



December 2021

INFORMATION TECHNOLOGY

Digital Service Programs Need to Consistently Coordinate on Developing Guidance for Agencies



A Century of Non-Partisan Fact-Based Work

GAO@100 Highlights

Highlights of [GAO-22-104492](#), a report to congressional committees

Why GAO Did This Study

Federal agencies spend more than \$100 billion annually on IT to improve mission delivery and support; and enhance infrastructure, security, and management. However, because of longstanding challenges, the federal government's management of IT acquisitions and operations has been on GAO's high-risk list since 2015.

The Modernizing Government Technology Act of 2017 included a provision for GAO to review federal IT programs and entities, including USDS and 18F, and the extent to which they duplicate work.

This report (1) describes investments identified on the federal IT Dashboard, (2) summarizes prior GAO recommendations and current implementation status on IT duplication and management roles and responsibilities, and (3) evaluates USDS's and 18F's efforts to coordinate IT services to avoid overlap and duplication.

To do so, GAO (1) examined IT data reported by 26 agencies on the federal IT Dashboard; (2) identified prior GAO reports that evaluated duplicative IT and IT roles and responsibilities, and determined the number and implementation status of relevant recommendations; and (3) compared USDS and 18F coordination activities with leading collaboration practices identified in GAO's prior work.

What GAO Recommends

GAO is making two recommendations, one each to OMB and GSA, to establish and document an approach to coordinate on IT guidance provided to agencies. OMB and GSA generally concurred with the recommendations.

View [GAO-22-104492](#). For more information, contact Carol C. Harris at (202) 512-4456 or harriscc@gao.gov.

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INFORMATION TECHNOLOGY:

Digital Service Programs Need to Consistently Coordinate on Developing Guidance for Agencies

What GAO Found

For fiscal year 2021, 26 federal agencies reported 7,806 information technology (IT) investments on the federal IT Dashboard, a public website the Office of Management and Budget (OMB) launched in 2009. OMB requires agencies to report their IT investments on the dashboard and categorize them in various ways that help describe their purpose. For fiscal year 2021, agencies reported their investments in one of three portfolio categories: IT infrastructure, security, and management (45 percent); mission delivery (37 percent); and mission support services (18 percent). Additionally, agencies are to classify each of their investments under one of 225 different service categories. The two service categories with the highest planned fiscal year 2021 spending were IT infrastructure (\$17.9 billion) and health care delivery services (\$3.9 billion).

Over the past 10 years, GAO has issued 12 reports that included 275 recommendations to agencies to address issues related to duplicative IT, such as weaknesses in the processes agencies used to reduce contract duplication. GAO also made 117 recommendations in six reports to address issues related to IT management roles and responsibilities, such as unclear responsibilities for chief information officers and acquisition officials. As of October 2021, agencies had implemented a total of 290 (74 percent) of the recommendations. Implementing the remaining 102 would provide agencies greater assurance that they are effectively managing IT acquisitions and operations.

Status of GAO Recommendations Related to Duplicative Information Technology (IT) and IT Management Roles and Responsibilities, as of October 2021

	Number of related recommendations	Number fully implemented	Number not fully implemented
Duplicative IT	275	238 (87 percent)	37 (13 percent)
Roles and responsibilities	117	52 (44 percent)	65 (56 percent)
Total	392	290	102

Source: GAO analysis of GAO reports. | [GAO-22-104492](#)

OMB's U.S. Digital Service (USDS) and the General Services Administration's 18F program offices help agencies deliver digital services, such as public facing websites and on-line benefit applications. These offices conduct similar activities to fulfill their missions, such as providing IT expertise on agencies' projects, recruiting IT experts, and developing guidance to assist agencies. Although USDS and 18F coordinated on projects and recruiting efforts, they did not always do so to avoid developing duplicative IT guidance. Specifically, neither entity had an established, documented coordination approach, even though they had issued guidance on the same IT acquisition and development topics with similar content. USDS and 18F officials acknowledged the need to improve guidance coordination, but did not have specific plans to do so. Documenting a coordinated approach for developing and issuing guidance would reduce the risk of overlap and duplication, and the potential for conflicting information.

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Abbreviations

CIO	Chief Information Officer
DOD	Department of Defense
FITARA	Federal Information Technology Acquisition Reform Act
FY	fiscal year
GSA	General Services Administration
IT	information technology
OMB	Office of Management and Budget
TTS	Technology Transformation Services
USDS	U.S. Digital Service

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December 10, 2021

Congressional Committees

Although agencies spend more than \$100 billion annually on information technology (IT), the federal government has faced longstanding problems in its management of IT.¹ Accordingly, in 2015, we added improving the management of IT acquisitions and operations to GAO's High-Risk List as a government-wide challenge. In our March 2021 high-risk series update, we reported that the management of IT acquisitions and operations continued to face significant challenges and required significant attention to address outstanding issues.²

In the high-risk series update, we identified numerous prior GAO recommendations related to the management of IT acquisitions and operations that federal agencies had not implemented. These included, for example, recommendations aimed at improving agencies' implementation of IT management roles and responsibilities established by provisions commonly known as the Federal Information Technology Acquisition Reform Act (FITARA)³ and by Office of Management and Budget (OMB) guidance. We also made recommendations on duplicative IT that focused on actions, such as reducing duplicative contracts and consolidating data centers. Given the magnitude of the government's investment in IT, it is important that federal agencies avoid investing in duplicative systems and acquisitions to ensure the most efficient use of resources.

To provide federal agencies, the public, and other stakeholders the ability to view details of federal IT investments and track their progress over

¹According to federal IT Dashboard data and *Department of Defense Information Technology and Cyberspace Activities Budget Overview, Fiscal Year 2021 Budget Estimates* (Feb. 2020), 26 federal agencies, including the Department of Defense (DOD), planned to spend about \$102 billion on IT. This amount does not include a number of other federal government agencies, such as independent executive branch agencies, and legislative and judicial branch agencies.

²GAO, *High-Risk Series: Dedicated Leadership Needed to Address Limited Progress in Most High-Risk Areas*, [GAO-21-119SP](#) (Washington, D.C.: Mar. 2, 2021).

³*Carl Levin and Howard P. 'Buck' McKeon National Defense Authorization Act for Fiscal Year 2015*, Pub. L. No. 113-291, Div. A, Title VIII, Subtitle D, 128 Stat. 3292, 3438-3450 (Dec. 19, 2014).

time, OMB launched the IT Dashboard website in 2009. The federal government also established OMB's U.S. Digital Service (USDS) and the General Services Administration's (GSA) 18F programs in 2014 to help address agencies' troubled IT efforts.⁴ Both programs have similar missions of improving public-facing federal digital services, such as online forms and benefits applications on federal agencies' websites and mobile applications.⁵

The Modernizing Government Technology Act of 2017 included a provision for GAO to assess the number of IT procurement, development, and modernization programs, offices, and entities in the federal government, including USDS and 18F.⁶ The provision also called for us to assess the extent to which they duplicate work.⁷

Our specific objectives for this review were to (1) describe the procurement, development, and modernization investments identified on the federal IT Dashboard; (2) summarize prior GAO recommendations and current implementation status on IT duplication and management roles and responsibilities; and (3) determine the extent to which USDS and 18F coordinate IT services to avoid overlap and duplication.

⁴See GAO, *Digital Service Programs: Assessing Results and Coordinating with Chief Information Officers Can Improve Delivery of Federal Projects*, [GAO-16-602](#) (Washington, D.C.: Aug. 15, 2016).

⁵OMB defines digital services as the delivery of digital information (data or content) and transactional services (e.g., online forms and benefits applications) across a variety of platforms, devices, and delivery mechanisms (e.g., websites, mobile applications, and social media).

⁶The name of the 18F program refers to its office location, which is in northwest Washington, D.C., at 18th and F Streets.

⁷Modernizing Government Technology provisions of the *National Defense Authorization Act for Fiscal Year 2018*, Pub. L. No. 115-91, Div. A, Title X, Subtitle G, 131 Stat. 1283, 1568 (2017), 41 U.S.C. 11301 note. The provision for the GAO assessment is at sec. 1078(b)(7)(B)(iv), 131 Stat. 1591, 1592.

To address the first objective, we analyzed the investments reported by 26 agencies on the IT Dashboard for fiscal year 2021.⁸ In doing so, we identified and summarized the 7,806 IT investments that agencies had reported on the dashboard, by IT portfolio categories and investment types.

Specifically, we determined the total number of investments and planned fiscal year 2021 spending reported across all of the 26 agencies for each of the three portfolio categories and five investment types, according to OMB's guidance for fiscal year 2021 IT budget reporting. We also determined the total number of investments reported by each agency, and the number of investments each agency reported by investment type, according to OMB's guidance—non-major, standard IT infrastructure, major, funding transfer, or non-standard infrastructure.

In addition, we summarized the number of investments and planned spending that agencies reported by service category, according to the dashboard data. Specifically, agencies used the Business Reference Model, which is part of OMB's Federal Enterprise Architecture, to classify each investment by service category to describe how the federal government uses or intends to use the investment. OMB's model has 225 service categories. We determined the 25 service categories with the highest number of investments reported across all investment types and agencies, as well as the 25 service categories with the highest amount of planned fiscal year 2021 spending.

We also determined the service categories with the highest number of investments and highest planned spending for the investments reported by the 26 agencies as a major investment type.⁹ Finally, we determined the five service categories with the highest amount of planned spending

⁸The 26 federal agencies are the Departments of Agriculture, Commerce, Defense, Education, Energy, Health and Human Services, Homeland Security, Housing and Urban Development, Justice, the Interior, Labor, State, Transportation, the Treasury, Veterans Affairs; the Environmental Protection Agency; the General Services Administration; the National Aeronautics and Space Administration; National Archives and Records Administration; National Science Foundation; Nuclear Regulatory Commission; Office of Personnel Management; Small Business Administration; Social Security Administration; U.S. Agency for International Development; and the U.S. Army Corps of Engineers.

⁹According to OMB guidance, major investments are mission delivery or mission support investments that require special management attention because of their importance to the mission or function of the government; significant program or policy implications; high executive visibility; high development, operating, or maintenance costs; or unusual funding mechanism; or because they are otherwise defined as major by the agency.

reported on the dashboard, across all investments and agencies, for (1) development, modernization, and enhancement of new systems or capabilities; and (2) operations and maintenance of existing systems or capabilities.

To address the second objective, we identified prior GAO reports which focused on IT development or acquisition efforts that were government-wide in scope or that involved multiple federal agencies. We reviewed the findings and recommendations in these reports to identify those recommendations that we made to OMB or federal agencies to address issues related to (1) efforts to avoid duplicative IT or (2) IT management roles and responsibilities. We identified 16 reports that GAO issued from 2011 through 2020 with a total of 392 relevant recommendations.

We then identified the number of recommendations to address issues related to duplicative IT and IT management roles and responsibilities, and the number of agencies that received the recommendations in each of these reports. Next, we determined the current status of agencies' implementation of these recommendations, as of October 2021, and summarized the number of recommendations not yet implemented, and the number of agencies that had not yet implemented the recommendations.

To address the third objective, we compared the coordination activities of USDS and 18F to avoid overlap and duplication with leading collaboration practices, according to our prior work on managing fragmentation, overlap, and duplication.¹⁰ We also used the steps recommended by GAO's fragmentation, overlap, and duplication evaluation guide to identify whether there was any fragmentation, overlap, or duplication in USDS's and 18F's activities.¹¹ We also considered control activities related to two key internal control principles when USDS and 18F had not addressed leading collaboration practices to avoid duplication. The key internal control principles are that management should (1) design control activities

¹⁰GAO, *Results-Oriented Government: Practices That Can Help Enhance and Sustain Collaboration among Federal Agencies*, [GAO-06-15](#) (Washington, D.C.: Oct. 21, 2005) and *Fragmentation, Overlap, and Duplication: An Evaluation and Management Guide*, [GAO-15-49SP](#) (Washington, D.C.: Apr. 14, 2015).

¹¹[GAO-15-49SP](#).

to achieve objectives and respond to risks and (2) implement control activities through policies.¹²

First, we reviewed USDS and 18F documents and websites and our prior report on these programs¹³ to identify their mission, roles, responsibilities, and goals. Based on this review, we determined that the two programs engage in three common activities. Each of the programs works with agencies on IT projects; recruits and hires IT experts; and plans, develops, and issues IT guidance.

For each of these activities, we interviewed USDS and 18F officials on their efforts to coordinate with each other, and analyzed relevant documentation. We then compared the efforts to leading collaboration practices, according to our prior work. Specifically, we assessed the extent to which these entities had developed ways for operating across agency boundaries, identifying opportunities to address resource needs and leverage each other's resources, and documented their commitment to work collaboratively.¹⁴

We also obtained and reviewed USDS's and 18F's complete project lists, as of February 2021, to identify any potentially duplicative work. We identified potentially duplicative work if both lists included projects with similar project names. In cases where we identified potentially duplicative work, we reviewed additional information from 18F, such as the program's interagency agreements describing the project, and from USDS, such as reports on its projects, to determine if the work was actually duplicative.

To assess the extent to which USDS and 18F have coordinated to recruit and hire IT experts, we interviewed USDS and 18F officials about their efforts, and obtained and reviewed supporting documentation, which included a USDS June 2021 candidate referral report. We compared the efforts to leading collaboration practices, according to our prior work, which calls for programs to establish ways to operate across agency boundaries and identify opportunities to address resource needs.

Additionally, we reviewed USDS's and 18F's guidance documents published on their respective websites, as of March 2021; we categorized

¹²GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#) (Washington, D.C.: Sept. 10, 2014).

¹³[GAO-16-602](#).

¹⁴[GAO-06-15](#).

the documents according to topic, such as guiding principles, acquisition of digital services using agile methods, and agile development. We then compared the purpose and contents of the documents to identify any overlap or duplication. A more detailed description of our objectives, scope, and methodology can be found in appendix I.

We conducted this performance audit from August 2020 to December 2021 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

Federal IT Dashboard

OMB launched the IT Dashboard website in 2009 to provide federal agencies, the public, and other stakeholders the ability to view details of federal IT investments and track their progress over time. OMB requires agencies to report their IT budget data to OMB, which releases certain IT budget data publicly on the dashboard. We have previously reported that the IT Dashboard addresses a requirement in FITARA for OMB and agencies to make publicly available detailed information on federal IT investments.¹⁵

According to OMB guidance for fiscal year 2021 IT budget reporting, agencies were required to categorize their investments in several different ways. For example, agencies were to assign each of their investments to one of three IT portfolio categories.

- **IT infrastructure, security, and management.** Investments related to IT security and compliance; IT management; provisioning of an enterprise-wide network; data center or cloud computing capability; or end user capability, among others.
- **Mission delivery.** Investments that directly support the delivery of the agency's mission.

¹⁵40 U.S.C. 11302(c)(3)(A). [GAO-16-494](#), *IT Dashboard: Agencies Need to Fully Consider Risks When Rating Their Major Investments* (Washington, D.C.: June 2, 2016).

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- **Mission support services.** Investments that support activities common across all agencies such as financial management, human resources, contracting, travel, and grants management.

Further, agencies were to select one investment type for each of their investments, and the investment type depended on the assigned portfolio category. For IT infrastructure, security, and management investments, agencies were to select one of two investment types: standard IT infrastructure or funding transfer. For mission delivery and mission support services investments, agencies were to select one of four investment types: funding transfer, major, migration, or non-major.

- **Standard IT infrastructure.** Investments for IT goods and services that are common to all agencies and not mission-specific.
- **Funding transfer.** Contributions made by an agency to another agency's IT investment.
- **Major.** IT investments that require special management attention because of their importance to the mission or function of the government; significant program or policy implications; high executive visibility; high development, operating, or maintenance costs; or unusual funding mechanism; or because they are otherwise defined as major by the agency.
- **Migration.** Costs associated with systems in a partner agency that are not captured by the lead agency, when the partner agency is migrating to the lead agency's shared service system.
- **Non-major.** Investments that do not fit into one of the other investment types.

OMB's IT budget reporting guidance also required agencies to classify each investment listed on the dashboard using the Business Reference Model, which is part of OMB's Federal Enterprise Architecture.¹⁶ The model is a three-layered taxonomy consisting of: (1) ten mission sectors (e.g., Defense and Security, Environmental and Natural Resources, and General Government); (2) 40 business functions (e.g., Homeland Security Intelligence Operations, Water Resources, and Support Delivery of Federal Services); and (3) 225 services (e.g., Command and Control, Water Resource Management, and Provide and Maintain IT

¹⁶According to OMB, the Federal Enterprise Architecture is intended to help identify duplicative IT investments, gaps, and opportunities for collaboration, interoperability, and integration within and across agency programs.

Infrastructure). The IT Dashboard contains data related to the services layer, which is the most detailed layer and describes how the federal government uses or intends to use the investment (i.e., the investment's purpose).

In addition, agencies were to identify planned spending on development, modernization, and enhancement of new systems or capabilities for each of their IT investments reported on the IT Dashboard. Agencies were also to identify planned spending on operations and maintenance of existing systems or capabilities.

IT Management Roles and Responsibilities

As part of their effort to reform the government-wide management of IT, Congress and the President enacted FITARA in December 2014.¹⁷ The legislation was to improve covered agencies' acquisitions of IT and enable Congress to monitor agencies' progress and hold them accountable for reducing duplication and achieving cost savings.¹⁸

FITARA established roles and responsibilities for the Chief Information Officers (CIO) of covered agencies.¹⁹ Specifically:

- The CIO is to have a significant role in the decision processes for all annual or multi-year planning, programming, budgeting, and execution decisions; related reporting requirements; and reports related to IT; and in the management, governance, and oversight processes related to IT.

¹⁷Carl Levin and Howard P. 'Buck' McKeon *National Defense Authorization Act for Fiscal Year 2015*, Pub. L. No. 113-291, Div. A, Title VIII, Subtitle D, 128 Stat. 3292, 3438-3450 (Dec. 19, 2014).

¹⁸The FITARA provisions generally apply to the agencies covered by the Chief Financial Officers Act of 1990, 31 U.S.C. § 901(b), except for limited application to the Department of Defense. The covered agencies are the Departments of Agriculture, Commerce, Defense, Education, Energy, Health and Human Services, Homeland Security, Housing and Urban Development, Justice, Labor, State, the Interior, the Treasury, Transportation, and Veterans Affairs; the Environmental Protection Agency, General Services Administration, National Aeronautics and Space Administration, National Science Foundation, Nuclear Regulatory Commission, Office of Personnel Management, Small Business Administration, Social Security Administration, and U.S. Agency for International Development.

¹⁹Carl Levin and Howard P. 'Buck' McKeon *National Defense Authorization Act for Fiscal Year 2015*, Pub. L. No. 113-291, Div. A, Title VIII, Subtitle D, 128 Stat. 3439, 3440 (Dec. 19, 2014). The FITARA provisions generally have limited applicability to DOD.

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- The agency may not enter into an IT contract or agreement without the review and approval of the agency's CIO.
 - The duties of the CIO are not delegable, unless related to a non-major IT acquisition. In such a situation, the CIO may delegate their responsibilities to a subordinate who reports directly to them.
 - The agency is to review its IT investment portfolio annually in order to, among other things, increase efficiency and effectiveness and identify potential waste and duplication.

In June 2015, OMB released guidance, which expanded upon FITARA with regard to CIOs' review and approval of IT contracts and to identifying and reducing waste in agencies' IT portfolios.²⁰ Specifically, according to the guidance:

- CIOs can designate other agency officials to act as their representatives, but the CIOs must retain accountability;
- Chief Acquisition Officers are responsible for ensuring that all IT contract actions are consistent with CIO-approved acquisition strategies and plans;
- Chief Acquisition Officers are to indicate to the CIOs when planned acquisition strategies and acquisition plans include IT; and
- CIOs are to hold PortfolioStat sessions on a quarterly basis with OMB and other attendees to discuss and update a multi-year strategy to identify and reduce duplication and waste within the agency's IT portfolio.

USDS's Mission, Roles, Responsibilities, Goals, and Organization

In 2014, the President established USDS within OMB, to improve the federal government's most important public-facing digital services.²¹ Its mission is to deliver better government services to the American people through technology and design. According to OMB, USDS applies best practices in product design and engineering to improve the usefulness, user experience, and reliability of the most important public-facing federal digital services.

²⁰OMB, *Management and Oversight of Federal Information Technology*, Memorandum M-15-14 (Washington, D.C.: June 10, 2015).

²¹OMB defines digital services as the delivery of digital information (data or content) and transactional services (e.g., online forms and benefits applications) across a variety of platforms, devices, and delivery mechanisms (e.g., websites, mobile applications, and social media).

USDS is an OMB office led by an Administrator and Deputy Administrator, who report to the Deputy Director of Management and Budget. As of April 2021, USDS had 180 employees. Additionally, OMB establishes teams of detailed personnel at agencies that have longer-term engagements with USDS. OMB considers these agency digital service teams to be extensions of its USDS office. As of February 2021, USDS had digital service teams detailed at three agencies—the Departments of Health and Human Services, Homeland Security, and Veterans Affairs.²²

USDS has four goals:

- Transform critical public-facing services.
- Rethink how the federal government buys digital services.
- Expand the use of common platforms, services, and tools.
- Bring top technical talent into public service.²³

To carry out its mission, USDS receives appropriated funding, as well as reimbursements from the agencies to which it has extended digital service teams. USDS officials said that the program uses its own appropriations to fund core activities. This funding allows it to prioritize projects with urgency and impact and reduces the barrier to critical technical projects, such as at small agencies with smaller budgets. According to USDS officials and budget documentation, in addition to appropriations, beginning in fiscal year 2019, the program has received reimbursements from the Departments of Health and Human Services, Homeland Security, and Veterans Affairs to recoup some of the salary and employee benefit costs for its staff working on projects at those agencies.

²²USDS previously had digital service teams at the Departments of Defense, Education, Justice, State, and the Treasury. According to USDS, in August 2019, Defense’s digital service team became an independent organization outside of the USDS organization. The USDS Administrator closed the other four agencies’ teams in 2016 and 2017 as projects were completed and USDS assigned employees to other projects.

²³In 2016, we recommended that USDS ensure that all goals and associated performance measures are outcome-oriented and that performance measures have targets (see [GAO-16-602](#)). While USDS identified goals, in response to our recommendation, it has not established performance measures for all of its goals.

In fiscal year 2021, USDS had a budget of \$8 million. It received an additional \$200 million in the American Rescue Plan Act of 2021, which is to remain available through fiscal year 2024.²⁴ According to budget documentation, USDS is using the additional funds provided by the act to increase the number of its personnel to quickly address technology emergencies and help agencies modernize their systems for long-term stability.

According to budget documentation, USDS is using the funding to staff relief implementation projects and improve urgent delivery during the Coronavirus Disease 2019 crisis, as well as to provide system stability through recovery. USDS planned to use about \$10 million of the \$200 million in fiscal year 2021 and plans to use \$54 million in fiscal year 2022. Table 1 shows USDS’s budget for the past 3 fiscal years and its projected budget for fiscal year 2022.

Table 1: U.S. Digital Service’s Budget for Fiscal Years (FY) 2019 through 2022, in Millions of Dollars

	FY 2019	FY 2020	FY 2021	FY 2022
U.S. Digital Service’s Budget	13	7	18	54

Source: Office of Management and Budget. | GAO-22-104492

To accomplish its mission, USDS recruits private-sector IT experts (e.g., designers, engineers, and product managers) and leading civil servants, and then deploys small multi-disciplinary teams to work with government agencies. USDS officials said that they use a hiring authority called Schedule A—which permits the appointment of qualified personnel without the use of a competitive examination process—to hire the majority of its staff.²⁵ The recruited IT experts join USDS for tours of civic service lasting no more than 4 years (a 2-year term, with an option for an additional 2-year term).

18F’s Mission, Roles, Responsibilities, Goals, and Organization

GSA created 18F in 2014 with the mission of transforming the way the federal government builds and buys digital services. According to 18F, it works with agencies that request its help to deliver digital services that

²⁴American Rescue Plan Act of 2021, Pub. L. No. 117-2, Title IV, Sec. 4010, 135 Stat. 80.

²⁵USDS said that it uses 5 C.F.R. § 213.3102(r) as the specific legal source for its hiring authority.

meet user needs, and are secure and delivered quickly and at reasonable cost.

18F is a division in GSA's Office of Clients and Markets, within Technology Transformation Services (TTS),²⁶ which is part of GSA's Federal Acquisition Service. An Executive Director leads the division and, as of April 2021, 18F had a team of about 120 employees.

18F has six goals:

- Develop digital services capacity within its partner (customer) organizations.
- Produce prototypes and sites that meet the goals of the 21st Century Integrated Digital Experience Act.²⁷
- Include agile elements in partner solicitations.
- Reduce partner acquisition lead time.
- Maintain partner (customer) satisfaction levels.
- Recover all program costs.

GSA officials stated that the agency funds 18F through the Acquisition Services Fund, rather than a direct appropriation received from Congress.²⁸ The Acquisition Services Fund is a revolving fund, which operates on the revenue generated from GSA's business units.²⁹ In order to recover its costs, 18F is to establish interagency agreements with partner agencies and charge them for actual time and material costs, as well as a fixed overhead amount. Table 2 describes 18F's revenue,

²⁶The intention of TTS is to transform the way government builds, buys, and shares technology. It is responsible for, among other things, designing, building, and operating technology products and services for federal agencies; consulting with federal agencies on technology and the recruitment of staff with related expertise; designing, building, and operating government-wide technology products and platforms; and educating federal agencies on modern technology design, development, operations, and procurement methodologies.

²⁷The 21st Century Integrated Digital Experience Act (21st Century IDEA) includes requirements for new or redesigned websites or digital services. Pub. Law 115-336, 132 Stat. 5025 (2018).

²⁸According to 18F officials, the program is to recover costs through the Acquisition Services Fund reimbursement authority for the majority of projects and Economy Act reimbursement authority for a small number of projects.

²⁹40 U.S.C. § 321.

expenses, and net operating results for fiscal years 2019 through 2022. As shown in the table, the extent of 18F’s actual and projected cost recovery varies each year.

Table 2: Reported Revenue, Expenses, and Net Operating Results for 18F, Fiscal Years (FY) 2019 through 2022, in Millions of Dollars

	FY 2019 actual	FY 2020 actual	FY 2021 projected	FY 2022 projected
Revenue from goods and services sold	32.5	30.2	35.6	36.2
Operating expenses and cost of goods and services sold	33.1	33.5	34.7	37.4
Net operating results	-0.6	-3.2	0.9	-1.2

Source: GAO analysis of 18F information. | GAO-22-104492

To accomplish its mission, 18F recruits IT experts (e.g., designers, developers, technologists, researchers, and product specialists) and assigns these experts to work with government agencies. In 2016, we reported that 18F had used special hiring authorities, such as Schedule A excepted service, for a majority of its staff for terms lasting no more than 4 years (a 2-year term, with an option for an additional 2-year term).³⁰

18F officials said that they began moving away from using excepted authorities in 2019 and began increasing the use of competitive service direct-hire authority, with term appointments lasting no more than 8 years (a 4-year term, with an option for an additional 4-year term). The officials said that they began moving away from excepted authorities because the 2-year term limit required many resources to continually replace staff while keeping up with the demand for 18F’s services. According to 18F officials, the program had hired 40 percent of its staff under direct-hire authority, as of March 2021.

³⁰See [GAO-16-602](#).

The IT Dashboard Described Approximately 7,800 Federal IT Investments of Various Types for Fiscal Year 2021

For fiscal year 2021, 26 federal agencies reported 7,806 IT investments that were categorized in a variety of ways on the federal IT Dashboard. According to the data, the agencies planned to spend approximately \$71 billion on these investments in fiscal year 2021.³¹

According to the dashboard, with regard to the portfolio category, about 45 percent of the planned spending for fiscal year 2021 was on IT infrastructure, security, and management; about 37 percent was on mission delivery; and about 18 percent was on mission support services. Table 3 identifies the fiscal year 2021 planned spending for the investments by portfolio category.

Table 3: Fiscal Year (FY) 2021 Information Technology (IT) Investments and Planned Spending Reported on the IT Dashboard, by Portfolio Category

IT portfolio category	Number of investments	Percent of total investments on the dashboard	FY 2021 IT spending (in millions)	Percent of total FY 2021 IT spending on the dashboard
Infrastructure, security, and management	2,254	29	32,251.2	45
Mission delivery	2,354	30	25,918.0	37
Mission support services	3,198	41	12,799.1	18
Total	7,806	100	70,968.2	100

Source: GAO analysis of Federal IT Dashboard data. | GAO-22-104492

Also, considering the type of investment, according to the dashboard data, agencies reported most investments as non-major (60 percent). The second highest number of investments were standard IT infrastructure (27 percent). Seven percent of the investments were reported to be major. Table 4 includes the number of investments by type.

³¹In fiscal year 2021, according to the IT Dashboard data and *Department of Defense Information Technology and Cyberspace Activities Budget Overview, Fiscal Year 2021 Budget Estimates* (Feb. 2020), 26 federal agencies, including DOD, planned to spend about \$102 billion on IT. The approximately \$31 billion that is not included in the dashboard data is for DOD's national security systems (\$19 billion) and DOD's classified IT (\$12 billion).

Table 4: Fiscal Year 2021 Information Technology (IT) Investments Reported on the IT Dashboard, by Type

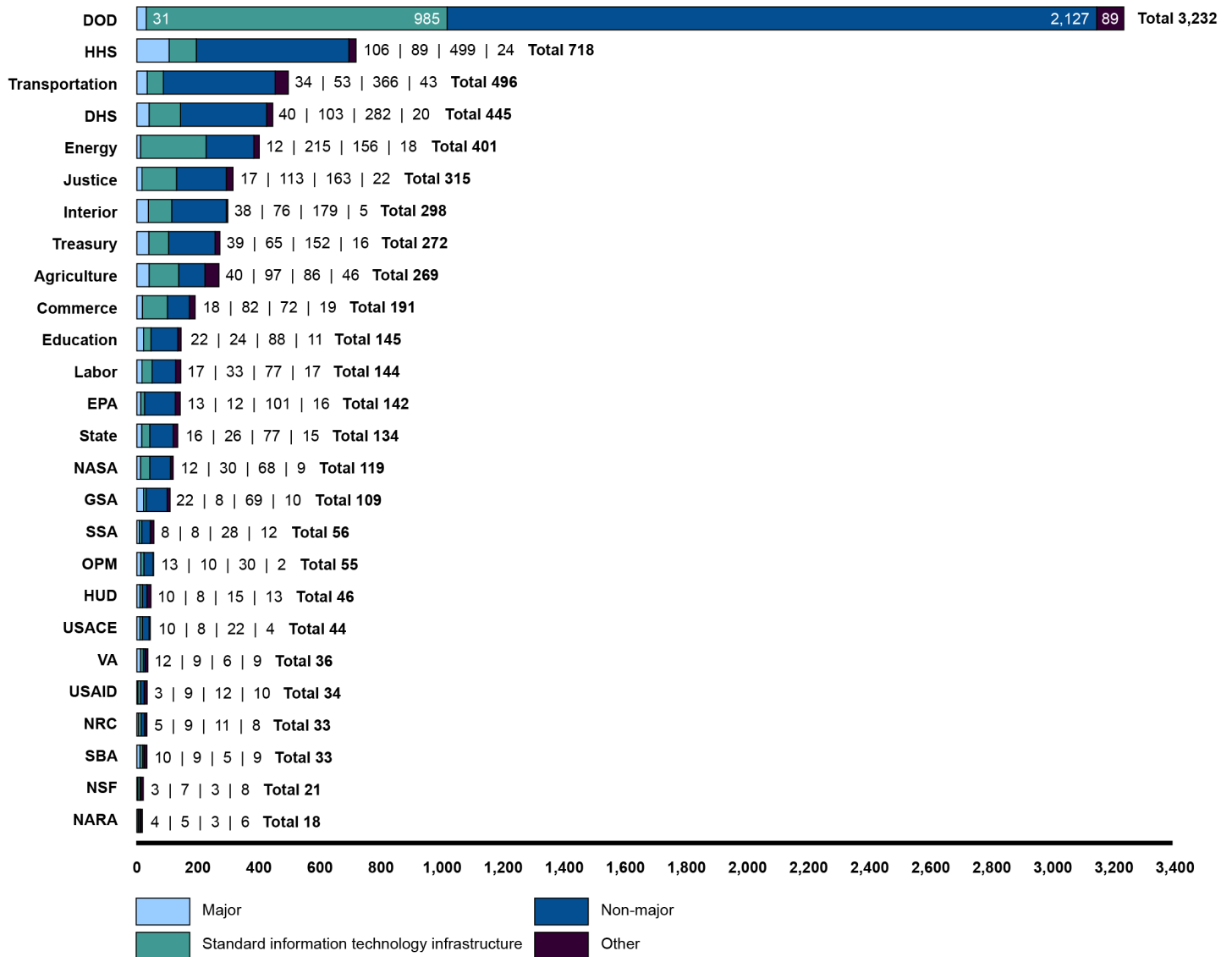
Type of investment	Number of investments	Percent of total investments on the dashboard
Non-major	4,697	60
Standard IT infrastructure	2,093	27
Major	555	7
Funding transfer	334	4
Non-standard infrastructure	127	2
Total	7,806	100

Source: GAO analysis of Federal IT Dashboard data. | GAO-22-104492

Figure 1 shows the total number of IT investments by agency. It also shows the portion of investments each agency identified as major, non-major, standard IT infrastructure, or other type of investment (i.e., funding transfer and non-standard infrastructure).

Figure 1: Total Number of Information Technology (IT) Investments Reported by Agency on the IT Dashboard for Fiscal Year 2021

Count of type of investment



Source: GAO analysis of Office of Management and Budget's Information Technology Dashboard data. | GAO-22-104492

Legend: DOD (Department of Defense), HHS (Department of Health & Human Services), Transportation (Department of Transportation), DHS (Department of Homeland Security), Energy (Department of Energy), Justice (Department of Justice), Interior (U.S. Department of the Interior), Treasury (Department of the Treasury), Agriculture (United States Department of Agriculture), Commerce (Department of Commerce), Education (Department of Education), Labor (Department of Labor), EPA (Environmental Protection Agency), State (Department of State), NASA (National Aeronautics and Space Administration), GSA (General Services Administration), SSA (Social Security Administration), OPM (Office of Personnel Management), HUD (Department of Housing and Urban Development), USACE (United States Army Corps of Engineers), VA (Department of Veterans Affairs), USAID

(United States Agency for International Development), NRC (Nuclear Regulatory Commission), SBA (Small Business Administration), NSF (National Science Foundation), NARA (National Archives and Records Administration).

As discussed earlier in this report, agencies were to classify each investment listed on the federal IT Dashboard into one of 225 service categories to identify how the federal government uses or intends to use the investment. For fiscal year 2021, agencies classified each of the 7,806 IT investments listed on the dashboard into one of 189 service categories.

The most common investments, based on service category, were for providing and maintaining IT Infrastructure (about 18 percent). According to OMB’s service category definitions, the investments in this service category are for the planning, design, and maintenance of IT Infrastructure to effectively support automated needs. Examples of investments in this service category include platforms, networks, servers, or printers.

The service category with the second highest number of investments was logistics management (about 4.4 percent). OMB defines the logistics management service category as investments for planning and tracking personnel and their resources in relation to their availability and location. Table 5 lists the 25 most common investment service categories used by the 26 agencies to classify the federal government’s investments for fiscal year 2021.

Table 5: Number and Percent of Total Information Technology (IT) Investments Reported on the IT Dashboard, by Service Category, in Fiscal Year (FY) 2021

Service category	Number of FY 21 IT investments	Percent of total FY 21 IT investments on the dashboard
Provide and Maintain IT Infrastructure	1,392	17.83
Logistics Management	345	4.42
Facilities, Fleet and Equipment Management	229	2.93
Reporting and Information	225	2.88
Data Warehouse	196	2.51
Knowledge Distribution and Delivery	186	2.38
Program / Project Management	168	2.15
Health Care Administration	162	2.08
Goods and Services Acquisition	154	1.97

Service category	Number of FY 21 IT investments	Percent of total FY 21 IT investments on the dashboard
IT System Development / Integration Support	153	1.96
Accounting	147	1.88
Taxation Management	125	1.60
Collaboration Tools	116	1.49
Customer Services	107	1.37
Inventory Control	97	1.24
Scientific and Technological Research and Innovation	93	1.19
Staffing and Recruiting	92	1.18
Employee Benefits and Compensation	92	1.18
Population Health Management	91	1.17
Security Management	91	1.17
Business Analytics	86	1.10
Threat and Vulnerability Management	82	1.05
Criminal Investigation and Surveillance	81	1.04
Budget Formulation	80	1.02
Employee Development and Training	79	1.01
All other service categories	3,137	40.19

Source: GAO analysis of Federal IT Dashboard data. | GAO-22-104492

Of the approximately \$71 billion that the agencies planned to spend on the IT investments reported on the dashboard in fiscal year 2021, \$17.9 billion (about 25 percent) was for providing and maintaining IT infrastructure. The next highest amount, \$3.9 billion (about 5.5 percent), it was for providing and supporting the delivery of healthcare services to beneficiaries. Examples of these healthcare delivery services include assessing health status, planning health services, ensuring quality of services and continuity of care, and managing clinical information and documentation. Table 6 lists the 25 investment service categories with the highest amount of fiscal year 2021 IT spending.

Table 6: Fiscal Year (FY) 2021 Information Technology (IT) Spending Reported on the IT Dashboard, by Investment Service Category

Service category	Planned FY 2021 IT spending (in millions)	Percent of total planned FY 2021 IT spending on the dashboard
Provide and Maintain IT Infrastructure	17,916.9	25.25
Health Care Delivery Services	3,915.5	5.52
Logistics Management	1,988.4	2.80
IT System Development / Integration Support	1,795.1	2.53
Taxation Management	1,680.3	2.37
Accounting	1,576.0	2.22
Enterprise Licenses and Software	1,568.5	2.21
Border and Transportation Security	1,510.7	2.13
Help Desk Services	1,490.6	2.10
Health Care Administration	1,463.8	2.06
Customer Services	1,335.3	1.88
Air Transportation	1,268.1	1.79
Scientific and Technological Research and Innovation	1,251.7	1.76
Threat and Vulnerability Management	1,129.4	1.59
Space Exploration and Innovation	995.0	1.40
Program / Project Management	985.3	1.39
Access to Care	983.8	1.39
Reporting and Information	943.2	1.33
Voice Communications	896.1	1.26
Criminal Investigation and Surveillance	886.8	1.25
Security Management	843.0	1.19
Enterprise Architecture	823.5	1.16
Employee Benefits and Compensation	748.0	1.05
Goods and Services Acquisition	744.3	1.05
General Purpose Data and Statistics	739.1	1.04
All other service categories	21,489.9	30.28

Source: GAO analysis of Federal IT Dashboard data. | GAO-22-104492

Of the 7,806 IT investments, agencies identified 555 as major investments. As we stated previously, major investments are mission delivery or mission support investments that require special management

attention because of their importance to the mission or function of the government; significant program or policy implications; high executive visibility; high development, operating, or maintenance costs; or unusual funding mechanism.

Agencies classified the major investments into one of 115 of the 225 service categories. The most common major investments, based on service category, were for health care administration (about 8.5 percent), followed by accounting (about 6.3 percent). Table 7 lists the most commonly used investment service categories for major investments across the agencies.

Table 7: Number and Percent of Major Information Technology (IT) Investments Reported on the IT Dashboard, by Service Category, in Fiscal Year (FY) 2021

Service category	Number of FY 2021 major IT investments	Percent of total FY 2021 major IT investments on the dashboard
Health Care Administration	47	8.47
Accounting	35	6.31
Taxation Management	18	3.24
Goods and Services Acquisition	17	3.06
Air Transportation	17	3.06
Border and Transportation Security	12	2.16
Employee Benefits and Compensation	12	2.16
Customer Services	11	1.98
Population Health Management	11	1.98
Logistics Management	11	1.98
Criminal Investigation and Surveillance	11	1.98
General Purpose Data and Statistics	11	1.98
Provide and Maintain IT Infrastructure	11	1.98
Health Care Delivery Services	9	1.62
Data Warehouse	9	1.62
Payments	9	1.62
Business and Industry Development	9	1.62
Facilities, Fleet and Equipment Management	8	1.44
IT System Development / Integration Support	7	1.26
Emergency Response	7	1.26
IT Strategy and Innovation	7	1.26
Intelligence Collection Tasking	7	1.26

Service category	Number of FY 2021 major IT investments	Percent of total FY 2021 major IT investments on the dashboard
Reporting and Information	7	1.26
Environmental Monitoring and Forecasting	7	1.26
Collections and Receivables	6	1.08
American Indian and Alaskan Native Relations	6	1.08
Scientific and Technological Research and Innovation	6	1.08
Access to Care	6	1.08
Permits and Licensing	6	1.08
Regulatory Compliance	6	1.08
All other service categories	209	37.66

Source: GAO analysis of Federal IT Dashboard data. | GAO-22-104492

Note: According to Office of Management and Budget guidance, an IT investment is considered major if it requires special management attention because of its importance to the mission or function of the government; significant program or policy implications; high executive visibility; high development, operating, or maintenance costs; or unusual funding mechanism; or is otherwise defined as major by the agency. Since the IT Dashboard does not include details about national security systems or classified IT investments, this table does not include any major investments that are national security systems or classified.

Of the \$71 billion planned spending reported on the IT Dashboard, agencies planned to spend about \$21 billion on major IT investments. The two service categories with the highest planned spending were health care delivery services (about \$3.7 billion or 18 percent) and health care administration (about \$1.2 billion or 6 percent). Table 8 lists the service categories with the highest amount of fiscal year 2021 planned spending on major IT investments.

Table 8: Planned Fiscal Year (FY) 2021 Major Information Technology (IT) Investment Spending Reported on the IT Dashboard, by Service Category

Service category	FY 21 planned IT spending (in millions)	Percent of Total FY 21 planned major IT investment spending on the dashboard
Health Care Delivery Services	3,683.7	17.91
Health Care Administration	1,195.9	5.81
Accounting	1,090.6	5.30
Logistics Management	952.3	4.63
Access to Care	887.5	4.31
Air Transportation	852.5	4.14

Service category	FY 21 planned IT spending (in millions)	Percent of Total FY 21 planned major IT investment spending on the dashboard
Border and Transportation Security	822.5	4.00
Taxation Management	705.7	3.43
General Purpose Data and Statistics	596.8	2.90
Provide and Maintain IT Infrastructure	502.1	2.44
Scientific and Technological Research and Innovation	472.5	2.30
Performance Management	450.3	2.19
Employee Benefits and Compensation	442.7	2.15
Customer Services	419.9	2.04
Criminal Investigation and Surveillance	419.5	2.04
Criminal and Terrorist Threat Mitigation	402.1	1.95
Environmental Monitoring and Forecasting	294.6	1.43
Veteran Benefits and Services	284.3	1.38
Collections and Receivables	262.5	1.28
Immigration and Naturalization	245.2	1.19
Information Discovery	244.0	1.19
Enterprise Architecture	240.8	1.17
Goods and Services Acquisition	232.5	1.13
Intelligence Collection Tasking	202.7	0.99
IT System Development / Integration Support	184.5	0.90
All other service categories	4,484.0	21.80

Source: GAO analysis of Federal IT Dashboard data. | GAO-22-104492

Note: According to Office of Management and Budget guidance, an IT investment is considered major if it requires special management attention because of its importance to the mission or function of the government; significant program or policy implications; high executive visibility; high development, operating, or maintenance costs; or unusual funding mechanism; or is otherwise defined as major by the agency. Since the IT Dashboard does not include details about national security systems or classified IT investments, this table does not include any major investments that are national security systems or classified.

As mentioned earlier in this report, agencies also identify, for each of their IT investments reported on the IT Dashboard, how much is planned to be spent on the development, modernization, and enhancement of new systems or capabilities and how much is planned to be spent on operations and maintenance of existing systems or capabilities. In fiscal year 2021, agencies planned to spend \$57.9 billion (82 percent) on operations and maintenance, while development, modernization, and

enhancement made up the remaining \$13 billion (18 percent) of planned spending.

According to the IT dashboard data for fiscal year 2021, the five service categories for which agencies planned to spend the highest amount on operations and maintenance were:

- Provide and Maintain IT Infrastructure (\$16 billion),
- Health Care Delivery Services (\$3.4 billion),
- Logistics Management (\$1.6 billion),
- Enterprise Licenses and Software (\$1.5 billion), and
- Help Desk Services (\$1.4 billion).

The five service categories for which agencies planned to spend the highest amount on development, modernization, and enhancement were:

- Provide and Maintain IT Infrastructure (\$1.9 billion),
- Air Transportation (\$652 million),
- Taxation Management (\$521 million),
- Health Care Delivery Services (\$496 million), and
- IT System Development/Integration Support (\$475 million).

Agencies Made Progress Addressing IT Duplication and Management Roles and Responsibilities, but Work Remains

Over the past 10 years, we have issued numerous reports on federal agencies' efforts to develop and acquire IT. Among them, we issued 16 reports that made a total of 392 recommendations to 33 agencies to help address duplicative IT, and to clarify and strengthen IT management roles and responsibilities.

OMB and agencies had made progress in implementing our recommendations, with 290 recommendations fully implemented, as of October 2021. However, while this is notable progress, agencies had not yet fully implemented 102 recommendations.

Further, as of October 2021, agencies had made more progress on implementing the recommendations to address IT duplication (87 percent) than on the recommendations to address IT roles and responsibilities (44 percent). Specifically, we made 275 recommendations related to duplicative IT, such as weaknesses in the processes agencies were using

to identify complete application inventories, reduce IT contract duplication, and consolidate data centers, among other things.

Of the 275 recommendations related to duplicative IT, 238 had been fully addressed, and 37 had not been addressed. For example:

- In May 2014, we reported on agencies' management of software licenses and found that none of the 24 federal agencies we reviewed had fully implemented practices to regularly track and maintain comprehensive inventories of software licenses or to analyze the software license data to inform investment decisions.³² We stated that, as a result, agencies' oversight of software license spending was limited or lacking, and they could miss out on opportunities to reduce software license duplication and spending. We made 118 recommendations to 24 agencies and OMB to help address duplicative software licenses. As of October 2021, 114 recommendations were fully implemented, but four had not been implemented at three agencies.

Agencies that implemented the recommendations have collectively reported achieving hundreds of millions in cost savings and avoidance due to their efforts to improve software license management. For example, the Social Security Administration analyzed its software license inventory and, as a result of these reviews, reported \$140 million in cost savings and avoidance for fiscal years 2015 through 2019. In addition, the Department of Health and Human Services analyzed its agency-wide inventory of software license data and identified opportunities for consolidating redundant software purchases and generating enterprise agreements with volume discounts resulting in \$226.6 million in cost savings and avoidance for fiscal years 2014 through 2018.

- In September 2016, we reported on 24 federal agencies' efforts to establish a complete software application inventory and rationalize their portfolios of applications to, among other things, reduce

³²GAO, *Federal Software Licenses: Better Management Needed to Achieve Significant Savings Government-wide*, [GAO-14-413](#) (Washington, D.C.: May 22, 2014).

complexity and redundancy.³³ We noted that 20 of the agencies had not fully met four practices for establishing complete application inventories, which limited their ability to identify savings and efficiencies.³⁴ We also found that five agencies had not rationalized all of their applications. We made 25 recommendations to 22 agencies to improve their efforts to rationalize their portfolios of applications.

As of October 2021, 20 recommendations were fully implemented, but five had not been fully implemented at four agencies. By fully implementing the recommendations, agencies are better positioned to identify opportunities to reduce redundancy, which could lead to savings and efficiencies.

- In September 2020, we reported on seven agencies' efforts to reduce IT contract duplication. We noted that three agencies were not fully sharing prices paid, terms, and conditions for purchased IT goods and services that agencies can use to make informed acquisition decisions, including identifying opportunities to reduce IT contract duplication.³⁵ We also reported that five of the seven agencies had not regularly used a spend analysis to identify opportunities to reduce IT contract duplication. Accordingly, we made 20 recommendations to six agencies. As of October 2021, one agency had implemented one of the recommendations, and 19 recommendations had not been fully implemented. Until agencies fully implement the recommendations, they will be at increased risk of wasteful spending, and will likely miss opportunities to identify and realize savings of potentially millions of dollars.

Table 9 summarizes the implementation status of the recommendations we made to federal agencies to address duplicative IT, which were included in 12 reports.

³³In a memorandum issued in March 2013, OMB advocated the use of application rationalization, which is the process of streamlining an agency's portfolio to improve efficiency, reduce complexity and redundancy, and lower the cost of ownership. OMB, *Fiscal Year 2013 PortfolioStat Guidance: Strengthening Federal IT Portfolio Management*, M-13-09 (Washington, D.C.: Mar. 27, 2013).

³⁴GAO, *Information Technology: Agencies Need to Improve Their Application Inventories to Achieve Additional Savings*, [GAO-16-511](#) (Washington, D.C.: Sept. 29, 2016).

³⁵GAO, *Information Technology: Selected Federal Agencies Need to Take Additional Actions to Reduce Contract Duplication*, [GAO-20-567](#) (Washington, D.C.: Sept. 30, 2020).

Table 9: GAO Reports Identifying Issues and Recommendations Related to Duplicative Information Technology, as of October 2021, in Chronologic Order

GAO report	Number of related recommendations	Number of agencies that received a recommendation	Number of recommendations that had not been fully implemented	Number of agencies with recommendations that had not been fully implemented
<i>Data Center Consolidation: Agencies Need to Complete Inventories and Plans to Achieve Expected Savings, GAO-11-565</i>	26	24	0	0
<i>Information Technology: OMB Needs to Improve Its Guidance on IT Investments, GAO-11-826</i>	3	1	0	0
<i>Information Technology: Departments of Defense and Energy Need to Address Potentially Duplicative Investments, GAO-12-241</i>	5	3	0	0
<i>Information Technology: Key Federal Agencies Need to Address Potentially Duplicative Investments, GAO-13-718</i>	3	3	0	0
<i>Information Technology: Additional OMB and Agency Actions Are Needed to Achieve Portfolio Savings, GAO-14-65</i>	42	23	6	4
<i>Federal Software Licenses: Better Management Needed to Achieve Significant Savings Government-Wide, GAO-14-413</i>	118	25	4	3
<i>Strategic Sourcing: Opportunities Exist to Better Manage Information Technology Services Spending, GAO-15-549</i>	13	5	0	0
<i>Information Technology: Agencies Need to Improve Their Application Inventories to Achieve Additional Savings, GAO-16-511</i>	25	22	5	4
<i>Information Technology: Agencies Need to Involve Chief Information Officers in Reviewing Billions of Dollars in Acquisitions, GAO-18-42</i>	8	8	0	0
<i>Data Center Optimization: Additional Agency Actions Needed to Meet OMB Goals, GAO-19-241</i>	11	11	2	2

GAO report	Number of related recommendations	Number of agencies that received a recommendation	Number of recommendations that had not been fully implemented	Number of agencies with recommendations that had not been fully implemented
<i>Data Center Optimization: Agencies Report Progress, but Oversight and Cybersecurity Risks Need to Be Addressed</i> , GAO-20-279	1	1	1	1
<i>Information Technology: Selected Federal Agencies Need to Take Additional Actions to Reduce Contract Duplication</i> , GAO-20-567	20	6	19	6
Total recommendations	275	29	37	16

Source: GAO analysis of GAO reports. | GAO-22-104492

Note: Since 2011, GAO has issued annual products responding to a statutory provision for it to identify and report on federal programs, agencies, offices, and initiatives—either within departments or government-wide—that have duplicative goals or activities. (Pub. L. No. 111-139, § 21, 124 Stat. 8, 29 (2010), codified at 31 U.S.C. § 712 note.) Table 9 represents a subset of reports GAO issued on duplication topics that had recommendations relevant to our review. For more complete information on the key issues, progress made, and related products in these duplication areas, see GAO’s action tracker at <https://www.gao.gov/reports-testimonies/action-tracker>.

We made 117 recommendations to address issues related to agencies’ IT management roles and responsibilities. As of October 2021, 52 of the recommendations had been implemented, while 65 recommendations had not been implemented. For example:

- We previously highlighted unclear responsibilities among IT management roles at 21 selected agencies that limited their ability to identify duplicative IT. Specifically, in May 2017, we reported on the Department of Homeland Security’s efforts to implement CIO responsibilities and, in January 2018, we reported on 22 other agencies’ efforts to implement CIO responsibilities. Collectively, we found that 21 of the agencies had not sufficiently established CIO and acquisition officials’ roles, which limited their ability to identify duplicative IT.³⁶ Accordingly, we made 32 recommendations to 21 agencies to address these concerns. As of October 2021, 17 agencies had implemented 24 of our recommendations, but seven agencies had not implemented eight recommendations. By fully

³⁶GAO, *Homeland Security: Progress Made to Implement IT Reform, but Additional Chief Information Officer Involvement Needed*, [GAO-17-284](#) (Washington, D.C.: May 18, 2017) and *Information Technology: Agencies Need to Involve Chief Information Officers in Reviewing Billions of Dollars in Acquisitions*, [GAO-18-42](#) (Washington, D.C.: Jan. 10, 2018).

implementing the recommendations, the agencies will be able to provide more effective oversight of IT acquisitions and fully realize the benefits FITARA intended, such as identifying IT acquisitions that are duplicative, wasteful, or poorly conceived. Until the agencies implement the remaining recommendations, they will miss an opportunity to strengthen their CIOs' authority and oversight of IT acquisitions.

- Among 24 federal agencies that we reported on in August 2018, none had policies that fully addressed the role of their CIOs consistent with federal laws and guidance.³⁷ We also highlighted weaknesses in OMB guidance on the comprehensiveness of the CIOs' roles and responsibilities. We stressed that such weaknesses could affect the CIOs' ability to effectively acquire, maintain, and secure their agencies' IT systems. To address these issues, we made one recommendation to each of the 24 agencies and three to OMB. As of October 2021, only four agencies had fully implemented their recommendations, and OMB had implemented one of its recommendations. Until OMB improves its guidance to clearly address all CIO responsibilities and agencies fully address the role of CIOs in their policies, CIOs will be limited in effectively managing IT and addressing long-standing IT management challenges.

Table 10 summarizes the status of the 117 recommendations on IT management roles and responsibilities.

³⁷GAO, *Federal Chief Information Officers: Critical Actions Needed to Address Shortcomings and Challenges in Implementing Responsibilities*, [GAO-18-93](#) (Washington, D.C.: Aug. 2, 2018).

Table 10: GAO Reports Identifying Issues and Recommendations Related to Federal Agencies' Information Technology Management Roles and Responsibilities, as of October 2021, in Chronologic Order

GAO report	Number of related recommendations	Number of agencies that received a recommendation	Number of recommendations that had not been fully implemented	Number of agencies with recommendations that had not been fully implemented
<i>Data Center Consolidation: Strengthened Oversight Needed to Achieve Cost Savings Goal</i> , GAO-13-378	1	1	0	0
<i>Federal Software Licenses: Better Management Needed to Achieve Significant Savings Government-Wide</i> , GAO-14-413	18	18	2	2
<i>Homeland Security: Progress Made to Implement IT Reform, but Additional Chief Information Officer Involvement Needed</i> , GAO-17-284	1	1	0	0
<i>Information Technology: Agencies Need to Involve Chief Information Officers in Reviewing Billions of Dollars in Acquisitions</i> , GAO-18-42	31	20	8	7
<i>Federal Chief Information Officers: Critical Actions Needed to Address Shortcomings and Challenges in Implementing Responsibilities</i> , GAO-18-93	27	25	22	21
<i>Information Technology: Departments Need to Improve Chief Information Officers' Review and Approval of IT Budgets</i> , GAO-19-49	39	8	33	6
Total recommendations	117	29	65	24

Source: GAO analysis of GAO reports. | GAO-22-104492

Collectively, as of October 2021, agencies had not implemented 102 recommendations to address duplicative IT or management roles and responsibilities. We are not making any new recommendations because the existing recommendations remain valid. Until agencies fully implement the recommendations, they will not be positioned to oversee and effectively manage their IT development and acquisition efforts, and will continue to risk wasting federal funds and other resources on duplicative IT investments.

USDS and 18F Consistently Coordinated on IT Projects and Recruiting, but Not on Developing IT Guidance

According to GAO guidance on evaluating and managing fragmentation, overlap, and duplication, executive branch leaders and program administrators should take actions to help identify and mitigate the negative effects of fragmentation, overlap, and duplication.³⁸ For example, leaders and program administrators can ensure that their programs run efficiently and effectively by initiating and participating in collaborative efforts between agencies.

Additionally, agencies can enhance and sustain their collaborative efforts by following leading collaboration practices that GAO has identified. These practices include establishing means to operate across agency boundaries (e.g., compatible policies and procedures and frequent communications). The practices also state that agencies can enhance their collaborative efforts by identifying opportunities to address resource needs and by leveraging each other's resources, thus, obtaining additional benefits that would not be available if the agencies were working separately. In addition, according to the practices, agencies can strengthen their commitment to work collaboratively by articulating agreements in formal documents, such as a memorandum of understanding or interagency planning document, signed by senior officials in the respective agencies.³⁹

OMB's USDS and GSA's 18F offices conduct similar activities to fulfill their mission, such as providing expertise to agencies on specific IT projects, recruiting IT experts, and developing guidance to assist agencies in acquiring IT. Regarding IT projects, USDS and 18F officials stated that having different business models reduces the amount of coordination needed on projects. In describing USDS's business model, its officials said that the program funds most of its own work and, therefore, identifies the projects for which it will provide assistance and engages in discussions with those agencies.

In contrast, 18F officials said that, because agencies reimburse their program for its services, agencies approach 18F when they need assistance. Thus, according to the officials, these agencies would be expected to know if they are obtaining the same assistance from both

³⁸GAO, *Fragmentation, Overlap, and Duplication: An Evaluation and Management Guide*, GAO-15-49SP (Washington, D.C.: Apr. 14, 2015).

³⁹GAO-06-15.

USDS and 18F and, in doing so, are engaging in overlapping or duplicative efforts.

Notwithstanding its different business models, USDS and 18F described steps they take to coordinate on their projects. For example, USDS officials said that they discuss 18F in their communications with the agencies, such as asking if the agency had previously or is currently engaged with 18F. USDS officials also said that they recommend 18F as a potential alternative if USDS is not able to engage on a project.

As another example, USDS and 18F officials described meetings USDS and GSA's Technology Transformation Service (TTS) leadership—the office that oversees 18F—conduct to discuss strategic collaboration on a wide variety of topics, including the current and upcoming projects USDS and 18F are each working on. USDS officials said they also hold additional meetings that include representation from USDS and TTS, as well as others in OMB and agency leadership, to communicate on more specific topics and projects.

The project coordination approaches appear to be working because, in reviewing the 504 completed and active USDS and 18F projects, as of February 2021, we did not find evidence of overlap or duplication among them.⁴⁰ Moreover, USDS and 18F had collaborated with each other when working on four of the projects. For example, in 2017, USDS and 18F worked together to launch Login.gov, which is a single sign-on solution for government websites.⁴¹

For recruiting efforts, USDS and 18F officials described steps they take to coordinate with each other. For example, 18F officials said that a TTS talent acquisition team coordinates 18F recruiting. TTS officials stated that they coordinate recruiting for several programs they oversee that need IT talent, including 18F,⁴² by sharing information about job applicants that did not work out for one program but could be a good

⁴⁰USDS had 130 projects and 18F had 374 projects, from the programs' inception in 2014 through February 2021.

⁴¹Login.gov is a secure sign in service used by the public to sign in to participating government agencies. It enables users to log in to services from numerous government agencies using the same username and password.

⁴²Other TTS programs include the IT Modernization Centers of Excellence, which is a centralized team of technical experts intended to accelerate agency-wide IT modernization, and the Presidential Innovation Fellowship, which is a program that pairs top technologists with civil servants to tackle the nation's challenges.

candidate for another. TTS officials said they also share candidate information with USDS. Further, USDS shares information about job candidates with TTS and other agency digital service teams.

Although they coordinated on projects and recruiting, USDS and 18F did not always coordinate on the IT acquisition and development guidance they provided to agencies. 18F officials told us that they had not formally established an approach for coordinating with USDS on planning and developing IT guidance for agencies. USDS officials said they have coordinated with 18F on guidance when it made sense to do so. Both USDS and 18F officials also described examples of ad hoc ways in which communication about guidance had occurred, such as in meetings on other topics and informal communication among their employees.

Among the guidance USDS and 18F have issued to date, we found one example where the two programs had collaborated on guidance. Specifically, in 2015, USDS and 18F collaborated on the development of the U.S. Web Design System, which is a library of code, tools, and guidance to help government teams design and build websites.

Additionally, as of March 2021, USDS had issued 10 guidance documents and 18F had issued 14 guidance documents—available through their websites—to assist agencies on a variety of IT acquisition and development topics. Although we did not find significant issues with the content of the guidance, such as conflicting information, the guidance at times covered the same topics and had similar content. Specifically, each program had issued at least one document that covered each of six similar topics. In two of these cases, USDS and 18F referenced each other's related content. For example, 18F's Partnership Principles states that it builds upon USDS's Digital Services Playbook—both of which include key principles for agencies' IT acquisition and development projects.

However, USDS and 18F did not coordinate or reference their guidance documents related to four other similar topics. For example, both USDS and 18F developed two guides each on acquiring digital services using agile development methods. These guides included information on some of the same agile software development topics, such as modular

contracting and product vision.⁴³ (See appendix II for all USDS and 18F guidance documents and topics.)

18F officials said that they do not think it is necessary to coordinate with USDS on planning and developing the guidance they issue because 18F has experts who are qualified to contribute to its guides. Nevertheless, 18F officials acknowledged that they would want to avoid duplicating efforts on developing guidance. USDS officials said they would do more in the future to coordinate with 18F on guidance, but did not provide specific plans or time frames for doing so.

Having a coordinated approach is important, given that both programs provide similar IT expertise and issue guidance on similar topics for agencies. However, by not coordinating on the planning and development of guidance, USDS and 18F risk overlapping or duplicating their efforts or presenting conflicting information in their guidance. Additionally, by not coordinating more strategically on their guidance, USDS and 18F could miss opportunities to identify and leverage each other's resources and expertise in ways that enhance the guidance and assistance they provide to agencies.

Conclusions

Given the magnitude of the federal government's investment in IT, it is important that federal agencies responsible for developing and acquiring systems avoid overlapping or duplicating IT work. Agencies have made progress addressing recommendations we have made to address duplicative IT and improve management roles and responsibilities. However, as of October 2021, 102 of 392 recommendations had not been implemented. Until agencies fully implement these recommendations, they will not be positioned to fully oversee and effectively manage their IT acquisitions. Moreover, they will continue to risk wasting federal funds and other resources on duplicative IT investments.

USDS and 18F help agencies develop and acquire IT, and they have successfully coordinated to avoid overlapping or duplicating efforts on agency projects. In addition, they have coordinated recruiting efforts to address their need to hire IT experts. However, they do not consistently coordinate their plans to develop and issue IT acquisition and development guidance for agencies, which risks overlapping or duplicating work or presenting conflicting information. Further, by not

⁴³The guides include 18F's *State Software Budgeting Handbook* (August 2019) and *De-risking Government Technology Federal Agency Field Guide* (Sept. 2020), and USDS's *Acquisition Principles for Digital Services* and *TechFAR Handbook for Procuring Digital Services Using Agile Processes*.

coordinating in a more strategic manner on their guidance development efforts, USDS and 18F diminish their opportunities to leverage each other's resources and achieve greater outcomes.

Recommendations for Executive Action

We are making a total of two recommendations, including one to USDS and one to 18F. Specifically:

The Director of OMB should direct the Administrator of USDS to work with the Executive Director of 18F to establish and document an approach to coordinate on the IT guidance they provide to agencies. (Recommendation 1)

The Administrator of General Services should direct the Executive Director of 18F to work with the Administrator of USDS to establish and document an approach to coordinate on the IT guidance they provide to agencies. (Recommendation 2)

Agency Comments

We received comments on a draft of this report from OMB and GSA. Specifically, via email, a liaison to GAO in OMB's General Counsel Office stated that, to address our recommendation, USDS and TTS (the GSA office that oversees 18F) have begun meeting to develop new processes to ensure future coordination between the two programs. Further, in written comments, GSA stated that it concurred with our recommendation and planned to work with OMB and USDS to address the recommendation. GSA's comments are reproduced in appendix III.

We are sending copies of this report to the appropriate congressional committees; the Acting Director, Office of Management and Budget; and the Administrator, General Services Administration. In addition, this report is available at no charge on the GAO website at <http://www.gao.gov>.

If you or your staff members have any questions about this report, please contact me at (202) 512-4456 or harriscc@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 contributions to this report are listed in appendix IV.



Carol C. Harris
Director, Information Technology Management Issues

List of Committees

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United States Senate

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Committee on Appropriations
House of Representatives

Appendix I: Objectives, Scope, and Methodology

Our objectives were to (1) describe the procurement, development, and modernization investments identified on the federal information technology (IT) Dashboard; (2) summarize prior GAO recommendations and current implementation status on IT duplication and management roles and responsibilities; and (3) determine the extent to which U.S. Digital Service (USDS) and 18F coordinate IT services to avoid overlap or duplication.

For the first objective, we analyzed agency-reported IT investment data for fiscal year 2021, downloaded from the Office of Management and Budget's (OMB) IT Dashboard (www.itdashboard.gov) in January 2021. The data from the dashboard contains IT investment information reported from 26 agencies.¹

We summarized the 7,806 IT investments the agencies reported on the dashboard for fiscal year 2021 by IT portfolio categories and investment types. For each of the three portfolio categories, according to OMB's guidance for fiscal year 2021 IT budget reporting—IT infrastructure, IT security, and IT management; mission delivery; and mission support services—we determined the number of investments and planned spending. We also determined the total number of investments reported by each of the 26 agencies and the number of investments by investment type, according to OMB's guidance—non-major, standard IT infrastructure, major, funding transfer, or non-standard infrastructure.

In addition, we summarized the number of investments and planned spending agencies reported by service category, according to the dashboard data. Specifically, agencies classified each investment listed on the dashboard using the Business Reference Model, which is part of OMB's Federal Enterprise Architecture. The Business Reference Model is a taxonomy structured as a three-layer hierarchy representing executive branch mission sectors, business functions, and services. Agencies categorized each investment by service, which is the most detailed layer and describes how the federal government uses or intends to use the

¹The 26 federal agencies are the Departments of Agriculture, Commerce, Defense, Education, Energy, Health and Human Services, Homeland Security, Housing and Urban Development, Justice, the Interior, Labor, State, Transportation, the Treasury, Veterans Affairs; the Environmental Protection Agency; the General Services Administration; the National Aeronautics and Space Administration; National Archives and Records Administration; National Science Foundation; Nuclear Regulatory Commission; Office of Personnel Management; Small Business Administration; Social Security Administration; U.S. Agency for International Development; and the U.S. Army Corps of Engineers.

investment (i.e., the investment's purpose). Among 225 service categories in OMB's model, we determined the 25 service categories with the highest number of investments reported across all investment types and agencies, as well as the 25 service categories with the highest amount of planned fiscal year 2021 spending. We also determined the service categories with the highest number of investments and highest planned spending for the investments reported by the 26 agencies as a major investment type.²

Finally, we determined, according to the IT Dashboard data, how much agencies planned to spend on development, modernization, and enhancement of new systems or capabilities and how much agencies planned to spend on operations and maintenance of existing systems or capabilities, in fiscal year 2021. We also determined the five service categories with the highest amount of planned spending for development, modernization, and enhancement; and for operations and maintenance.

For the second objective, we identified prior GAO reports on IT development or acquisition efforts that were government-wide in scope or that involved multiple federal agencies. We reviewed the findings and recommendations in these reports to identify any recommendations made to OMB or federal agencies to address issues related to (1) efforts to avoid duplicative IT or (2) IT management roles and responsibilities.

We identified 16 reports that GAO issued from 2011 through 2020, with a total of 392 relevant recommendations. We determined the implementation status of these recommendations, as of October 2021. We then summarized the total number of relevant recommendations that we made in each of these reports to address duplicative IT and IT management roles and responsibilities, the number of agencies that received relevant recommendations, and the number of recommendations that had not been fully implemented.

To address the third objective, we assessed the extent to which USDS and 18F coordinate IT services to avoid overlap or duplication by comparing their efforts with leading collaboration practices, according to

²According to OMB guidance, major investments are mission delivery or mission support investments that require special management attention because of their importance to the mission or function of the government; significant program or policy implications; high executive visibility; high development, operating, or maintenance costs; or unusual funding mechanism; or because they are otherwise defined as major by the agency.

our prior work on managing fragmentation, overlap, and duplication.³ In addition, we used the steps recommended by GAO's fragmentation, overlap, and duplication evaluation guide to identify whether there was any fragmentation, overlap, or duplication in their activities.⁴ We also considered control activities related to two key internal control principles when USDS and 18F had not addressed leading collaboration practices to avoid duplication. The key internal control principles are that management should (1) design control activities to achieve objectives and respond to risks and (2) implement control activities through policies.⁵

First, we reviewed USDS and 18F reports and websites and our prior report on these two programs to identify their mission, roles, responsibilities, and goals.⁶ Based on this review, we identified similar activities that both USDS and 18F conduct: assist agencies on IT projects; plan, develop, and issue IT guidance; and recruit and hire IT experts. For each of these activities, we interviewed USDS and 18F officials and analyzed supporting documentation to determine the extent to which they had established an approach to coordinating to avoid duplication or overlap. We compared the efforts to leading collaboration practices, according to our prior work. Specifically, we assessed the extent to which these entities had developed ways for operating across agency boundaries, identifying opportunities to address resource needs and leverage each other's resources, and documenting their commitment to work collaboratively.⁷

To identify potentially duplicative projects, we obtained and analyzed USDS's and 18F's project lists. 18F's project list included 374 projects, which started between November 2013 and March 2021, and USDS's list included 130 projects completed between May 2015 and February 2021. We reviewed both project lists and identified potentially duplicative work if

³GAO, *Results-Oriented Government: Practices That Can Help Enhance and Sustain Collaboration among Federal Agencies*, [GAO-06-15](#) (Washington, D.C.: Oct. 21, 2005) and *Fragmentation, Overlap, and Duplication: An Evaluation and Management Guide*, [GAO-15-49SP](#) (Washington, D.C.: Apr. 14, 2015).

⁴[GAO-15-49SP](#).

⁵GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#) (Washington, D.C.: Sept. 10, 2014).

⁶GAO, *Digital Service Programs: Assessing Results and Coordinating with Chief Information Officers Can Improve Delivery of Federal Projects*, [GAO-16-602](#) (Washington, D.C.: Aug. 15, 2016).

⁷[GAO-06-15](#).

both lists included projects with similar project names. In cases where we identified potentially duplicative work, we reviewed additional information from 18F, such as their interagency agreements describing the project, and from USDS, such as reports on its projects, to determine if the work was actually duplicative. We also examined whether USDS and 18F coordinated on projects that appeared to be duplicative.

To determine the reliability of the data in USDS's and 18F's project lists, we interviewed USDS and 18F officials about the steps taken to ensure their respective entity's list is complete and accurate. We concluded that the data were sufficiently reliable for the purposes of identifying potential overlap or duplication among USDS's and 18F's projects.

To assess the extent to which USDS and 18F have coordinated to recruit and hire IT experts, we interviewed USDS and 18F officials about their efforts, and obtained and reviewed a USDS June 2021 candidate referral report. We compared the efforts to leading collaboration practices, according to our prior work, which calls for programs to establish ways to operate across agency boundaries and identify opportunities to address resource needs.

To identify potentially duplicative guidance, we identified all guidance released on USDS's and 18F's websites. We identified 10 guidance documents USDS released and 14 guidance documents 18F released, as well as one additional guidance document they collaborated on. To verify that our lists were complete, as of March 2021, we interviewed agency officials. We analyzed the guidance and determined that eight USDS documents and seven 18F documents covered six similar topics, such as guiding principles, acquisition of digital services using agile methods, and agile development.

We assessed the extent to which guidance documents that covered similar topics were overlapping or duplicative by comparing the documents' purpose and contents. We also examined the documents to determine whether USDS and 18F coordinated on the guidance that appeared to be overlapping or duplicative.

In addition, we interviewed USDS and 18F officials about their efforts to coordinate on planning and developing guidance for agencies. We compared the efforts to leading collaboration practices, according to our prior work. Specifically, we assessed the extent to which USDS and 18F had developed ways for operating across agency boundaries and for identifying opportunities to leverage each other's resources.

**Appendix I: Objectives, Scope, and
Methodology**

We conducted this performance audit from August 2020 to December 2021 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.

Appendix II: U.S. Digital Service and 18F Guidance

In 2015, U.S. Digital Service (USDS) and 18F collaborated on the development of the U.S. Web Design System, which is a library of code, tools, and guidance to help government teams design and build websites. In addition, USDS issued 10 other guidance documents and 18F issued 14 other guidance documents—available through their websites, as of March 2021—to assist agencies on a variety of IT acquisition and development topics. The guidance at times covered the same topics and had similar content. Specifically, each program had issued at least one document that covered each of six similar topics. Table 11 lists USDS and 18F guidance that covered a similar topic, and whether the programs coordinated on the guidance.

Table 11: Guidance released on U.S. Digital Service’s (USDS) and 18F’s Websites, as of March 2021, with Similar Topics and the Extent of their Coordination

Topic	USDS guidance	18F guidance	Coordination
Acquisition of digital services using agile methods	USDS Acquisition Principles for Digital Services	State Software Budgeting Handbook: De-risking Custom Technology Projects	None
	TechFAR: Handbook for Procuring Digital Services Using Agile Processes	De-risking Government Technology: Federal Agency Field Guide	
Agile development	Quick and Dirty Skinny on Agile Software Development	Agile Principles and 18F Practices	None
Collecting information about a problem	Discovery Sprint Guide ^a	Discover Methods Cards	None
	Discovery Sprint Guide: Interview Guide		
Guidance on writing	Every Project Needs an Inspiring Product Vision	18F Content Guide	None
Guiding principles	Digital Services Playbook	18F Partnership Principles	None ^b
Understanding the information collected about a problem	Discovery Sprint Guide ^a	Decide Method Cards	None ^c
	Discovery Sprint Guide: Writing Guide		

Source: GAO analysis of USDS and 18F guidance. | GAO-22-104492

^aThe Discovery Sprint Guide was organized in two topics (collecting information about a problem and understanding the information collected about a problem).

^bAlthough they did not coordinate on the guidance, 18F stated in 18F Partnership Principles that it builds on USDS’s Digital Services Playbook.

^cAlthough they did not coordinate on the guidance, USDS’s Discovery Sprint Guide referenced 18F’s Decide Method Cards guidance.

In addition, USDS released two guidance documents that did not cover a similar topic as 18F guidance:

- Finding Opportunities and Providing Services to the Federal Government

-
- Guide on How to Use an 8(a) Company For Your Digital Service Needs

18F released seven guidance documents that did not cover a similar topic as USDS guidance:

- 18F Product Guide
- User Experience (UX) Design Guide
- 18F Accessibility Guide
- TTS Engineering Practices Guide
- Make Methods Cards
- Validate Methods Cards
- Fundamentals Methods Cards

Appendix III: Comments from the General Services Administration

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The Administrator

November 17, 2021

The Honorable Gene L. Dodaro
Comptroller General of the United States
U.S. Government Accountability Office
Washington, DC 20548

Dear Mr. Dodaro:

The U.S. General Services Administration (GSA) appreciates the opportunity to review and comment on the draft report, "*Information Technology, Digital Service Programs Need to Consistently Coordinate on Developing Guidance for Agencies*" (GAO-22-104492).

The U.S. Government Accountability Office (GAO) recommends that the GSA Administrator should direct the Executive Director of 18F to work with the Administrator of the United States Digital Service (USDS) to establish and document an approach to coordinate on the IT guidance they provide to agencies.

GSA concurs with the recommendation and will collaborate with the Office of Management and Budget and USDS, as appropriate, in addressing this recommendation.

If you have any additional questions or concerns, please do not hesitate to contact Gianelle E. Rivera, Associate Administrator, Office of Congressional and Intergovernmental Affairs, at (202) 501-0563.

Sincerely,

A handwritten signature in blue ink that reads "Robin Carnahan".

Robin Carnahan
Administrator

cc: Carol C. Harris, Director, Information Technology Management Issues

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Appendix IV: GAO Contact and Staff Acknowledgments

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Staff Acknowledgments

In addition to the individual named above, Jeanne Sung (Assistant Director), Cheryl Dottermusch (Analyst in Charge), Scott Borre, Chris Businsky, Donna Epler, Corwin Hayward, Dave Hinchman, Julia Munroe, Ahsan Nasar, Katherine Noble, Monica Perez-Nelson, and Adam Vodraska made contributions to this report.

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