.
- **Guidance** outlined the roles, responsibilities, and procedures for using a flexibility. DOD developed guidance for four flexibilities but did not for the lab modernization flexibility, making it more difficult to use, according to officials.
- **Institutional support** included having agency or local leaders who advocated for or provided the management infrastructure to facilitate use.

The software-related pilot flexibility that GAO reviewed did not fully meet leading practices for pilot program design. During the pilot, DOD learned it could not collect the data as planned from all participating programs. DOD is in the process of updating its methodology but has not updated its evaluation plan for assessing the effectiveness of the pilot. Without implementing such a plan, DOD and Congress will lack the information needed to determine whether it should be made permanent.

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Abbreviations

A&S	Acquisition and Sustainment
BA-8	Software and Digital Technology Pilot Programs, also known as Budget Activity Eight
DOD	Department of Defense
FY	fiscal year
FLEX-4	Funding Laboratory Enhancements Across Four Categories
lab	laboratory
Lab Modernization	Defense Laboratory Modernization Program
MILCON	Military Construction
NA	not available
NATO	North Atlantic Treaty Organization
NDAA	National Defense Authorization Act
O&M	Operation and Maintenance
OMB	Office of Management and Budget
OUSD	Office of the Under Secretary of Defense
PPBE	Planning, Programming, Budgeting, and Execution
RAA	Rapid Acquisition Authority
R&D	research and development
R&E	Research and Engineering
RDT&E	research, development, test, and evaluation
RIF	Defense Research and Development Rapid Innovation Program, also known as Defense Rapid Innovation Fund
U.S.C.	United States Code
USD	Under Secretary of Defense

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U.S. GOVERNMENT ACCOUNTABILITY OFFICE
441 G St. N.W.
Washington, DC 20548

June 29, 2023

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

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

During fiscal years 2017 through 2021 the Department of Defense (DOD) received an average of about $95 billion annually to support research, development, test, and evaluation (RDT&E) efforts, but questions have been raised about the process used to request and allocate that money and whether it is fast and flexible enough. Specifically, DOD and defense experts have questioned whether DOD's Planning, Programming, Budgeting, and Execution (PPBE) process—its long-established approach to budgeting and allocating funding—enables DOD to effectively respond to evolving threats and maintain U.S. superiority.[1] Congress recently established a commission to consider potential alternatives to DOD's PPBE process to maximize DOD's ability to respond to current and emerging threats, among other things.[2]

Over the years, Congress has provided DOD some legislative authorities in the budgeting, financial management, and execution, or use, of funds to support research, development, and other innovation and modernization activities. Such authorities often empower DOD to make

[1]Secretary of Defense Robert S. McNamara established DOD's approach in 1961 and there have been incremental changes since.

[2]National Defense Authorization Act for Fiscal Year 2022, Pub. L. No. 117-81, § 1004 (2021), establishing the Commission on Planning, Programming, Budgeting, and Execution Reform.

decisions about the use of certain funds. For example, Congress has given discretion to DOD laboratories (lab) about how to use funds to support basic and applied research, technology transition, workforce development, and minor infrastructure projects.[3]

The Senate Report 117-39, accompanying a bill for the National Defense Authorization Act for Fiscal Year 2022, includes a provision for us to review DOD's existing budget and financial management authorities.[4] This report focuses on selected authorities that were available to DOD during fiscal years 2017 through 2021, the most recent 5 full fiscal years completed at the start of the review. These authorities provided DOD with budget or financial management flexibility in the use of funds to support DOD's research and development (R&D), innovation, and modernization activities. In this report, we refer to both budget and financial management authorities as financial flexibilities or just flexibilities. This report specifically addresses (1) the extent to which DOD communicated information within the department about the financial flexibilities available to support DOD R&D, innovation, and modernization activities; (2) how DOD used selected flexibilities, including the factors that contributed to DOD's use; and (3) the extent to which the selected flexibility that is a pilot program met leading practices for pilot program design.

For the purposes of this report:

- Innovation means developing new capabilities or implementing changes to existing capabilities and practices, such as breakthrough technologies that can cause disruptive effects.[5]
- Modernization means improving or replacing an existing facility, practice, or military technology, such as a weapon or system, with one that is more capable.

[3]See 10 U.S.C. § 4123.

[4]S. Rep. No. 117-39, at 214 (2021).

[5]In our prior work, we reported that disruptive innovation attempts to shift the balance of military power in DOD's favor by providing capabilities potentially unforeseen by adversaries. GAO, *Weapon Systems: Prototyping Has Benefited Acquisition Programs, but More Can Be Done to Support Innovation Initiatives*, GAO-17-309 (Washington, D.C.: June 27, 2017). We also reported that disruptive innovation projects carry a higher risk of failure but can offer significant rewards in the long term. GAO, *Defense Science and Technology: Adopting Best Practices Can Improve Innovation Investments and Management*, GAO-17-499 (Washington, D.C.: June 29, 2017).

To identify information about financial flexibilities, we examined DOD documents and reviewed sections of the United States Code (U.S.C.) and selected sections of the annual defense appropriations and authorization acts for fiscal years 2017 through 2021. We also requested information from, and reviewed our findings with, DOD and military department officials. Appendix I provides further information on each of the financial flexibilities we identified. The list of financial flexibilities identifies a range of available authorities provided by Congress and may not be comprehensive.

From the identified financial flexibilities, we purposefully selected a nongeneralizable sample of five flexibilities to examine in further detail: (1) Funding Laboratory Enhancements Across Four Categories (FLEX-4); (2) Defense Research and Development Rapid Innovation Program, also known as the Defense Rapid Innovation Fund (RIF); (3) Rapid Acquisition Authority (RAA); (4) Software and Digital Technology Pilot Programs, also known as Budget Activity Eight (BA-8); and (5) Defense Laboratory Modernization Program (Lab Modernization). We selected these financial flexibilities to provide variation in what the flexibility allows and whether DOD is required to use the flexibility, among other characteristics. From these five flexibilities, we also selected a nongeneralizable sample of 25 programs, projects, and efforts that used the selected flexibilities, which we collectively refer to as activities. We selected these activities to provide examples of use across DOD and the military departments. We reviewed relevant DOD, Air Force, Army, and Navy documents and conducted semistructured interviews with DOD and military department officials.

To assess each of our objectives, we analyzed DOD and military department documents, relevant guidance, and information obtained from officials. Specifically, we conducted semistructured interviews with DOD and military department officials responsible for R&D organizations, policy, and financial management. We analyzed DOD budget, notification, and reporting documents to determine the funding available for the selected flexibilities from fiscal years 2017 through 2021. To determine which factors enabled DOD's use of the selected flexibilities, we analyzed information from our semistructured interviews with DOD officials and identified the factors that appeared consistently across the interviews. In addition, we reviewed *Standards for Internal Control in the Federal Government* principles related to information and communication and

found them to be applicable to our review.[6] We also compared DOD's implementation of one of the selected flexibilities against leading practices on pilot programs that we identified in prior work and the program's authorizing statute.[7]

For additional information on our objectives, scope, and methodology, see appendix II.

We conducted this performance audit from February 2022 to June 2023 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

Planning, Programming, Budgeting, and Execution Process

DOD decides how much funding to request annually for each military department through the PPBE process. According to DOD, the objective of the process is to provide the department with the most effective mix of forces, equipment, personnel, and support attainable within fiscal constraints. It involves numerous offices within DOD and the military departments; the Office of Management and Budget; the White House; and Congress.

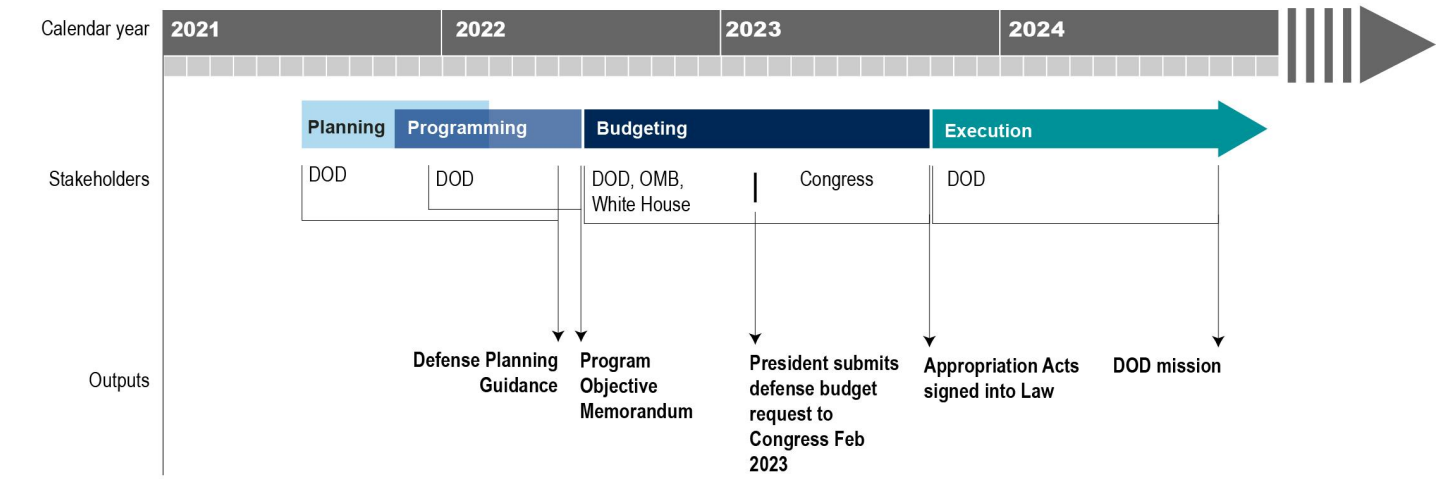
The process begins with strategic planning and ends with the execution, or obligation, and expenditure of funds to complete DOD's mission, such

[6]GAO, *Standards for Internal Control in the Federal Government,* GAO-14-704G (Washington, D.C.: Sept. 10, 2014).

[7]GAO, *Data Act: Section 5 Pilot Design Issues Need to Be Addressed to Meet Goal of Reducing Recipient Reporting Burden,* GAO-16-438 (Washington, D.C.: Apr. 19, 2016).

as developing and delivering technologies to the warfighter.[8] It generally takes around 2 years to obtain funding but can take longer (see fig. 1).

Figure 1: Notional DOD Planning, Programming, Budgeting, and Execution Timeline, Phases, Stakeholders, and Outputs for Fiscal Year 2024 Funding



Source: GAO analysis of Department of Defense (DOD), GAO, and Office of Management and Budget (OMB) information. | GAO-23-105822

In June 2017, we reported that the lengthy PPBE process can slow innovation.[9] For example, a project conceived in November 2021 might not be authorized and appropriated funding until October 2023 or later. Projects that are expected to take 3 to 5 years to complete in effect can require 5 to 7 years from conception to completion. We also reported that these long timelines can make it difficult to achieve the adaptability and faster capability development and fielding times that DOD seeks to keep pace with rapidly evolving threats.[10]

Additionally, over the last 10 years, budget submissions and appropriations acts have generally been late. On average budget submissions were 42 days late and appropriations acts were signed into law 108 days after the fiscal year start. Leaders from both the executive

[8]In general, an obligation is a definite commitment that creates a legal liability of the government for the payment of goods and services ordered or received. An agency incurs an obligation, for example, when it places an order, or signs a contract. An expenditure is the payment or outlay for those goods or services.

[9]GAO-17-499.

[10]GAO-17-309.

and legislative branches have identified lengthy delays in regular appropriations as a threat to national security.[11] In addition, some of these leaders have publicly stated that the delays contribute to ineffective use of funds.

Annual Defense Appropriations

During the budget phase of the PPBE process, Congress drafts legislation that, when signed into law, provides DOD with budget authority in appropriations acts. Congress specifies the purpose for which each appropriation may be used, the amount of budget authority available, and the time period in which it is available under each appropriation. DOD uses that authority during the final phase of the PPBE process to execute its mission. Most of DOD's appropriations can be grouped into five major categories. Appropriations may be used only for their intended purposes and, for fixed-period appropriations, only for a defined period of time. See table 1 for examples of the four categories of appropriations included in this report; the fifth is for Military Personnel. Two of the appropriations categories—RDT&E and Military Construction (MILCON)—are discussed further below.

Table 1: Selected Categories of Defense Appropriations

Appropriation category	Notional examples of use	Years available for new obligation
Research, Development, Test and Evaluation	Funds activities performed by government laboratories, universities and contractors for the research and development of equipment and software, and its test and evaluation	2
Procurement	Funds acquisition programs approved for production and the costs integral to delivering a useful end item intended for operational use or inventory, including purchase of software licenses	3
Operation and Maintenance	Funds civilian salaries, travel, software license renewals, minor construction projects, training and education, depot maintenance, operating military forces, and base operations support	1

[11]During delays in regular appropriations acts, Congress may pass and the President sign a continuing resolution. A continuing resolution is an appropriations act that provides budget authority for federal agencies to continue in operation when Congress and the President have not completed action on the regular appropriations acts by the beginning of the fiscal year. In general, continuing resolutions prohibit new activities and projects for which appropriations, funds, or other authority were not available in the prior fiscal year.

Appropriation category	Notional examples of use	Years available for new obligation
Military Construction	Funds major construction projects such as bases, schools, missile storage facilities, medical/dental clinics, military family housing, sensitive compartmented information facilities, and research and development installations	5

Source: GAO summary of Department of Defense information (Financial Management Regulation, 7000.14-R). | GAO-23-105822

RDT&E

To maintain technological superiority on the battlefield, DOD relies on scientific and technical knowledge developed largely through R&D activities and investments funded by the department and performed by industry, universities, government labs, and others. RDT&E appropriations include eight budget activities and largely fund DOD's R&D efforts.[12] For example, the first three budget activities generally represent efforts undertaken by research laboratories, industry, and academia to advance research in areas important to U.S. military capabilities, drive long-term innovation, and develop technology.[13] The other five budget activities are typically associated with product development for acquisition programs or fielded capabilities and comprise the majority of RDT&E funds.[14]

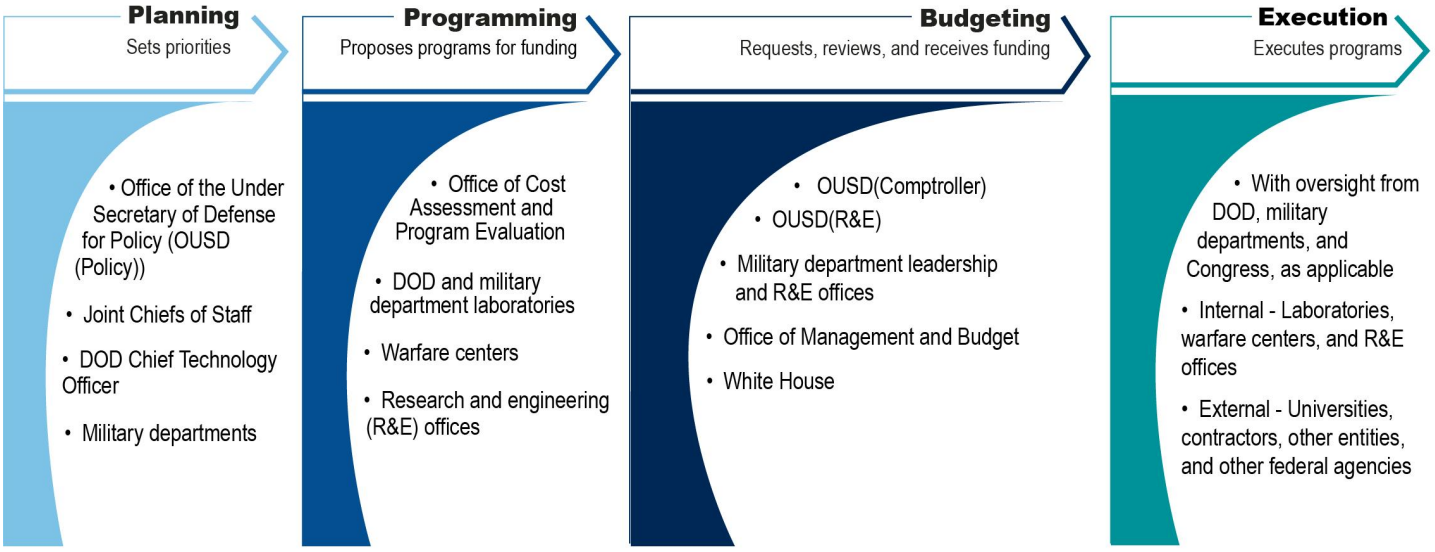
Many organizations within DOD are involved in R&D activities, from setting priorities to execution and oversight. See figure 2 for examples of the stakeholders involved in science and technology funding.

[12]DOD refers to RDT&E budget activities 1 through 3, which support research and development phases, as science and technology. RDT&E budget activities 4, 5, 7, and 8 may support the application of existing knowledge to meet an operational need. Lastly, RDT&E budget activity 6 is for R&D management support. DOD 7000.14-R, Financial Management Regulation, Vol. 2A, Ch. 1 (Oct. 2008) and Vol. 2B, Ch. 5 (Sept. 2022).

[13]According to DOD, research is the systematic study directed toward fuller scientific knowledge or understanding of the subject studied. Development is the systematic use of the knowledge and understanding gained from research, for the production of useful materials, devices, systems, or methods, including the design and development of prototypes and processes. Technology development, for example, generally focuses on demonstrating a proof of concept or feasibility of a technology, rather than development of hardware for operational use.

[14]Product development includes the further advancement of technologies, components, and systems for inclusion in an acquisition program or for operational use.

Figure 2: Examples of DOD Science and Technology Stakeholders in the Planning, Programming, Budgeting, and Execution (PPBE) Process



Source: GAO analysis of Department of Defense (DOD) information. | GAO-23-105822

Some of the key officials and organizations involved in the implementation and oversight of R&D-related efforts include:

- The Under Secretary of Defense for Research and Engineering (USD(R&E))—the principal advisor to the Secretary of Defense for research, engineering, and technology development activities and programs—serves as DOD's chief technology officer. The powers and duties of this office include establishing policies and providing oversight for DOD's research, engineering, and technology development activities.
- The Deputy Chief Technology Officer for Science and Technology supports DOD's research and engineering mission by helping to ensure comprehensive, department-level insight into the activities and capabilities of the defense labs. The Deputy Chief's office carries out a range of core functions related to the defense labs, including analysis of capabilities, alignment of activities, and advocacy.
- The USD(Comptroller)—the principal advisor to the Secretary of Defense for budgetary and fiscal matters—serves as DOD's chief financial officer and administers the budget and execution phases of the PPBE process. The powers and duties of this office include financial management, accounting policy and systems, budget formulation and execution, and contract and audit administration.

- The USD for Acquisition and Sustainment (A&S)—the principal advisor to the Secretary of Defense for all matters relating to acquisition and sustainment, including system design and development; production; installation maintenance, management, and resilience; military construction; and procurement of goods and services, among other things. The powers and duties of this office include establishing policies and providing oversight of the DOD acquisition system, including rapid acquisition policies for urgent operational needs and acquisition of software.
- Military Department Assistant Secretaries of Air Force, Army, and Navy responsible for acquisition, technology, and logistics generally oversee, or have responsibilities related to, R&D. The powers and duties of these offices generally include establishing policies and providing oversight for the military departments' research, engineering, technology development, and acquisition activities.
- Military Department Assistant Secretaries of the Air Force, Army, and Navy responsible for financial management serve as comptrollers of the military departments. They are responsible for policies, procedures, programs, and systems pertaining to finance and accounting activities and operation. The powers and duties of these offices generally include RDT&E budget formulation, the presentation and defense of the budget through the congressional appropriation process, budget execution and analysis, reprogramming actions, and appropriation fund control/distribution.
- Military Department Laboratories conduct R&D activities along with universities, federally-funded research and development centers, and other entities.

Military Construction

MILCON funds R&D-related construction projects, including facility modernization and new construction, among other things. R&D-related construction projects represent a relatively small proportion of needs and compete for funding with other construction projects, such as runways, piers, barracks, schools, hospitals, and other facilities. DOD includes a fraction of its construction-related needs each year in the President's budget request, which can result in neglected facilities that become more costly to maintain and repair. For example, the maintenance portion of the fiscal year 2022 budget request for MILCON included $348 million whereas a couple years earlier, for fiscal year 2020, DOD reported a deferred maintenance backlog of $137 billion. DOD leadership has raised concerns about the performance, reliability, and long-term viability of

DOD's lab and test center infrastructure given the degraded facilities. To assist DOD labs, Congress has authorized certain flexibilities to help address laboratory construction and maintenance needs.

Flexibilities

Congress generally provides defense budget oversight, direction, and authorities to DOD through two annual bills—defense appropriations and authorization acts. Once signed into law, some of these legislative authorities allow DOD to address problems the department or Congress identified by providing DOD with financial flexibility in use of funds to support R&D, innovation, and modernization activities.[15] These financial flexibilities may be limited to relatively small amounts of funding or target high-priority activities, such as addressing improvised explosive devices. Congress can provide temporary financial flexibilities, such as a pilot program for a new budget activity during which DOD and Congress can learn how a change in operations may work without investing relatively large amounts of funds or committing to long-term changes.

Congress can also give DOD the discretion to exercise a financial flexibility or not. For example, Congress authorized the Pilot Program on Modernization and Fielding of Electromagnetic Spectrum Warfare Systems and Electronic Warfare Capabilities in fiscal year 2017, and it remains in effect through fiscal year 2023.[16] However, in May 2018, DOD notified the House of Representatives Committee on Armed Services that it had not established the pilot program because it would instead use modernization plans to improve legacy electromagnetic spectrum warfare and electronic warfare systems.

Financial flexibilities can also vary in terms of the discretion granted to DOD as demonstrated by the five flexibilities examined further in this review.

[15]In addition to the flexibilities examined in this review, Congress has provided DOD other flexibilities that could be used to support DOD R&D, innovation, and modernization efforts. For more information, see appendix I.

[16]National Defense Authorization Act for Fiscal Year 2017, Pub. L. No. 114-328, Div. A, Title II, § 234 (2016). Pursuant to this authority, the Secretary of Defense "may" carry out a pilot program on the modernization and fielding of electromagnetic spectrum warfare systems and electronic warfare systems, and if implemented, the Electronic Warfare Executive Committee shall select the systems.

1. **Funding Laboratory Enhancements Across Four Categories (FLEX-4).**[17] First introduced in fiscal year 2009 and codified in legislation enacted in 2017, this flexibility requires DOD to establish mechanisms for labs to use certain funds. In the event the director of a lab decides to use the flexibility, they must use between two and four percent of the lab's available funds for basic and applied research, workforce development, efforts that support transitioning technology into operational use, and lab repair, revitalization, and minor refurbishment activities. The military departments have internal procedures for determining how to spend these funds but do not have to go through the full PPBE process.
2. **Defense Research and Development Rapid Innovation Program, also known as Defense Rapid Innovation Fund (RIF)**.[18] First introduced in fiscal year 2011 and codified in legislation enacted in 2018, RIF allows DOD to transfer RIF-available funds to department RDT&E appropriations accounts (e.g. from Defense-wide RDT&E to Army RDT&E) to develop innovative technologies. RIF activities focus on maturing and demonstrating technologies in a relevant environment with the goal of transitioning them to defense programs.
3. **Rapid Acquisition Authority (RAA)**.[19] First introduced in fiscal year 2003 and codified in legislation enacted in 2022, RAA allows DOD to use any of its available funds for the urgent acquisition and deployment of capabilities to eliminate deficiencies that could result in mission failure or loss of life. The funding decisions are approved within the department and do not have to go through the planning, programming, and budgeting phases of the PPBE process, but DOD must notify Congress about its use.
4. **Software and Digital Technology Pilot Programs, also known as Budget Activity Eight (BA-8)**.[20] Introduced in fiscal year 2021, this pilot, using a new RDT&E budget activity, allows certain DOD programs to develop, buy, and maintain software using a single appropriation category rather than the three appropriations categories typically required for these types of efforts (RDT&E, Procurement, and Operation and Maintenance [O&M]).

[17]10 U.S.C. § 4123.

[18]10 U.S.C. § 4061.

[19]10 U.S.C. § 3601.

[20]Consolidated Appropriations Act, 2021, Pub. L. No. 116-260, § 8131 (2020).

5. **Defense Laboratory Modernization Program (Lab Modernization)**.[21] First introduced in fiscal year 2016 and codified by the James M. Inhofe National Defense Authorization Act for Fiscal Year 2023, Lab Modernization allows DOD to obligate RDT&E, rather than MILCON, funds to support certain lab- or test center-related military construction. DOD must comply with military construction and congressional notification requirements.

DOD Has Not Communicated Information about Available Financial Flexibilities across the Department

We found that DOD has not broadly communicated information about available financial flexibilities throughout the agency. The Office of the Under Secretary for Defense (OUSD)(R&E), OUSD(Comptroller), and officials from the military departments responsible for research do not maintain centralized information on financial flexibilities that can be used to support DOD's R&D, innovation, and modernization efforts, nor is there a single responsible organization for these flexibilities. Instead, responsibility is distributed across different organizations in the department. OUSD(R&E) and OUSD(Comptroller) officials said that makes compiling information on the flexibilities difficult.

Without centralized information on financial flexibilities, we took steps to identify financial flexibilities available to DOD during fiscal years 2017 to 2021 to support its R&D efforts. The 26 financial flexibilities we identified support: (1) laboratory and test facility needs; (2) technology development; (3) development and fielding of capabilities to address specific threats; or (4) modern software development. We found over half of the 26 flexibilities provided DOD with decision-making over funds that it collected from providing services or that nonfederal government entities contributed towards certain DOD project costs. Table 2 lists the 26 financial flexibilities we identified. Appendix I provides summaries, congressional reporting requirements, and other information about these flexibilities. There may be additional flexibilities that are not included, but this resource may be a helpful starting point.

[21] 10 U.S.C. § 2805(g).

Table 2: Financial Flexibilities Relevant to DOD's Research and Development, Innovation, and Modernization Efforts from Fiscal Years 2017 through 2021

Category	Flexibility	United States Code (U.S.C.) or legislation	Fiscal year originally authorized
Supports laboratory and test facility needs	Availability of Samples, Drawings, Information, Equipment, Materials, and Certain Services	10 U.S.C. § 4892	1994
Supports laboratory and test facility needs	Centers for Science, Technology, and Engineering Partnership	10 U.S.C. § 4124	2016
Supports laboratory and test facility needs	Cooperative Agreements for Reciprocal Use of Test Facilities: Foreign Countries and International Organizations	10 U.S.C. § 2350l	2002
Supports laboratory and test facility needs	Defense Laboratory Modernization Program[a]	10 U.S.C. § 2805(g)	2016
Supports laboratory and test facility needs	Enhanced Transfer of Technology Developed at Department of Defense (DOD) Laboratories	National Defense Authorization Act (NDAA) for Fiscal Year (FY) 2014, Pub. L. No. 113-66, § 801 (2013), as amended, (10 U.S.C. § 4832 note)	2014
Supports laboratory and test facility needs	Federal Defense Laboratory Diversification Program	10 U.S.C. § 4833	1995
Supports laboratory and test facility needs	Mechanism to Provide Funds for Defense Laboratories for Research and Development of Technologies for Military Missions. DOD refers to this flexibility as the Funding Laboratory Enhancements Across Four Categories (FLEX-4)[a]	10 U.S.C. § 4123	2009
Supports laboratory and test facility needs	Pilot Program to Improve Incentives for Technology Transfer from DOD Laboratories	NDAA for FY 2018, Pub. L. No. 115-91, § 233 (2017), as amended (10 U.S.C. § 4832 note)	2018
Supports laboratory and test facility needs	Unspecified Minor Construction – Laboratory Revitalization	10 U.S.C. § 2805(d)	1982
Supports laboratory and test facility needs	Use of Test and Evaluation Installations by Commercial Entities	10 U.S.C. § 4175	1994
Supports technology development	Authority of the Department of Defense to Carry Out Certain Prototype Projects	10 U.S.C. § 4022	2016
Supports technology development	Cooperative Research and Development Agreements: North Atlantic Treaty Organization (NATO) Organizations; Allied and Friendly Foreign Countries	10 U.S.C. § 2350a	1990
Supports technology development	Defense Dual-use Critical Technology Program	10 U.S.C. § 4831	1993

Category	Flexibility	United States Code (U.S.C.) or legislation	Fiscal year originally authorized
Supports technology development	Defense Research and Development Rapid Innovation Program. DOD refers to this flexibility as the Defense Rapid Innovation Fund (RIF)[a]	10 U.S.C. § 4061	2011
Supports technology development	Foreign Contributions for Cooperative Projects	10 U.S.C. § 2350i	1992
Supports technology development	Manufacturing Technology Program	10 U.S.C. § 4841	1994
Supports technology development	Military Aviation and Installation Assurance Clearinghouse for Review of Mission Obstructions	10 U.S.C. § 183a	2018
Supports technology development	Nontraditional and Small Contractor Innovation Prototyping Program[b]	NDAA for FY 2017, Pub. L. No. 114-328, § 884 (2016), as amended	2017
Supports technology development	Prizes for Advanced Technology Achievements	10 U.S.C. § 4025	2000
Supports technology development	Rapid Prototyping Fund[c]	NDAA for FY 2016, Pub. L. No. 114-92, § 804(d) (2015), as amended	2016
Supports technology development	Research Projects: Transactions Other than Contracts and Grants	10 U.S.C. § 4021	1990
Supports development and fielding of capabilities to address specific threats	Joint Improvised-Threat Defeat Fund	Consolidated Appropriations Act, 2017, Pub. L. No. 115-31, Div. C, Title IX, Other Department of Defense Programs (2017)	2017
Supports development and fielding of capabilities to address specific threats	National Defense Sealift Fund	10 U.S.C. § 2218	1993
Supports development and fielding of capabilities to address specific threats	Pilot Program on Modernization and Fielding of Electromagnetic Spectrum Warfare Systems and Electronic Warfare Capabilities	NDAA for FY 2017, Pub. L. No. 114-328, § 234 (2016) (10 U.S.C. § 113 note)	2017
Supports development and fielding of capabilities to address specific threats	Procedures for Urgent Acquisition and Deployment of Capabilities Needed in Response to Urgent Operational Needs or Vital National Security Interest. DOD refers to this flexibility as the Rapid Acquisition Authority (RAA)[a]	10 U.S.C. § 3601	2003
Supports modern software development	Software and Digital Technology Pilot Programs. DOD refers to this flexibility as Budget Activity Eight (BA-8)[a]	Consolidated Appropriation Act, 2021, Pub. L. No. 116-260, § 8131 (2020)	2021

Source: GAO analysis of United States Code, National Defense Authorization Acts, and Consolidated Appropriation Acts. | GAO-23-105822

Note: There may be additional flexibilities not included in this list.

[a]One of five flexibilities GAO selected for further review in this report.

[b]Nontraditional and Small Contractor Innovation Prototyping Program can be found in the Statutory Notes and Related Subsidiaries after 10 U.S.C. Subtitle A, Part V, Subpart F, Chapter 322, Subchapter V.

[c]Rapid Prototyping Fund can be found in the Statutory Notes and Related Subsidiaries after 10 U.S.C. Subtitle A, Part V, Subpart B, Chapter 221.

We found that some Army, Navy, and Air Force officials who are responsible for, or work at, department-level R&D organizations were not familiar with certain flexibilities for technology development and technology transfer. OUSD(R&E), OUSD(Comptroller), and some military department officials explained that an official might not be familiar with some flexibilities because they might be new to their roles, the flexibility is not widely used, or the flexibility does not pertain to their area of responsibility. Some of these officials explained that while a senior official responsible for R&D efforts or laboratory director might not be aware of all available financial flexibilities, they could rely on their staff to provide information about various flexibilities and advocate for use of the flexibility to meet a research need. However, some of these officials stated that leadership's lack of familiarity with financial flexibilities could lead to underuse of flexibilities to support DOD's R&D efforts.

Currently, multiple organizations in DOD conduct their own reviews to identify relevant flexibilities and, through efforts like these, pockets of information exist.

- An Army official responsible for laboratory management and Navy officials responsible for R&D policy said that they review legislation, such as National Defense Authorization Acts and appropriation acts, to identify relevant flexibilities to their area of responsibility, and pass this information to officials within their chain of command.
- Officials in the Office of the Secretary of the Air Force said that they reviewed guidance issued by the Office of Management and Budget and DOD to identify relevant flexibilities. Furthermore, they explained, many program element monitors—officials responsible for a specific program in the budget request—annually review the National Defense Authorization Act to identify applicable flexibilities for their program. Officials said the review is a time-consuming task on top of their primary responsibilities.
- A senior OUSD(R&E) official stated that they collect legislative information about the flexibilities under their purview and share information with lab governance panels. However, we found the information was generally related to hiring authorities rather than financial flexibilities.

- OUSD(Comptroller) publishes a summary of certain flexibilities on its website. However, it was not comprehensive and included two of the 26 flexibilities we identified. In addition, some officials responsible for R&D and financial management said they were not familiar with this resource. OUSD(Comptroller) officials explained this resource generally covers flexibilities that involve their office, such as reprogramming and transfer authorities. The summary is from January 2021, but a responsible official said that they plan to update it in 2023.

However, these officials stated that this information is not necessarily widely available. For example, information OUSD(R&E) collects and shares would not be available to officials who are not part of OUSD(R&E)'s governance panels. As of January 2023, an OUSD(R&E) official stated that they are considering whether to make the information on flexibilities they track available department-wide but do not have a specific timeline for when this would be completed.

In addition, the annual reviews of new legislation may not result in a complete understanding of the breadth of available flexibilities. The reviews do not capture financial flexibilities that are not amended annually. For example, an official could miss the availability of the Enhanced Transfer of Technology Developed at DOD Laboratories flexibility because it was infrequently amended—once in 2016 and 5 years later in 2021. As of March 2023, the flexibility has not been amended.

Army, Navy, and Air Force officials said that having widely available information about the financial flexibilities would be helpful to confirm their understanding of the flexibilities and to ensure they did not miss identifying relevant authorities that could support R&D efforts. For example, they said that a resource with information about a flexibility—such as whether it identifies a funding source, is authorized for a fixed period of time, and has congressional reporting requirements—would help them understand how to use it. In addition, identifying relevant DOD and military department guidance would help facilitate the use of financial flexibilities, according to Army and Navy officials. Air Force officials said that DOD could use existing mechanisms to widely communicate information about the flexibilities, such as having Defense Acquisition University courses cover current financial flexibilities or refer to a resource with such information.

Standards for Internal Control in the Federal Government calls for management to internally communicate the necessary quality information

to achieve an objective.[22] Similarly, we previously reported that DOD should educate users to maximize the use of flexibilities to address various challenges, ranging from quickly fielding solutions to the warfighter to increasing innovation from nontraditional defense contractors.[23] We also reported that DOD increased its use of human capital authorities as the agency's leadership encouraged the use of the authorities and provided guidance to address confusion about the authorities' requirements.[24] Without having a responsible office to regularly collect and provide easily accessible information about the availability of the flexibilities, DOD officials may not be fully leveraging them to further support the department's R&D goals.

DOD Used Selected Flexibilities to Support R&D Efforts but Faced Some Challenges

DOD's use of selected financial flexibilities from fiscal years 2017 through 2021 supported thousands of activities contributing to DOD R&D and efforts to modernize or innovate capabilities for military departments. The use of selected financial flexibilities varied and depended on several factors, such as having to meet specific criteria to use the flexibility or availability of funds. We found planning, guidance, and institutional support enabled DOD's use of the selected flexibilities, but DOD faced challenges when using some of these flexibilities. DOD officials cited numerous benefits that resulted from the use of selected financial flexibilities, including the ability to address R&D and operational needs or requirements that arise outside of DOD's planning, programming, and budgeting process.

[22]GAO-14-704G.

[23]GAO, *Warfighter Support: Improvements to DOD's Urgent Needs Processes Would Enhance Oversight and Expedite Efforts to Meet Critical Warfighter Needs,* GAO-10-460 (Washington, D.C.: Apr. 30, 2010); *DOD Acquisitions: Opportunities May Exist to Increase Utility of Nondevelopmental Items Pilot Program,* GAO-15-285 (Washington, D.C.: Jan. 29, 2015).

[24]GAO, *Defense Acquisition Workforce: DOD Increased Use of Human Capital Flexibilities but Could Improve Monitoring,* GAO-19-509 (Washington, D.C.: Aug. 15, 2019).

DOD's Use of Selected Flexibilities Depended on Availability of Funding and Eligibility Requirements That Aligned with Needs

DOD reported making about $4.5 billion available from fiscal years 2017 through 2021 for the five selected financial flexibilities we reviewed to address specific lab needs, support technology development, develop and field capabilities to address specific threats, and fund software development (see table 3). This amount constituted less than half of the total amount allowed by the selected flexibilities from fiscal years 2017 through 2021, and constituted a small percentage of DOD's RDT&E appropriations overall.[25]

Table 3: Reported Amounts Available for Selected Flexibilities from Fiscal Years 2017 through 2021

Dollars represent amounts DOD reported as available, rounded to nearest million. BA-8 was not available (NA) in fiscal years 2017 through 2020.

Flexibility	2017	2018	2019	2020	2021	Total
Funding Laboratory Enhancements Across Four Categories (FLEX-4)	299	459	530	559	620	**2,467**
Defense Research and Development Rapid Innovation Program, also known as Defense Rapid Innovation Fund (RIF)	250	250	241			**741**
Rapid Acquisition Authority (RAA)	424		155	18		**597**
Software and Digital Technology Pilot Programs, also known as Budget Activity Eight (BA8)	NA	NA	NA	NA	588	**588**
Defense Laboratory Modernization Program (Lab Modernization)				111		**111**
Total	**973**	**709**	**926**	**688**	**1,208**	**4,504**

Source: GAO analysis of Department of Defense (DOD) information. | GAO-23-105822

DOD's use of the five selected flexibilities varied, in part, based on the availability of funding and the needs the flexibilities were designed to address. For example, FLEX-4 allows lab directors to use between 2 to 4 percent of their labs' available funds in support of activities in four categories that generally align with routine lab performance. In December 2018, we reported that this affords lab directors greater ability to make

[25]During fiscal years 2017 through 2021, DOD's reported RDT&E obligational authority totaled almost $477 billion. To identify the total amounts allowed by the selected flexibilities, we analyzed the parameters in the various authorities. For example, pursuant to the Lab Modernization statutory authority, DOD may obligate up to $150 million of RDT&E funds in a fiscal year for certain military construction projects at specific laboratories, facilities supporting technology development programs, and RDT&E facilities. 10 U.S.C. § 2805(g).

their own decisions over which activities the lab prioritizes and the means to fund those activities.[26] In contrast, DOD used RAA as needed to meet specific urgent or emergent requirements to eliminate deficiencies that could result in the loss of life or mission failure, which led to more sporadic use during this time. The following further details use and conditions under which the funding can be used for each selected flexibility.[27]

FLEX-4. FLEX-4 was the most frequently used of the selected flexibilities, funding thousands of activities across military department labs during fiscal years 2017 through 2021, according to DOD.[28] Its overall use has increased across the military departments since 2017, when we previously found that the military departments were not maximizing their use of the flexibility.[29] Some labs applied the full 4 percent allowed by statute to FLEX-4 activities. Other labs increased their use as of fiscal year 2022 or have plans to do so in the near future. According to DOD, each of the military departments takes its own approach to funding FLEX-4.[30]

DOD reported that FLEX-4 provides labs with flexibility to exploit scientific advances, respond to threats outside the PPBE cycle, and address lab-identified priorities.[31] According to DOD, it provides funding for critical

[26]GAO, *Defense Science and Technology: Actions Needed to Enhance Use of Laboratory Initiated Research Authority,* GAO-19-64 (Washington, D.C.: Dec. 20, 2018).

[27]Some flexibilities also have reporting or information sharing requirements, which are highlighted in appendix I.

[28]OUSD(R&E), DOD Funding Laboratory Enhancements Across Four Categories (FLEX-4) Program, Mechanisms to Provide Funds for Defense Laboratories for Research and Development of Technologies for Military Missions, summary reports for fiscal years 2017 through 2021.

[29]GAO-19-64.

[30]The Air Force Research Laboratory identifies a portion of its RDT&E appropriations. Participating Army labs generally use a combination of their appropriations (RDT&E, O&M, and Procurement) and reimbursable customer funding sources. The Navy generally uses a portion of its Navy Working Capital Fund for participating Naval Warfare Centers' and Laboratories' activities.

[31]Department of Defense (DOD), Office of the Under Secretary of Defense (OUSD), Research and Engineering (R&E), *DOD Funding Laboratory Enhancements Across Four Categories (FLEX-4) Program, Mechanisms to Provide Funds for Defense Laboratories for Research and Development of Technologies for Military Missions, Fiscal Year 2021 Report* (July 22, 2022).

activities that would not otherwise receive funding. For example, a quarter of the Air Force's FLEX-4 basic and applied research category supports seedling initiatives to prove new concepts—providing initial funding for initiatives that could contribute to key future advances, according to DOD. Air Force officials explained that without FLEX-4 spending minimums, lab funds may be redirected to technologies with existing missions. FLEX-4 also helps by offering support for building and shaping labs' talent pool in new and emerging technology areas, according to DOD. For example, officials from some of the selected activities said FLEX-4 offered opportunities to grow and deepen staff knowledge and experience in the areas of artificial intelligence and autonomy.

RIF. Congress directly funded RIF in fiscal years 2017 through 2019, supporting hundreds of R&D and technology demonstration activities across DOD.[32] However, Congress has not appropriated funding for the program since fiscal year 2019, and DOD did not include RIF in its fiscal year 2020 or fiscal year 2021 RDT&E budget requests. RIF program officials said that DOD uses RIF's original appropriation and provides funds in response to purchase requests based on a project or administrative request, rather than leveraging the flexibility's authority to transfer funds to the RDT&E account of a military department or unified combatant command for special operations forces. Officials said that this approach gives DOD RIF officials more control to reallocate funds across activities. For example, funds may become available for reallocation if activity costs are lower than expected or an underperforming activity is terminated.

Government and industry, small businesses in particular, have raised concerns over the lack of funds to mature technologies enough to be included in an acquisition program or delivered to the warfighter.[33] Military department and OUSD(R&E) Manufacturing Technology officials said that

[32]OUSD(R&E), *U.S. Department of Defense Rapid Innovation Fund: Report to Congress on Section 878 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116-92)* (June 26, 2020). Appendices updated as of July 2022. Individual RIF activities were generally $3 million or less; higher dollar activities required additional approvals. In fiscal year 2020, the project limit increased to $6 million before additional approvals are required. 10 U.S.C. § 4061.

[33]We have previously reported that the acquisition community often needs a higher level of technology maturity than is developed within the science and technology community, thereby requiring additional federal or private-sector investment to bridge what DOD refers to as the "valley of death." GAO, *Defense Advanced Research Projects Agency: Key Factors Drive Transition of Technologies, but Better Training and Data Dissemination Can Increase Success*, GAO-16-5 (Washington, D.C.: Nov. 18, 2015).

RIF provides such funds and, without RIF, the selected activities would have been delayed or otherwise unsupported. As of July 2022, RIF officials said that 50 percent of activities funded using fiscal years 2017 through 2019 appropriations have transitioned or have plans to transition to operational use. A couple of RIF program managers said that the 50 percent transition rate means they are taking on appropriate risk to achieve innovation, and a higher transition rate would mean that they are not investing in new technologies.

RAA. RAA's use varied from fiscal years 2017 through 2021 because it is used in limited circumstances, as urgent needs generally arise outside of the normal PPBE cycle. Some officials have called RAA "a last resort" because it is used when immediate action is needed and when no other funding source is available. DOD reported using RAA a total of 13 times in fiscal years 2017, 2019, and 2020, each year staying below the limits allowed for each category annually.[34] RAA users needed to identify funds from any existing DOD appropriations to acquire available solutions or products requiring minimal development to fulfill the urgent requirements. For example, a Marine Corps official said that they identified unused O&M dollars from a lower priority activity to purchase an available uncrewed aircraft system from industry to address an urgent operational need.

RAA users said that other funding mechanisms, such as reprogramming, could support urgent or emerging needs. However, officials we spoke with said that other funding mechanisms can take too long to execute and solutions risk becoming irrelevant when addressing immediate needs.

BA-8. DOD received fiscal year 2021 RDT&E funds for eight software development programs in the pilot program.[35] These participating programs represented several departments across DOD and varied in size. DOD reported fiscal year 2021 funding for participating programs ranged from approximately $11 million at some departments to $230 million at others. DOD's internal selection criteria included that nominated programs had to previously have been fully-funded and preference was given to programs already participating in separate, Agile-related pilot

[34]RAA projects under the 804 rapid acquisition pathway category currently are limited to $50 million in a fiscal year. The annual limit for the other three categories is currently $200 million each in a fiscal year. 10 U.S.C. § 3601.

[35]Pub. L. No. 116-260, § 8131(a).

programs.[36] DOD proposed adding other programs to the BA-8 pilot in its subsequent budget requests. However, according to the report accompanying fiscal year 2023 defense appropriations, the appropriation committees' agreement encouraged DOD to stop proposing additional programs until it first demonstrated its ability to collect quantitative data on performance improvements provided by the pilot program.[37]

According to DOD, effective software engineering typically requires concurrent technical work addressing bug fixes and existing vulnerabilities while developing new capabilities. These tasks may map to different appropriation categories based on statute and DOD financial regulations. However, BA-8 allows approved programs to use RDT&E funds for tasks that might otherwise be covered under multiple, separate appropriation categories. According to OUSD(A&S), BA-8 is not viewed as a "silver bullet." While it helps address some challenges for adopting commercial software development practices, it will not resolve all issues. OUSD(A&S) officials explained that a program office can use multiple appropriation categories when developing software using an Agile approach, but the flexibility to use one appropriation category can make it easier.

Lab Modernization. Lab Modernization was the least used of the selected flexibilities, funding three Air Force construction activities in fiscal year 2020. DOD requested and received $111 million of the maximum $150 million that the flexibility allows in any fiscal year. Its use, similar to RAA, is at DOD's discretion. DOD must include Lab Modernization military construction projects in the annual budget submission to Congress. Users of this flexibility must adhere to MILCON planning and reporting procedures, such as completing a planning and estimate document included in DOD's request for construction funding.

Some officials we spoke with expressed concerns about this flexibility, indicating that infrequent use could be due to funding procedures and noted that requests to use this flexibility could negatively affect labs' funding. For example, a request to use RDT&E funding for a construction project that otherwise would use MILCON funding could give the impression that a lab does not need the RDT&E funding for its non-

[36]We discuss the pilot program in further detail later in this report.

[37]Joint Explanatory Statement, Div. C, Title IV, Research, Development, Test and Evaluation, Software and Digital Technology Programs, at 657-658, accompanying the Consolidated Appropriations Act, 2023, Pub. L. No. 117-328 (2022).

construction R&D efforts. In addition, some officials said that there was confusion because, when the Air Force used the flexibility, the funds were provided using MILCON instead of RDT&E funding. Further, in a report, the Senate Appropriations Committee stated that it supported the activities DOD proposed using the flexibility and understood DOD's challenge in prioritizing small but critical lab construction projects. However, it encouraged DOD to request MILCON funds rather than RDT&E funds as allowed by the flexibility.[38] According to Air Force officials, the department's MILCON approval processes take too long to meet high-priority RDT&E construction needs. For example, Air Force officials said that it could take between 5 to 15 years to get a project through the military department's approval process.

Planning, Guidance, and Institutional Support Enabled DOD's Use of Flexibilities, But Users Faced Challenges with Some Flexibilities

Based on our analysis of interviews with users of the five selected financial flexibilities, we identified three factors—(1) planning, (2) guidance, and (3) institutional support—that enabled effective use of the flexibilities.

Planning. This factor refers to actions that DOD officials took prior to using a selected flexibility. DOD and military department officials described planning as critical to leveraging each of the five flexibilities. Specifically, planning helped officials align flexibility activities with agency priorities, structure activities to meet desired outcomes, mitigate externalities hindering the use of flexibilities, and combine the selected financial flexibilities with other authorities, such as direct hire authority and other transaction authority, to optimize their use. For example, officials from all three military departments stated that planning helped

[38]S. Rep. No. 116-103, at 167 (2019) stated: "The fiscal year 2020 President's budget request includes $111,000,000 in research, development, test and evaluation [RDTE], Air Force funding to support three projects authorized by the Fiscal Year 2019 National Defense Authorization Act (Public Law 115–232) for the fiscal year 2017 Defense Laboratory Modernization Pilot Program. The Committee supports the three projects, but transfers the funding from the Defense appropriations bill to the Military Construction appropriations bill for more appropriate execution and oversight. The Committee understands the Department of Defense's challenge in prioritizing small, but critical laboratory construction projects with larger, higher profile construction projects. However, the Committee encourages the Department of Defense to appropriately request the funding in the Military Construction appropriations bill."

align FLEX-4 minor military construction or repair of laboratory infrastructure and equipment activities with their modernization priorities. To that end, Army officials told us that they built the Robotics Research Collaboration Campus with FLEX-4 funding to provide expanded capabilities for the experimentation and testing of autonomous systems—a DOD modernization priority—at a more accessible location. Moreover, military department officials noted problems associated with delays in the availability of funding needed to initiate new projects using the financial flexibilities.[39] Some of these officials stated that delays in using the new budget activity led to the program offices having to use an alternate approach while a continuing resolution was in effect and dealing with financial systems processes afterwards. Planning can help officials decide how to execute funding and structure their projects to accommodate such delays.

Guidance. This factor refers to the availability of formal documentation that specifies roles, responsibilities, and procedures for using a flexibility. DOD or military departments established guidance for four of the five selected flexibilities. Appendix III lists the primary guidance associated with each flexibility. There is no formal guidance governing Lab Modernization, and potential users of the Lab Modernization flexibility told us that they were unsure how to use it. For example, Air Force Research Laboratory officials said that they did not use this flexibility, in part, because of difficulty in understanding how to use it. Air Force Test Center officials used the flexibility but said the lack of guidance made obtaining approvals more difficult. Specifically, a Test Center official said that they had to educate staff in numerous other DOD organizations each time the Test Center attempted to use the flexibility. Further, guidance could clarify for officials when to use this flexibility in-lieu of requesting MILCON. An official within OUSD(R&E) told us that they informed potential users of this flexibility in the past but did not provide guidance. They said that the language of the flexibility is self-explanatory and they had not received requests for clarification. However, the agency is responsible for identifying departmental procedures for using the flexibility, such as the organizations responsible for approving its use. After we brought the lack of guidance to OUSD(R&E)'s attention, an official said that they plan to issue policy for Lab Modernization in fiscal year 2023.

[39]During fiscal years 2017 through 2021 the enactment of regular defense-related appropriations acts was delayed four times for between approximately 2.5 and 7 months.

Standards for Internal Control in the Federal Government states that management should communicate quality information down and across reporting lines to enable personnel to perform key roles to achieve objectives, address risks, and support the internal control system.[40] Our past work has also recommended DOD develop guidance for using flexibilities, such as RAA, which it did.[41] Guidance could facilitate DOD's use of Lab Modernization to expedite construction efforts in accordance with this authority and address any questions about approvals or the flexibility's relationship with MILCON funding.

Institutional support. This factor refers to having organizational leaders or officials who work directly with programs using the flexibilities advocate or provide the management and organizational infrastructure to facilitate their use. DOD and military department officials using the five selected flexibilities described institutional support as an enabling factor.

- **Advocacy**. DOD and military department leaders have demonstrated support through consistent, and in some cases, increased, resources for some flexibilities. Air Force, Army, Navy, and OUSD(R&E) officials described FLEX-4 as critical to DOD's modernization and technological advances. For example, Navy officials stated that FLEX-4 fostered collaboration between experts in modeling and simulation as well as artificial intelligence to learn how coordination of autonomous vehicles perform in a variety of tactical scenarios. With BA-8, DOD leaders proposed the flexibility to Congress in DOD's Fiscal Year 2021 budget request and, in 2021, DOD received authority to pilot eight BA-8 programs. DOD requested pilot expansion in subsequent years that could help DOD better understand the use of BA-8 and knowledge acquired across different software programs that used the flexibility.
- **Management and organizational infrastructure**. According to multiple users, the Joint Rapid Acquisition Cell within DOD played an

[40]GAO-14-704G.

[41]GAO, *Warfighter Support: DOD's Urgent Needs Processes Need a More Comprehensive Approach and Evaluation for Potential Consolidation*, GAO-11-273 (Washington, D.C.: Mar. 1, 2011).

important role in facilitating the military departments' use of RAA.[42] For example, a Marine Corps official said that Joint Rapid Acquisition Cell support staff was helpful in moving the Marine Corps' requirement through the RAA process and ensured that the RAA package was appropriately staffed. FLEX-4 users across the Air Force, Army, and Navy also described knowledgeable officials within the labs they could turn to with questions about the process for proposing activities for FLEX-4 funding and for support when using the flexibility.[43] At the local level, an official at Edwards Air Force Base advocated for the Lab Modernization flexibility and, despite the lack of guidance, developed procedures for using it to support test center construction at three locations.

By comparison, we identified a lack of institutional support in the RIF program. For example, DOD did not include RIF in its Fiscal Year 2020 or Fiscal Year 2021 RDT&E budget requests, and Congress did not appropriate funding for it. A DOD official stated that DOD senior leadership did not support RIF as a funding priority at that time but anticipated DOD leadership may include RIF in future budget requests. The official explained that previously, leadership may not have fully understood the importance of this program and its effect on the science and technology community, in part, due to the RIF program's lack of reporting on its work. DOD has updated the RIF implementing procedures to emphasize connections to DOD's modernization priorities and identify an office responsible for the program. DOD has also enhanced its guidance and reporting, and developed its organizational infrastructure for reviewing proposals and making awards with an aim of shortening its timelines.

Some officials said that they encountered resistance when using BA-8 and RAA flexibilities because these require deviation from the execution of funding that officials were accustomed to using. For example, a Space Force official using BA-8 said that both experienced and junior financial management staff were hesitant to use the RDT&E budget activity for sustainment or procurement activities because the flexibility goes against established procedures or they were unfamiliar with what the flexibility

[42]The Joint Rapid Acquisition Cell receives and evaluates requests to meet emergent or urgent warfighter needs that have been validated by senior DOD officials and designates responsibility for fulfilling urgent needs to DOD organizations. Joint Rapid Acquisition Cell officials help DOD organizations use RAA to acquire funding to meet an urgent warfighter need.

[43]Each military department has established a general process and otherwise delegated responsibility for determining which projects will receive FLEX-4 funding.

allowed. In contrast, institutional support helped address resistance that could discourage or slow flexibility use. For example, a DOD official working on another BA-8 program described an environment in which the entire program office, including financial management staff, were committed to making this flexibility work. They said that staff acquired expertise and familiarity with what the flexibility allowed, helping them to maximize benefits of BA-8.

DOD Used Selected Flexibilities to Accelerate Funds to R&D Efforts

According to the users of the five flexibilities who we interviewed, the flexibilities' use allowed them to address R&D and emerging needs more quickly by avoiding certain steps in the PPBE process. Agency officials stated that, because the PPBE process can take several years to make funds available for use, innovation opportunities or emerging needs can be difficult to address.

The flexibilities supported users' efforts to revitalize or refurbish labs and test centers, begin early research, mature technologies to transition into programs, and promote software development, among other things. Agency officials who used the flexibilities said that without them, their projects would have experienced delays, delivered less capability to address a need, or run the risk of being unfunded.

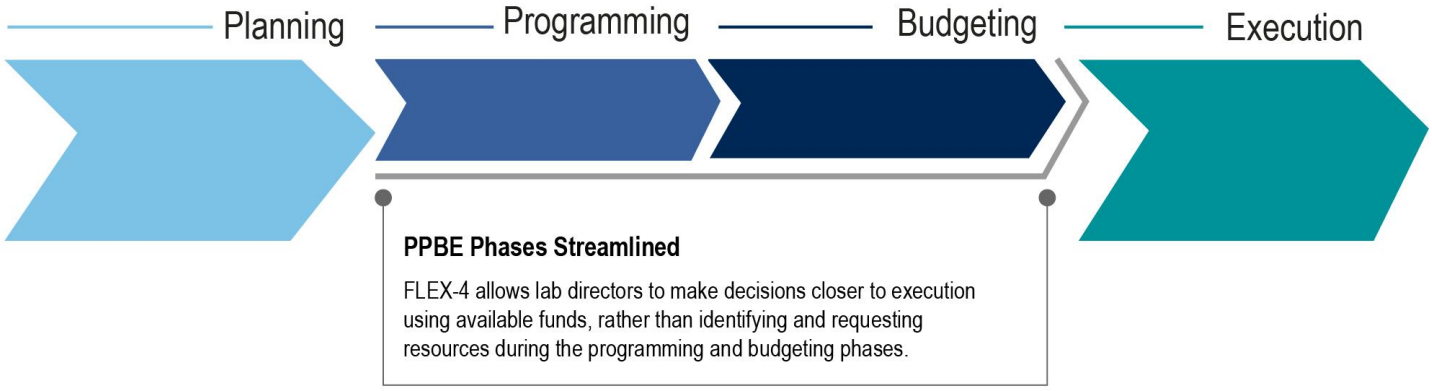
Below are high-level summaries of each selected flexibility, including DOD identified benefits; the PPBE phases streamlined; and examples of the contributions to research, development, innovation, and modernization.

FLEX-4

Overall, DOD and agency officials said that FLEX-4 contributes to innovation, the military departments' modernization, and national defense strategy by expanding knowledge. Officials said FLEX-4 also increases the capacity and size of the workforce and creates opportunities to explore, develop, and test new technologies and their potential uses. Further, it streamlines parts of the PPBE process (see fig. 3).

Figure 3: Funding Laboratory Enhancements Across Four Categories (FLEX-4) Benefit and Planning, Programming, Budgeting, and Execution (PPBE) Phases

Allows laboratory (lab) directors to make timely resourcing decisions, according to DOD, based on lab-specified needs to support: **a)** basic or applied research, **b)** efforts that support technology transition, **c)** workforce development, or **d)** lab revitalization or refurbishment.



Source: GAO analysis of United States Code and Department of Defense (DOD) information. | GAO-23-105822

Specific examples officials identified include:

- **Expanded research and testing opportunities**. Air Force, Army, and Navy officials said that FLEX-4 positions labs to conduct current and future research and testing. For example, Air Force officials for the Enriched Understanding of Hypersonic Materials activity said that the flexibility is supporting hypersonic material testing and simulation efforts. They are testing materials and developing prediction models that will help inform the next generation of materials. Without FLEX-4, officials said that the activity would be delayed several fiscal years.
- **Workforce development opportunities**. Navy and Army officials said that FLEX-4 increased workforce development opportunities. For example, Army officials said that the Distinguished Postdoctoral Fellowship and Research Associateship Program helps bring in top-level scientists and engineers to better address the Army's innovation and modernization needs. These participants can introduce new techniques to a lab and expand lab relationships with universities.

Selected Funding Laboratory Enhancements Across Four Categories Activities

Material Testing in an Extreme Environment

Uncrewed Aircraft Systems

Uncrewed Surface Vehicle Demonstration

Sources: In order of appearance Air Force, Army, and Navy. | GAO-23-105822

- **Seed funding for early research**. Army and Air Force officials said that FLEX-4 provided funding for future efforts. For example, the Army used FLEX-4 funding to jump-start its Emerging Overmatch Technology activity. Army officials said that the flexibility was critical in maturing the technology and demonstrating the uncrewed aircraft systems' ability to achieve cooperative protection for small units of combat vehicles. As a result, they said that the Army has requested funding through the PPBE process to further develop this technology.
- **Investment in lab infrastructure**. Air Force, Army, and Navy officials said that FLEX-4 provided critical funding for lab infrastructure, ranging from investing in equipment to refurbishing and renovating buildings. Air Force officials said that FLEX-4 is meant to help the labs keep pace with some infrastructure needs, despite what they view as a lack of prioritization for DOD R&D infrastructure, which they said is a strategic issue for the department.[44] However, officials from each of the military departments said that the $6 million cap on minor military construction limits the types of investments labs can make for repair or minor military construction of laboratory infrastructure and

[44]These officials explained it can take 5 to 10 years for an infrastructure project to be included in the prioritization list, and even longer to be included in the MILCON budget request.

equipment.[45] Since we spoke with these officials, Congress increased the cap to $9 million.[46]

- **Increased collaboration with program offices, within the labs, and with outside entities**. Army and Navy officials said that their use of FLEX-4 provided opportunities for collaboration within their military departments and with industry. The Army used FLEX-4 funds to construct facilities with convenient and collaborative spaces, and the Navy used FLEX-4 funds to support cooperative agreements with industry. In both situations, agency relationships benefitted from the availability of the funds, resulting in time and cost savings. For example, Ship-to-Shore Navy officials said that they collaborated with other warfare centers and industry partners to develop a water-based, small, uncrewed surface vehicle—which served as a proof of concept for similar technologies. Navy officials said that industry partnerships provided additional expertise and the prototype vehicle used. Further, the team received important feedback from potential users following the demonstrations, which we have previously identified as a leading practice when developing new technologies.[47]

RIF

The RIF flexibility allows DOD to transfer available funding to expedite support for further developing technologies that solve operational challenges and contribute to addressing national security needs. RIF funded awards that aim to transition technologies to military programs. It offers opportunities to streamline the PPBE process (see fig. 4).

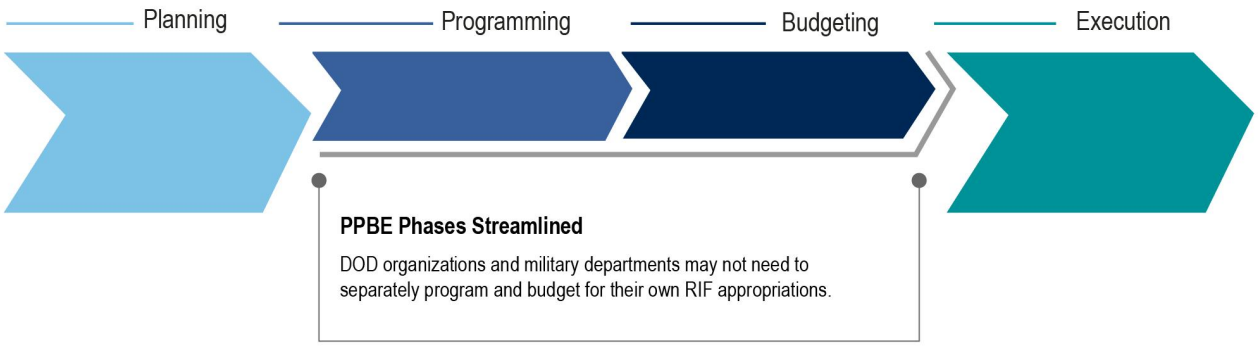
[45]A corresponding authority (Unspecified Construction—Laboratory Revitalization) allows DOD to use three funds—(1) O&M appropriations, (2) MILCON appropriations not authorized by law for laboratory revitalization, or (3) FLEX-4 funds—to support the revitalization and recapitalization of DOD laboratories. 10 U.S.C. § 2805(d). This statute defines an unspecified minor military construction project as a military construction project that has an approved cost equal to or less than $6,000,000. FLEX-4 authority is codified at 10 U.S.C. § 4123.

[46]Pub. L. No. 117-263, § 2801.

[47]GAO, *Leading Practices: Agency Acquisition Policies Could Better Implement Key Product Development Principles,* GAO-22-104513 (Washington, D.C.: Mar. 10, 2022).

Figure 4: Defense Research and Development Rapid Innovation Program, also known as Defense Rapid Innovation Fund (RIF) Benefit and Planning, Programming, Budgeting, and Execution (PPBE) Phases

Allows DOD to transfer available funds to the research, development, test, and evaluation accounts of military departments, defense agencies, and special operations forces. This transfer authority is in addition to other transfer authorities. RIF supports the development of innovative and promising technologies.



Source: GAO analysis of United States Code and Department of Defense (DOD) information. | GAO-23-105822

Specific examples of benefits officials identified include:

Selected Defense Research and Development Rapid Innovation Program, also known as Defense Rapid Innovation Fund, Activity

Army Demonstration of Communication Prototype

Source: Kathryn Bailey/Bowhead Business and Technology Solutions. | GAO-23-105822

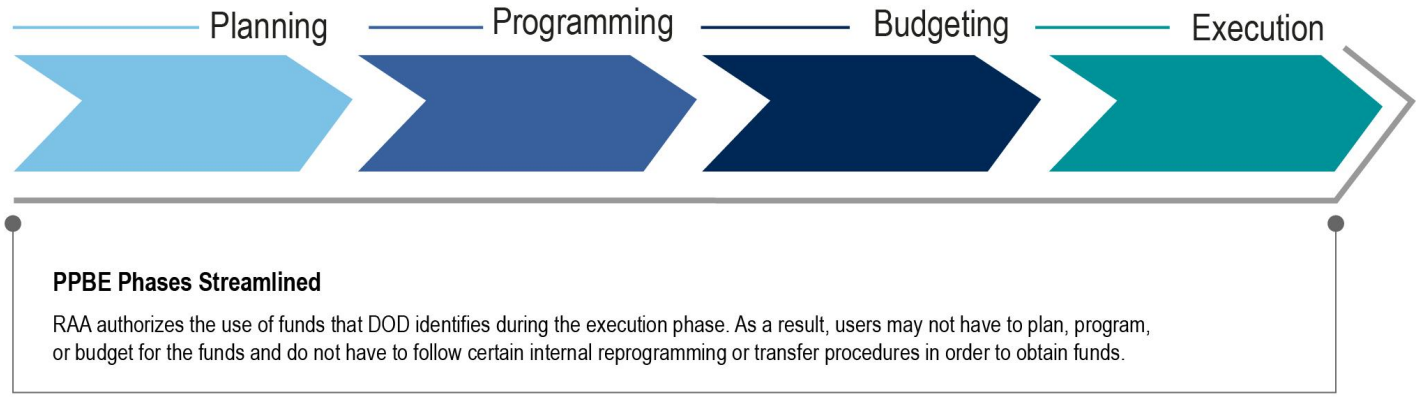
- **Assisted technology transition**. OUSD(R&E) and Navy officials said that the RIF program provides funding to bridge experimental research and acquisition programs. For example, a Navy official said that, when the Rapid Acquisition Sensor and Response activity first received RIF funding, the technology to track submarines was at the early lab development phase, but has since moved to operational environment testing. They said that the activity's technology now has a program office to sponsor its transition into a program of record. The Navy official said that the maturation of the technology or the interest in the activity by a program of record would not have been possible without RIF support.
- **Informed future strategies**. An Army official said that RIF activities that do not transition to a program of record can help inform future efforts. For example, they said that the results from the Mobile Ad-Hoc Networking in Congested and Contested Environments Prototype's activity assessment, which included potential users, provided valuable information for shaping other network design goals. Additionally, the technology remains a consideration for future communication capabilities.

RAA

According to DOD officials, RAA is beneficial in cases where there are insufficient resources to address an urgent need, such as preventing loss of life. It also streamlines parts of the PPBE process (see fig. 5).

Figure 5: Rapid Acquisition Authority (RAA) Benefit and Planning, Programming, Budgeting, and Execution (PPBE) Phases

Allows DOD to quickly access funds to urgently acquire and deploy capabilities to eliminate deficiencies that have resulted in or will result in combat casualties, could result in loss of life or mission failure, or to eliminate a deficiency caused by a cyberattack; or to initiate a project to address compelling national security needs requiring the initiation of a rapid prototyping and fielding effort.



Source: GAO analysis of relevant defense authorization acts and Department of Defense (DOD) information and interviews. | GAO-23-105822

Specific examples of benefits officials identified include:

Selected Rapid Acquisition Authority Activity

Air-mobile COVID-19 Isolation Container

Loading Container onto Aircraft

Source: Air Force. | GAO-23-105822

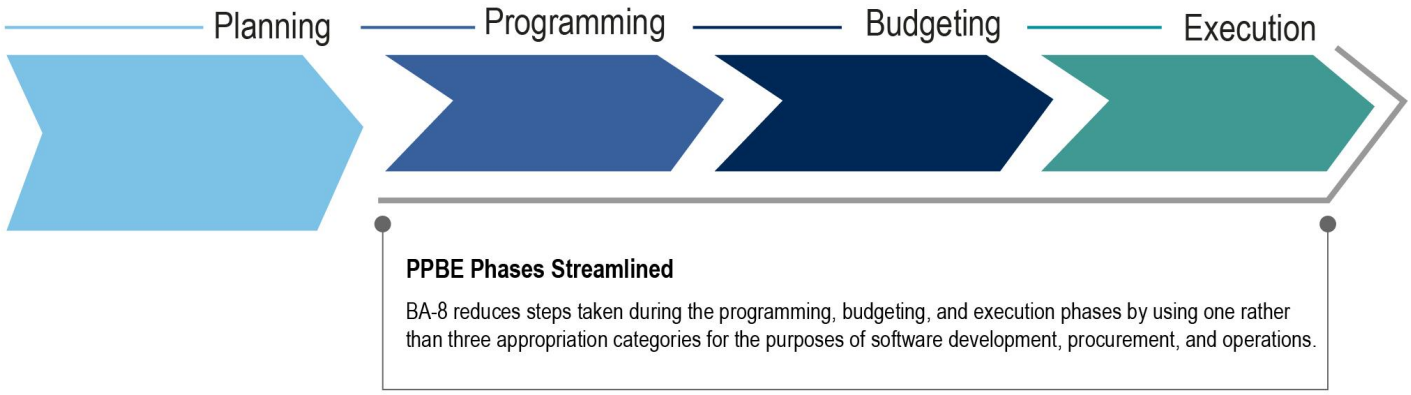
- **Reduced internal barriers in meeting urgent or emergent needs**. Air Force, Army, and Marine Corps officials said that they could have addressed certain needs without RAA, but officials would not have been able to obtain the solution quickly enough, or at the speed of relevance, to meet their urgent or emergent needs. For example, Army officials for the Counter-Small Unmanned Aircraft Systems activity said that they could have used reprogramming, but to do so would have taken 1 to 2 years longer.
- **Solutions met immediate needs and provided enduring capability**. Army, Marine Corps, and Air Force officials said that there were limited solutions available to address different emerging needs, which resulted in using or building on existing solutions in the commercial sector to develop or procure a new capability that could be used in other situations going forward. For example, Air Force officials said that the COVID-19 airlift activity not only met the urgent need for transporting COVID-19 patients while keeping the crew safe, it is available to transport patients with other deadly diseases.

BA-8

Officials said that benefits of BA-8 are primarily related to time and labor savings by staff spending less time on administrative activities, such as programming and budgeting for multiple appropriations. BA-8 streamlines parts of the PPBE process (see fig. 6).

Figure 6: Software and Digital Technology Pilot Programs, also known as Budget Activity Eight (BA-8) Benefit and Planning, Programming, Budgeting, and Execution (PPBE) Phases

Allows DOD to use a single research, development, test, and evaluation (RDT&E) budget activity to cover RDT&E expenses as well as procurement and operation and maintenance expenses related to certain software and digital technology programs. According to DOD, this reduces administrative time that would be invested in programming, budgeting, and executing multiple budget requests, allowing increased team focus on capability development; increased ease and ability to obtain software licenses; and decreased budgeting risks.



Source: GAO analysis of relevant defense appropriations acts and Department of Defense (DOD) information and interviews. | GAO-23-105822

Specific examples officials identified include:

Notional Software and Digital Technology

Source: A Stockphoto/stock.adobe.com. | GAO-23-105822

- **Increased focus on developing capabilities**. Space Force and Army program officials said that BA-8 allowed their teams to focus more on providing capabilities to users, such as tools to detect cyber threats on department networks, rather than on activities or steps that occur during the programming or budgeting PPBE phases. For example, Space Force program officials said that BA-8 allows them to operate with lean financial management staff focusing more resources on the technical aspects of the program.
- **Solutions that better align with customer and capability need**s. Army and Space Force program officials said that BA-8 helped when program requirements shifted from needing to buy a renewal license to purchasing new software. Without flexible funds, these officials said that they would have likely selected a solution based on available funding options rather than using BA-8's available funding to find a solution that best met program needs.
- **Reduced budget risk for program offices**. Navy program officials said that they would not have accurately predicted RDT&E needs when creating their BA-8 program's fiscal year 2022 budget request. During execution, they told us that they learned the software needed significantly more development than previously expected. Without the

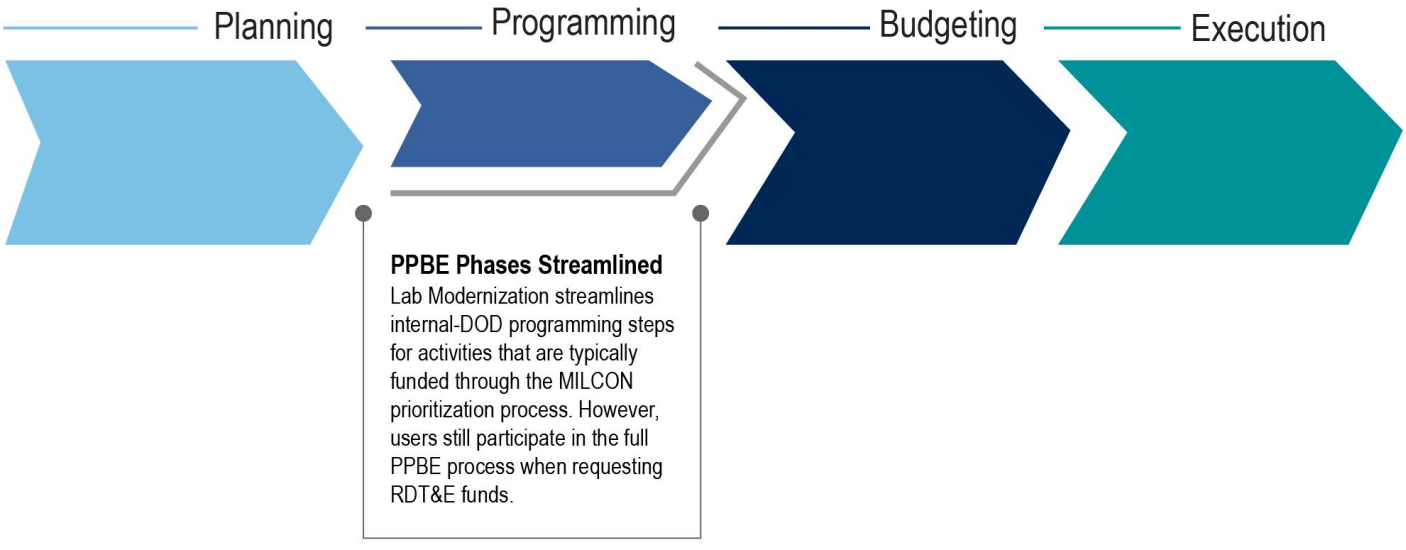
flexibility offered by BA-8 to pivot between development and maintenance efforts, officials said that they would have delivered less capability in fiscal year 2022.

Lab Modernization

Lab Modernization can allow labs and test centers to build or rehabilitate facilities to operate using the latest technology. It also streamlines part of the PPBE process (see fig. 7).

Figure 7: Defense Laboratory Modernization Program (Lab Modernization) Benefit and Planning, Programming, Budgeting, and Execution (PPBE) Phases

Allows DOD to use research, development, test, and evaluation (RDT&E), rather than military constructions (MILCON), funds for the purposes of building or revitalizing certain facilities, such as labs and test centers. By using RDT&E appropriations, RDT&E decisionmakers compare proposed activities against RDT&E needs thereby reportedly avoiding competition with other MILCON activities and the resulting, lengthy programming process.



Source: GAO analysis of relevant defense authorization and appropriations acts and Department of Defense (DOD) information and interviews. | GAO-23-105822

Officials identified that Lab Modernization also:

- **Provided a funding path for lab and test centers that would otherwise not be available**. Air Force officials said that RDT&E projects do not compete well in the MILCON process or rate highly on the prioritization list. They explained that construction addressing the health and safety of the service members and their families are higher priorities in the budget process. The Air Force used Lab Modernization to construct a Joint Simulation Environment facility at Edwards Air Force Base. This facility provides new testing capabilities for the F-35 Lightning II and other aircraft for entities across DOD. Air Force officials said that, without Lab Modernization, the construction of the facility would not be possible as there would not have been a funding path to support it.

Selected Defense Laboratory Modernization Program Activity

Rendition of Joint Simulation Environment Facility at Edwards Air Force Base

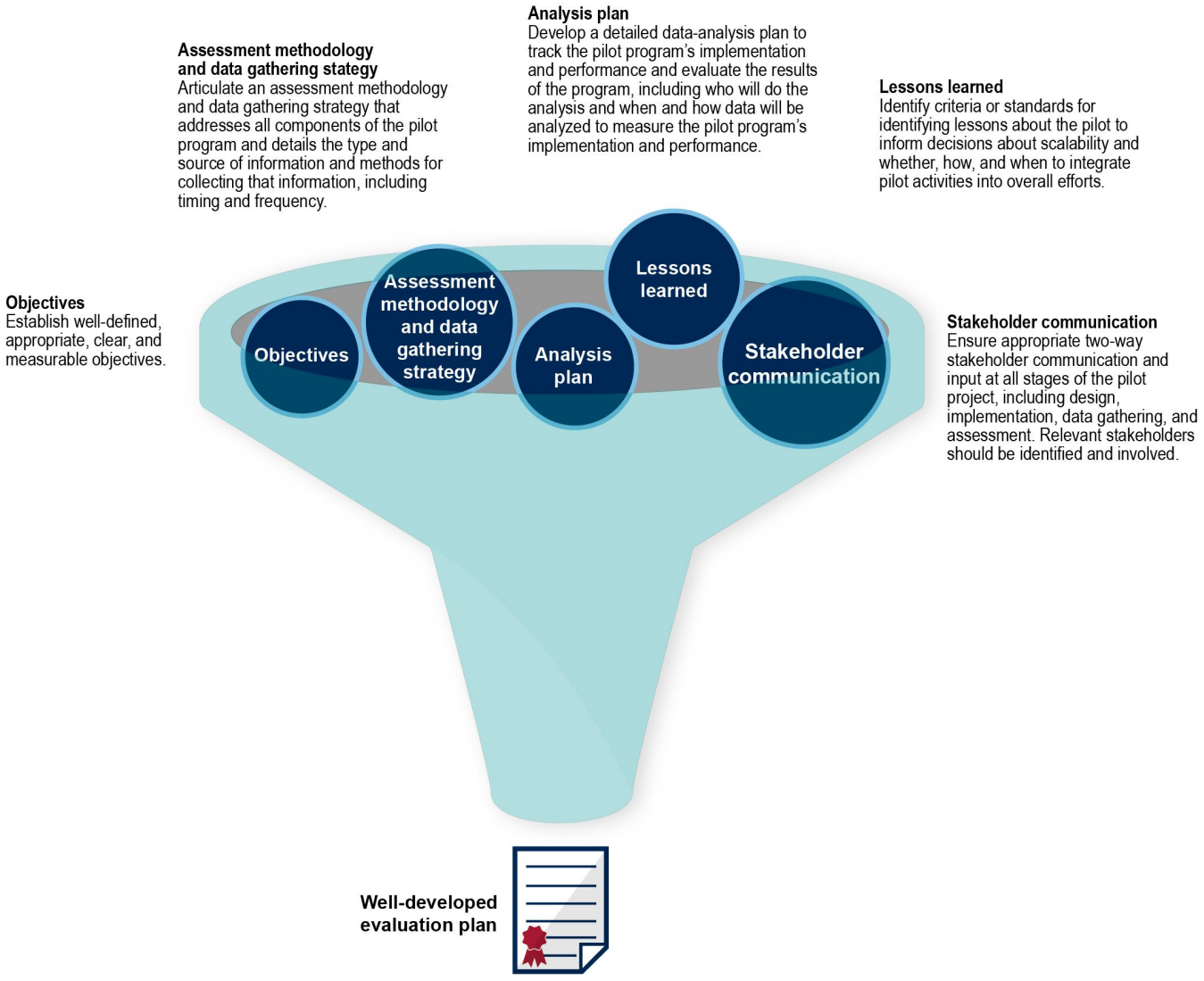
Source: Air Force. | GAO-23-105822

BA-8 Financial Flexibility Partially Met Leading Practices

We found DOD partially met leading practices we identified in prior work related to pilot design for BA-8, the one selected flexibility that is currently a pilot program. Our previous work found that implementing these leading practices for pilot design can help ensure agency assessments of the pilot produce the information needed to make effective program and policy decisions. Such a process enhances the quality, credibility, and usefulness of evaluations, in addition to ensuring time and resources are used effectively. The five leading practices form a framework for effective pilot design and evaluation.[48] Figure 8 summarizes these five leading practices for pilot design.

[48]GAO-16-438.

Figure 8: Leading Practices that GAO Identified for Pilot Program Design



Source: GAO. | GAO-23-105822

Congress established the BA-8 pilot in fiscal year 2021. The pilot identified eight software programs allowed to use the single RDT&E budget activity and eight programs using the traditional appropriation categories—RDT&E, Procurement, and O&M—for comparison. Before implementing the pilot, DOD had to establish metrics and develop a plan for assessing each program using the single appropriation, such as comparing program performance against their own historical performance

and a comparison group of eight, traditionally funded programs. DOD was directed to report quarterly on the pilot's progress.

DOD submitted a plan to congressional defense committees for assessing the pilot and developed guidance for implementing the pilot. However, we found that DOD has not fully met the five leading practices for pilot design (see table 4).

Table 4: Software and Digital Technology Pilot Program (BA-8) Partially Met Leading Practices for Pilot Design

Leading practice	GAO assessment (Met, Partially Met, or Did not Meet)
Establish well-defined, appropriate, clear, and measurable objectives	Met
Clearly articulate assessment methodology and data gathering strategies	Partially Met
Document lessons learned	Partially Met
Develop plan to evaluate pilot results	Partially Met
Ensure appropriate stakeholder communication	Partially Met

Source: GAO analysis of Department of Defense information. | GAO-23-105822

Establish well-defined, appropriate, clear, and measurable objectives. OUSD(A&S) is responsible for the BA-8 pilot and established measurable objectives in its implementation plan, such as BA-8's effect on programs using the single appropriation category. Although OUSD(A&S) officials said that they are adjusting some strategies described in their implementation plan, they expect BA-8's objectives to remain unchanged.

Clearly articulate assessment methodology and data gathering strategies. As of April 2023, OUSD(A&S) officials have not updated their assessment and data collection methodologies. At the start of the BA-8 pilot, OUSD(A&S) outlined metrics for participating programs, including descriptions, frequency, and methods of data collection, in its June 2021 implementation plan and pilot agreements. DOD used these agreements to ensure that mechanisms were in place to provide consistent monitoring and data collection for the pilot. However, the pilot ran for about a year and a half without all programs having agreed to ensure mechanisms were in place. Most participating programs signed their respective pilot agreements in fiscal years 2020 and 2021, but several programs using the traditional funding structure did not fully sign their pilot agreements until early fiscal year 2023. Furthermore, OUSD(A&S) officials said that they have not implemented the methodologies described in those documents. For example, OUSD(A&S) officials said that they realized metrics outlined in the pilot agreements, such as product development

time and lead-time for changes, were not consistently measurable across participating programs. OUSD(A&S) officials said that they are in the process of establishing new strategies to better understand BA-8's effect on Agile software development for participating programs.

Document lessons learned. OUSD(A&S) officials said that they generally capture program feedback in a shared drive and ask programs to provide information about their experience. But they have not formally documented lessons learned and do not have plans in place to review lessons if any are collected. DOD plans to share lessons gathered during the pilot in its final report and identified program managers or their designee as being responsible for collecting them. Officials for the four selected BA-8 programs in our review told us that they share insights regarding their use of the new budget activity and participation in the pilot with OUSD(A&S) officials at monthly and quarterly meetings but do not formally collect lessons learned.

Develop plan to evaluate pilot results. OUSD(A&S) detailed its plans to assess the pilot in its June 2021 implementation plan. However, officials told us that they are not consistently collecting the data that would be used in their evaluation and, after consulting with participating programs, cannot use the planned metrics to evaluate the pilot. OUSD(A&S) officials said that they have yet to fully establish or document an updated evaluation plan.

Ensure appropriate two-way stakeholder communication. OUSD(A&S) officials communicate with participating programs on a quarterly and monthly basis, but officials said that affected programs were not involved in the design phase of the BA-8 pilot. OUSD(A&S) officials said that engaging stakeholders during BA-8's development might have helped them avoid using metrics that were not applicable for some programs.

In addition, OUSD(A&S) is in the process of responding to congressional concerns about the adequacy of its required quarterly reporting. OUSD(A&S) is required to provide updates on the pilot's progress, but OUSD(A&S) officials said that the reports they provided were anecdotal and did not clearly address the Senate Appropriations Committee's requests for quantitative data. OUSD(A&S) officials said that members of Congress raised concerns about OUSD(A&S)'s reporting in November 2021 and did not want to add more programs without data to support claims about the pilot's effect. Further, the explanatory statement accompanying DOD's fiscal year 2023 appropriations encouraged DOD

to refrain from submitting additional pilot programs until DOD can demonstrate its ability to provide data on performance improvements.[49] OUSD(A&S) officials told us that they are working through potential solutions but have yet to establish new procedures or plans to analyze collected data. As OUSD(A&S) continues to adjust its strategies, incorporating the elements of a well-developed evaluation plan would better position DOD to provide more informative updates to Congress regarding the effectiveness of the pilot.

DOD has an opportunity to build on knowledge obtained over the past 2 years through interactions with stakeholders and address congressional concerns by using the leading practices for pilot design. Without a well-developed evaluation plan, including strategies for assessing lessons learned and BA-8's effect on participating programs, DOD and Congress will lack the information needed to assess the effectiveness of the pilot and whether this financial flexibility should be made permanent.

Conclusions

With research and development efforts, innovation and technology evolution can stem from bursts of sporadic insight that occur outside the PPBE cycle. DOD seeks to quickly identify and pursue promising emerging technologies for its innovation and modernization purposes, in part, by leveraging opportunities to streamline its lengthy PPBE process. Congress has provided a set of flexibilities to help DOD be more agile; however, the department could do more to take full advantage of them. DOD could use our work as a starting point for regularly communicating and disseminating information about the most recently available flexibilities and provide regular updates on any changes Congress may make to existing or new flexibilities. With easily-accessed information available department-wide, DOD would be better positioned to identify opportunities to leverage the flexibilities and the value they provide. In addition, having guidance on how to use these flexibilities could help DOD maximize their use. Furthermore, for pilot programs, implementing a well-developed evaluation plan can help DOD know what effect changes from its normal operations are having, whether they are generating the

[49]168 Cong. Rec. S8174, S8175 (2022). The DOD Appropriations Act for Fiscal Year 2023 included seven programs in the pilot, omitting an eighth that was previously included. Pub. L. No. 117-328, § 8107.

anticipated benefits, and whether there is a good business case to make the changes permanent.

Recommendations for Executive Action

We are making the following three recommendations to the Secretary of Defense:

The Secretary of Defense should ensure the Deputy Secretary of Defense designates a primary office responsible to regularly collect current information about the financial flexibilities that are available to support DOD's research and development, innovation, and modernization efforts and ensures the office makes the information easily accessible department-wide. (Recommendation 1)

The Secretary of Defense should ensure the Under Secretary of Defense for Research & Engineering develops guidance for the Defense Research Laboratory Modernization program that communicates the purpose, roles and responsibilities, time frames, procedures, and other relevant information needed to effectively implement this flexibility. (Recommendation 2)

The Secretary of Defense should ensure the Under Secretary of Defense for Acquisition & Sustainment implements an evaluation plan, developed using leading practices for pilot design for assessing the effectiveness of the Software and Digital Technology Pilot Programs, also known as Budget Activity Eight (BA-8). (Recommendation 3)

Agency Comments and Our Evaluation

We provided a draft of this report to DOD for review and comment. In its comments, reproduced in appendix IV, DOD concurred with our three recommendations and provided technical comments, which we incorporated as appropriate.

In its response to the first recommendation, DOD concurred and stated that OUSD(C) plans to use existing administrative processes to expand access and understanding of the processes available to support DOD activities.

In response to the second recommendation to develop guidance for the Defense Research Laboratory Modernization Program, DOD stated in its letter it concurred. DOD also stated in its letter that it provided additional context to be considered for the final report. Specifically, in its response, OUSD(R&E) disagreed that the 26 financial flexibilities we identified are all financial flexibilities. OUSD(R&E) also noted that it did not agree that many of the flexibilities are not used. However, DOD did not identify which, if any, of the flexibilities included in our report were not "financial" and did not provide an alternative definition or additional support. Our report explains that this term includes both budget and financial management authorities. In addition, our report provides a number of examples of how the flexibilities are used and outlines opportunities to increase use further with additional actions. We continue to believe that regularly collecting and sharing information about financial flexibilities available to support DOD's research and development, innovation, and modernization efforts and developing guidance for the Defense Laboratory Modernization Program would better position DOD to use these and future authorities.

DOD also agreed with the third recommendation to develop an evaluation plan to assess the effectiveness of the Software and Digital Technology pilot program.

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

If you or your staff have any questions about this report, please contact me at (202) 512-4841 or RussellW@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix V.

William Russell
Director, Contracting and National Security Acquisitions

Appendix I: Authorities That Could Support Certain DOD Efforts during Fiscal Years 2017 through 2021

Congress generally provides oversight, direction, and authorities to DOD on the defense budget through two annual bills—defense appropriations and authorization acts. Once signed into law, some of these legislative authorities permit DOD to address problems the department or Congress identified. Some of these authorities provide DOD with budget or financial management flexibility in use of funds to support research and development (R&D), innovation, and modernization activities, which we refer to as financial flexibilities.

This audit examined financial flexibilities available specifically to DOD during fiscal years 2017 through 2021 (see table 5).

Table 5: Authorities That Allowed DOD Flexibility in Use of Funds Specifically to Support Research and Development (R&D), Innovation, and Modernization Efforts during Fiscal Years 2017 through 2021

Category	Authority (listed in alphabetical order)	United States Code (U.S.C.) and/or source of authorizing legislation	Summary of authority	Time frame of authority	Reporting requirements in authorizing legislation
Supports laboratory and test facility needs	Availability of Samples, Drawings, Information, Equipment, Materials, and Certain Services	10 U.S.C. § 4892 Originally authorized by the National Defense Authorization Act (NDAA) for Fiscal Year (FY) 1994, Pub. L. No. 103-160, Div. A, Title VIII, § 822(b)(1) (1993), as amended	The authority allows Department of Defense (DOD) to use the fees collected from making available the (1) services of any government laboratory, center, range, or other testing facility for the testing of materials or other items; and (2) facilities, services, and equipment of a government laboratory, research center, or range. DOD may credit the fees to the appropriations accounts or funds used to make the items and services available. The fees may not be more than the amount needed to recoup the direct and indirect costs of making these items and services available.	No expiration date	None

Category	Authority (listed in alphabetical order)	United States Code (U.S.C.) and/or source of authorizing legislation	Summary of authority	Time frame of authority	Reporting requirements in authorizing legislation
Supports laboratory and test facility needs	Centers for Science, Technology, and Engineering Partnership	10 U.S.C. § 4124 Originally authorized by NDAA for FY 2016, Pub. L. No. 114-92, Div. A, Title II, § 211(a) (2015), as amended	The authority allows DOD to decide whether the amount received by a Center for work performed under a public-private cooperative agreement ("partnership") may be (1) credited to the appropriation account or fund that incurs the cost of performing the work or (2) used consistent with the FLEX-4 authority in 10 U.S.C. § 4123. The Director of a Center can enter into a public-private partnership to foster cooperation and technology transfer between the armed forces, academia, private industry, and state and local government; maximize the use of the Center; increase the Center's access to a skilled technical workforce; or achieve other objectives. DOD designates science and technology reinvention laboratories as Centers for Science, Technology, and Engineering Partnership.	No expiration date	None

Category	Authority (listed in alphabetical order)	United States Code (U.S.C.) and/or source of authorizing legislation	Summary of authority	Time frame of authority	Reporting requirements in authorizing legislation
Supports laboratory and test facility needs	Cooperative Agreements for Reciprocal Use of Test Facilities: Foreign Countries and International Organizations	10 U.S.C. § 2350l Originally authorized by NDAA for FY 2002, Pub. L. No. 107-107, Div. A, Title XII, §1213(a) (2001), as amended	The authority requires DOD to credit funds collected from a foreign country or international organization using a U.S. test facility to the appropriation accounts used to provide this service. Under a memorandum of understanding or other agreement with a foreign country or international organization, DOD must charge the party to the agreement for using DOD's facilities to test defense equipment for direct costs and may charge for indirect costs related to this service.	No expiration date	None
Supports laboratory and test facility needs	Defense Laboratory Modernization Program	10 U.S.C. § 2805(g) Originally authorized by NDAA for FY 2016, Pub. L. No. 114-92, Div. B, Title XXVIII, §2803 (2015), as amended	The authority allows DOD to obligate up to $150 million of research, development, test, and evaluation (RDT&E) funds in a fiscal year for certain military construction projects at specific laboratories, facilities supporting technology development programs, and RDT&E facilities. The military construction projects must support R&D activities, potentially allow entities outside DOD to use the facilities, be endorsed by more than one military department or defense agency, and not be fully funded by other authorities.	No expiration date	The Secretary of Defense is required to include military construction projects proposed under the program in DOD's annual budget justification documents that are submitted to Congress. Also, the Secretary of Defense is required to notify the congressional defense committees of the construction project no less than 14 days prior to the first obligation of funds.

Category	Authority (listed in alphabetical order)	United States Code (U.S.C.) and/or source of authorizing legislation	Summary of authority	Time frame of authority	Reporting requirements in authorizing legislation
Supports laboratory and test facility needs	Enhanced Transfer of Technology Developed at DOD Laboratories	Originally authorized by NDAA for FY 2014, Pub. L. No. 113-66, Div. A, Title VIII, §801 (2013), as amended (10 U.S.C. § 4832 note)	The authority requires DOD to use royalties and other payments from licensing computer software or documentation to reward employees who developed or substantially increased the technical value of the computer software. Rewards cannot exceed $75,000 per year for each person unless approved by the President. DOD laboratories receive the remaining balance, and the laboratory where the software was developed receives the majority of the remaining balance. The laboratories then decide whether to use the funds to (1) reward employees; (2) further scientific exchange among laboratories; (3) train employees; (4) pay for expenses incidental to the administration and licensing of intellectual property; or (5) for R&D. DOD must also move leftover royalties or other payments to the U.S. Treasury.	Expires on December 31, 2026	The Secretary of Defense must develop and implement a plan to collect and analyze data about the use of this authority to (1) develop and share best practices; and (2) provide information to Congress about the use of this authority. Also, the Secretary of Defense must submit a report to the congressional defense committees about the activities carried out under this authority by December 31, 2025.

Category	Authority (listed in alphabetical order)	United States Code (U.S.C.) and/or source of authorizing legislation	Summary of authority	Time frame of authority	Reporting requirements in authorizing legislation
Supports laboratory and test facility needs	Federal Defense Laboratory Diversification Program	10 U.S.C. § 4833 Originally authorized by NDAA for FY 1995, Pub. L. No. 103-337, Div. A, Title XI, §1113(a) (1994), as amended	The authority requires DOD to ensure that nonfederal government participants in a cooperative arrangement make a substantial contribution to the total cost of activities related to the R&D of dual-use technologies. The amount that these participants should contribute depends on their risks and potential benefits from the activities. The cooperative arrangement aims to promote cooperation between DOD laboratories and industry on the R&D of dual-use technologies to further national security objectives. The cooperative arrangements can be between DOD laboratories, and eligible firms and nonprofit research corporations and can include other federal laboratories, institutions of higher education, agencies of state and local governments, and other appropriate entities.	No expiration date	None

Category	Authority (listed in alphabetical order)	United States Code (U.S.C.) and/or source of authorizing legislation	Summary of authority	Time frame of authority	Reporting requirements in authorizing legislation
Supports laboratory and test facility needs	Mechanism to Provide Funds for Defense Laboratories for Research and Development of Technologies for Military Missions Note: DOD refers to this authority as Funding Laboratory Enhancements Across Four Categories (FLEX-4).	10 U.S.C. § 4123 Originally authorized by Duncan Hunter NDAA for FY 2009, Pub. L. No. 110-417, Div. A, Title II, §219 (2008), as amended	FLEX-4 gives discretion to DOD laboratories about how to use funds for the following general categories: (1) basic and applied research, (2) programs that support transitioning technology into operational use, (3) workforce development, and (4) repair or minor military construction of laboratory infrastructure and equipment. FLEX-4 allows the director of a defense laboratory to use between 2 to 4 percent of all funds available to the laboratory to fund the four categories, and to charge customers a fixed percentage fee that may not exceed four percent of costs.	No expiration date	The Secretary of Defense is responsible for establishing and maintaining mechanisms to share information on FLEX-4's achievements, best practices, lessons learned, and other information in both unclassified and classified forms. Also, the Secretary is responsible for notifying the congressional defense committees of the total project costs before using FLEX-4 funds for the repair or minor military construction of laboratory infrastructure projects.

Category	Authority (listed in alphabetical order)	United States Code (U.S.C.) and/or source of authorizing legislation	Summary of authority	Time frame of authority	Reporting requirements in authorizing legislation
Supports laboratory and test facility needs	Pilot Program to Improve Incentives for Technology Transfer from DOD Laboratories	Originally authorized by NDAA for FY 2018, Pub. L. No. 115-91, Div. A, Title II, §233 (2017), as amended (10 U.S.C. § 4832 note)	Under the pilot program, DOD laboratories must use a portion of the royalties and other payments received from licensing their inventions, and licensing and assigning inventions under agreements entered into by the laboratories, to pay inventors as applicable and/or may pay employees who substantially increased the technical value of the invention. Also, the laboratories may decide to use the royalties or other payments as appropriate to: (1) reward employees; (2) further scientific exchange among laboratories; (3) train employees; (4) pay for expenses incidental to the administration and licensing intellectual property; or (5) conduct R&D. The cumulative payments to an inventor employed at the laboratory cannot be more than $500,000 per year. If an inventor is no longer a laboratory employee, cumulative payments cannot exceed $150,000 per year unless approved by the head of the agency.	Expires on September 30, 2025	None

Category	Authority (listed in alphabetical order)	United States Code (U.S.C.) and/or source of authorizing legislation	Summary of authority	Time frame of authority	Reporting requirements in authorizing legislation
Supports laboratory and test facility needs	Unspecified Minor Construction – Laboratory Revitalization	10 U.S.C. § 2805(d) Originally authorized by Military Construction Codification Act, Pub. L. No. 97-214, §2(a) (1982), as amended	The authority allows DOD to use amounts from: (1) appropriations for operations and maintenance (O&M), (2) appropriations for military construction not authorized by law, or (3) FLEX-4 funds to support minor military construction for the revitalization and recapitalization of DOD laboratories. The minor military construction cannot cost more than $9 million, a temporary increase from $6 million that will remain in effect until December 1, 2025.	No expiration date	The Secretary of Defense is required to notify the appropriate congressional committees about the decision to carry out an unspecified minor military construction project for laboratory revitalization. DOD can carry out the project after 14 days from the date the notification is received by the committees.
Supports laboratory and test facility needs	Use of Test and Evaluation Installations by Commercial Entities	10 U.S.C. § 4175 Originally authorized by NDAA for FY 1994, Pub. L. No. 103-160, Div. A, Title VIII, § 846(a) (1993), as amended	The authority requires DOD to include a contract provision in which a commercial entity that uses a Major Range and Test Facility installation under its contract must reimburse the department for all direct costs associated with test and evaluation activities conducted under the contract. Furthermore, the authority requires DOD to credit those funds to the appropriations account associated with those activities. Also, the authority allows DOD to decide whether to include a contract provision where it is reimbursed for indirect costs related to the use of the installation.	No expiration date	None

Category	Authority (listed in alphabetical order)	United States Code (U.S.C.) and/or source of authorizing legislation	Summary of authority	Time frame of authority	Reporting requirements in authorizing legislation
Supports technology development	Authority of the Department of Defense to carry out certain prototype projects	10 U.S.C. § 4022 Originally authorized by NDAA for FY 2016, Pub. L. No. 114-92, Div. A, Title VIII, §815(a)(1) (2015), as amended	The authority allows DOD to enter into a transaction for a prototype project in situations where at least one-third of the total cost of the project is paid out of funds provided by sources other than the federal government. Prototype projects could enhance the mission effectiveness of military personnel and supporting platforms. Approval procedures for entering into a transaction for a prototype project and follow-on production vary by dollar amount.	No expiration date, with the exception of pilot authority under (i) for use of other transactions for installation or facility prototyping	The Secretary of Defense must submit an annual report to congressional defense committees on the use of other transaction agreements for research projects and prototype projects, among other contracting vehicles, and associated funding. Also, DOD must provide a written notification to the congressional defense committees 30 days before the authority can be exercised for transactions for a prototype project that are greater than $500 million, and at the time of exercising the authority for transactions for follow-on productions that are greater than $100 million.

Category	Authority (listed in alphabetical order)	United States Code (U.S.C.) and/or source of authorizing legislation	Summary of authority	Time frame of authority	Reporting requirements in authorizing legislation
Supports technology development	Cooperative Research and Development Agreements: North Atlantic Treaty Organization (NATO) Organizations; Allied and Friendly Foreign Countries	10 U.S.C. § 2350a Originally authorized by NDAA for FYs 1990 and 1991, Pub. L. No. 101-189, Div. A, Title IX, §931(a)(2) (1989), as amended	The authority requires DOD to share the costs of a project equitably with the country or organization that is party to a cooperative R&D project on defense equipment and munitions unless the Secretary of Defense or delegate makes a written determination to share the costs unequally. Parties to a memorandum of understanding or other formal agreement to a cooperative R&D project can include NATO organizations and allied and friendly foreign countries. To enter into a memorandum of understanding or other agreement, the Secretary of Defense must determine that the project will improve conventional defense capabilities.	No expiration date	The Secretary of Defense must submit a report about the proposed memorandum or formal agreement to the Senate Committees on Armed Services and on Foreign Relations, and to the House of Representatives Committees on Armed Services and on International Relations. Also, 30 days must pass after the submission of the report for the memorandum or agreement to go into effect.

Category	Authority (listed in alphabetical order)	United States Code (U.S.C.) and/or source of authorizing legislation	Summary of authority	Time frame of authority	Reporting requirements in authorizing legislation
Supports technology development	Defense Dual-use Critical Technology Program	10 U.S.C. § 4831 Originally authorized by NDAA for FY 1993, Pub. L. No. 102-284, Div. D, Title XLII, § 4221(a) (1992), as amended	The authority allows DOD to enter into various types of transactions for projects related to the R&D and application of dual-use critical technology, which is defined as critical technology that has military and nonmilitary applications. DOD is allowed to provide up to 50 percent of the total project cost, unless the Secretary of Defense agrees it is justifiable for DOD to provide more. The other party to the transaction must cover the remaining percentage of total costs.	No expiration date	None

Category	Authority (listed in alphabetical order)	United States Code (U.S.C.) and/or source of authorizing legislation	Summary of authority	Time frame of authority	Reporting requirements in authorizing legislation
Supports technology development	Defense Research and Development Rapid Innovation Program Note: DOD refers to this program as the Defense Rapid Innovation Fund (RIF).	10 U.S.C. § 4061 Originally authorized by Ike Skelton NDAA for FY 2011, Pub. L. No. 111-383, Div. A, Title X, § 1073 (2011), as amended	The authority gives DOD the discretion to transfer funds available for the RIF program to the RDT&E account of a military department, defense agency, or the unified combatant command for special operations forces to support an applicable project. RIF uses competitive, merit-based procedures to select and fund projects up to $6 million. The projects should accelerate the fielding of technologies developed pursuant to Small Business Innovation Research and Small Business Technology Transfer Phase II projects, technologies developed by the defense laboratories, and other innovative technologies.	No expiration date	No ongoing requirements

Category	Authority (listed in alphabetical order)	United States Code (U.S.C.) and/or source of authorizing legislation	Summary of authority	Time frame of authority	Reporting requirements in authorizing legislation
Supports technology development	Foreign Contributions for Cooperative Projects	10 U.S.C. § 2350i Originally authorized by NDAA for FYs 1992 and1993, Pub. L. No. 102-190, Div. A, Title 10, § 1047 (1991)	The authority allows DOD to credit contributions received under a cooperative project in which the parties are participating on a cost-sharing basis. The cooperative project aims to improve the parties' conventional defense capabilities, and can be used to share the cost of R&D, testing, evaluation, or joint production of defense articles. Participants can include a foreign country or NATO. Their contributions may be credited to appropriations available to an appropriate military department or another organization within DOD. The contributions to an appropriations account are available only for payment of the foreign country's or NATO's share of project expenses, and can cover payments to contractors and suppliers for necessary articles and services; damages and costs from the performance or cancellation of a contract; administrative costs; and refunds.	No expiration date	None

Category	Authority (listed in alphabetical order)	United States Code (U.S.C.) and/or source of authorizing legislation	Summary of authority	Time frame of authority	Reporting requirements in authorizing legislation
Supports technology development	Manufacturing Technology Program	10 U.S.C. § 4841 Originally authorized by NDAA for FY 1994, Pub. L. No. 103-160, Div. A, Title VIII, § 801(a)(1) (1993), as amended	The authority requires DOD to evaluate proposed transactions for program projects using competitive procedures that include the extent to which the proposed transaction plans for the proposed recipient to share in the project costs. The program aims to develop and apply advanced manufacturing technologies and processes that will reduce acquisition and supportability costs and manufacturing and repair cycle times of defense weapons systems.	No expiration date	None

Category	Authority (listed in alphabetical order)	United States Code (U.S.C.) and/or source of authorizing legislation	Summary of authority	Time frame of authority	Reporting requirements in authorizing legislation
Supports technology development	Military Aviation and Installation Assurance Clearinghouse for Review of Mission Obstructions	10 U.S.C. § 183a Originally authorized by NDAA for FY 2018, Pub. L. No. 115-91, Div. A, Title III, § 311(a) (2017), as amended	The authority provides that DOD's Military Aviation and Installation Assurance Siting Clearinghouse can request and accept a voluntary contribution of funds from an applicant for an energy project. The funds must be used to offset the costs of DOD mitigating or conducting studies to mitigate adverse impacts of an energy project on military operations and readiness, including flight research, development, testing, evaluation, and training. The Clearinghouse is responsible for assessing the risk of an energy project impacting military operations and readiness, and identifying actions to minimize the risk.	No expiration date	If DOD finds that the energy project poses an unacceptable risk to national security, DOD must submit a report about this finding to the congressional defense committees, the Senate Committee on Commerce, Science, and Transportation, and the House of Representatives Committee on Transportation and Infrastructure within 30 days of making the finding.
Supports technology development	Nontraditional and Small Contractor Innovation Prototyping Program[a]	Originally authorized by NDAA for FY 2017, Pub. L. No. 114-328, Div. A., Title VIII, § 884 (2016), as amended	The authority authorized $250 million to be made available from the Rapid Prototyping Fund to carry out a pilot program for nontraditional contractors and small businesses to design, develop, and demonstrate innovative prototype military platforms with specific innovative capabilities. The capabilities can include swarming of multiple unmanned, modular fixed-wing air vehicles, defense against hypersonic weapons, and others.	Expires September 30, 2026	No ongoing requirements

Category	Authority (listed in alphabetical order)	United States Code (U.S.C.) and/or source of authorizing legislation	Summary of authority	Time frame of authority	Reporting requirements in authorizing legislation
Supports technology development	Prizes for Advanced Technology Achievements	10 U.S.C. § 4025 Originally authorized by NDAA for FY 2000, Pub. L. No. 106-65, Div. A, Title II, § 244(a) (1999), as amended	The authority allows DOD to accept and use funds provided by outside sources, such as the private sector and state and local agencies, to award prizes for achievements in basic, advance, and applied research, technology development, and prototype development, one condition of which may be that it has the potential to be used in DOD's military missions. The prizes can include cash prizes, nonmonetary prizes, or the award of a procurement contract or other agreement. Approval to award prizes varies by the type of prize and dollar value.	No expiration date	The Secretary of Defense is required to submit to the congressional defense committees a written notice about a prize that consists of a procurement contract or other agreement that exceeds $10 million. DOD needs to submit the notice no later than 15 days after the contract or agreement is awarded.

Category	Authority (listed in alphabetical order)	United States Code (U.S.C.) and/or source of authorizing legislation	Summary of authority	Time frame of authority	Reporting requirements in authorizing legislation
Supports technology development	Rapid Prototyping Fund[b]	Originally authorized by NDAA for FY 2016, Pub. L. No. 114-92, § 804(d) (2015), as amended	The DOD Rapid Prototyping Fund consists of amounts appropriated to it as well as any amounts credited from remittances based on reductions to RDT&E accounts in accordance with NDAA for FY 2016, § 828. The Fund supports acquisition programs under the rapid prototyping pathway established by the Middle Tier of Acquisition for Rapid Prototyping and Rapid Fielding (NDAA for FY 2016 § 804). DOD has the flexibility to transfer money from the fund to a military department to carry out an acquisition program under the Middle Tier of Acquisition for Rapid Prototyping and Rapid Fielding.	No expiration date	The senior official who manages the DOD Rapid Prototyping Fund must notify the congressional defense committees about any transfers of funds to the military departments within 5 business days after the transfer is made.

Category	Authority (listed in alphabetical order)	United States Code (U.S.C.) and/or source of authorizing legislation	Summary of authority	Time frame of authority	Reporting requirements in authorizing legislation
Supports technology development	Research Projects: Transactions Other than Contracts and Grants	10 U.S.C. § 4021 Originally authorized by NDAA for FYs 1990 and 1991, Pub. L. No. 101-189, Div. A, Title II, § 251(a)(1) (1989), as amended	The authority allows DOD to include a clause in a cooperative agreement or other transaction for basic, applied, and advanced research projects for the recovery of funds, where a person or entity is required to make payments to DOD or other federal agency as a condition for receiving support under the cooperative agreement or other transaction. The payments may be added to the appropriate account for the cooperative agreement or other transaction, and must be available for the same purpose and period as the other available funds in the account.	No expiration date	The Secretary of Defense must submit an annual report to congressional defense committees on the use of other transaction agreements for research projects and prototype projects, among other contracting vehicles, and associated funding.
Supports development and fielding of capabilities to address specific threats	Joint Improvised-Threat Defeat Fund	Consolidated Appropriations Act, 2017, Pub. L. No. 115-31, Div. C, Title IX, Other Department of Defense Programs (2017)	The Secretary of Defense may transfer funding appropriated to the Joint Improvised-Threat Defeat Fund for fiscal year 2017 to appropriations for military personnel, O&M, procurement, RDT&E, and defense working capital funds to defeat improvised explosive devices. Funds could be used to investigate, develop, and provide equipment, supplies, services, training, facilities, personnel, and funds.	No expiration date for transfer authority; transfer authority applies to funds that expired September 30, 2019	No ongoing requirements

Supports development and fielding of capabilities to address specific threats	National Defense Sealift Fund	10 U.S.C. § 2218 Originally authorized by NDAA for FY 1993, Pub. L. No. 102-484, Div. A, Title X, § 1024(a)(1) (1992), as amended	The authority requires DOD to deposit the following into the Fund, in accordance with applicable laws: (1) receipts from the disposition of national defense sealift vessels, except for receipts from the sale, exchange, and scrapping of National Defense Reserve Fleet vessels; (2) receipts from charter vessels; (3) any other funds available to DOD to achieve the purpose of the National Defense Sealift Fund; and (4) all funds appropriated to DOD for certain purposes related to national defense sealift vessels and installation and maintenance of defense features on private vessels. Also, DOD can deposit donations—such as money and receipts from the disposition of property to support DOD sealift functions—into the Fund. Funds in the National Defense Sealift Fund can be obligated for construction and conversion, including design and modernization, of DOD sealift vessels; operation, maintenance, and lease of DOD vessels for national defense purposes; installation and maintenance of defense features on privately owned and operated vessels that are made in the U.S.; and maintaining the National Defense Reserve Fleet, among other things.	No expiration date for the National Defense Sealift Fund, but appropriations deposited into the Fund do not remain available for obligation more than 5 years after the end of the fiscal year for which they are appropriated except to the extent specifically provided by law	The Secretary of Defense is required to submit a report about proposed vessel purchases to the congressional defense committees no later than 30 days before the purchase of any vessel. Also, prior to procuring more than four foreign constructed vessels, the Secretary must submit a certification to Congress that he or she has initiated an acquisition strategy for the construction in U.S. shipyards of at least 10 new vessels that are sealift, auxiliary, or a combination thereof, and that the lead ship is anticipated to be delivered no later than 2028.

Category	Authority (listed in alphabetical order)	United States Code (U.S.C.) and/or source of authorizing legislation	Summary of authority	Time frame of authority	Reporting requirements in authorizing legislation
Supports development and fielding of capabilities to address specific threats	Pilot Program on Modernization and Fielding of Electromagnetic Spectrum Warfare Systems and Electronic Warfare Capabilities	Originally authorized by NDAA for FY 2017, Pub. L. No. 114-328, Div. A, Title II, § 234 (2016) (10 U.S.C. § 113 note)	Under the pilot program, DOD can use funds that are authorized to be appropriated for electromagnetic spectrum warfare and electronic warfare for the development and fielding of these systems and capabilities, respectively. If the Secretary of Defense carries out the pilot program, the Electronic Warfare Executive Committee must select a total of 10 applicable systems across at least two military departments for modernization and fielding under the pilot program.	Expires on September 30, 2023	None

Supports development and fielding of capabilities to address specific threats	Procedures for Urgent Acquisition and Deployment of Capabilities Needed in Response to Urgent Operational Needs or Vital National Security Interest Note: DOD refers to these procedures as the Rapid Acquisition Authority (RAA).	10 U.S.C. § 3601 Originally authorized by Bob Stump NDAA for FY 2003, Pub. L. No. 107-314, Div. A, Title VIII, § 806 (2002), as amended	Subject to certain limitations, the authority allows DOD to use any funds available to the agency in a fiscal year to urgently acquire and deploy capabilities necessary to eliminate a deficiency, or to initiate a project under the Middle Tier of Acquisition for Rapid Prototyping and Rapid Fielding based on a compelling national security need, after the Secretary makes a written determination. In general, the three categories of deficiency that justify urgent acquisition and deployment include: (1) a documented deficiency that resulted or will result in combat casualties; (2) a documented deficiency that impacts a contingency operation, which could result in loss of life or critical mission failure; or (3) a deficiency from a cyberattack that could result in critical mission failure, the loss of life, property destruction, or economic effects. The use of O&M funding is limited to certain operation and maintenance appropriations, and when funds are used for sustainment, the authority may not be used for more than 2 years. Furthermore, during any fiscal year the funding is limited to a total of $200 million for each category of deficiency that justifies urgent acquisition and	No expiration date	The Secretary of Defense must notify the congressional defense committees about the written determination to use urgent acquisition and deployment of capabilities necessary to eliminate a deficiency. The timing of when to notify the committees varies by the type of deficiency that is addressed. Also, the Secretary must notify the congressional defense committees of the determination that funds are necessary to initiate a project under the Middle Tier of Acquisition for Rapid Prototyping and Rapid Fielding within 10 days after using the funds.

Category	Authority (listed in alphabetical order)	United States Code (U.S.C.) and/or source of authorizing legislation	Summary of authority	Time frame of authority	Reporting requirements in authorizing legislation
			deployment, and a total of $50 million for projects under the Middle Tier of Acquisition that are based on a compelling national security need.		
Supports modern software development	Software and Digital Technology Pilot Programs Note: DOD generally refers to these pilot programs as Budget Activity Eight (BA-8).	Consolidated Appropriations Act, 2021, Pub. L. No. 116-260, Div. C, Title VIII, § 8131 (2020)	The authority allows selected DOD programs to use a new single RDT&E budget activity to cover RDT&E expenses as well as procurement and O&M expenses for software and digital technology.	Applies to amounts appropriated under title IV of Div. C of the Consolidated Appropriations Act, 2021	No ongoing requirements.

Source: GAO analysis of United States Code, National Defense Authorization Acts, and Consolidated Appropriation Acts. | GAO-23-105822

Note: There may be additional flexibilities not included in this list.

[a]Nontraditional and Small Contractor Innovation Prototyping Program can be found in the Statutory Notes and Related Subsidiaries after 10 U.S.C. Subtitle A, Part V, Subpart F, Chapter 322, Subchapter V.

[b]Rapid Prototyping Fund can be found in the Statutory Notes and Related Subsidiaries after 10 U.S.C. Subtitle A, Part V, Subpart B, Chapter 221.

In addition to the financial flexibilities examined in this review, Congress has provided DOD other authorities that could be used to support DOD R&D, innovation, and modernization efforts.

- **General financial authorities**. DOD has some inherent flexibilities in the execution of its budget authority, such as reprogramming.[1] DOD also has transfer authorities granted by Congress. The use of these authorities can take extended periods of time, depending on the processes and procedures involved. For example, as a matter of policy, DOD may ask Congress to approve multiple reprogrammings simultaneously via its annual "omnibus reprogramming action," which

[1]Reprogramming is the shifting of funds within an appropriation account for purposes other than those originally contemplated at the time of appropriation. Transfer is the shifting of funds between appropriation accounts, and it requires explicit statutory authority.

officials said can take months to go through DOD and Office of Management and Budget approvals.[2]

- **Other financial authorities**. Authorities outside the scope of this report include those that give DOD the flexibility to decide how to use certain funds but are either not specific to DOD, such as the Small Business Innovation Research program, or are not specific to R&D, such as Emergency Construction.[3] However, DOD may use such authorities in ways that ultimately support its R&D, innovation, and modernization efforts. For example, DOD might use the Emergency Construction authority to rebuild a destroyed R&D facility if the department determined the facility was urgently required and vital to national security.
- **Nonfinancial authorities**. In addition, there are other authorities, such as direct hire authority and the ability to waive regulations and guidance in order to facilitate effective laboratory (lab) management as part of the Laboratory Enhancement Pilot Program, that have been available to DOD.[4] In December 2018, we reported that DOD officials said that they have used human capital authorities to compete with the private sector to attract science, technology, engineering, and mathematics talent.[5]

[2]DOD 7000.14-R, Financial Management Regulation, Vol. 3, Ch. 6 (Sept. 2015).

[3]15 U.S.C. § 638 (“Research and development”) and 10 U.S.C. § 2803 (“Emergency construction”).

[4]See 10 U.S.C. § 4091 (“Authorities for certain positions at science and technology reinvention laboratories”) and National Defense Authorization Act for Fiscal Year 2017, Pub. L. No. 114-328, § 233 (2016), as amended (“Pilot program for the enhancement of the research, development, test, and evaluation centers of the Department of Defense”).

[5]GAO, *Defense Science and Technology: Actions Needed to Enhance Use of Laboratory Initiated Research Authority,* GAO-19-64 (Washington, D.C.: Dec. 20, 2018).

Appendix II: Objectives, Scope, and Methodology

The Senate Report 117-39, accompanying a bill for the National Defense Authorization Act for Fiscal Year 2022, includes a provision for us to review existing budget and financial management flexibilities.[1] This report addresses: (1) the extent to which the Department of Defense (DOD) communicated information within the department about the budget and financial management flexibilities available to support DOD research and development (R&D), innovation, and modernization activities; (2) how DOD used selected flexibilities, including factors that contributed to DOD's use; and (3) the extent to which the selected flexibility that is a pilot program met leading practices for pilot program design that GAO identified in prior work.

This report examined financial flexibilities available to DOD during fiscal years 2017 through 2021, the most recent 5 full fiscal years completed at the start of the review. In this report, we refer to both budget and financial management flexibilities as financial flexibilities. Our scope included financial flexibilities that specifically allow DOD flexibility in use of funds to support DOD's R&D, innovation, and modernization activities. For the purposes of this report:

- Innovation means developing new capabilities or implementing changes to existing capabilities and practices, such as breakthrough technologies that can cause disruptive effects.[2]
- Modernization means improving or replacing an existing military technology, such as a weapon or system, with one that is more capable.

[1]S. Rep. No. 117-39, at 214 (2021).

[2]In our prior work, we reported that disruptive innovation attempts to shift the balance of military power in DOD's favor by providing capabilities potentially unforeseen by adversaries. GAO, *Weapon Systems: Prototyping Has Benefited Acquisition Programs, but More Can Be Done to Support Innovation Initiatives*, GAO-17-309 (Washington, D.C.: June 27, 2017). We also reported that disruptive innovation projects carry a higher risk of failure but can offer significant rewards in the long term. GAO, *Defense Science and Technology: Adopting Best Practices Can Improve Innovation Investments and Management*, GAO-17-499 (Washington, D.C.: June 29, 2017).

To identify information about financial flexibilities, we examined DOD documents and reviewed sections of the United States Code and selected sections of the annual defense appropriations and authorization acts for fiscal years 2017 through 2021. We also requested information from, and reviewed our preliminary findings with, DOD and military department officials. We also conducted semistructured interviews with representatives of the Offices of the Under Secretaries of Defense (OUSD) for Research and Engineering (R&E) and Comptroller and military department offices responsible for oversight of research organizations and financial management. Appendix I includes a list of available flexibilities that we identified. There may be additional flexibilities Congress provided that are not included.

From the identified financial flexibilities, we purposefully selected a nongeneralizable sample of five flexibilities to examine in further detail (see table 6). We selected financial flexibilities to provide variation in the types of decisions the flexibility authorizes and whether DOD is required to establish or use the flexibility, among other characteristics.

Table 6: Selected Authorities That Allow the Department of Defense (DOD) Discretion to Use Funds for Research and Development, Innovation, and Modernization Efforts from Fiscal Years 2017 through 2021

Authority	Type of decision-making authorized	Implementation and use of authority
Funding Laboratory Enhancements Across Four Categories (FLEX-4)	Allows available lab funds to be used toward specific categories of activities and charging customers a fee to obtain funds for the activities	The Secretary of Defense was required to establish mechanisms relating to the appropriate use of this authority, but the authority does not require laboratories to use the flexibility.
Defense Research and Development Rapid Innovation Program, also known as Defense Rapid Innovation Fund (RIF)	Transfer	DOD was required to establish RIF but is not required to use the transfer authority.
Rapid Acquisition Authority (RAA)	Expands the types of funding that can be used in certain urgent circumstances	DOD was required to establish procedures for the urgent acquisition and deployment of capabilities needed in certain circumstances, which includes RAA. But DOD is not required to use the flexibility in any given year.
Software and Digital Technology Pilot Programs, also known as Budget Activity Eight (BA-8)	Expands the types of activities supported by RDT&E appropriations	DOD is permitted to use amounts appropriated for certain expenses relating to specific programs.
Defense Laboratory Modernization Program (Lab Modernization)	Expands the types of activities supported by RDT&E appropriations	The authority allows DOD to obligate up to $150 million of research, development, test, and evaluation (RDT&E) funds in a fiscal year for certain military construction projects at specific laboratories, facilities supporting technology development programs, and RDT&E facilities.

Source: GAO analysis of US Code and Appropriation and Authorization legislation. | GAO-23-105822

From these five financial flexibilities, we also selected a nongeneralizable sample of 25 programs, projects, and efforts executed using the flexibilities, which we collectively refer to as activities, to provide examples of use across DOD and the military departments. We selected these activities, using data provided by DOD and the military departments, to obtain a sample of activities funded between fiscal years 2017 and 2021 from a variety of organizations across DOD and the military departments (see table 7). We reviewed relevant DOD, Air Force, Army, and Navy documents and conducted semistructured interviews with DOD and military department officials about their knowledge and experiences using the selected flexibilities.

Table 7: Sample of Activities Using Selected Authorities

Category	Activity code	Activity	Organization	Fiscal year
BA-8: Software and Digital Technology Pilot Programs, also known as Budget Activity Eight	1	Defense Cyber Operations	Army, Program Executive Office Enterprise Information Systems	2021
BA-8: Software and Digital Technology Pilot Programs, also known as Budget Activity Eight	2	Risk Management Information	Naval Safety Command	2021
BA-8: Software and Digital Technology Pilot Programs, also known as Budget Activity Eight	3	Acquisition Visibility	Office of the Under Secretary of Defense (OUSD) for Acquisition and Sustainment, Acquisition Enablers	2021
BA-8: Software and Digital Technology Pilot Programs, also known as Budget Activity Eight	4	Space Command and Control	Space Force Space Systems Command	2021
FLEX-4: Funding Laboratory Enhancements Across Four Categories	5	Enriched Understanding of Hypersonic Materials	Air Force Research Laboratory	2020
FLEX-4: Funding Laboratory Enhancements Across Four Categories	6	Defense Deep Space Sentinel	Air Force Research Laboratory	2020
FLEX-4: Funding Laboratory Enhancements Across Four Categories	7	Wright Brother's Institute	Air Force Research Laboratory	2020

Category	Activity code	Activity	Organization	Fiscal year
FLEX-4: Funding Laboratory Enhancements Across Four Categories	8	Wright Site Corporate Secure Facility	Air Force Research Laboratory	2019
FLEX-4: Funding Laboratory Enhancements Across Four Categories	9	Knowledge Management and Intellectual Property, Patents, and Licenses; Information Exchange and Collaboration, and Technology Demos	Army Engineering Research and Development Center	2017
FLEX-4: Funding Laboratory Enhancements Across Four Categories	10	Emerging Overmatch Technologies	Army Research Laboratory	2018
FLEX-4: Funding Laboratory Enhancements Across Four Categories	11	Distinguished Fellowships and Postdoc Program	Army Research Laboratory	2020
FLEX-4: Funding Laboratory Enhancements Across Four Categories	12	Autonomous Systems Integration & Assessment Facility	Army Research Laboratory	2018
FLEX-4: Funding Laboratory Enhancements Across Four Categories	13	Red Team Tactical Penetration Testing Capability within Cyber Warfare Engineering Lab and Tactical Protected Distribution System Expansion	Naval Surface Warfare Center	2019
FLEX-4: Funding Laboratory Enhancements Across Four Categories	14	Ship-to-Shore Precision Engagement Integration & Prototype	Naval Surface Warfare Center	2019

Category	Activity code	Activity	Organization	Fiscal year
FLEX-4: Funding Laboratory Enhancements Across Four Categories	15	Modeling the Millennia (formerly Super Swarm)	Naval Surface Warfare Center	2019
FLEX-4: Funding Laboratory Enhancements Across Four Categories	16	Calibration Lab RF Station	Naval Surface Warfare Center	2019
Lab Modernization: Defense Laboratory Modernization Program	17	Edwards Air Force Base Joint Simulation Environment Facility	Air Force Test Center	2019
RAA: Rapid Acquisition Authority	18	Acquire Solutions for Safely Airlifting COVID-19 Infected Passengers	Air Force	2020
RAA: Rapid Acquisition Authority	19	Acquire Counter-small Unmanned Aerial System Capabilities	Joint Counter-small Unmanned Aircraft Systems Office (Army)	2017
RAA: Rapid Acquisition Authority	20	Electronic Counter-small Unmanned Aerial System Capabilities to detect, identify, track and defeat small Unmanned Aerial System threats at specific sites	Joint Counter-small Unmanned Aircraft Systems Office (Army)	2019
RAA: Rapid Acquisition Authority	21	Unmanned Aerial Systems Capability	US Marine Corps	2017
RIF: Defense Research and Development Rapid Innovation Program, also known as Defense Rapid Innovation Fund	22	Economical Payload Integration Cost	Air Force Program Executive Office Space	2018
RIF: Defense Research and Development Rapid Innovation Program, also known as Defense Rapid Innovation Fund	23	Mobile Ad-Hoc Networking in Congested and Contested Environments Prototype	Army Network Command, Control, Communication, and Intelligence Cross-Functional Team	2017

Category	Activity code	Activity	Organization	Fiscal year
RIF: Defense Research and Development Rapid Innovation Program, also known as Defense Rapid Innovation Fund	24	Rapid Acquisition Sensor and Response	Naval Air Systems Command	2019
RIF: Defense Research and Development Rapid Innovation Program, also known as Defense Rapid Innovation Fund	25	3D Autonomous Measurement	OUSD(Research & Engineering), Manufacturing Technology	2019

Source: GAO summary of Department of Defense, Air Force, Army, and Navy data. | GAO-23-105822

To assess DOD and military department use of the selected flexibilities; factors that enabled DOD's use; and the extent to which selected flexibilities met leading practices for pilot design, we analyzed DOD and military department documents about flexibilities use, relevant guidance, and information obtained from semistructured interviews with officials. Specifically, we analyzed DOD budget, notification, and reporting documents to determine selected flexibility use between fiscal year 2017 and 2021. For Software and Digital Technology Pilot Programs also known as Budget Activity Eight (BA-8), Defense Laboratory Modernization Program, and Defense Research and Development Rapid Innovation Program, also known as Defense Rapid Innovation Fund, we reviewed DOD's obligational authority and the amount of funding that was made available as reported in OUSD(Comptroller) budget documents for fiscal year 2019 through fiscal year 2023. We obtained these documents from the Comptroller's website. For Rapid Acquisition Authority, we obtained DOD reports of use and summaries of the notifications to Congress DOD submitted from fiscal year 2017 through fiscal year 2021. For Funding Laboratory Enhancements Across Four Categories, we obtained reports OUSD(R&E) compiled about military department use of the flexibility, including the amount of funding each department made available and compared these with information from the military departments. For each of the selected flexibilities, we rounded dollars to the nearest million. We assessed the reliability of the data. For example, we conducted electronic data testing to review the information for obvious errors, such as missing data and checking total dollars and number of activities against summary-level data, and interviewed knowledgeable officials. We determined these data are sufficiently reliable for our purposes.

To determine which factors enabled DOD's use of the five selected flexibilities, we reviewed statements from our semistructured interviews

with DOD officials and developed a set of factors based on officials' statements. An analyst assessed officials' statements for relevant evidence about factors that enabled the use of the five selected flexibilities and tabulated the number of interviews during which officials mentioned each of the factors. Based on the assessment, the analyst identified three factors in particular that officials consistently noted enabled the use of the selected flexibilities. An independent analyst and supervisor reviewed the assessment and conclusions regarding these factors. In addition, we reviewed agency guidance for the selected flexibilities. We also reviewed the *Standards for Internal Control in the Federal Government* principles related to information and communication and found them to be applicable to our review.[3]

We also compared DOD's design and implementation of the BA-8 pilot program against leading practices on pilot program design that we identified in prior work.[4] We reviewed DOD's implementation plan and guidance, reports to Congress, and the authorizing legislation for information about the pilot and its design—including DOD's planned data collection and assessment methodologies. We also spoke with officials responsible for BA-8 implementation and oversight and officials from the four software development efforts participating in the pilot program that we studied. One analyst assessed the relevant information related to each leading practice and an independent analyst and supervisor reviewed these assessments. Based on these assessments, we determined whether DOD met, partially met, or did not meet each practice. For example, if DOD's plans for the pilot did not fully address the leading practice or were not being implemented as designed, the analyst determined DOD partially met the practice.

We conducted this performance audit from February 2022 to June 2023 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

[3]GAO, *Standards for Internal Control in the Federal Government*, GAO-14-704G (Washington, D.C.: Sept. 10, 2014).

[4]GAO, *Data Act: Section 5 Pilot Design Issues Need to Be Addressed to Meet Goal of Reducing Recipient Reporting Burden*, GAO-16-438 (Washington, D.C.: Apr. 19, 2016).

Appendix III: Guidance for Selected Authorities

Table 8: Guidance for Selected Authorities

Authority	Agency office or organization establishing guidance	Primary guidance document[a]
Funding Laboratory Enhancements Across Four Categories (FLEX-4)	Assistant Secretary of the Army, Acquisition, Logistics and Technology	Memorandum: Mechanisms to Provide Funds for Defense Laboratories under Title 10, United States Code, Section 2363 (10 U.S.C. § 2363) (February 12, 2018)
Funding Laboratory Enhancements Across Four Categories (FLEX-4)	Office of the Assistant Secretary of the Navy for Research, Development, and Acquisition	Memorandum: Naval Innovative Science and Engineering Program Policy-Updated (November 27, 2009)[b]
Funding Laboratory Enhancements Across Four Categories (FLEX-4)	Air Force Research Laboratory	Air Force Research Laboratory Instruction 61-102, Implementation of Section 219 of the FY 2009 National Defense Authorization Act, (April 8, 2019)
Defense Research and Development Rapid Innovation Program, also known as Defense Rapid Innovation Fund (RIF)	Office of the Under Secretary of Defense for Research and Engineering	Memorandum: Rapid Innovation Fund Program Fiscal Year 2019 Implementation Guidelines and Use of Technology Transition Best Practices (October 28, 2018)
Rapid Acquisition Authority (RAA)	Office of the Under Secretary of Defense for Acquisitions and Sustainment	DOD Manual 5000.78, Rapid Acquisition Authority (March 20, 2019)
Software and Digital Technology Pilot Programs, also known as Budget Activity Eight (BA-8)	Office of the Under Secretary of Defense (Comptroller)	DOD 7000.14-R, Financial Management Regulation Vol.2B, Ch.5, “Research, Development, Test, and Evaluation Appropriations” (September 2022)[c]
Defense Laboratory Modernization Program	N/A	None

Source: GAO analysis of Department of Defense (DOD) documents. | GAO-23-105822

[a]This is not a comprehensive list of all guidance documents available. GAO reviewed updates to primary guidance documents as applicable, and some updates are pending. For instance, Air Force officials stated that they plan to release an updated Air Force Research Laboratory Instruction 61-102 in the summer of 2023.

[b]Since 2009, the Navy has issued additional memorandums to reflect changes in the authority and department policy.

[c]The Regulation replaced Department of Defense, Memorandum: Software and Digital Technology Pilot Programs Interim Financial Management Regulation Policy (June 4, 2020).

Appendix IV: Comments from the Department of Defense

OFFICE OF THE UNDER SECRETARY OF DEFENSE
1100 DEFENSE PENTAGON
WASHINGTON, DC 20301-1100

COMPTROLLER
(Program/Budget)

JUN 9 2023

Mr. W. William Russell
Director, Contracting and National Security Acquisitions
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Russell,

This is the Department of Defense (DoD) response to the GAO Draft Report, GAO-23-105822, "RESEARCH AND DEVELOPMENT: DOD Benefited from Financial Flexibilities but Could Do More to Maximize Their Use,' dated May 5, 2023 (GAO Code 105822)."

The Department reviewed the draft report and associated recommendations. As a result, my office, in concert with the Department functional experts in the Office of the Under Secretary of Defense (Acquisition and Sustainment) and the Office of the Under Secretary of the Defense (Research and Engineering), concurs with the three recommendations. Attached are administrative comments that provide for minor technical corrections and additional context to be considered for the final report.

We appreciate the opportunity to review and comment on the GAO draft report. My point of contact is Marty Williams who can be reached at marty.t.williams.civ@mail.mil and phone 703-697-1029.

Sincerely,

Roberto Rodriguez
Director of Investment
Office of Under Secretary of Defense
(Comptroller)

Attachment: As stated.

GAO DRAFT REPORT DATED MAY 05, 2023
GAO-23-105822

"RESEARCH AND DEVELOPMENT: DOD BENEFITED FROM FINANCIAL FLEXIBILITIES BUT COULD DO MORE TO MAXIMIZE THEIR USE"

DEPARTMENT OF DEFENSE COMMENTS TO THE GAO DRAFT RECOMMENDATIONS

RECOMMENDATION 1: The Secretary of Defense should ensure the Deputy Secretary of Defense designates a primary office responsible to regularly collect current information about the financial flexibilities that are available to support DOD's research and development, innovation, and modernization efforts and ensures the office makes the information easily accessible department-wide.

OUSD(C) RESPONSE: Concur. Annually, the Office of the Under Secretary of Defense (Comptroller) OUSD(C) publishes on the public-facing website a page titled "Budget Execution Flexibility Tutorial" that outlines financial execution flexibilities for the Department. OUSD(C) in coordination with General Counsel serves as the Department's functional expert for execution flexibilities. OUSD(C) will work within Department administrative processes to expand access and understanding of the processes available to support DOD activities.

RECOMMENDATION 2: The Secretary of Defense should ensure the Under Secretary of Defense for Research and Engineering develops guidance for the Defense Research Laboratory Modernization program that communicates the purpose, roles and responsibilities, timeframes, procedures, and other relevant information needed to effectively implement this flexibility.

OUSD(R&E) RESPONSE: Concur with comments.

- On page 7, the organization cited as, "The Office of Research, Technology, and Laboratories" no longer exists. That line should be replaced by "The Deputy Chief Technology Officer (DCTO) for Science and Technology."
- In general, we don't agree with the supposition that the totality of the flexibilities listed relate to financial flexibilities.
- We don't agree that many of the flexibilities aren't used. A number of the flexibilities, particularly related to Technology Transfer are used and there is an entire community focused on technology transfer. We expect some offices GAO interviewed weren't familiar with technology transfer.

RECOMMENDATION 3: The Secretary of Defense should ensure the Under Secretary of Defense for Acquisition and Sustainment implements an evaluation plan, developed using leading practices for pilot design for assessing the effectiveness of the Software and Digital Technology Pilot Programs (BA-8).

OUSD(A&S) RESPONSE: Concur.

Accessible Text for Appendix IV: Comments from the Department of Defense

JUN 9 2023

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Director, Contracting and National Security Acquisitions
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

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OUSD (A&S) RESPONSE: Concur.

Appendix V: GAO Contact and Staff Acknowledgments

GAO Contact:

William Russell at (202) 512-4841 or RussellW@gao.gov

Staff Acknowledgments:

In addition to the contact named above, J. Andrew Walker (Assistant Director), Leslie Ashton (Analyst-in-Charge), Bonnie Binggeli, Britt Bovbjerg, Laura Greifner, Kristine Hassinger, Gina Hoover, Brenda Mittelbuscher, John Rastler-Cross, Miranda Riemer, Ronald Schwenn, Robin Wilson, and Carmen Yeung made key contributions to this report. Mallory Bryan, Jennifer Dougherty, Megan Graves, Michael Holland, Richard Hung, Ethan Kennedy, Victoria Klepacz, Riley Knight, Richard Kusman, Leah Nash, Alexis Olson, Daniel Singleton, Roger Stoltz, Maria Storts, Alyssa Weir, and Alexandra Wilk also contributed to this report.

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