GAO

December 2023

ARTIFICIAL INTELLIGENCE

Agencies Have Begun Implementation but Need to Complete Key Requirements

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Why GAO Did This Study

While there are varying definitions of AI, they generally refer to computing systems that "learn" how to improve their performance. AI has the potential to rapidly change the world and holds substantial promise for improving government operations. However, AI poses risks that can negatively impact individuals, groups, organizations, communities, and society.

The President's fiscal year 2023 budget request included $1.8 billion for nondefense research and development investment in AI. In addition, some agencies are using AI operationally to identify information security threats and facilitate the review of large datasets, among other uses. Given the rapid growth in capabilities and widespread adoption of AI, the federal government should have safeguards to manage AI's complexities, risks, and societal consequences.

In this report, GAO reviewed the implementation of AI at major federal agencies. This report examines (1) federal agency reported current and planned uses of AI, (2) the extent to which federal agencies' AI reporting was comprehensive and accurate, and (3) the extent to which federal agencies have complied with selected federal policy and guidance on AI.
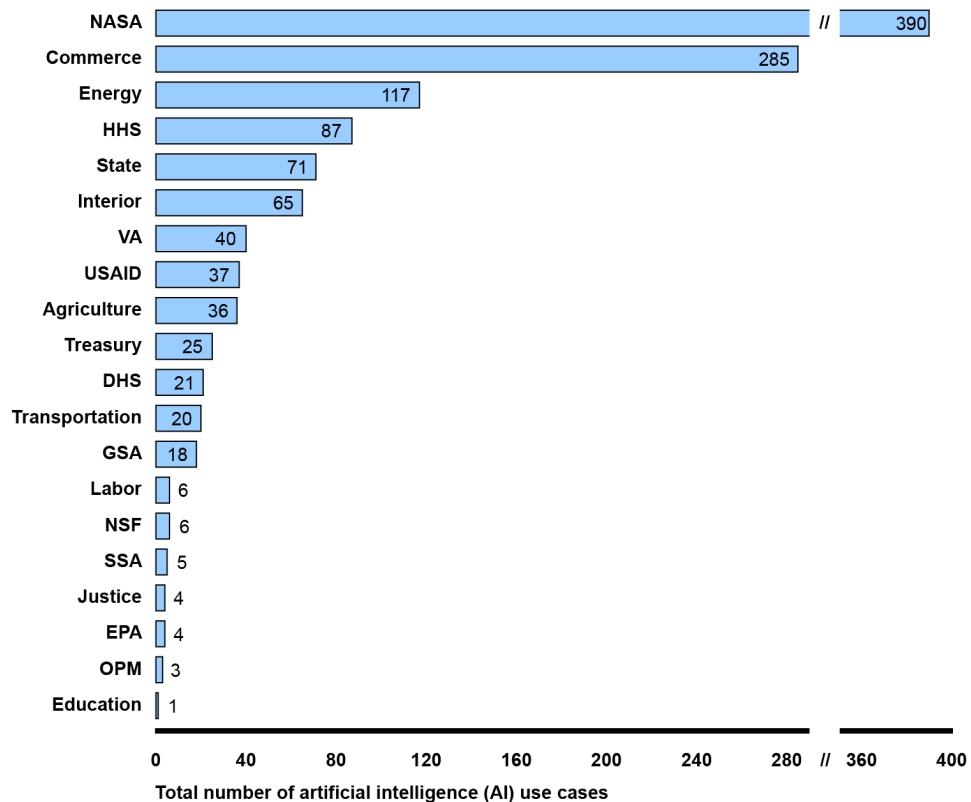
This review focused on agencies with government-wide roles in AI implementation (including OMB and OPM) as well as agencies with individual responsibilities for AI implementation (including 23 of the 24 Chief Financial Officers (CFO) Act of 1990 agencies). The Department of Defense was excluded because GAO had issued recent AI reports on that department.

View GAO-24-105980. For more information, contact Kevin Walsh at (202) 512-6151 or WalshK@gao.gov.

What GAO Found

Twenty of 23 agencies reported about 1,200 current and planned artificial intelligence (AI) use cases—specific challenges or opportunities that AI may solve. Three agencies reported not having uses for AI. Agency reported uses included analyzing data from cameras and radar to identify border activities, analyzing photographs from drones, and targeting of scientific specimens for planetary rovers. The National Aeronautics and Space Administration (NASA) and the Department of Commerce (Commerce) reported the highest number of AI use cases (see figure).

Agency Reported AI Use Cases in Fiscal Year 2022

Legend: NASA = National Aeronautics and Space Administration; Commerce = Department of Commerce; Energy = Department of Energy; HHS = Department of Health and Human Services; State = Department of State; Interior = Department of the Interior; VA = Department of Veterans Affairs; USAID = U.S. Agency for International Development; Agriculture = Department of Agriculture; Treasury = Department of the Treasury; DHS = Department of Homeland Security; Transportation = Department of Transportation; GSA = General Services Administration; Labor = Department of Labor; NSF = National Science Foundation; SSA = Social Security Administration; Justice = Department of Justice; EPA = Environmental Protection Agency; OPM = Office of Personnel Management; Education = Department of Education.

Source: GAO analysis of agency AI use case inventory submissions to Office of Management and Budget. | GAO-24-105980

_____ **United States Government Accountability Office**

GAO reviewed the 23 civilian CFO Act agencies' AI inventories and analyzed reported use cases and supporting data. GAO also compared agency reported data to the requirements for developing an AI inventory outlined in federal guidance.

In addition, GAO identified requirements from executive orders, OMB guidance, and a law regarding the implementation of AI. GAO then assessed agencies' implementation of these requirements. GAO also interviewed relevant officials.

What GAO Recommends
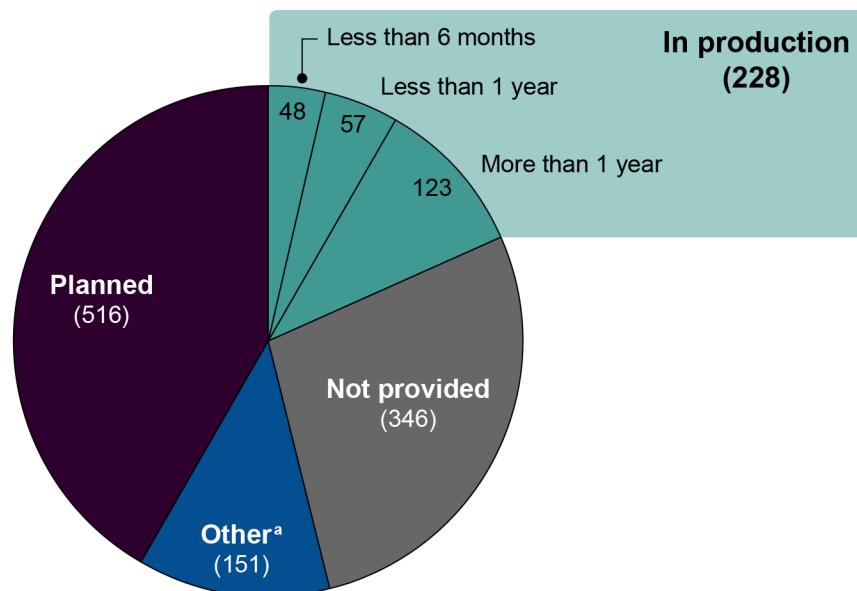
GAO is making 35 recommendations to 19 agencies, including OMB, to fully implement federal AI requirements. Specifically, GAO is recommending that:

- Fifteen agencies update their AI use case inventories to include required information and take steps to ensure the data aligns with guidance.
- OMB, OSTP, and OPM implement AI requirements with government-wide implications, such as issuing guidance and establishing or updating an occupational series with AI-related positions.
- Twelve agencies fully implement AI requirements in federal law, policy, and guidance, such as developing a plan for how the agency intends to conduct annual inventory updates; and describing and planning for regulatory authorities on AI.

Of the 19 agencies, ten agencies agreed with their recommendations; three agencies partially agreed with one or more recommendations; four agencies neither agreed nor disagreed; and one agency did not agree with its recommendation. OMB agreed with one recommendation but disagreed with another because it had taken recent action. GAO maintains that the recommendations in the report are warranted.

Most of the reported AI use cases were in the planning phase and not yet in production (i.e., currently used) (see figure). In about 200 instances, agencies reported that they were currently using AI.

Agency Reported Artificial Intelligence (AI) Use Case Lifecycle Stage, as of Fiscal Year 2022

Source: GAO analysis of agency AI use case inventory submissions to Office of Management and Budget. | GAO-24-105980

[a]"Other" includes life cycle stage responses not included in the *2021 Guidance for Creating Agency Inventories of Artificial Intelligence Use Cases,* such as "research and design" and "exploratory."

GAO's analysis of agencies' inventories of use cases identified instances of incomplete and inaccurate data. Specifically, five agencies provided comprehensive information for each of their reported use cases while the other 15 had instances of incomplete and inaccurate data. For example, some inventories did not include required data elements, such as the AI life cycle stage or an indication of whether an AI use case was releasable or not. In addition, two inventories included AI uses that were later determined by the agencies to not be AI. Without accurate inventories, the government's management of its use of AI will be hindered by incomplete and inaccurate data.

Federal agencies have taken initial steps to comply with AI requirements in executive orders and federal law; however, more work remains to fully implement these.

- Commerce and the General Services Administration (GSA) fully implemented selected requirements. Specifically, Commerce created a plan to develop AI technical standards and GSA established the AI Center of Excellence.
- The Offices of Management and Budget (OMB) and Personnel Management (OPM) did not fully implement selected requirements. OMB has not yet developed guidance for the acquisition and use of AI. OPM has not yet established or updated an occupational category for those employees performing AI work.
- The Office of Science and Technology Policy (OSTP) did not communicate its designation of which agencies were expected to fulfill specific AI requirements.
- Ten of 23 agencies implemented all AI requirements specific to their agencies, 12 implemented some but not all, and one was exempt from the requirements. These requirements included preparing an inventory on the use of AI, planning for inventory updates, and planning for AI regulatory authorities.

Addressing these requirements will improve agency identification, development, implementation, and oversight of AI.

Contents

Figures

Abbreviations

AI	artificial intelligence
CFO	Chief Financial Officer
CDO	Chief Data Officer
CIO	Chief Information Officer
DHS	Department of Homeland Security
DOD	Department of Defense
EO	executive order
EPA	Environmental Protection Agency
GSA	General Services Administration
HHS	Department of Health and Human Services
HUD	Department of Housing and Urban Development
NASA	National Aeronautics and Space Administration
NIST	National Institute of Standards and Technology
NRC	Nuclear Regulatory Commission
NSF	National Science Foundation
OMB	Office of Management and Budget
OPM	Office of Personnel Management
OSTP	Office of Science and Technology Policy
RAIO	responsible artificial intelligence official
SBA	Small Business Administration
SSA	Social Security Administration
USAID	U.S. Agency for International Development
USDA	U.S. Department of Agriculture
VA	Department of Veterans Affairs

December 12, 2023

Congressional Addressees

Artificial intelligence (AI)[1] is rapidly changing our world and has significant potential to transform society and people's lives. According to the National Institute of Standards and Technology (NIST), remarkable surges in AI capabilities have led to a wide range of innovations including autonomous vehicles and Internet of Things devices in our homes.[2] It also holds substantial promise for improving the operations of government agencies.

According to a supplement to the President's fiscal year 2023 budget submission, agencies have requested $1.8 billion for nondefense research and development investment in AI.[3] In addition, according to an executive order (EO) issued in December 2020, agencies are already using AI operationally to combat fraud, identify information security threats, and facilitate the review of large datasets, among other uses.[4]

However, AI poses risks that can negatively impact individuals, groups, organizations, communities, society, and the environment. For example,

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[1]AI, in general, refers to computer systems that are able to solve problems and perform tasks that have traditionally required human intelligence and that continually get better at their assigned tasks. AI is described as a transformative technology with applications ranging from medical diagnostics and precision agriculture, to advanced manufacturing and autonomous transportation, to national security and defense. The White House, Office of Science and Technology Policy (OSTP), *American Artificial Intelligence Initiative: Year One Annual Report*, (Washington, D.C.: Feb. 2020) and GAO, *Artificial Intelligence: Status of Developing and Acquiring Capabilities for Weapon* Systems, GAO-22-104765 (Washington, D.C.: Feb. 17, 2022).

[2]National Institute of Standards and Technology, "Artificial Intelligence," accessed October 30, 2023, https://www.nist.gov/artificial-intelligence.

[3]National Science and Technology Council, The Networking & Information Technology R&D Program and the National Artificial Intelligence Initiative Office, *Supplement to the President's FY 2023 Budget: A report by the Subcommittee on Networking and Information Technology Research and Development and the Machine Learning and Artificial Intelligence Subcommittee of the National Science and Technology Council*, (Washington, D.C.: Nov. 28, 2022).

[4]The White House, *Promoting the Use of Trustworthy Artificial Intelligence in the Federal Government,* Exec. Order 13960 (Washington, D.C.: Dec. 3, 2020).

AI systems may be trained[5] on data that can change over time, sometimes significantly and unexpectedly, affecting system functionality and trustworthiness. In addition, according to the White House, there is extensive evidence that these systems can produce inequitable outcomes and amplify existing inequity.[6] For example, it notes that a predictive model marketed as being able to predict whether students were likely to drop out of school was used by more than 500 universities across the country. The model was found to use race directly as a predictor and the resulting risk scores were used by advisors to guide students towards or away from particular majors.

Given the rapid growth in capabilities and widespread adoption of AI, the federal government must manage its use of AI in a responsible way to minimize risk, achieve intended outcomes, and avoid unintended consequences. As a result, we performed this work under the authority of the Comptroller General to assist Congress with its continued oversight of AI.

Our objectives were to (1) describe federal agencies' reported current and planned uses of AI, (2) assess the extent to which federal agencies' AI reporting was comprehensive and accurate, and (3) determine the extent to which federal agencies have complied with selected federal policy and guidance on AI.

We selected agencies with specific government-wide responsibilities specified in the law and guidance, including the Office of Management and Budget (OMB), the Office of Science and Technology Policy (OSTP), the Office of Personnel Management (OPM), the General Services Administration (GSA), and the Department of Commerce (Commerce). We also selected 23 of the 24 major agencies covered by the Chief

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[5]The AI model learning process is achieved by using large data sets that identify the desired outcome, with the AI developer validating that the model is producing the desired results.

[6]The White House, *Blueprint for an AI Bill of Rights; Making Automated Systems Work for the American People* (Washington, D.C.: October 2022).

Financial Officers (CFO) Act of 1990.[7] We excluded the Department of Defense (DOD) due to our recently published reports specific to the department's efforts related to AI.[8]

To address the first objective, we reviewed the applicable CFO agencies' public AI use case inventories and the AI use case inventories submitted to OMB.[9] We analyzed information contained in agencies' inventories, including the number of AI use cases and the life cycle stage. We also analyzed the use case descriptions to identify the use case's general application area (e.g., science and law enforcement).

To assess the reliability of agencies' AI inventories, we reviewed documentation supporting the development of those inventories, such as the 2021 Guidance for Creating Agency Inventories of AI Use Cases and its associated template for developing the inventory.[10] In addition, we performed electronic testing for obvious errors in accuracy and completeness. Further, we reviewed written responses from agency officials knowledgeable about the data. We noted instances where we found discrepancies (such as missing data, outliers, duplicate records, or data entry errors) while conducting our analyses. While we determined that the data were sufficiently reliable for the purpose of describing agency AI inventories, we also identified risks to the reliability of the data, as discussed later in the report.

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[7]The scope of our review includes the 23 civilian agencies covered by the Chief Financial Officers Act of 1990, which are the Departments of Agriculture, Commerce, Education, Energy, Health and Human Services, Homeland Security, Housing and Urban Development, the Interior, Justice, Labor, State, Transportation, the Treasury, 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 the U.S. Agency for International Development (31 U.S.C. § 901(b)).

[8]In particular, GAO, *Artificial Intelligence: DOD Needs Department-Wide Guidance to Inform Acquisitions,* GAO-23-105850 (Washington, D.C.: June 29, 2023); *Artificial Intelligence: DOD Should Improve Strategies, Inventory Process, and Collaboration Guidance,* GAO-22-105834 (Washington, D.C.: Mar. 30, 2022); *and Artificial Intelligence: Status of Developing and Acquiring Capabilities for Weapon Systems,* GAO-22-104765 (Washington, D.C.: Feb. 17, 2022).

[9]According to GSA, an AI use case is a specific challenge or opportunity that AI may solve.

[10]The Federal CIO Council, *2021 Guidance for Creating Agency Inventories of Artificial Intelligence Use Cases,* (Washington, D.C.: October 2021).

To address the second objective, we assessed the applicable CFO agencies' AI inventories to determine the extent to which federal agencies developed comprehensive and accurate AI inventories. Specifically, we reviewed the 2021 Guidance for Creating Agency Inventories and its associated template, and identified the data that agencies were required to provide within their AI inventory. We then compared agency inventories against the requirements outlined in the guidance. We identified those instances where agencies' inventories did not include required information for each use case. We also identified inventories that included duplicative use cases or use cases that should have been excluded per the guidance.

To address the third objective, we reviewed recent federal law and guidance to identify agency requirements regarding the implementation of AI. In particular, we focused on one AI-related law and three guidance documents because of their government-wide requirements or government-wide effects.[11] Specifically, the law and guidance included requirements for certain agencies to establish government-wide guidance and tools as well as requirements for individual agencies to manage and oversee their own use of AI.

We identified 18 requirements from the law and guidance documents that agencies were expected to follow when implementing AI. Six of these requirements were specific to agencies responsible for establishing government-wide guidance or tools. The remaining 12 requirements applied to individual agencies to manage and oversee their own use of AI.

We then compared the applicable agencies' plans and documentation to the 18 selected requirements for implementing AI. We considered a requirement to be fully implemented if an agency provided evidence that it fully satisfied the requirement or other criterion specified in the selected law and guidance. We considered a requirement to be partially implemented if an agency provided evidence that it satisfied some, but not all, of the criteria. Last, we considered a requirement to not be

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[11]AI in Government Act of 2020, Div. U, Title I of the Consolidated Appropriations Act, 2021, Pub. L. No. 116-260, Div. U, Title I, 134 Stat. 1182, 2286-89 (2020); The White House, *Maintaining American Leadership in Artificial Intelligence,* Exec. Order 13859 (Washington, D.C.: Feb. 11, 2019); Office of Management and Budget, *Guidance for Regulation of Artificial Intelligence Applications*, M-21-06 (Washington, D.C.: Nov. 17, 2020); The White House, *Promoting the Use of Trustworthy Artificial Intelligence in the Federal Government,* Exec. Order 13960 (Washington, D.C.: Dec. 3, 2020).

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implemented if an agency did not provide evidence that satisfied any of the criteria.

For each of the objectives, we met with relevant officials at the agencies to obtain additional information on agency efforts to comply with AI federal policy and legal requirements. We also obtained information about agencies' efforts to develop AI inventories. Additional details about our objectives, scope, and methodology are discussed in appendix I.

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

Background

AI involves computing systems that "learn" how to improve their performance; it is a rapidly growing transformative technology with applications found in every aspect of modern life. AI is used in day-to-day technologies such as video games, web searching, facial recognition technology, spam filtering, and voice recognition. It also has applications in business and commerce, agriculture, transportation, and medicine.

AI holds substantial promise for improving government operations. For example, the Department of Health and Human Services (HHS) utilizes an AI chatbot to assist the agency's security team by providing an automated email response for general physical security questions and allowing the help desk team to better assist employees and contractors. In addition, OPM uses AI to improve user experiences on its employment website, USAJobs, by providing users job recommendations based on their skills and opportunity descriptions. Accordingly, over the last few years, the federal government has widely implemented AI and oversight authorities have provided related guidance for agencies.

AI Definitions Vary

AI capabilities are rapidly evolving, but neither the scientific community nor industry agree on a common definition for these technologies. Even within the government, definitions vary. For example, two separate federal statutes enacted in the last few years have different definitions of AI. Specifically, Congress included one definition of AI in the John S. McCain National Defense Authorization Act for Fiscal Year 2019 and a different definition in the National Artificial Intelligence Initiative Act of

2020. Table 1 provides some of the various definitions of AI used within the federal government.

Table 1: Various Artificial Intelligence (AI) Definitions within the Federal Government

Source	Definition of AI
Environmental Protection Agency	Branch of computer science devoted to developing data processing systems that perform functions normally associated with human intelligence, such as reasoning, learning, and self-improvement.
General Services Administration	Computerized systems that work and react in ways commonly thought to require intelligence, such as the ability to learn, solve problems, and achieve goals under uncertain and varying conditions. The field encompasses a range of methodologies and application areas, including machine learning, natural language processing, and robotics.
John S. McCain National Defense Authorization Act for Fiscal Year 2019	Any artificial system (1) that performs tasks under varying and unpredictable circumstances without significant human oversight, or that can learn from experience and improve performance when exposed to data sets; (2) developed in computer software, physical hardware, or other context that solves tasks requiring human-like perception, cognition, planning, learning, communication, or physical action; (3) designed to think or act like a human, including cognitive architectures and neural networks; or (4) designed to act rationally, including an intelligent software agent or embodied robot that achieves goals using perception, planning, reasoning, learning, communicating, decision making, and acting. A set of techniques, including machine learning, that is designed to approximate a cognitive task.[a]
National Artificial Intelligence Initiative Act of 2020	Machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations, or decisions influencing real or virtual environments. AI systems use machine and human based inputs to (1) perceive real and virtual environments, (2) abstract such perceptions into models through analysis in an automated manner, and (3) use model inference to formulate options for information or action.[b]
National Institute of Standards and Technology AI Risk Management Framework	An engineered machine-based system that can, for a given set of objectives, generate outputs such as predictions, recommendations, or decisions influencing real or virtual environments. AI systems are designed to operate with varying levels of autonomy.
2018 Department of Defense AI Strategy	The ability of machines to perform tasks that normally require human intelligence—for example, recognizing patterns, learning from experiences, drawing conclusions, making predictions, or taking action—whether digitally or as the smart software behind autonomous physical systems.

Source: Federal policy and guidance. | GAO-24-105980

[a]John S. McCain National Defense Authorization Act for Fiscal Year 2019, Pub. L. No. 115-232, § 238(g), 132 Stat. 1636, 1697-98 (Joint Artificial Intelligence, Research, Development and Transition Activities) and § 1051(f), 132 Stat. at 1965 (National Security Commission on Artificial Intelligence) (2018). Note that subsection 238(f) requires the Secretary of Defense to delineate a definition of the term ''artificial intelligence'' for use within the Department of Defense.

[b]National Artificial Intelligence Initiative Act of 2020, Division E of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021, Pub. L. No. 116-283, Div. E, § 5002(3), 134 Stat. 3388, 4524 (2021).(codified in relevant part at 15 U.S.C. § 9401(3)).

Characteristics and Types of AI

In 2018, we reported on characteristics and types of AI and described one conceptualization of AI as having three distinct waves of development, as
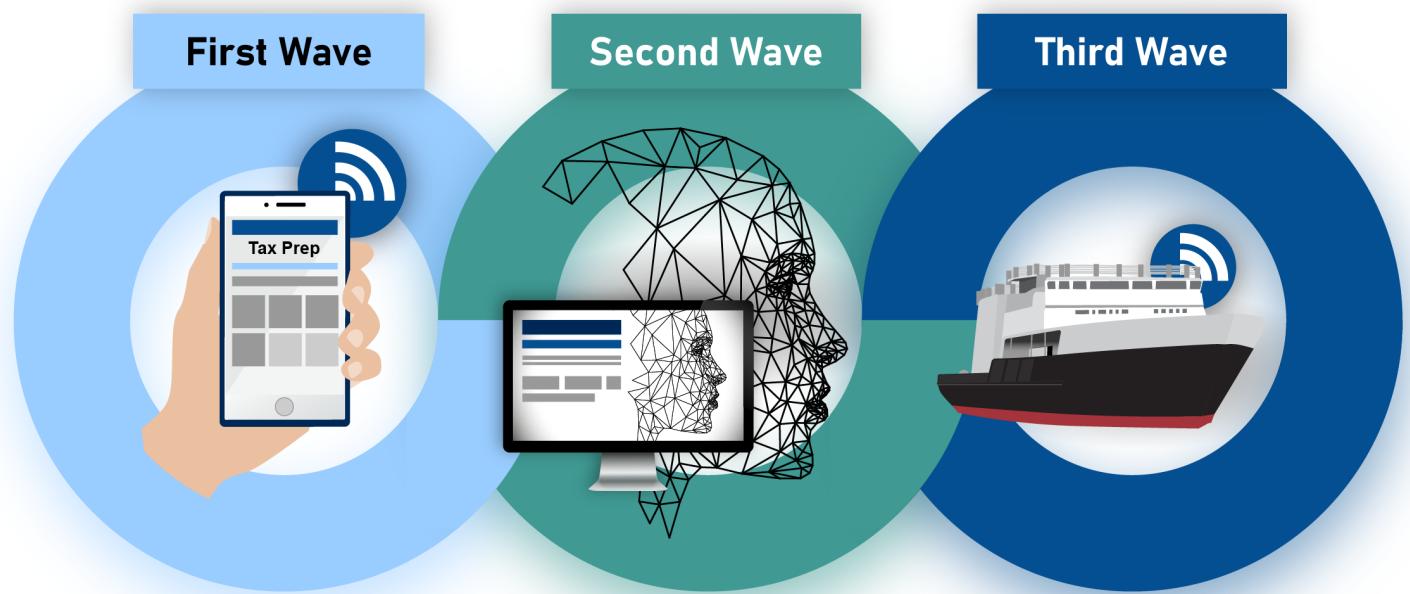
shown in figure 1.[12] The first wave of AI often encompassed expert or rules-based systems whereby a computer was programmed based on expert knowledge or criteria and produced outputs consistent with its programming. Software programs that do tax preparation or logistics scheduling are examples of expert systems. The second and current wave of AI systems is based on machine learning and begins with data and infers rules or decision procedures to predict specified outcomes. Self-driving automated vehicles are an example of machine-learning systems. In addition, popular platforms such as ChatGPT and Bard are examples of second-wave AI. Lastly, third-wave AI systems—the future of AI—could combine the strengths of first- and second-wave AI systems, while also being capable of contextual sophistication, abstraction, and explanation. Additionally, third-wave AI systems would not only be capable of adapting to new situations but would also explain to users the reasoning behind these decisions.

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[12]GAO*, Technology Assessment: Artificial Intelligence: Emerging Opportunities, Challenges, and Implications,* GAO-18-142SP (Washington, D.C.: Mar. 28, 2018) and John Launchbury, *A DARPA Perspective on Artificial Intelligence*, (Oct. 3, 2016).

Figure 1: Waves of AI

First Wave

Expert knowledge or criteria and logical reasoning

The first wave of artificial intelligence (AI) is represented by expert knowledge or criteria developed in law or other authoritative sources and encoded into a computer program in the form of an expert system.

Example: Online tax preparation

Second Wave

Machine/statistical learning

Second-wave AI technology is based on machine learning, or statistical learning, and includes voice recognition, natural language processing, and computer-vision technologies, among others.

Example: Face recognition technology

Third Wave

Contextual adaptation

Third-wave AI technology combines the strengths of first-and second-wave AI, and is also capable of contextual sophistication, abstraction, and explanation.

Example: Autonomous ships

Sources: The Defense Advanced Research Projects Agency Information; GAO (monitor, hand, ship); lidiia/stock.adobe.com (wireframe). | GAO-24-105980

Researchers have distinguished the types of AI as either narrow or general AI. Narrow AI refers to applications that provide domain-specific expertise or task completion, including today's robotics and applications such as Apple's Siri, Amazon's Alexa, and online "chatbots," which answer questions specific to a product or service. General AI refers to an AI system that exhibits intelligence comparable to that of a human, or beyond, across the range of contexts in which a human might interact.

There has been considerable progress in developing AI that outperforms humans in specific domains, but some observers believe that general AI

is unlikely to be achieved for decades. On the other hand, some experts believe that general AI will be achieved in the near future. Although general AI has not been achieved, fictional examples include Lieutenant Commander Data, from the *Star Trek: The Next Generation* television series, and the doll, M3gan, from the 2023 film: *M3gan*.

Federal Law and Executive Actions Guide AI Implementation and Responsibilities

Federal agencies' efforts to implement AI have been guided by federal law, executive actions, and federal guidance. The President has issued EOs and Congress and the President have enacted legislation to assist agencies in implementing AI in the federal government. For example,

- In February 2019, the President issued an EO, establishing the American AI Initiative, which promoted AI research and development investment and coordination amongst other things.[13]

- In December 2020, the President issued a second EO, promoting the use of trustworthy AI, which focused on operational AI and established a common set of principles for the design, development, acquisition, and use of AI in the federal government.[14]

- In December 2020, the AI in Government Act of 2020 was enacted as part of the Consolidated Appropriations Act, 2021.[15]

- Most recently, in October 2023, the President issued an EO which aims to advance a coordinated, federal government-wide approach to the development and safe and responsible use of AI.[16]

These EOs and the law, among others, include various requirements federal agencies must follow. Figure 2 provides a timeline of key federal laws, EOs, and federal guidance that have been released over the past 4 years.

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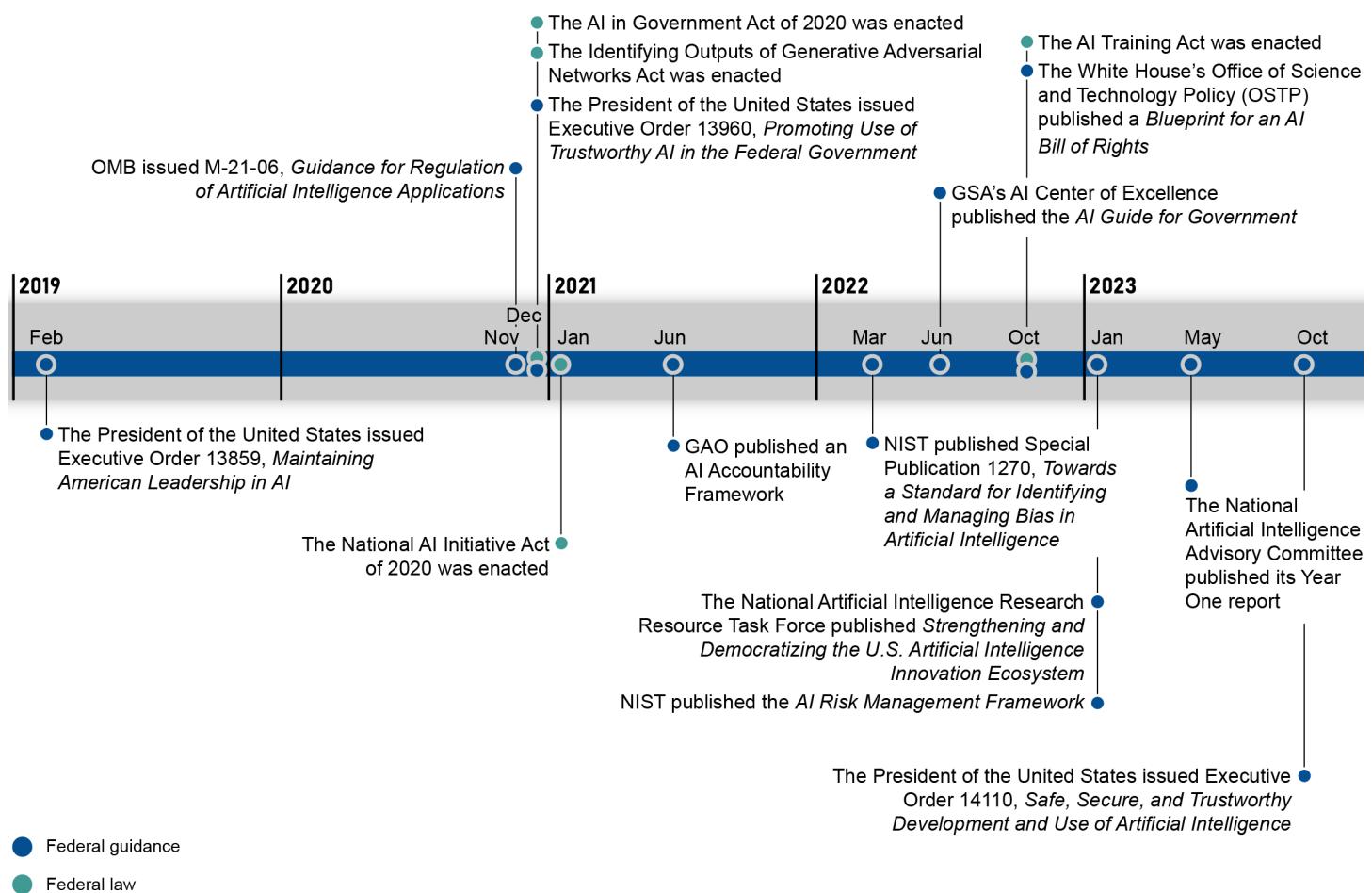
[13]The White House, *Maintaining American Leadership in Artificial Intelligence*, Exec. Order 13859 (Washington, D.C.: Feb. 11, 2019).

[14]The White House, *Promoting the Use of Trustworthy Artificial Intelligence in the Federal Government,* Exec. Order 13960 (Washington, D.C.: Dec. 3, 2020).

[15]AI in Government Act of 2020, Division U, Title I of the Consolidated Appropriations Act, 2021, Pub. L. No. 116-260, Div. U, Title I, 134 Stat. 1182, 2286-89 (2020).

[16]The White House, *Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence*, Exec. Order 14110 (Washington, D.C.: Oct. 30, 2023).

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Figure 2: Timeline of Federal Efforts to Advance Artificial Intelligence

The AI in Government Act of 2020 was enacted

The Identifying Outputs of Generative Adversarial Networks Act was enacted

The President of the United States issued Executive Order 13960, *Promoting Use of Trustworthy AI in the Federal Government*

OMB issued M-21-06, *Guidance for Regulation of Artificial Intelligence Applications*

The AI Training Act was enacted

The White House's Office of Science and Technology Policy (OSTP) published a *Blueprint for an AI Bill of Rights*

GSA's AI Center of Excellence published the *AI Guide for Government*

2019 Feb | **2020** | Dec Nov | **2021** Jan | Jun | **2022** Mar | Jun | Oct | **2023** Jan | May | Oct

The President of the United States issued Executive Order 13859, *Maintaining American Leadership in AI*

The National AI Initiative Act of 2020 was enacted

GAO published an AI Accountability Framework

NIST published Special Publication 1270, *Towards a Standard for Identifying and Managing Bias in Artificial Intelligence*

The National Artificial Intelligence Research Resource Task Force published *Strengthening and Democratizing the U.S. Artificial Intelligence Innovation Ecosystem*

NIST published the *AI Risk Management Framework*

The National Artificial Intelligence Advisory Committee published its Year One report

The President of the United States issued Executive Order 14110, *Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence*

● Federal guidance

● Federal law

(AI) artificial intelligence, OMB (Office of Management and Budget), NIST (National Institute of Standards and Technology), GSA (General Services Administration)

Source: GAO analysis of federal guidance and legislation on AI. | GAO-24-105980

As previously stated, laws and EOs include various requirements federal agencies must follow to help ensure that AI is implemented ethically and responsibly. In addition, several agencies have a role to aid the implementation of AI across the federal government. OMB, which oversees the implementation of the President's vision across the executive branch, serves as the primary agency for establishing and updating AI policy and guidance based on requirements in the order for maintaining leadership in AI, the order for promoting use of trustworthy AI, and the AI in Government Act of 2020. For example, in response to the

order for maintaining leadership in AI, OMB released a memorandum directing agencies to consider ways to reduce barriers to the use of AI technologies in order to promote their innovative application while protecting civil liberties, privacy, and American values. OMB's effective leadership and guidance are critical to ensuring that federal agencies prioritize and adhere to AI requirements, as OMB directly impacts AI policy development, the application of emerging AI practices, and the acquisition and use of AI products.

In addition, OSTP, OPM, GSA, and Commerce also have responsibilities for developing AI-related plans and guidance mechanisms for the federal government. Table 2 describes key AI requirements for agencies and OMB that have government-wide implications, as of April 2022 when we began our review.

Table 2: Key Artificial Intelligence (AI) Requirements from Federal Law and Guidance, as of April 2022

Responsible agency/agencies	Requirement	Requirement source
Office of Management and Budget (OMB)	Issue a memorandum to the heads of all agencies that shall: • Inform the development of regulatory and non-regulatory approaches by such agencies regarding technologies and industrial sectors that are either empowered or enabled by AI, and that advance American innovation while upholding civil liberties, privacy, and American values; and • Consider ways to reduce barriers to the use of AI technologies in order to promote their innovative application. Issue a draft version of the memorandum for public comment before it is finalized.	Executive Order 13859: *Maintaining American Leadership in Artificial Intelligence* (Issued: Feb. 11, 2019)
	Issue a memorandum to the head of each agency, in coordination with the Director of the Office of Science and Technology Policy, that • Informs the development of policies regarding federal acquisition and use by agencies regarding technologies that are empowered or enabled by AI, • Recommends approaches to remove barriers for use by agencies of AI technologies, • Identifies best practices for identifying, assessing, and mitigating any discriminatory impact or bias on the basis of any classification protected under Federal nondiscrimination laws, or any unintended consequence of the use of artificial intelligence, • Provides a template of the required contents for agency plans to achieve consistency with this memorandum. Issue a draft version of the memorandum for public comment not later than 180 days after date of enactment of the act. Issue updates to the memorandum within 2 years of the initial issuance of the memorandum and every 2 years thereafter for 10 years.	AI in Government Act of 2020 (Enacted: Dec. 27, 2020)

Responsible agency/agencies	Requirement	Requirement source
	Post a public roadmap for the policy guidance that OMB intends to create or revise to better support the use of AI, including a schedule for engaging with the public and timelines for finalizing relevant policy guidance.	Executive Order 13960: *Promoting the Use of Trustworthy Artificial Intelligence in the Federal Government* (Issued: Dec. 3, 2020)
OMB/Chief Information Officers Council	Identify, provide guidance on, and make publicly available the criteria, format, and mechanisms for agency inventories of non-classified and non-sensitive use cases of AI by agencies.	Executive Order 13960
	Publish a list of recommended interagency bodies and forums in which agencies may elect to participate, as appropriate and consistent with their respective authorities and missions.	
Department of Commerce/ National Institute of Standards and Technology	Issue a plan for federal engagement in the development of technical standards and related tools in support of reliable, robust, and trustworthy systems that use AI technologies. This plan shall include: • Federal priority needs for standardization of AI systems development and deployment; • Identification of standards development entities in which federal agencies should seek membership with the goal of establishing or supporting technical leadership roles; and • Opportunities for and challenges to leadership in standardization related to AI technologies. The plan shall be developed in consultation with the Select Committee on AI, the private sector, academia, non-governmental entities, and other stakeholders, as appropriate.	Executive Order 13859
Federal agencies	Submit documentation to OMB and post on a publicly available page on the website of the agency (1) a plan to achieve consistency with the memorandum on regulation; or (2) a written determination that the agency does not use and does not anticipate using AI. This should be completed within 180 days of OMB issuing the memorandum required by the act or within 180 days of an update to the memorandum.	AI in Government Act of 2020
	Prepare an inventory of non-classified and non-sensitive use cases of AI, including current and planned uses, but excluding those related to research and development.	Executive Order 13960
	Identify, review, and assess existing AI deployed and operating in support of agency missions for any inconsistencies with this order. • Develop plans either to achieve consistency with Executive Order 13960, section 5 for each AI application or to retire AI applications found to be developed or used in a manner that is not consistent with this order. These plans must be approved by the agency-designated responsible official(s). • Implement the approved plans.	
	Share inventories with other agencies to improve interagency coordination and information sharing for common use cases.	
	Make inventories available to the public.	
	Specify the responsible official(s) at that agency who will coordinate implementation of the principles for use of AI with the Agency Data Governance Body and other relevant officials and will collaborate with the interagency coordination bodies identified by the Chief Information Officer Council.	

Responsible agency/agencies	Requirement	Requirement source
Federal agencies with regulatory authorities	Review authorities relevant to applications of AI and submit to OMB plans to achieve consistency with OMB's associated memorandum.	Executive Order 13859
	Develop an agency plan that • Identifies any statutory authorities specifically governing agency regulation of AI applications, as well as collections of AI-related information from regulated entities. • Report on the outcomes of stakeholder engagements that identify existing regulatory barriers to AI applications and high-priority AI applications that are within an agency's regulatory authorities. • List and describe any planned or considered regulatory actions on AI.	OMB M-21-06: *Guidance for Regulation of Artificial Intelligence Applications* (Issued: Nov. 17, 2020)
General Services Administration	Create a program known as the "AI Center of Excellence" which shall facilitate the adoption of AI technologies in the federal government and improve cohesion and competency in the adoption and use of AI within the federal government for the purposes of benefitting the public and enhancing the productivity and efficiency of federal government operations.	AI in Government Act of 2020
General Services Administration/ Presidential Innovation Fellows[a]	Identify priority areas of expertise and establish an AI track to attract experts from industry and academia to undertake a period of work at an agency.	Executive Order 13960
Office of Personnel Management	Submit to Congress a comprehensive plan with a timeline to complete the following requirements: • Identify key skills and competencies needed for positions related to AI; • Establish an occupational series, or update and improve an existing occupational series, to include positions the primary duties of which relate to AI; • Establish, to the extent appropriate, an estimate of the number of federal employees in positions related to AI, by each agency; and • Prepare, using the aforementioned estimate, a 2-year and 5-year forecast of the number of federal employees in positions related to AI that each agency will need to employ.	AI in Government Act of 2020
	Create an inventory of federal rotational programs and determine how these programs can be used to expand the number of employees with AI expertise at the agencies. Issue a report with recommendations for how the programs in the inventory can be best used to expand the number of employees with AI expertise at the agencies. This report shall be shared with the interagency coordination bodies identified by the Chief Information Officers Council.	Executive Order 13960
Office of Science and Technology Policy/Select Committee on AI	Designate the appropriate federal agencies as implementing agencies. Specifically, determine which agencies conduct foundational AI research and development, develop and deploy applications of AI technologies, provide educational grants, and regulate and provide guidance for applications of AI technologies.	Executive Order 13859

Source: GAO analysis of key requirements from AI law and executive orders. | GAO-24-105980

[a]The Presidential Innovation Fellows program is a 1-year fellowship. The fellowship was established by the White House in 2012 to attract top innovators into government, capable of tackling issues at the convergence of technology, policy, and process. The program is administered as a partnership between the White House Office of Science and Technology Policy, OMB, and the General Services Administration (GSA). In 2013, the program established a permanent home and program office within GSA.

AI Oversight Bodies in the Federal Government

Various oversight bodies have been developed and play a major role in the implementation of AI. In particular,

- **The National Science and Technology Council.** Established by EO 12881, this council is cabinet-level and advises the President on science and technology.[17] Members include the Vice President, the Director of OSTP, cabinet secretaries, and agency heads with significant science and technology responsibilities. The council has multiple functions under six primary committees and two special committees, including the Select Committee on AI.

  - **Select Committee on AI.** Established in June 2018, the National Science and Technology Council's Select Committee on AI advises the White House on interagency AI research and development priorities and improving the coordination of federal AI efforts to ensure continued U.S. leadership in AI. Committee goals include developing policies to prioritize and promote AI research and development, leveraging federal data and computing resources for the AI community, and training an AI-ready workforce.

- **National Artificial Intelligence Initiative Office.** Mandated by the National Artificial Intelligence Initiative Act of 2020, this office was established to coordinate and support the National AI Initiative.[18] Tasks of the office include providing technical and administrative support to the Interagency Committee on AI and the National AI Advisory Committee. In addition, this office oversees interagency coordination of the initiative and promotes access to technologies, innovations, best practices, and expertise derived from initiative activities to agency missions and systems across the federal government.

- **National Artificial Intelligence Advisory Committee.** Mandated by the National Artificial Intelligence Initiative Act of 2020 and launched in April 2022, this committee is tasked with advising the President and the National Artificial Intelligence Initiative Office.[19] In addition, the act directs the National Artificial Intelligence Advisory Committee to provide recommendations on topics including the current state of the nation's AI competitiveness, progress in implementing the initiative,

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[17]The White House, *Establishment of the National Science and Technology Council*, Exec. Order 12881 (Washington, D.C.: Nov. 23, 1993).

[18]Pub. L. No. 116-283, Div. E, § 5102, 134 Stat. 4523, 4526 (2021).

[19]Pub. L. No. 116-283, Div. E, § 5104, 134 Stat. 4523, 4528 (2021).

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and issues related to AI workforce. Topics also include how to leverage initiative resources; the need to update the initiative; the balance of activities and funding across the initiative; management, coordination, and activities of the initiative; and how AI can enhance opportunities for diverse geographic regions.

GAO Has Reported on AI and Opportunities to Improve Its Governance and Use

Recognizing the increasing importance and usage of AI, in June 2021, we published a framework to help managers ensure accountability and the responsible use of AI in government programs and processes.[20] The framework describes four principles—governance, data, performance, and monitoring—and associated key practices to consider when implementing AI systems. Each of the practices contains a set of questions and procedures for auditors and third-party assessors to consider when reviewing efforts related to AI.

In addition, we have reported on agencies' use of AI in relation to facial recognition, health care, and defense, and provided recommendations to improve AI implementation and oversight, including:

- In June 2021, we reported that 20 federal agencies that employ law enforcement officers reported owning or using systems with facial recognition to support various agency activities.[21] Some of the systems reported were owned by agencies, while some systems were owned by other non-federal entities, such as state, local, and non-government entities. We found that most agencies did not track non-federal systems nor the related risks, which created privacy and security concerns. We recommended that 13 agencies (1) implement a mechanism to track what non-federal systems are used by employees to support investigative activities and (2) assess the risks of using these systems. Twelve agencies concurred with both recommendations, while one agency concurred with one recommendation and partially concurred with the other. As of November 2023, 10 agencies had implemented the recommendation to track what non-federal systems with facial recognition technology are used by employees to support investigative activities. The remaining three agencies had not yet implemented the recommendation.

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[20]GAO, *Artificial Intelligence: An Accountability Framework for Federal Agencies and Other Entities,* GAO-21-519SP (Washington, D.C.: June 30, 2021).

[21]GAO, *Facial Recognition Technology: Federal Law Enforcement Agencies Should Better Assess Privacy and Other Risks,* GAO-21-518 (Washington, D.C.: June 3, 2021).

- In September 2022, we reported on the use of AI in health care.[22] Specifically, we reported that several machine learning technologies were available to help medical professionals diagnose five selected diseases—certain cancers, diabetic retinopathy, Alzheimer's disease, heart disease, and COVID-19. In addition, we discussed emerging machine learning medical diagnostic technologies and reported on challenges affecting the development and adoption of such technologies for medical diagnosis such as demonstrating real-world performance, meeting medical needs, and addressing regulatory gaps. Last, we developed three policy options to help address the challenges identified for medical diagnostics technologies.

- In March 2022, we reported that DOD's AI strategy and plans included some characteristics of a comprehensive strategy.[23] In addition, we noted that the department lacked a high-level plan or roadmap to address limitations in developing a comprehensive AI inventory. We also noted that while DOD collaborated on AI activities, the department did not fully incorporate leading collaboration practices in its AI activities. We made seven recommendations to the department, including to develop a high-level plan for its AI inventory processes, issue guidance to include all characteristics of a comprehensive strategy, and finalize guidance and agreements that define roles and responsibilities for AI collaboration. DOD concurred with each of the recommendations; as of November 2023, it had not fully implemented them.

- In June 2023, we reported that although numerous entities across DOD are acquiring, developing, or already using AI, the department had not issued department-wide guidance for how its components should approach acquiring AI.[24] We noted that various DOD components had individually developed or planned to develop their own informal AI acquisition resources, some of which reflected key factors identified by private companies for AI acquisition. The department was in the process of planning to develop such guidance, but it had not defined concrete plans and had no timeline to do so. We made three recommendations for the department and three military

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[22]GAO, *Artificial Intelligence in Health Care: Benefits and Challenges of Machine Learning Technologies for Medical Diagnostics*, GAO-22-104629 (Washington, D.C.: Sept. 29, 2022).

[23]GAO, *Artificial Intelligence: DOD Should Improve Strategies, Inventory Process, and Collaboration Guidance,* GAO-22-105834 (Washington, D.C.: Mar. 30, 2022).

[24]GAO, *Artificial Intelligence: DOD Needs Department-Wide Guidance to Inform Acquisitions,* GAO-23-105850 (Washington, D.C.: June 29, 2023).

services (Army, Navy, and Air Force) to develop guidance on acquiring AI capabilities, leveraging private company factors. DOD concurred with each of the recommendations; however, as of November 2023, it had not yet addressed any of the recommendations.

Agency AI Inventories Reported About 1,200 Uses for AI

In fiscal year 2022, 20 agencies reported about 1,200 AI use cases—specific challenges or opportunities that AI may solve. Almost half of the reported use cases fell into the "planned" stage. Agencies reported using AI in various applications areas, with science and internal management being identified the most, representing about 69 percent of the use cases.

Agencies Reported About 1,200 Current Uses for AI

Of the 23 agencies in our review, 20 reported a total of 1,241 AI use cases. The remaining three agencies—the Department of Housing and Urban Development (HUD), Nuclear Regulatory Commission (NRC), and Small Business Administration (SBA)—reported that they did not have AI use cases.[25] The agencies made 888 of these use cases public. The remaining 353 use cases were considered sensitive or not disclosed to the public.[26] The National Aeronautics and Space Administration (NASA) and Commerce had the highest number of AI use cases with 390 and 285, respectively. Examples of reported uses for AI include the following:

- NASA reported using AI that enables intelligent targeting of scientific specimens that match scientists' specifications by planetary rovers.

- Commerce reported using AI to automate counting of seabirds and pinnipeds from photographs collected by drones.

- OPM reportedly uses AI for natural language processing to provide better matches between posted job opportunities in order to help users identify opportunities of interest in USAJOBS.

- The Department of Homeland Security (DHS) reported use of a backpack mobile unit meant for agent deployments that is intended to
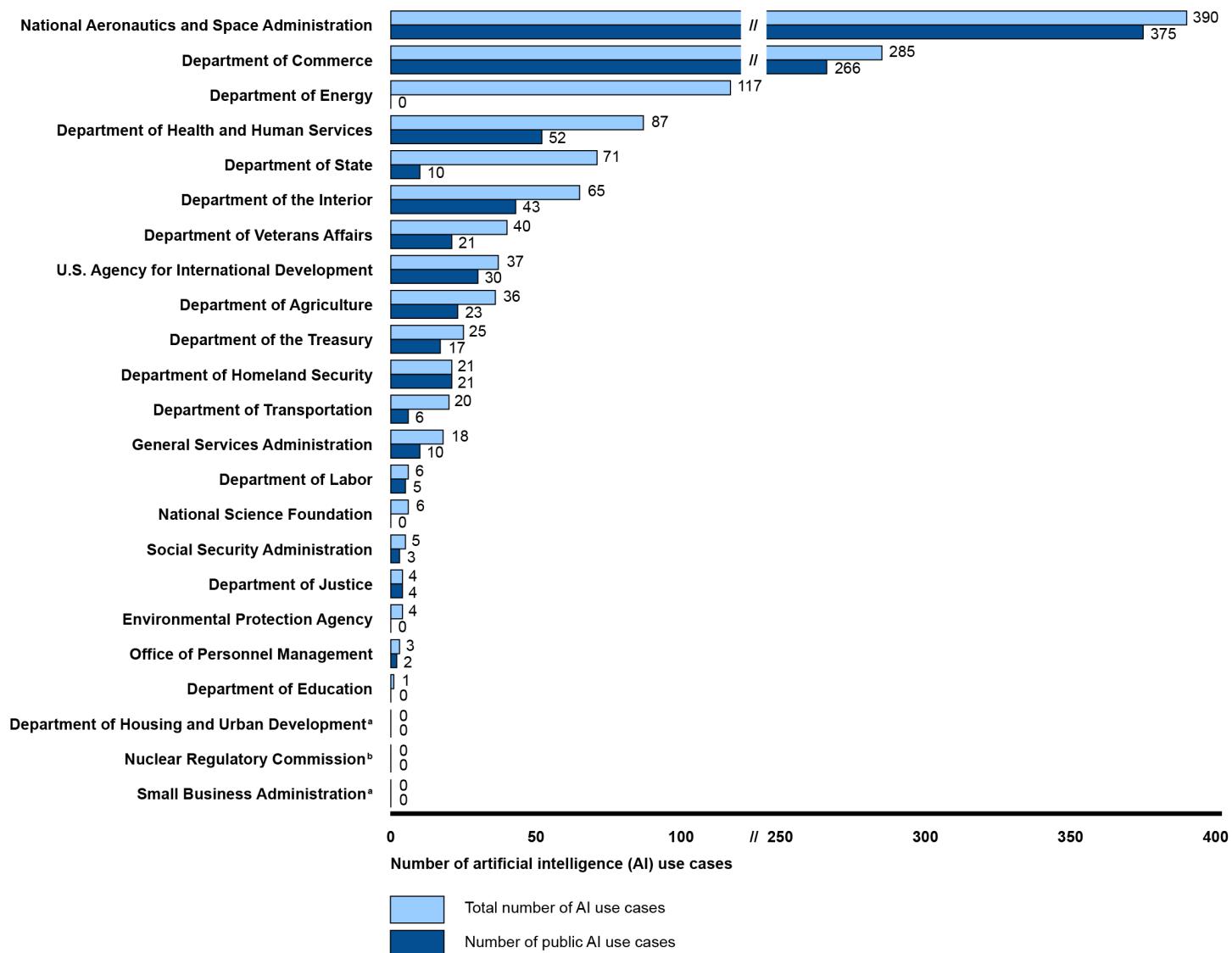
[25]Two of the remaining three agencies, HUD and SBA, indicated that they did not have an AI inventory. The third agency, NRC, did not provide an AI inventory because it is exempt from EO 13960 requirements, and therefore, was not required to. NRC was exempt from EO 13960 requirements due to its designation as an independent regulatory agency as described in section 3502, paragraph (5), of title 44, and therefore, was not required to develop an AI inventory.

[26]A use case was determined to be public if an agency explicitly indicated that it could be released. In cases where an agency indicated that a use case could not be released to the public or the agency did not respond to this question, the use case was described as not disclosed to the public.

identify border activities of interest by using AI/machine learning to analyze data from cameras and radar.

Figure 3 shows the total number of AI use cases submitted to OMB for fiscal year 2022 alongside the number of use cases that were identified publicly.

Figure 3: Agency Reported AI Use Cases during Fiscal Year 2022

Agency	Total number of AI use cases	Number of public AI use cases
National Aeronautics and Space Administration	390	375
Department of Commerce	285	266
Department of Energy	117	0
Department of Health and Human Services	87	52
Department of State	71	10
Department of the Interior	65	43
Department of Veterans Affairs	40	21
U.S. Agency for International Development	37	30
Department of Agriculture	36	23
Department of the Treasury	25	17
Department of Homeland Security	21	21
Department of Transportation	20	6
General Services Administration	18	10
Department of Labor	6	5
National Science Foundation	6	0
Social Security Administration	5	3
Department of Justice	4	4
Environmental Protection Agency	4	0
Office of Personnel Management	3	2
Department of Education	1	0
Department of Housing and Urban Development[a]	0	0
Nuclear Regulatory Commission[b]	0	0
Small Business Administration[a]	0	0

Number of artificial intelligence (AI) use cases

Source: GAO analysis of agency AI use case inventory submissions to Office of Management and Budget. | GAO-24-105980

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[a]The Department of Housing and Urban Development and the Small Business Administration reported that they did not have any AI use cases.

[b]In addition, the Nuclear Regulatory Commission is exempt from EO 13960 requirements and did not submit an AI inventory. The agency indicated that it does not have any AI use cases.

Stage of Development for Federal Agencies' AI Uses Varied

Agencies were required to report on the life cycle stage of each AI use case. In particular, agencies were asked to select among the following designations: (1) planned (not in production), (2) in production: less than 6 months, (3) in production: less than 1 year, and (4) in production: more than 1 year. Most AI use cases were within the "planned" life cycle stage.

Agencies did not provide this information in 346 instances. We discuss this later in the report. Figure 4 shows the number of AI use cases by the reported AI life cycle stage.

Figure 4: Agency Reported Artificial Intelligence (AI) Use Case Life Cycle Stage, as of Fiscal Year 2022

Source: GAO analysis of agency AI use case inventory submissions to Office of Management and Budget. | GAO-24-105980

[a]"Other" includes life cycle stage responses not included in the *2021 Guidance for Creating Agency Inventories of Artificial Intelligence Use Cases*, such as "research and design" and "exploratory."

Agencies Reported Various AI Application Areas
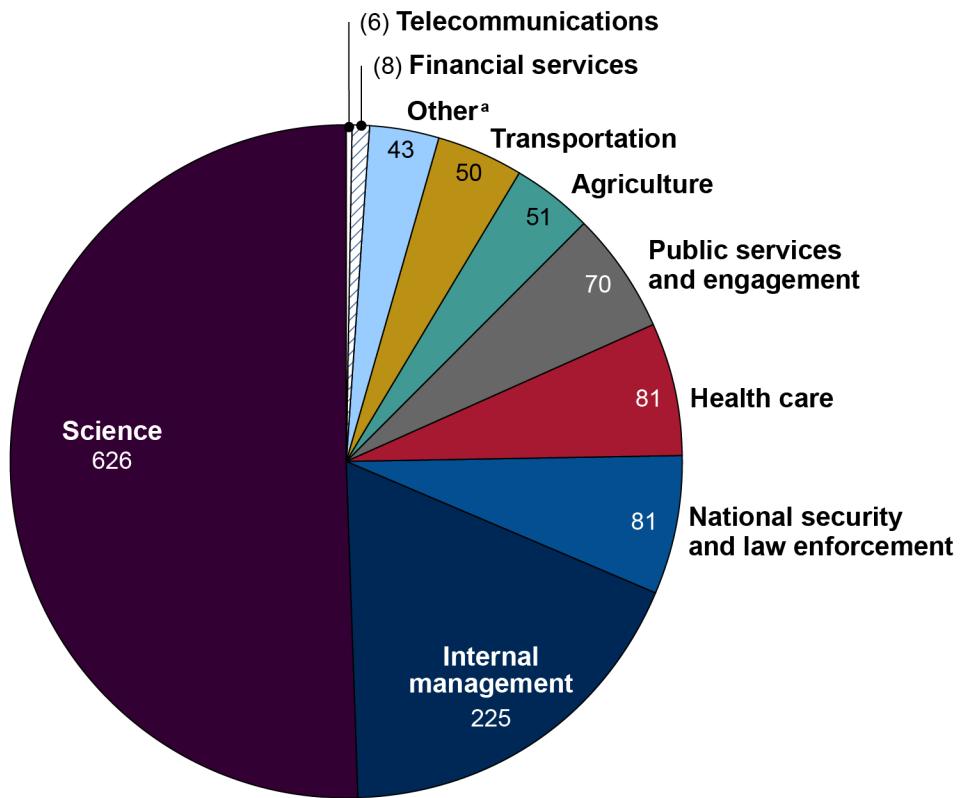
Agencies are currently using AI in various areas, including agriculture, financial services, health care, internal management, national security and law enforcement, public services and engagement, science, telecommunications, and transportation. Science and internal management were the two most common use case types identified and represented about 69 percent of the use cases. Telecommunications and financial services were the least common identified use case types, with six and eight use cases, respectively. Examples of science-based AI use cases include:

- NASA reported the use of AI to implement a global surveillance program to study volcanoes.

- Commerce reported the use of AI for satellite-based fire detection and intensity products combined with fuel, elevation, and weather data to determine the probability of rapid intensification and spread of wildfires.

Figure 5 displays the various AI areas in which agencies are using AI.

Figure 5: Artificial Intelligence (AI) Use Case Application Areas

Source: GAO analysis of agency AI use case inventory submissions to Office of Management and Budget. | GAO-24-105980

a"Other" includes AI use cases that did not clearly fit into one of the identified use case types.

Most Agencies' AI Inventories Were Not Fully Comprehensive and Accurate

As previously stated, agencies are required by EO 13960: *Promoting the Use of Trustworthy Artificial Intelligence in the Federal Government* to prepare an inventory of their AI use cases, excluding those that are classified and research and development related. In addition, the Chief Information Officers (CIO) Council's guidance for creating agency AI inventories indicated that, at minimum, the inventory should be submitted to OMB and should include (1) the AI use case identifying information, (2) contact information for the use case, (3) summary, (4) life cycle stage, and (5) ability for the use case to be released to the public.

Although 20 of 23 agencies developed AI inventories and submitted them to OMB, they did not always identify and follow the requirements within the CIO Council's associated guidance. Specifically, five of the 20 agencies provided comprehensive information for each of its reported use

cases;[27] the other 15 agencies' inventories had data gaps and inaccuracies. The table below displays where limitations were identified in agencies' 2021 AI inventory that were submitted to OMB.

Table 3: Summary of Limitations Identified in Agency Artificial Intelligence (AI) Inventories

Agency	Had data gaps or inaccuracies	Incorrectly included research and development use cases	Included non-AI uses	Included duplicative AI uses
Department of Agriculture	X			
Department of Commerce	X	X		X
Department of Energy	X			X
Department of Health and Human Services	X	X		
Department of Homeland Security	X	X	X	
Department of the Interior	X	X		
Department of Labor	X			
Department of State	X	X	X	
Department of Transportation	X			
Department of the Treasury	X			
Department of Veterans Affairs	X			
Environmental Protection Agency	X	X		
General Services Administration	X	X		
National Aeronautics and Space Administration	X	X		X
U.S. Agency for International Development	X	X		X

Source: GAO analysis of 15 agencies' inventories where limitations were identified. | GAO-24-105980

In particular, we identified the following limitations to the data agencies submitted to OMB:

- **Gaps or inaccuracies in required data elements.** Agencies provided inventories that included missing elements or inaccurate data. For example, thirteen agencies[28] did not include required data elements that OMB requested for the initial inventory, such as life cycle stage, the office responsible for the AI use case, a relevant point of contact, or whether the use case should be withheld from the public

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[27]The Departments of Education and Justice, the National Science Foundation, the Office of Personnel Management, and the Social Security Administration provided comprehensive information for each of its reported use cases.

[28]The Departments of Agriculture, Commerce, Energy, HHS, the Interior, Labor, State, Transportation, the Treasury, and Veterans Affairs; the Environmental Protection Agency; GSA; and NASA did not include each of the required data elements for the AI inventory.

inventory. In addition, nine agencies[29] provided an inventory that included life cycle stage data outside of those identified on the template's instructions, which accounted for 151 of the 1,241 AI use cases. For example, the Department of Veterans Affairs (VA) entered a response of "FDA approved" for the life cycle stage, which was not one of the choices.

- **Inclusion of research and development-related AI use cases.** Although research and development-related AI use cases were to be excluded from agency use case inventories, nine agencies— Commerce, DHS, HHS, the Department of the Interior, the Department of State (State), Environmental Protection Agency (EPA), GSA, NASA, and the U.S. Agency for International Development (USAID)—reported 277 research and development-related AI use cases in their inventories.

- **Inclusion of AI use cases that were later determined to be not AI.** Two agencies—DHS and State—provided AI use cases that they later determined were not AI. For example, officials from State informed us that 15 use cases included within its AI inventory submitted to OMB were later removed from the inventory because they were not AI.

- **Duplicative use cases.** Four agencies—Commerce, the Department of Energy, NASA, and USAID—provided inventories that contained duplicate AI use case names. For example, eight use cases contained matching use case names and summaries.

Agencies provided various reasons for the data quality issues. These reasons included errors made by staff, a difference in the interpretation of CIO Council instructions, and the anticipation of a change in life cycle stage, among other reasons. For example, VA officials stated that they used life cycle stage responses outside of those provided on the CIO Council's template because the selections did not accurately reflect the life cycle stage for their AI use cases and there was no option for "other." In addition, USAID officials stated that research and development use cases were included in error as a staff oversight. Further, State officials stated that research and development use cases were included with the anticipation that they would graduate through the life cycle from research and development to in use.

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[29]The Departments of Agriculture, HHS, Homeland Security, the Interior, State, and VA; GSA; NASA; and U.S. Agency for International Development provided a response to a use case life cycle stage outside of the template selections.

Maintaining comprehensive and accurate AI use case inventories with quality information is critical for the government to have awareness of its AI capabilities and for agency leaders to make important decisions. Without an accurate inventory, the government's implementation, oversight, and management of AI can be based on faulty data. In addition, accurate inventories would allow agencies to more effectively plan and execute AI projects through collaboration with others, including federal agencies.

Federal Agencies Have Taken Steps to Comply with AI Requirements, but Further Actions Remain

Federal agencies have mixed results to date in complying with AI requirements outlined in federal law and executive orders:

- OMB and OPM did not fully implement selected requirements, including OMB developing guidance for the acquisition and use of AI and OPM updating the occupational category for employees working on AI.

- OSTP partially implemented its requirement to designate certain agencies as "implementing agencies."

- GSA fully implemented selected requirements for establishing the AI Center of Excellence and implementing the Presidential Innovation Fellows program requirements for AI.[30]

- Commerce fully implemented requirements for creating a plan to develop AI technical standards with relevant stakeholder groups.

- Ten of 23 agencies implemented all of the AI requirements specific to their agencies, 12 implemented some but not all, and one was exempt.

OMB Partially Issued AI Guidance for Federal Agencies

Federal law and executive orders require OMB to issue critical guidance that informs federal agencies' policies and plans for the development, acquisition, and use of AI. Of the three selected requirements, OMB implemented one requirement and did not implement the other two. Table 4 shows the extent to which OMB had implemented selected requirements of AI federal policy and legal requirements, as of November 2023.

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[30]The Presidential Innovation Fellows program is a 1-year fellowship that unites industry and federal innovators.

Table 4: Office of Management and Budget (OMB) Implementation of Selected Artificial Intelligence (AI) Federal Policy and Legal Requirements, as of November 2023

OMB's AI-related requirements from federal policy and law	GAO assessment	Requirement source
Issue a memorandum to the heads of all agencies that informs the development of regulatory and non-regulatory approaches and considers ways to reduce barriers to the use of AI technologies. OMB should issue a draft version of the memorandum for public comment.	● **Implemented**. On November 17, 2020, OMB issued M-21-06 to the heads of executive departments and agencies to guide the regulation of AI applications.ᵃ On January 13, 2020, OMB made the draft version of the memorandum available for public comment. OMB held the comment period from January 13, 2020, through March 13, 2020, via the federal register.	Executive Order 13859: *Maintaining American Leadership in Artificial Intelligence*
Issue a memorandum to the head of each agency, that (1) informs the development of policies regarding acquisition and use of technologies enabled by AI, including identifying the responsibilities of agency officials managing AI; (2) recommends approaches to remove barriers for using AI; (3) identifies best practices for addressing discriminatory impact on the basis of any classification protected under federal nondiscrimination laws; and (4) provides a template of the required contents for agency plans. OMB should issue updates to the initial memorandum within 2 years and every 2 years thereafter for 10 years.	○ **Not implemented.** As of November 2023, OMB had not issued a memorandum to guide federal agencies' actions under the AI in Government Act of 2020. According to OMB, the agency is in the process of implementing requirements of the act, but did not provide a time frame for completion. OMB was required to complete this requirement by September 23, 2021, with the draft version of the memorandum released by June 25, 2021. However, in November 2023 and in response to the new Executive Order 14110, OMB issued a draft memorandum for public comment that when finalized should inform the development of policies regarding the use of AI, among other things.	AI in Government Act of 2020
Post a public roadmap for the policy guidance that OMB intends to create or revise to better support the use of AI, consistent with this order. The roadmap shall include, where appropriate, a schedule for engaging with the public and timelines for finalizing relevant policy guidance.	● **Implemented.** In October 2023, the President issued Executive Order 14110 which provides a public roadmap for the policy guidance that OMB intends to create to support the use of AI, including engaging with the public and timelines.	Executive Order 13960: *Promoting the Use of Trustworthy Artificial Intelligence in the Federal Government*

Source: GAO analysis of OMB's efforts. | GAO-24-105980

ᵃOMB, *Guidance for Regulation of Artificial Intelligence Applications*, M-21-06 (Washington, D.C.: Nov. 17, 2020).

As shown in the table, OMB issued its November 2020 memorandum for the heads of executive departments and agencies on the regulation of AI applications, M-21-06,[31] and made the draft version available for public comment in January 2020. The memorandum outlines 10 principles that agencies should consider when forming regulatory and non-regulatory approaches to the design, development, deployment, and operation of AI applications, as well as reducing barriers to AI deployment and use. In addition, in October 2023, the President issued Executive Order 14110

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[31]OMB, *Guidance for Regulation of Artificial Intelligence Applications*, M-21-06 (Washington, D.C.: Nov. 17, 2020).

which provides a public roadmap for the policy guidance OMB intends to create to support the use of AI.[32]

However, OMB has not implemented the requirement to issue a memorandum to guide federal agencies' actions under the AI in Government Act of 2020. In November 2023 and in response to the new Executive Order 14110, OMB issued a draft memorandum for public comment that when finalized should inform the development of policies regarding the use of AI, among other things.

Until OMB issues the required guidance, federal agencies will likely develop inconsistent policies on their use of AI, which will not align with key practices or be beneficial to the welfare and security of the American public. In addition, agencies will not be able to develop AI plans in line with OMB's guidance, as discussed later in this report.

OSTP Did Not Inform Agencies Responsible for AI Actions

EO 13859 assigned the responsibility of determining which agencies are "implementing agencies"[33] to OSTP's National Science and Technology Council's Select Committee on AI.[34] In addition, as we discussed earlier, OMB issued its memorandum on the regulation of AI applications, M-21-06.[35] Further, according to our *Standards for Internal Control in the Federal Government*, effectively communicating implementing agency designations internally and externally are vital to achieving the office's intended objective.[36]

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[32]The White House, *Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence*, Exec. Order 14110 (Washington, D.C.: Oct. 30, 2023).

[33]OSTP's National Science and Technology Council's Select Committee on AI was charged with designating agencies as "implementing agencies," which are described as agencies conducting foundational AI research and development, developing and deploying AI technologies, providing educational grants, and regulating and providing guidance for applications of AI technologies. Those agencies were to pursue strategic objectives to promote and protect American advancements in AI.

[34]The White House, *Maintaining American Leadership in Artificial Intelligence*, Exec. Order 13859 (Washington, D.C.: Feb. 11, 2019).

[35]Office of Management and Budget, *Guidance for Regulation of Artificial Intelligence Applications*, M-21-06 (Washington, D.C.: Nov. 17, 2020).

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

Accordingly, OSTP stated that it designated 14 of the 23 civilian agencies covered by the CFO Act as implementing agencies.[37] OSTP officials stated that the agencies with Select Committee members in place were designated as implementing agencies and should have been knowledgeable of their status. While OSTP designated those agencies as implementing agencies internally, OSTP did not communicate the Select Committee's designation of these agencies. Consequently, some agencies stated that they were unaware of their designation, as discussed later in this report.

The lack of transparent communication and knowledge sharing among OSTP and the agencies indicates an increased need for the oversight of federal AI efforts. Further, one of the objectives within the National AI Advisory Committee's May 2023 report on AI was to "bolster AI leadership, coordination, and funding in the White House and across the U.S. government."[38]

Establishing and documenting a shared list of implementing agencies, including those that should respond to M-21-06, and communicating the designation status of the agencies are critical to determining the federal requirements that apply to each agency. Until OSTP completes these steps, the government's AI efforts could be hindered.

OPM Identified Key AI Skills and Competencies, but Needs to Complete Other Requirements

OPM is responsible for leading federal agencies' efforts to implement AI through workforce needs assessments and updates, among other things. Of the four selected requirements we reviewed, OPM implemented one, partially implemented another, and did not implement the remaining two. Table 5 shows the extent to which OPM had implemented selected requirements of AI federal policy and legal requirements, as of September 2023.

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[37]OSTP stated that it designated the Departments of Agriculture, Commerce, Education, Energy, Health and Human Services, Homeland Security, the Interior, Justice, State, Transportation, the Treasury, and Veterans Affairs; National Aeronautics and Space Administration; and National Science Foundation as implementing agencies.

[38]The National Artificial Intelligence Advisory Committee, *Year 1 Report*, (May 2023).

Table 5: Office of Personnel Management (OPM) Implementation of Selected Artificial Intelligence (AI) Federal Policy and Legal Requirements, as of September 2023

OPM's AI-related requirements from federal policy and law	GAO assessment	Requirement source
Submit to Congress a comprehensive plan with a timeline to complete requirements related to updating the occupational series.	● **Implemented**. In December 2021, OPM provided to Congress its plan for completing the requirements related to updating the AI occupational series, to include a timeline for completing actions.	AI in Government Act of 2020
Complete the statutory requirements related to AI by: (1) identifying key skills and competencies needed for positions related to AI; (2) establishing an occupational series, or updating and improving an existing occupational series, to include positions that relate to AI; (3) establishing, to the extent appropriate, an estimate of the number of federal employees in positions related to AI, by each agency; and (4) using the estimate to prepare a 2-year and 5-year forecast of the number of federal employees in positions related to AI that each agency will need to employ.	◑ **Partially implemented**. As of September 2023, OPM partially met this requirement. The agency identified key skills and competencies needed for AI-related positions. However, OPM had not yet established an occupational series, updated or improved an existing occupational series, estimated the number of federal AI-related positions, by agency, or prepared a 2-year and 5-year forecast of the number of employees in these positions.	
Create an inventory of federal rotational programs and determine how these programs can be used to expand the number of employees with AI expertise at the agencies.	○ **Not implemented.** As of September 2023, OPM had not created a federal rotational programs inventory or determined how the programs could be used to expand the number of federal employees with AI expertise.	Executive Order 13960: *Promoting the Use of Trustworthy Artificial Intelligence in the Federal Government*
Issue a report with recommendations for how the programs in the inventory can be best used to expand the number of employees with AI expertise at the agencies and share it with the interagency coordination bodies identified by the Chief Information Officers Council.	○ **Not implemented.** As of September 2023, OPM had not issued a report with recommendations for how the programs in the inventory can be used to expand the number of federal employees with AI expertise and shared it with the interagency coordination bodies identified by the Chief Information Officers Council	

Source: GAO analysis of the Office of Personnel Management's efforts. | GAO-24-105980

As shown in the table, OPM provided to Congress an occupational study plan of action for updating the AI occupational series in December 2021. The plan includes a timeline for completing certain requirements, steps for identifying key skills and competencies needed for federal positions related to AI, as well as steps related to establishing or updating and improving an AI occupational series. The plan also includes a six-phased approach for completing certain actions between fiscal years 2021 and 2023.

OPM has also taken initial steps to address the requirement for updating the occupational series, but it remains partially implemented. Specifically, in July 2023, in collaboration with OSTP, OPM developed a listing of general and technical competencies to identify key skills and competencies needed for AI-related positions.

Although it developed the action plan, OPM has not yet established an occupational series; estimated the number of federal positions required to meet AI-related workforce needs, by agency; or prepared a 2-year and 5-year forecast of the number of employees in these positions. Additionally, OPM has not developed an inventory of federal rotational programs or determined how these programs could help expand the number of federal employees with AI expertise. Further, OPM has not implemented the requirement for issuing a related report with recommendations on expanding AI expertise since it has not yet implemented the initial requirement.

OPM provided several reasons for not fully implementing these requirements. Specifically, agency officials stated that creating a single occupational series or variations of AI series is not conducive to the agency's needs and missions as AI work impacts many occupational series. However, officials also stated that competing legislative priorities have further delayed the agency's decision to establish a new occupational series or update an existing series until the fourth quarter of fiscal year 2023. Regarding estimating the number of federal positions related to AI, OPM plans to begin that effort after the AI occupational study is completed, but the agency did not provide a time frame for completion.

Regarding the requirement for developing federal rotational programs, OPM officials stated that the agency is currently developing guidance for federal agencies to identify AI work, determine how to classify AI-related positions, and determine how to qualify applicants for these positions. Officials also said that efforts are underway to identify general and technical competencies to be used by agencies, which OPM believes to be key to assessing the rotational programs for expansion to the AI workforce. After these initial steps are completed, OPM plans to conduct a data call with the other federal agencies to identify the rotational programs. However, OPM did not provide an expected completion date.

Federal agencies are relying on OPM's guidance to identify AI-related positions and increase AI expertise at the agency level. Until OPM completes these actions, agencies will likely have issues identifying requirements for AI positions. This could lead to duplication of effort, wasted federal funds and inefficiencies, and inconsistent practices for determining and increasing AI expertise across the government.

GSA Established the AI Center of Excellence and an AI Track through the Presidential Innovation Fellows Program

GSA is responsible for leading federal agencies in bringing together AI experts to help develop AI solutions and improve the public experience with the federal government. GSA implemented both of its selected requirements for creating the AI Center of Excellence, and identifying priority areas and establishing an AI track as part of the Presidential Innovation Fellows program. Table 6 shows that GSA implemented the selected requirements of AI federal policy and legal requirements, as of September 2023.

Table 6: General Services Administration (GSA) Implementation of Selected Artificial Intelligence (AI) Federal Policy and Legal Requirements, as of September 2023

GSA's AI-related requirements from federal policy and law	GAO assessment	Requirement source
Create "AI Center of Excellence" to facilitate the adoption of AI technologies and improve cohesion and competency in the adoption and use of AI.	● **Implemented.** GSA created the AI Center of Excellence in the fall of 2019.[a]	AI in Government Act of 2020
Identify priority areas of expertise and establish an AI track to attract experts from industry and academia through the Presidential Innovation Fellows program in collaboration with other agencies.	● **Implemented.** GSA identified priority areas of expertise and established an AI track to attract experts from industry and academia to federal agencies through the Presidential Innovation Fellows program. According to agency officials, the AI track was established in March 2020.	Executive Order 13960: *Promoting the Use of Trustworthy Artificial Intelligence in the Federal Government*

Source: GAO analysis of the General Services Administration's efforts. | GAO-24-105980

[a]According to GSA officials, the agency initially created the AI Center of Excellence in 2019 although the AI in Government Act of 2020 did not require such until December 2020.

Though the AI in Government Act of 2020 mandated the creation of the AI Center of Excellence, GSA officials stated that, in 2019, prior to the statutory mandate, the agency partnered with the Office of the Federal CIO and OMB to create the center. We confirmed that the AI Center of Excellence has conducted several activities to support the use of AI in the government. For example, the center held government-wide events on topics in AI, hosted AI-related working groups, and published a monthly newsletter for AI practitioners. Related to the AI Center of Excellence, GSA also established the AI Community of Practice to build a knowledge base and interagency forum on best practices, tools, and resources that enable the federal workforce to deploy AI and machine learning in a responsible manner. As of October 2023, the community of practice serves approximately 1,200 members representing 60 federal agencies.

GSA addressed the EO 13960 requirement by identifying priority areas of expertise and establishing an AI track through its Presidential Innovation Fellows program in March 2020. The program brings mid-to-senior level entrepreneurs, executives, and technologists into the federal government

through 12-to-24-month assignments to address the nation's mission critical problems. The AI track that GSA established, known as data strategy and AI, includes data management, machine learning, and data science, among other things. GSA's efforts should allow the federal government to improve public service quality through the adoption of AI software and systems.

Commerce Issued a Plan to Develop AI Technical Standards with Relevant Stakeholders

Commerce, through NIST, is charged with leading federal agencies in their efforts to develop technical standards for AI. Commerce implemented both of its selected requirements to issue a plan for developing technical standards related to AI and develop the plan in consultation with other stakeholder groups. Table 7 shows that Commerce implemented both of the selected requirements in the summer of 2019.

Table 7: Commerce Implementation of Selected Artificial Intelligence (AI) Federal Policy, as of September 2023

Commerce's AI-related requirements from federal policy and law	GAO assessment	Requirement source
Issue a plan for developing technical standards for systems that use AI technologies, including identifying federal priority needs for standardization of AI systems development and deployment; standards development entities in which agencies should seek membership; and opportunities for and challenges to leadership in AI standardization.	● **Implemented.** In August 2019, Commerce, through the National Institute of Standards and Technology (NIST), issued its plan, *U.S. Leadership in AI: A Plan for Federal Engagement in Developing Technical Standards and Related Tools*. The plan addresses each of the required elements.	Executive Order 13859: *Maintaining American Leadership in Artificial Intelligence*
Develop the plan in consultation with the Select Committee, as needed, the private sector, academia, non-governmental entities, and other stakeholders, as appropriate.	● **Implemented.** Commerce, through NIST, developed the plan with various stakeholders. This included holding discussions with White House Select Committee members; facilitating a federal AI standards workshop with private and public sector representatives; seeking comments from the private sector and federal agencies; and publishing a request for information, "Artificial Intelligence Standards," in the Federal Register for the public on May 1, 2019.	

Source: GAO analysis of the Department of Commerce's efforts. | GAO-24-105980

As shown in the table, Commerce issued its plan, *U.S. Leadership in AI: A Plan for Federal Engagement in Developing Technical Standards and Related Tools* through NIST in August 2019.[39] The plan provides guidance on important characteristics of standards and practical steps for agencies to take as they make decisions about AI standards. Specifically,

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[39]National Institute of Standards and Technology, *U.S. Leadership in AI: A Plan for Federal Engagement in Developing Technical Standards and Related Tools* (Gaithersburg, Md.: Aug. 9, 2019).

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the plan identifies nine focus areas for AI standards: concepts and terminology, data and knowledge, human interactions, metrics, networking, performance testing and reporting methodology, safety, risk management, and trustworthiness. The plan also includes four recommendations to the federal government to speed the pace of reliable, robust, and trustworthy AI development.

Commerce developed the plan in consultation with multiple stakeholder groups through various methods of outreach. In particular, the agency held discussions with the Select Committee on AI members and other federal agencies on AI and related topics, conducted a workshop on a federal AI standards engagement strategy with over 400 private and public sector representatives, and sought private sector and federal agencies' input on the draft plan. In May 2019, Commerce also published a request for information, "Artificial Intelligence Standards," in the Federal Register.[40]

In addition to the plan, NIST released its *NIST AI 100-1 Artificial Intelligence Risk Management Framework (AI RMF 1.0)* in January 2023 to guide organizations actions as they design, develop, deploy, or use AI systems to help manage the many risks of AI and promote trustworthy and responsible development and use of AI systems.

By creating a plan for federal agencies to develop AI-related technical standards with relevant stakeholder groups, Commerce has provided practical steps to help agencies move toward developing and deploying reliable and trustworthy AI.

Federal Agencies Partially Implemented AI Requirements

Federal agencies are charged with implementing AI-related requirements established by federal law, executive orders, policy, and guidance from the leading agencies. In particular, agencies should:

- **Prepare an AI use case inventory.** According to the CIO Council's guidance, the inventory should list each of the agency's use cases, or specific challenges or opportunities that AI may solve, as defined by GSA's IT Modernization Centers of Excellence. Each use case should include (1) the AI use case name, (2) associated agency and office, (3) contact information for the use case, (4) a summary of what the AI

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[40]National Institute of Standards and Technology, *Artificial Intelligence Standards*, 84 FR 18490 (May 1, 2019). https://www.federalregister.gov/documents/2019/05/01/2019-08818/artificial-intelligence-standards.

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does, (5) life cycle stage, and (6) whether the use case should be withheld from an agency's public inventory.[41]

- **Develop a plan for AI inventory updates.**[42] The plan should detail how the agencies expect to achieve consistency with EO 13960 and include how each agency intends to conduct annual updates of its AI use case inventory, ensure the inventory items are consistent with the EO, and include steps that would be taken to retire any AI system not consistent with the EO.

- **Make the AI use case inventory publicly available.** The inventory should be made publicly available to the extent practicable and in accordance with applicable law and policy, including those concerning the protection of privacy and of sensitive law enforcement, national security, and other protected information.

- **Designate a responsible AI official (RAIO).** The official is to be responsible for overseeing AI plans and activities and managing the AI use case inventory data to be provided to OMB and the public.[43]

- **Describe and plan for AI regulatory authorities.** The heads of implementing agencies that also have regulatory authorities should review their authorities related to applications of AI and submit to OMB plans to achieve consistency with OMB's memorandum on the regulation of AI applications.[44] The plans should identify statutory authorities governing AI applications and describe any planned or considered regulatory actions on AI, among other things.

- **Develop a plan for achieving consistency with OMB's guidance on the acquisition and use of AI.** Agencies should submit to the OMB Director and post on a publicly available page on the agency's website (1) a plan to achieve consistency with OMB's guidance on the

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[41]According to the CIO Council, the agency inventory of AI use cases was to include only non-classified and non-sensitive use cases. Notably, the 2023 guidance for the inventory of AI use cases was updated to require: the AI use case ID; use case name; associated agency and bureau/department; a summary of what the AI does; life cycle stage; date initiated; date when development and/or acquisition began, if applicable; date implemented, if applicable; contact information for the use case; developer information; and whether the use case is consistent with EO 13960.

[42]Executive Order 13960 § 5.

[43]The requirement to designate an RAIO is no longer valid and has been superseded by the designation of a Chief Artificial Intelligence Officer, pursuant to EO 14110.

[44]OMB, *Guidance for Regulation of Artificial Intelligence Applications*, M-21-06 (Washington, D.C.: Nov. 17, 2020).

acquisition and use of AI, or (2) a written determination that the agency does not use and does not anticipate using AI.

Of the 23 civilian CFO Act agencies in our review, 10 agencies implemented all applicable requirements; 12 agencies partially implemented them; and one agency, NRC, was exempt from EO 13960 requirements.[45] Table 8 shows the extent to which the 23 agencies implemented selected AI requirements of federal law, policy, and guidance, as of September 2023.

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[45]NRC was exempt from EO 13960 requirements due to its designation as an independent regulatory agency as defined in 44 U.S.C. § 3502(5), and therefore, was not required to develop an AI inventory. The commission indicated that it did not have any AI use cases, but it opted to designate a RAIO.

Table 8: Federal Agencies' Implementation of Selected Artificial Intelligence (AI) Requirements, as of September 2023

Agency	AI requirements in federal law, policy, and guidance					
	Prepare AI use case inventory	Plan for AI inventory updates and compliance[a]	Make AI use case inventory public	Designate a responsible AI official	Describe and plan for AI regulatory authorities[b]	Plan for consistency with OMB guidance on the acquisition and use of AI[c]
Department of Agriculture	●	●	●	●	○	Pending[h]
Department of Commerce	●	○	●	●	N/A[g]	
Department of Education	●	○	●	●	N/A[g]	
Department of Energy	●	●	●	●	●	
Department of Health and Human Services	●	○	●	●	●	
Department of Homeland Security	●	○	●	●	○	
Department of Housing and Urban Development[d]	No AI use cases			●	N/A[g]	●
Department of the Interior	●	○	●	●	○	
Department of Justice	●	●	●	●	●	
Department of Labor	●	●	●	●	N/A[g]	
Department of State	●	●	●	●	N/A[g]	
Department of Transportation	●	●	●	●	○	
Department of the Treasury	●	○	●	●	N/A[g]	
Department of Veterans Affairs	●	●	●	●	N/A[g]	
Environmental Protection Agency	●	◑	●	●	N/A[g]	
General Services Administration	●	○	●	●	N/A[g]	
National Aeronautics and Space Administration	●	◑	●	●	N/A[g]	
National Science Foundation[e]	●	●	N/A	●	N/A[g]	
Nuclear Regulatory Commission[d]	No AI use cases			●	N/A[g]	●
Office of Personnel Management	●	○	●	●	N/A[g]	
Small Business Administration[d]	No AI use cases			●	N/A[g]	●
Social Security Administration	●	●	●	●	N/A[g]	
U.S. Agency for International Development[f]	●	●	N/A	●	●	

Legend: ● = Fully implemented; ◑ = Partially implemented; ○ = Not implemented; N/A=not applicable; Green shading = the agency met each of the applicable requirements; Grey shading = the agency was not assessed on this requirement, as the requirement was not applicable.

Source: GAO analysis of federal agencies' efforts to implement selected policy and guidance on AI. | GAO-24-105980

This table only shows whether agencies developed inventories and does not discuss whether the inventories were complete and accurate. As described in greater detail earlier in our report, we found that most agencies' AI inventories were not comprehensive and accurate.

[a]Executive Order 13960, § 5(c)(i).

[b]Office of Management and Budget, *Guidance for Regulation of Artificial Intelligence Applications*, M-21-06 (Washington, D.C.: Nov. 17, 2020).

[c]AI in Government Act of 2020, Div. U, Title I of the Consolidated Appropriations Act, 2021, Pub. L. No. 116-260, Div. U, Title I, 134 Stat. 1182, 2286-89 (2020).

[d]The Department of Housing and Urban Development and the Small Business Administration reported that they did not have any AI use cases. The Nuclear Regulatory Commission is exempt from EO 13960 requirements because it is an independent regulatory agency and did not submit an AI inventory, as the agency indicated that it did not have any AI use cases.

[e]The National Science Foundation reported that it did not have any public AI use cases and all of its AI use cases are only for internal use.

[f]The U.S. Agency for International Development reported that it did not identify any AI use cases that should be made publicly available.

[g]The Departments of Commerce, Education, Energy, Housing and Urban Development, Labor, State, the Treasury, and Veterans Affairs; Environmental Protection Agency; General Services Administration; National Aeronautics and Space Administration; National Science Foundation; Office of Personnel Management; Small Business Administration; Social Security Administration; and the U.S. Agency for International Development reported having no regulatory authorities over applications of AI.

[h]OMB did not develop the required guidance for the agencies' acquisition and use of AI technologies; therefore, agencies are awaiting guidance from OMB.

Notably, most agencies fully implemented three of the key AI requirements: (1) preparing an AI use case inventory, (2) making the inventory publicly available, and (3) designating a responsible AI official. Agencies were less compliant with implementing the requirement to develop a plan for AI inventory updates and compliance. Additionally, agencies were required to submit to the OMB Director and post on a publicly available page on the agency's website a (1) plan to achieve consistency with the OMB guidance on the acquisition and use of AI, or (2) written determination that the agency does not use and does not anticipate using AI. However, as previously noted, OMB did not develop guidance for the acquisition and use of AI technologies. This lack of guidance has impeded federal agencies' ability to develop their plans to achieve consistency with the act. Details follow for the key AI requirements for 22 agencies:[46]

- **Prepare an AI use case inventory.** Twenty agencies prepared an AI use case inventory.[47] The requirement was not applicable to HUD and SBA since they reported having no AI use cases.

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[46]As previously noted, NRC was exempt from EO 13960 requirements due to its designation as an independent regulatory agency as defined in 44 U.S.C. § 3502(5), and therefore, was not required to develop an AI inventory.

[47]The 20 agencies are Agriculture, Commerce, Education, Energy, HHS, DHS, the Interior, Justice, Labor, State, Transportation, the Treasury, VA, EPA, GSA, NASA, NSF, OPM, SSA, and USAID.

- **Develop a plan for AI inventory updates.**[48] Ten agencies (the Departments of Agriculture, Energy, Justice, Labor, State, Transportation, and VA; the National Science Foundation (NSF); Social Security Administration (SSA); and USAID) developed a plan to achieve consistency with EO 13960 or retire AI applications found to be inconsistent with the EO. EPA and NASA partially implemented the requirement. For example, EPA developed a document to achieve consistency with the EO, but it was not a formalized plan and it had not been approved or fully implemented. NASA's plan to achieve consistency with EO 13960 did not include steps for addressing AI applications found to be inconsistent with the EO. In addition, eight agencies did not implement this requirement.[49] Further, the requirement was not applicable to HUD and SBA since they reported not having any AI use cases to include in an inventory. Agencies provided several reasons for not developing the required plan:

  - Two agencies (Commerce and the Department of the Interior) had determined that their agencies' use cases were already consistent with the EO. Additionally, Commerce officials stated that a draft AI policy was provided to its management for review and approval in December 2021. The agency did not provide an expected date for approving the plan.

  - Four agencies (Education, the Treasury, HHS, and OPM) stated that their agencies were planning to or already had efforts underway to implement this requirement. However, this is more than a year past the established due date of August 2022. Accordingly, expeditiously addressing this requirement is essential to accuracy for future iterations of agencies' inventories.

  - DHS released a policy statement on its acquisition and use of AI in August 2023, but the statement did not establish a plan for achieving consistency with EO 13960.

  - GSA officials expect to develop a plan after the release of an anticipated executive order and OMB memorandum related to AI. The agency did not provide an expected date for completing the plan.

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[48]Executive Order 13960, § 5(c)(i).

[49]Commerce, Education, HHS, DHS, the Interior, the Treasury, GSA, and OPM did not develop a plan to achieve consistency with EO 13960 or retire AI applications found to be inconsistent with the EO.

- **Make the AI use case inventory publicly available.** Eighteen agencies[50] made their AI use case inventory available to the public and four agencies considered the requirement as not applicable.[51]

- **Designate a RAIO.** All of the agencies, including NRC, designated one or more RAIO, as called for in EO 13960.[52]

The 23 agencies identified 29 RAIOs that held various positions of authority at their respective agencies. In particular, 18 agencies reported having one RAIO, four agencies reporting having two RAIOs, and one agency reported having three RAIOs in place. The most frequently reported positions among the RAIOs were:

- Chief Technology Officer (seven officials),
- Chief Data Officer (CDO) (five officials),[53] and
- Director (two officials).

Table 9 lists the positions that the RAIOs held at the agencies.

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[50]Agriculture, Commerce, Education, Energy, HHS, DHS, the Interior, Justice, Labor, State, Transportation, the Treasury, VA, EPA, GSA, NASA, OPM, and SSA made their AI use case inventory publicly available.

[51]In addition to HUD and SBA reporting not having any AI use cases, NSF reported that its AI use cases were only for internal use and USAID reported that it did not identify any AI use cases that should be made publicly available.

[52]All agencies met this requirement. However, the RAIO are to be replaced by the Chief Artificial Intelligence Officer, pursuant to EO 14110.

[53]Transportation's RAIO holds the positions of CDO and Assistant CIO and OPM's RAIO holds the positions of CDO and Deputy Director. For this report, we counted both of the RAIOs as CDOs.

Table 9: Positions of Agency Officials Serving as Responsible Artificial Intelligence Officials (RAIO), as of September 2023

Agency	Number of RAIOs	RAIO agency positions
Department of Agriculture	2	Chief Data Officer (CDO); Lead Data Scientist
Department of Commerce	1	Chief Technology Officer (CTO)
Department of Homeland Security	2	CTO; Deputy Assistant Secretary
Department of Education	1	CTO (Acting)
Department of Energy	1	Senior Program Manager
Department of Health and Human Services	1	Chief Information Officer (CIO)
Department of Housing and Urban Development	1	Chief Digital Services Officer
Department of the Interior	1	CDO
Department of Justice	3	CTO; Assistant Director; Senior Counsel
Department of Labor	1	Director
Department of State	1	Chief Data Scientist
Department of Transportation[a]	1	CDO/Assistant CIO
Department of the Treasury	1	CTO
Department of Veterans Affairs	1	Director
Environmental Protection Agency	1	CDO
General Services Administration[b]	1	CTO
National Aeronautics and Space Administration	2	Associate Administrator; Chief Scientist
National Science Foundation	1	Chief Advisor
Nuclear Regulatory Commission[c]	1	Deputy Director
Office of Personnel Management[a]	1	CDO/Deputy Director
Small Business Administration	2	Chief Enterprise Architect; Deputy CIO
Social Security Administration	1	Chief Architect
U.S. Agency for International Development	1	CTO

Source: GAO analysis of agency RAIO position titles. | GAO-24-105980

[a]The Department of Transportation's RAIO holds the positions of CDO and Assistant CIO and the Office of Personnel Management's RAIO holds the positions of CDO and Deputy Director. For this report, we counted both of the RAIOs as CDOs.

[b]The General Services Administration's RAIO position informally transitioned from the CTO to the CDO in August 2023. A formal transition date was not established during this reporting period.

[c]The Nuclear Regulatory Commission is exempt from this EO 13960 requirement because it is an independent regulatory agency, but it opted to designate a RAIO.

- **Describe and plan for AI regulatory authorities.** As stated previously, six implementing agencies reported having regulatory authorities over applications of AI. Of these six agencies, two agencies (HHS and Justice) developed a plan to achieve consistency with OMB's memorandum and four agencies (Agriculture, DHS,

Interior, and Transportation) did not. The agencies provided several reasons for not developing the required plan:

- Agriculture stated that its AI work has largely been internal to the agency and conducted in a research setting;

- DHS stated it had created a working group to address the requirement, but did not include a time frame for completing it;

- Interior cited resource constraints as an impediment; and

- Transportation stated that its plan was undergoing interagency review, but an expected date of completion was not established.

The remaining 16 agencies considered the requirement as not applicable since they reported having no regulatory authorities over applications of AI.[54]

In addition, as previously mentioned, federal agencies were not always certain whether OSTP designated them as implementing agencies and thus, whether the memorandum applied to them. Notably, only six of the eight agencies reported that they were designated as implementing agencies. Further, one of the five agencies stated that it was "likely" considered as an implementing agency, and another agency stated that it "appears to be" an implementing agency but reported it had not been informed of its designation status from OSTP or OMB. The remaining two agencies reported that they did not know whether OSTP had designated them as implementing agencies.

- **Develop a plan for achieving consistency with OMB's guidance on the acquisition and use of AI.** As previously discussed, OMB has not completed its requirements to develop guidance, and therefore, agencies do not have the necessary guidance upon which to base their plans. Despite the lack of guidance from OMB, several agencies reported taking proactive steps toward addressing requirements of the act. For example, NASA published a framework for ethical AI in April 2021[55] and stated that it is also drafting an AI policy and AI practitioner's handbook. NASA expects to complete the policy and handbook by September 2024.

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[54]Commerce, Education, Energy, HUD, Labor, State, the Treasury, VA, EPA, GSA, NASA, NSF, OPM, SBA, SSA, and USAID reported having no regulatory authorities over applications of AI.

[55]National Aeronautics and Space Administration, *NASA Framework for the Ethical Use of Artificial Intelligence (AI)*, NASA/TM-20210012886 (Washington, D.C.: April 2021).

Until agencies implement these federal law and policy requirements, and federal guidance, they will not be positioned to increase transparency with the public and proactively prepare for the complexities and risks that may arise as they strive to implement AI.

Conclusions

AI capabilities and the government's use of AI have expanded rapidly over the last few years; hundreds of uses are now ongoing and planned. Maintaining complete and accurate inventories of these uses is essential to understanding the government's expected and ongoing AI investments and the resulting potential improvements and risks.

Although certain federal agencies have taken initial steps to comply with guidance and statutory requirements, key efforts to strengthen management of AI have missed deadlines and are not yet completed. OMB, OPM, and OSTP's actions on these are critical to helping agencies successfully manage AI. The lack of guidance has contributed to agencies not fully implementing fundamental practices in managing AI. Until they address such practices, agencies' efforts to proactively prepare for AI complexities, benefits, and risks will be impaired.

Recommendations for Executive Action

We are making a total of 35 recommendations to 19 agencies, including OMB, to take steps to completely implement federal AI requirements. Specifically,

The Director of OMB should ensure that the agency issues guidance to federal agencies in accordance with federal law, that is to (a) inform the agencies' policy development related to the acquisition and use of technologies enabled by AI, (b) include identifying responsible AI officials (RAIO), (c) recommend approaches to remove barriers for AI use, (d) identify best practices for addressing discriminatory impact on the basis of any classification protected under federal nondiscrimination laws, and (e) provide a template for agency plans that includes the required contents. (Recommendation 1)

The Director of OMB should ensure that the agency develops and posts a public roadmap for the agency's policy guidance to better support AI use, and, where appropriate, include a schedule for engaging with the public and timelines for finalizing relevant policy guidance, consistent with EO 13960. (Recommendation 2)

The Director of the Office of Science and Technology Policy should communicate a list of federal agencies that are required to implement the Regulation of AI Applications memorandum requirements (M-21-06) to

inform agencies of their status as implementing agencies with regulatory authorities over AI. (Recommendation 3)

The Director of OPM should ensure that the agency (a) establishes or updates and improves an existing occupational series with AI-related positions; (b) establishes an estimated number of AI-related positions, by federal agency; and, based on the estimate, (c) prepares a 2-year and 5-year forecast of the number of federal employees in these positions, in accordance with federal law. (Recommendation 4)

The Director of OPM should ensure that the agency creates an inventory of federal rotational programs and determines how these programs can be used to expand the number of federal employees with AI expertise, consistent with EO 13960. (Recommendation 5)

The Director of OPM should ensure that the agency issues a report with recommendations for how the programs in the inventory can be used to expand the number of federal employees with AI expertise and shares it with the interagency coordination bodies identified by the Chief Information Officers Council, consistent with EO 13960. (Recommendation 6)

The Director of OPM should ensure that the agency develops a plan to either achieve consistency with EO 13960 section 5 for each AI application or retires AI applications found to be developed or used in a manner that is not consistent with the order. (Recommendation 7)

The Secretary of Agriculture should ensure that the department (a) reviews the department's authorities related to applications of AI, and (b) develops and submits to OMB plans to achieve consistency with the Regulation of AI Applications memorandum (M-21-06). (Recommendation 8)

The Secretary of Agriculture should ensure that the department updates its AI use case inventory to include all the required information, at minimum, and takes steps to ensure that the data in the inventory aligns with provided instructions. (Recommendation 9)

The Secretary of Commerce should ensure that the department develops a plan to either achieve consistency with EO 13960 section 5 for each AI application or retires AI applications found to be developed or used in a manner that is not consistent with the order. (Recommendation 10)

The Secretary of Commerce should ensure that the department updates its AI use case inventory to include all the required information, at minimum, and takes steps to ensure that the data in the inventory aligns with provided instructions. (Recommendation 11)

The Secretary of Education should ensure that the department develops a plan to either achieve consistency with EO 13960 section 5 for each AI application or retires AI applications found to be developed or used in a manner that is not consistent with the order. (Recommendation 12)

The Secretary of Energy should ensure that the department updates its AI use case inventory to include all the required information, at minimum, and takes steps to ensure that the data in the inventory aligns with provided instructions. (Recommendation 13)

The Secretary of Health and Human Services should ensure that the department develops a plan to either achieve consistency with EO 13960 section 5 for each AI application or retires AI applications found to be developed or used in a manner that is not consistent with the order. (Recommendation 14)

The Secretary of Health and Human Services should ensure that the department updates its AI use case inventory to include all the required information, at minimum, and takes steps to ensure that the data in the inventory aligns with provided instructions. (Recommendation 15)

The Secretary of Homeland Security should ensure that the department develops a plan to either achieve consistency with EO 13960 section 5 for each AI application or retires AI applications found to be developed or used in a manner that is not consistent with the order. (Recommendation 16)

The Secretary of Homeland Security should ensure that the department (a) reviews the department's authorities related to applications of AI and (b) develops and submits to OMB plans to achieve consistency with the Regulation of AI Applications memorandum (M-21-06). (Recommendation 17)

The Secretary of Homeland Security should ensure that the department updates its AI use case inventory to include all the required information, at minimum, and takes steps to ensure that the data in the inventory aligns with provided instructions. (Recommendation 18)

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The Secretary of the Interior should ensure that the department develops a plan to either achieve consistency with EO 13960 section 5 for each AI application or retires AI applications found to be developed or used in a manner that is not consistent with the order. (Recommendation 19)

The Secretary of the Interior should ensure that the department (a) reviews the agency's authorities related to applications of AI and (b) develops and submits to OMB plans to achieve consistency with the Regulation of AI Applications memorandum (M-21-06). (Recommendation 20)

The Secretary of the Interior should ensure that the department updates its AI use case inventory to include all the required information, at minimum, and takes steps to ensure that the data in the inventory aligns with provided instructions. (Recommendation 21)

The Secretary of Labor should ensure that the department updates its AI use case inventory to include all the required information, at minimum, and takes steps to ensure that the data in the inventory aligns with provided instructions. (Recommendation 22)

The Secretary of State should ensure that the department updates its AI use case inventory to include all the required information, at minimum, and takes steps to ensure that the data in the inventory aligns with provided instructions. (Recommendation 23)

The Secretary of Transportation should ensure that the department (a) reviews the department's authorities related to applications of AI and (b) develops and submits to OMB plans to achieve consistency with the Regulation of AI Applications memorandum (M-21-06). (Recommendation 24)

The Secretary of Transportation should ensure that the department updates its AI use case inventory to include all the required information, at minimum, and takes steps to ensure that the data in the inventory aligns with provided instructions. (Recommendation 25)

The Secretary of the Treasury should ensure that the department develops a plan to either achieve consistency with EO 13960 section 5 for each AI application or retires AI applications found to be developed or used in a manner that is not consistent with the order. (Recommendation 26)

The Secretary of the Treasury should ensure that the department updates its AI use case inventory to include all the required information, at minimum, and takes steps to ensure that the data in the inventory aligns with provided instructions. (Recommendation 27)

The Secretary of Veterans Affairs should ensure that the department updates its AI use case inventory to include all the required information, at minimum, and takes steps to ensure that the data in the inventory aligns with provided instructions. (Recommendation 28)

The Administrator of the Environmental Protection Agency should ensure that the agency fully completes and approves its plan to either achieve consistency with EO 13960 section 5 for each AI application or retires AI applications found to be developed or used in a manner that is not consistent with the order. (Recommendation 29)

The Administrator of the Environmental Protection Agency should ensure that the agency updates its AI use case inventory to include all the required information, at minimum, and takes steps to ensure that the data in the inventory aligns with provided instructions. (Recommendation 30)

The Administrator of General Services should ensure that the agency develops a plan to either achieve consistency with EO 13960 section 5 for each AI application or retires AI applications found to be developed or used in a manner that is not consistent with the order. (Recommendation 31)

The Administrator of General Services should ensure that the agency updates its AI use case inventory to include all the required information, at minimum, and takes steps to ensure that the data in the inventory aligns with provided instructions. (Recommendation 32)

The Administrator of the National Aeronautics and Space Administration should ensure that the agency updates and approves the agency's plan to achieve consistency with EO 13960 section 5 for each AI application, to include retiring AI applications found to be developed or used in a manner that is not consistent with the order. (Recommendation 33)

The Administrator of the National Aeronautics and Space Administration should ensure that the agency updates its AI use case inventory to include all the required information, at minimum, and takes steps to ensure that the data in the inventory aligns with provided instructions. (Recommendation 34)

The Administrator of the U.S. Agency for International Development should ensure that the agency updates its AI use case inventory to include all the required information, at minimum, and takes steps to ensure that the data in the inventory aligns with provided instructions. (Recommendation 35)

Agency Comments and Our Evaluation

We provided a draft of the report to the 23 civilian CFO Act agencies, as well as OMB and OSTP, for their review and comment. Of the 19 agencies to which we made a recommendation in this report, ten agencies (Agriculture, Commerce, Energy, HHS, DHS, Interior, Transportation, VA, EPA, and GSA) agreed with their recommendations; three agencies (OPM, Education, and NASA) partially agreed with one or more of their recommendations; four agencies (Labor, State, Treasury, and USAID) neither agreed nor disagreed with the recommendation; and two agencies disagreed with one of their recommendations (OMB and OSTP). We also received technical comments from several agencies, which we have incorporated into the report as appropriate.

The following ten agencies agreed with our recommendations:

- Commerce provided written comments stating that it concurs with its recommendations and will prepare a formal action plan upon issuance of this report. Commerce's comments are reprinted in appendix II.

- In comments provided via email on October 27, 2023, an Audit Liaison Official stated that Agriculture generally concurred with the findings and recommendations in the draft report.

- Energy provided written comments stating that it concurs with the recommendation and noted that it planned to update its inventory to include all required information by March 1, 2024. Energy's comments are reprinted in appendix III.

- HHS provided written comments stating that it concurs with the recommendations. The department further stated that it looks forward to the implementation of the President's October 2023 EO on the use of AI, and OMB's associated guidance for appropriate risk management processes. HHS's comments are reprinted in appendix IV.

- DHS provided written comments stating that it concurs with the recommendations. Regarding the recommendation to achieve consistency with EO 13960, DHS noted that it has created an AI Policy Working Group which is working to update or revise existing policies, procedures, and processes for AI and estimated that it would

be completed by January 31, 2025. Regarding the recommendation to achieve consistency with OMB's guidance on the regulation of AI, DHS stated that it will leverage EO 14110 in meeting OMB's guidance and estimated implementing this recommendation by July 31, 2024. Regarding the recommendation on updating its AI inventory, DHS stated that as of July 26, 2023, it had updated its use case inventory; however, the agency did not provide evidence to support this statement. When DHS provides evidence of the implementation of this recommendation, we will review it and determine if the recommendation can be closed as implemented. DHS's comments are reprinted in appendix V.

- Interior provided written comments stating that it concurs with the recommendations and intends to implement them. Interior's comments are reprinted in appendix VI.

- In comments provided via email on October 30, 2023, an Audit Relations Analyst stated that Transportation concurs with the recommendations and will provide a comprehensive response on planned actions to address the recommendations in a later response.

- VA provided written comments stating that it concurs with the recommendation and provided additional comments regarding the recommendation. Specifically, VA stated that its use case data submissions do not have any gaps or inaccuracies in the required data elements. In particular, VA stated that, consistent with guidance from OMB, the department entered accurate terminology that was different from standardized template choices when the choices were inaccurate for the application (i.e., for the lifecycle stage). However, the CIO Council's inventory guidance and template states that agencies should select from the given list of lifecycle stages. The guidance does provide an additional column where agencies can provide additional comments on their selection.

  VA also asserted that it correctly included health care research and development use cases in its inventory, as allowed by the guidance. We acknowledge that while EO 13960 states that research and development AI use cases should be excluded, the CIO Council's guidance does allow agencies to include research and development use cases where the project produced an agency product (e.g., a research paper or where the research is deployed or planned to be deployed into production). As a result, we updated our report to reflect that VA's inventory did not include research and development use cases. However, because of the inaccurate reporting of lifecycle stages in the inventory, we believe the recommendation is still warranted.

Lastly, VA stated that it had completed additional actions to resolve the intent of the recommendation, including updating its inventory, establishing an AI Working Group to review and approve the inventory, and performing quality control checks on the inventories. However, VA did not provide evidence to support these statements. VA's comments are reprinted in appendix VII.

- EPA provided written comments stating that it agrees with the recommendations. It further described planned actions to implement them and estimated completion dates. For example, EPA noted that it has implemented parts of its draft plan and is assessing their efficacy. EPA estimates that it will incorporate the remaining parts of the plan into its processes by the end of March 2024. EPA's comments are reprinted in appendix VIII.

- GSA provided written comments stating that it agrees with the recommendations and is developing a plan to address them. GSA's comments are reprinted in appendix IX.

The following three agencies partially agreed with one or more of their recommendations:

- OPM provided written comments in which it concurred with three recommendations and partially concurred with one. Specifically, OPM stated that it concurred with our recommendation that the agency create an inventory of rotational programs and determines how these programs can be used to expand the number of federal employees with AI expertise and stated that it created an inventory after a June 2023 data call. It further stated that agency is prepared to evaluate and determine how the agency programs can be used to expand the number of federal employees with AI expertise.

  Regarding issuing a report with recommendations for how the programs in the inventory can be used, OPM concurred and stated that it is finalizing a report on how programs in the inventory can be used to expand the number of employees with AI expertise. The agency plans to share the report in the coming weeks.

  OPM also concurred with developing a plan to achieve consistency with EO 13960 and noted that it is currently conducting a review to identify the opportunities the agency is facing in leveraging AI applications. It further noted that this review will include the steps OPM needs to take to govern the review and development of AI applications.

  In addition, OPM partially concurred with establishing an occupational series with AI-related positions. OPM stated that it has completed two

parts of the recommendation (establishing an estimated number of AI-related positions and preparing a forecast of the number of federal employees in those positions). However, the agency did not provide documentation of the completion of these activities and has not yet completed the establishment (or updating) of an occupational series with AI-related positions. OPM's comments are reprinted in appendix X.

- Education provided written comments stating that it concurs in part with our recommendation to ensure that the department develops a plan to either achieve consistency with EO 13960 or retires AI applications found to be inconsistent with the order; however, it did not state with which part of the recommendation it did not concur. In addition, Education suggested that we update our report regarding the requirements based on EO 13960 because of the recently issued new EO on AI. In response to agency comments on the draft of this report, we made updates to the background of our report with respect to the issuance of EO 14110, signed on October 30, 2023. Given that OMB's implementation guidance memorandum for the order is only a proposal at this time, we have not assessed the implementation guidance for inclusion in this report. As a result, we believe our recommendation is warranted. Education's comments are reprinted in appendix XI.

- NASA provided written comments stating that it concurs with one recommendation and partially concurs with the other. Specifically, NASA concurred with our recommendation to update and approve its plan to achieve consistency with EO 13960, to include retiring applications not consistent with the order. NASA noted that it plans to conduct an annual review of its AI applications beginning in 2024 and estimated that it will complete this effort by December 31, 2024.

  NASA partially concurred with our recommendation that it update its AI use case inventory to include all required information and take steps to ensure that the data aligns with provided instructions. NASA stated that it relies on its AI practitioners to report faithfully on their activities. NASA further noted that some information may not be available; but stated that it would endeavor to report as accurately as possible on its AI activities. NASA estimated that it would complete the implementation of this recommendation by June 30, 2025. NASA's comments are reprinted in appendix XII.

Four agencies commented on our findings but did not state whether they agreed or disagreed with our recommendations:

- In comments provided via email on October 20, 2023, a representative from Labor's Office of the Assistant Secretary for Policy did not state whether the department agreed or disagreed with our recommendations but noted that the department intends to change its process before the next AI inventory data call.

- State provided written comments that did not state whether the department agreed or disagreed with our recommendation but noted that it is committed to updating its AI inventory to include all required information and will align its inventory with instructions. It also recommended a change to the wording of the recommendation that was very similar in meaning to the draft recommendation language. To be consistent with similar recommendations to other agencies, we did not incorporate that change. State's comments are reprinted in appendix XIII.

- Treasury provided written comments that did not state whether the department agreed or disagreed with our recommendations but noted that it has activities in place to address them and look forward to sharing its progress in the future. Treasury's comments are reprinted in appendix XIV.

- USAID provided written comments that did not state whether the agency agreed or disagreed with our recommendations but noted that it is incorporating lessons learned to develop a more robust collection process. USAID stated that, going forward, it intends to employ a more automated, uniform, and structured approach to collecting the data and that the data will be reviewed to ensure that it is accurate. When USAID provides evidence that these actions are complete, we will consider closing the recommendation as implemented. In addition, USAID stated that it is not a regulatory authority for AI and we updated our report to reflect that. USAID's comments are reprinted in appendix XV.

The following two agencies disagreed with one or more of their recommendations:

- OMB provided written comments in which it agreed with one recommendation and disagreed with the other. Specifically, OMB agreed with the recommendation to issue guidance to federal agencies in accordance with the AI in Government Act of 2020 and noted that it believed that its draft memorandum issued for public

comment on November 1, 2023, would implement this recommendation once it is finalized.

OMB disagreed with a recommendation included in our draft report to ensure that it develops and posts a public roadmap for the agency's policy guidance and includes a schedule for engaging with the public and timelines for finalizing policy guidance. Specifically, OMB stated that it believes that this action has been superseded by the publication of EO 14110. OMB further noted that the EO contains a list of actions for OMB, alongside deadlines for finalizing policy guidance. EO 14110 was issued in October 2023, after we provided OMB a copy of a draft of this report. We updated our report to show that the issuance of the new EO implements our recommendation. OMB's comments are reprinted in appendix XVI.

- In comments provided via email on November 9, 2023, OSTP's Legal Counsel stated that the agency did not agree with the recommendations in our report for several reasons. Specifically, OSTP stated that our draft report did not contain information on EO 14110 and OMB's related draft memorandum. In response to agency comments on the draft of this report, we made updates to the background of our report with respect to the issuance of EO 14110, signed on October 30, 2023. Given that OMB's implementation guidance memorandum for the order is only a proposal at this time, we have not assessed the implementation guidance for inclusion in this report.

  In addition, OSTP stated that, per EO 13859, "implementing agencies" are the same as agencies that are members of its Select Committee on AI and OSTP communicated membership on the Select Committee to its members. However, the actual text of EO 13859 states that implementing agencies are those that "conduct foundational AI R&D, develop and deploy applications of AI technologies, provide educational grants, and regulate and provide guidance for applications of AI technologies, *as determined by the co-chairs of the NTSC Select Committee*." At a June 2023 interview with OSTP officials, they stated that each agency that has a representative on the Select Committee was designated as an implementing agency and that agencies should be aware of their designation. However, officials also told us that OSTP did not notify each agency of their designation status, and if agencies had been notified, there was no record of the notification.

  OSTP also stated that EO 13859 does not state that the office must communicate the designation to agencies. We acknowledge that the EO does not require communication. However, because this is a

designation to be determined by OSTP's Select Committee, agencies cannot be expected to know their status unless it is communicated to them. As we state in the report, effectively communicating implementing agency designations internally and externally are vital to achieving the office's intended objective. In the absence of this communication, some agencies were not aware that they were to complete requirements related to EO 13859. As a result, we believe our recommendation is still warranted.

In addition, of the six agencies to which we did not make recommendations in this report:

- In comments provided via email on November 9, 2023, SBA's GAO Liaison stated that the agency agreed with the accuracy of the report.

- Via email on November 8, 2023, the Executive Technical Assistant of NRC's Office of the Executive Director for Operations provided comments that did not state whether NRC agreed or disagreed with the report, but provided technical comments.

- In comments provided via email on November 9, 2023, HUD's Audit Liaison Officer stated that HUD did not have any comments on the report.

- In comments provided via email on November 9, 2023, Justice's Senior Audit Liaison Specialist stated that the department did not have any comments on the report.

- In comments provided via email on November 9, 2023, an Analyst from NSF's Policy, Audit & Enterprise Risk Management office stated that the agency did not have any comments on the report.

- SSA provided a written response that stated that it had no comments, which is reprinted in appendix XVII.

We are sending copies of this report to the appropriate congressional committees, the Secretaries of the Departments of Agriculture, Commerce, Education, Energy, Health and Human Services, Homeland Security, Housing and Urban Development, Labor, State, the Interior, the Treasury, Transportation, and Veterans Affairs; the U.S. Attorney General of the Department of Justice; the Administrators of the Environmental Protection Agency, General Services Administration, National Aeronautics and Space Administration, Small Business Administration, and the U.S. Agency for International Development; the Commissioner of the Social Security Administration; the Directors of the National Science Foundation and the Office of Personnel Management; the Chairman of

the Nuclear Regulatory Commission; the Directors of the Office of Management and Budget and Office of Science and Technology Policy; and other interested parties. In addition, the report is available at no charge on the GAO website at http://www.gao.gov.

If you or your staff have any questions about this report, please contact Kevin Walsh at (202) 512-6151 or WalshK@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix XVIII.

Kevin Walsh
Director, Information Technology and Cybersecurity

The Honorable Charles E. Schumer
Majority Leader
United States Senate

The Honorable Maria Cantwell
Chair
Committee on Commerce, Science, and Transportation
United States Senate

The Honorable Gary C. Peters
Chairman
The Honorable Rand Paul, MD
Ranking Member
Committee on Homeland Security and Governmental Affairs
United States Senate

The Honorable Margaret Wood Hassan
Chairwoman
The Honorable Mitt Romney
Ranking Member
Subcommittee on Emerging Threats and Spending Oversight
Committee on Homeland Security and Governmental Affairs
United States Senate

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

The Honorable James Comer
Chairman
The Honorable Jamie Raskin
Ranking Member
Committee on Oversight and Accountability
House of Representatives

The Honorable Frank Lucas
Chairman
The Honorable Zoe Lofgren
Ranking Member
Committee on Science, Space and Technology
House of Representatives

The Honorable Nydia M. Velázquez
Ranking Member
Committee on Small Business
House of Representatives

The Honorable Nancy Mace
Chair
The Honorable Gerald E. Connolly
Ranking Member
Subcommittee on Cybersecurity, Information Technology, and
Government Innovation
Committee on Oversight and Accountability
House of Representatives

The Honorable Jay Obernolte
Chairman
The Honorable Valerie P. Foushee
Ranking Member
Subcommittee on Investigations and Oversight
Committee on Science, Space, and Technology
House of Representatives

The Honorable Michael F. Bennet
United States Senate

The Honorable Angus S. King, Jr.
United States Senate

The Honorable Edward J. Markey
United States Senate

The Honorable Mike Rounds
United States Senate

The Honorable Thom Tillis
United States Senate

The Honorable Jake Auchincloss
House of Representatives

The Honorable Mike Gallagher
House of Representatives

The Honorable Ted W. Lieu
House of Representatives

Appendix I: Objectives, Scope, and Methodology

Our objectives were to (1) describe federal agencies' reported current and planned uses of artificial intelligence (AI); (2) assess the extent to which federal agencies' AI reporting was comprehensive and accurate; and (3) determine the extent to which federal agencies have complied with selected federal policy and guidance on AI.

We selected agencies with specific government-wide responsibilities outlined in laws and guidance documents, including the Office of Management and Budget (OMB), the Office of Science and Technology Policy (OSTP), the Office of Personnel Management (OPM), the General Services Administration (GSA), and the Department of Commerce (Commerce). We also selected the 23 civilian agencies covered by the Chief Financial Officers (CFO) Act of 1990.[1] We excluded the Department of Defense due to our recently issued reports on the department's AI efforts.[2]

To address our first objective, to describe federal agencies' current and planned uses of AI, as reported in their AI use case inventories, we reviewed agencies' AI use case inventories submitted to OMB, as well as public AI use case inventories. Three agencies reported that they did not have any AI use cases, therefore, they did not have an inventory. We analyzed information contained in agencies' inventories, including the number of AI use cases and the life cycle stage. We also analyzed the descriptions to identify the use case's general application area (e.g., science and law enforcement).

To assess the reliability of agencies' AI inventories, we evaluated documentation supporting the development of AI inventories, such as the 2021 Guidance for Creating Agency Inventories of AI Use Cases and the

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[1]The scope of our review includes 23 of the 24 agencies covered by the Chief Financial Officers Act of 1990, which are the Departments of Agriculture, Commerce, Education, Energy, Health and Human Services, Homeland Security, Housing and Urban Development, the Interior, Justice, Labor, State, Transportation, the Treasury, 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 the U.S. Agency for International Development (31 U.S.C. § 901(b)).

[2]In particular, GAO, *Artificial Intelligence: DOD Needs Department-Wide Guidance to Inform Acquisitions,* GAO-23-105850 (Washington, D.C.: June 29, 2023); *Artificial Intelligence: DOD Should Improve Strategies, Inventory Process, and Collaboration Guidance,* GAO-22-105834 (Washington, D.C.: Mar. 30, 2022); and *Artificial Intelligence: Status of Developing and Acquiring Capabilities for Weapon Systems,* GAO-22-104765 (Washington, D.C.: Feb. 17, 2022).

CIO Council's Template for 2021 Agency Inventory of AI Use Cases. We
assessed the inventory data provided by each agency for outliers, errors,
or missing data. Further, we reviewed written responses from agency
officials knowledgeable about the data. We determined that agencies'
inventory data had issues with quality. We discuss these issues in
objective 2. While we recognize the inventory data is not completely
accurate due to the limitations identified in the report, we found that the
data were sufficiently reliable for providing a general idea of the number
of AI use cases reported by federal agencies in fiscal year 2022, as well
as providing some details about the use cases.

For our second objective, we reviewed the 2021 Guidance for Creating
Agency Inventories and compared it to the 20 AI use case inventories the
applicable CFO agencies submitted to OMB. Specifically, we reviewed
each inventory and compared it against the requirements identified in the
2021 Guidance for Creating Agency inventories to determine the extent to
which federal agencies developed comprehensive and accurate AI
inventories. Specifically, we reviewed the inventories and analyzed each
agency's response to the five required sections—questions 1A-1C, 2A-
2C, 3, 4A-4B, and 9A-9B. We noted in the report instances where
agencies did not complete the required sections identified in the CIO
Council guidance. We also identified inventories that included duplicative
use cases or use cases that should have been excluded per the
guidance. Table 10 shows the required inventory format provided in the
2021 Guidance for Creating Agency Inventories.

**Table 10: Required Fields of the 2021 Guidance for Creating Agency Inventories of Artificial Intelligence (AI) Use Cases
Inventory Format**

Field	Field description
AI Use Case Identifying Information	1A. AI use case name
	1B. Agency/sub-agency with AI use case
	Optional note field: To clarify 1B or to provide additional information (e.g., agency co-development)
	1C. Office with AI use case
Contact Information (Note: List the point of contact that will be made available for inter-agency and public inquires)	2A. Last name, first name
	2B. Email address
	2C. Additional point of contact name and email address
Summary	3. Provide a short summary (200 words max) of what the AI does. Include a high-level description of system inputs and outputs.

Field	Field description
Life cycle Stage	4A. What stage of production is the AI in? (Choose one: planned (not in production), in production: less than 6 months, in production: less than 1 year, in production: more than one year
	4B. Additional comments related to life cycle stage.
Use Case Releasability	9A. Should this use case be withheld from the public inventory? If yes, the use case will only be shared in the internal government inventory.
	9B. If the answer to 9A is yes, provide an explanation (this explanation will be included in the internal government inventory).

Source: GAO analysis of the Chief Information Officer's Council's guidance. | GAO-24-105980

We identified those instances where agencies' inventories did not include required information for each use case. We also identified inventories that included duplicative use cases or use cases that should have been excluded per the guidance.

To address our third objective, we reviewed recent federal law and guidance to identify agency requirements regarding the implementation of AI. We focused on one AI-related law and three guidance documents because they included requirements for specific agencies to establish government-wide guidance and tools or requirements for individual agencies. The laws and guidance we focused on are:

- Executive Order 13859, *Maintaining American Leadership in Artificial Intelligence*; [3]

- The Office of Management and Budget's (OMB) *Guidance for Regulation of Artificial Intelligence Applications,* Memorandum M-21-06; [4]

- Executive Order 13960, *Promoting the Use of Trustworthy Artificial Intelligence in the Federal Government*;[5] and

- AI in Government Act of 2020 (Division U, Title I of the Consolidated Appropriations Act, 2021, P.L. 116-260).[6]

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[3]The White House, *Maintaining American Leadership in Artificial Intelligence*, Exec. Order 13859 (Washington, D.C.: Feb. 11, 2019).

[4]Office of Management and Budget, *Guidance for Regulation of Artificial Intelligence Applications*, M-21-06 (Washington, D.C.: Nov. 17, 2020).

[5]The White House, *Promoting the Use of Trustworthy Artificial Intelligence in the Federal Government,* Exec. Order 13960 (Washington, D.C.: Dec. 3, 2020).

[6]AI in Government Act of 2020, Div. U, Title I of the Consolidated Appropriations Act, 2021, Pub. L. No. 116-260, Div. U, Title I, 134 Stat. 1182, 2286-89 (2020).

From these laws and guidance, we selected requirements that (1) were
government-wide or had government-wide effects; (2) focused on
operational AI and were not related to research and development; (3)
were not related to AI used for classified or defense-related purposes;
and (4) had clear deliverables. Based on our review of this information,
we identified 18 requirements; six were specific to agencies responsible
for establishing government-wide guidance or tools and 12 were specific
to agencies managing their own use of AI. The table below displays the
selected requirements.

Table 11: Key Artificial Intelligence (AI) Requirements from Federal Law and Guidance

Responsible agency/agencies	Requirement	Requirement source
Office of Management and Budget (OMB)	Issue a memorandum to the heads of all agencies that shall: • Inform the development of regulatory and non-regulatory approaches by such agencies regarding technologies and industrial sectors that are either empowered or enabled by AI, and that advance American innovation while upholding civil liberties, privacy, and American values; and • Consider ways to reduce barriers to the use of AI technologies in order to promote their innovative application. Issue a draft version of the memorandum for public comment before it is finalized.	Executive Order 13859: *Maintaining American Leadership in Artificial Intelligence* (Issued: Feb. 11, 2019)
	Issue a memorandum to the head of each agency, in coordination with the Director of the Office of Science and Technology Policy, that • Informs the development of policies regarding federal acquisition and use by agencies regarding technologies that are empowered or enabled by AI; • Recommends approaches to remove barriers for use by agencies of AI technologies; • Identifies best practices for identifying, assessing, and mitigating any discriminatory impact or bias on the basis of any classification protected under federal nondiscrimination laws, or any unintended consequence of the use of artificial intelligence; and • Provides a template of the required contents for agency plans to achieve consistency with this memorandum. Issue a draft version of the memorandum for public comment not later than 180 days after date of enactment of the act. Issue updates to the memorandum within 2 years of the initial issuance of the memorandum and every 2 years thereafter for 10 years.	AI in Government Act of 2020 (Enacted: Sept. 14, 2020)
	Post a public roadmap for the policy guidance that OMB intends to create or revise to better support the use of AI, including a schedule for engaging with the public and timelines for finalizing relevant policy guidance.	Executive Order 13960: *Promoting the Use of Trustworthy Artificial Intelligence in the Federal Government* (Issued: Dec. 3, 2020)

Responsible agency/agencies	Requirement	Requirement source
OMB/ Chief Information Officers Council	Identify, provide guidance on, and make publicly available the criteria, format, and mechanisms for agency inventories of non-classified and non-sensitive use cases of AI by agencies.	Executive Order 13960
	Publish a list of recommended interagency bodies and forums in which agencies may elect to participate, as appropriate and consistent with their respective authorities and missions.	
Department of Commerce/ National Institute of Standards and Technology	Issue a plan for federal engagement in the development of technical standards and related tools in support of reliable, robust, and trustworthy systems that use AI technologies. This plan shall include: • Federal priority needs for standardization of AI systems development and deployment, • Identification of standards development entities in which federal agencies should seek membership with the goal of establishing or supporting technical leadership roles, and • Opportunities for and challenges to leadership in standardization related to AI technologies. The plan shall be developed in consultation with the Select Committee on AI, the private sector, academia, non-governmental entities, and other stakeholders, as appropriate.	Executive Order 13859
Federal agencies	Submit documentation to OMB and post on a publicly available page on the website of the agency (1) a plan to achieve consistency with the memorandum on regulation, or (2) a written determination that the agency does not use and does not anticipate using AI. This should be completed within 180 days of OMB issuing the memorandum required by the act or within 180 days of an update to the memorandum.	AI in Government Act of 2020
	Prepare an inventory of non-classified and non-sensitive use cases of AI, including current and planned uses, but excluding those related to research and development.	Executive Order 13960
	Identify, review, and assess existing AI deployed and operating in support of agency missions for any inconsistencies with this order. • Develop plans either to achieve consistency with Executive Order 13960, section 5 for each AI application or to retire AI applications found to be developed or used in a manner that is not consistent with this order. These plans must be approved by the agency-designated responsible official(s). • Implement the approved plans.	
	Share inventories with other agencies to improve interagency coordination and information sharing for common use cases.	
	Make inventories available to the public.	
	Specify the responsible official(s) at that agency who will coordinate implementation of the principles for use of AI with the Agency Data Governance Body and other relevant officials and will collaborate with the interagency coordination bodies identified by the Chief Information Officers Council.	
Federal agencies with regulatory authorities	Review authorities relevant to applications of AI and submit to OMB plans to achieve consistency with OMB's associated memorandum.	Executive Order 13859
	Develop an agency plan that • Identifies any statutory authorities specifically governing agency regulation of AI applications, as well as collections of AI-related information from regulated entities; • Report on the outcomes of stakeholder engagements that identify existing regulatory barriers to AI applications and high-priority AI applications that are within an agency's regulatory authorities; and • List and describe any planned or considered regulatory actions on AI.	OMB M-21-06: *Guidance for Regulation of Artificial Intelligence Applications* (Issued: Nov. 17, 2020)

Responsible agency/agencies	Requirement	Requirement source
General Services Administration (GSA)	Create a program known as the "AI Center of Excellence" which shall facilitate the adoption of AI technologies in the federal government and improve cohesion and competency in the adoption and use of AI within the federal government for the purposes of benefitting the public and enhancing the productivity and efficiency of federal government operations.	AI in Government Act of 2020
GSA/ Presidential Innovation Fellows[a]	Identify priority areas of expertise and establish an AI track to attract experts from industry and academia to undertake a period of work at an agency.	Executive Order 13960
Office of Personnel Management	Submit to Congress a comprehensive plan with a timeline to complete the following requirements: • Identify key skills and competencies needed for positions related to AI; • Establish an occupational series, or update and improve an existing occupational series, to include positions the primary duties of which relate to AI; • Establish, to the extent appropriate, an estimate of the number of federal employees in positions related to AI, by each agency; and • Prepare, using the aforementioned estimate, a 2-year and 5-year forecast of the number of federal employees in positions related to AI that each agency will need to employ.	AI in Government Act of 2020
	Create an inventory of federal rotational programs and determine how these programs can be used to expand the number of employees with AI expertise at the agencies.	Executive Order 13960
	Issue a report with recommendations for how the programs in the inventory can be best used to expand the number of employees with AI expertise at the agencies. This report shall be shared with the interagency coordination bodies identified by the Chief Information Officers Council.	
Office of Science and Technology Policy/ Select Committee on AI	Designate the appropriate federal agencies as implementing agencies. Specifically, determine which agencies conduct foundational AI research and development, develop and deploy applications of AI technologies, provide educational grants, and regulate and provide guidance for applications of AI technologies.	Executive Order 13859

Source: GAO analysis of key requirements from AI law and executive orders. | GAO-24-105980

[a]The Presidential Innovation Fellowship is a 1-year fellowship program. The fellowship was established by the White House in 2012 to attract top innovators into government, capable of tackling issues at the convergence of technology, policy, and process. The program is administered as a partnership between the Office of Science and Technology Policy, OMB, and GSA. In 2013, the program established a permanent home and program office within GSA.

We assessed agency documentation, such as AI plans, AI inventories, and policies that described efforts to respond to the executive orders and law against the selected requirements from federal policy and guidance on AI to determine the extent to which agencies are meeting the requirements identified in table 10.

For each selected requirement, we considered a requirement to be fully implemented if an agency provided evidence that fully satisfies the requirement. We considered a requirement to be partially implemented if an agency provided evidence that it satisfied some, but not all, of the requirement. Lastly, we considered a practice to not be implemented if an agency did not provide evidence that satisfied any of the criteria.

For each of the objectives, we met with relevant officials at the 23 civilian CFO Act agencies to obtain additional information on agency efforts to comply with AI federal policy and legal requirements, including the development of an AI inventory. These officials included but were not limited to, staff from the agencies' offices of the Chief Information Officer and the Chief Financial Officer, such as the Chief Information Officer, Chief Data Officer, and program managers.

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

Appendix II: Comments from the Department of Commerce

UNITED STATES DEPARTMENT OF COMMERCE
Office of the Chief Financial Officer and
Assistant Secretary for Administration
Washington, D.C. 20230

November 30, 2023

Kevin C. Walsh
Director, Information Technology and Cybersecurity
U.S. Government Accountability Office
441 G Street NW
Washington, DC 20548

Dear Director Walsh:

Thank you for the opportunity to respond to the GAO draft report entitled GAO-24-105980, Implementation of AI at Federal Agencies.

The Department agrees with the recommendation(s) and will prepare a formal action plan upon issuance of GAO's final report.

If you have any questions, please contact MaryAnn Mausser, Department GAO Audit Liaison, at (202) 482-8120 or mmausser@doc.gov.

Sincerely,

JEREMY PELTER
Digitally signed by JEREMY PELTER
Date: 2023.11.29 17:32:19 -05'00'

Jeremy Pelter
Deputy Assistant Secretary for Administration, performing the non-exclusive functions and duties of the Chief Financial Officer and Assistant Secretary for Administration

Department of Energy
Washington, DC 20585

November 15, 2023

Mr. Kevin C. Walsh
Director
Information Technology and Cybersecurity
U.S. Government Accountability Office
441 G Street NW
Washington, DC 20548

Dear Mr. Walsh:

The Department of Energy (DOE or Department) appreciates the opportunity to comment on the Government Accountability Office's (GAO) draft report titled, "*ARTIFICIAL INTELLIGENCE: Agencies Have Begun Implementation but Need to Complete Key Requirements (GAO-24-105980).*" DOE provide the following comments below.

The draft report contained a total of 35 recommendations, of which GAO directed one recommendation to DOE. DOE concurred with GAO's recommendation.

GAO should direct any questions to Jonnie Bradley, Artificial Intelligence and Technology Office, at (202) 412-9377 or jonnie.bradley@hq.doe.gov.

Sincerely,

Jonnie Bradley
Senior Program Manager
Artificial Intelligence and Technology Office

Enclosure

Management Response
GAO Draft Report:
ARTIFICIAL INTELLIGENCE: Agencies Have Begun
Implementation but Need to Complete Key Requirements (GAO-24-105980)

Recommendation 13: The Secretary of Energy should ensure that the Department of Energy updates its AI use case inventory to include all the required information, at minimum, and take steps to ensure that the data in the inventory aligns with provided instructions.

DOE Response: Concur

The Department plans to update its AI use case inventory to include all the required information at a minimum, i.e., lifecycle stage and use case releasability, and take steps to ensure that the data in the inventory aligns with the provided instructions, including removing duplicative use case names.

Estimated Completion Date: March 1, 2024

Appendix IV: Comments from the Department of Health and Human Services

DEPARTMENT OF HEALTH & HUMAN SERVICES

OFFICE OF THE SECRETARY

Assistant Secretary for Legislation
Washington, DC 20201

November 9, 2023

Kevin Walsh
Director, Information Technology and Cybersecurity
U.S. Government Accountability Office
441 G Street NW
Washington, DC 20548

Dear Mr. Walsh:

Attached are comments on the U.S. Government Accountability Office's (GAO) report entitled,
**"Artificial Intelligence: Agencies Have Begun Implementation but Need to Complete Key
Requirements" (GAO-24-105980).**

The Department appreciates the opportunity to review this report prior to publication.

Sincerely,

Melanie Anne Egorin

Melanie Anne Egorin, PhD
Assistant Secretary for Legislation

Attachment

GENERAL COMMENTS FROM THE DEPARTMENT OF HEALTH & HUMAN SERVICES ON THE GOVERNMENT ACCOUNTABILITY OFFICE'S DRAFT REPORT ENTITLED – ARTIFICIAL INTELLIGENCE: AGENCIES HAVE BEGUN IMPLEMENTATION BUT NEED TO COMPLETE KEY REQUIREMENTS (GAO-24-105980)

The U.S. Department of Health & Human Services (HHS) appreciates the opportunity from the Government Accountability Office (GAO) to review and comment on this draft report.

Recommendation 14
The Secretary of Health and Human Services should ensure that the Department of Health and Human Services develops a plan to either achieve consistency with EO 13960 section 5 for each AI application or retires AI applications found to be developed or used in a manner that is not consistent with the order.

HHS Response
HHS concurs with GAO's recommendation.

On October 30, 2023, President Biden took action by signing Executive Order 14110 on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence. Section 10.1(b) of this order directs the director of the OMB to issue guidance to agencies to strengthen the effective and appropriate use of AI, advance AI innovation, and manage risks from AI in the Federal Government. The Department looks forward to implementation of this order and associated OMB guidance for appropriate risk management practices.

Recommendation 15
The Secretary of Health and Human Services should ensure that the Department of Health and Human Services updates its AI use case inventory to include all the required information, at minimum, and takes steps to ensure that the data in the inventory aligns with provided instructions.

HHS Response
HHS concurs with GAO's recommendation.

On October 30, 2023, President Biden took action by signing Executive Order 14110 on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence. Section 10.1(b) of this order directs the director of the OMB to issue guidance to agencies to strengthen the effective and appropriate use of AI, advance AI innovation, and manage risks from AI in the Federal Government. The Department looks forward to implementation of this order and associated OMB guidance for appropriate risk management practices.

Appendix V: Comments from the Department of Homeland Security

Homeland Security

November 16, 2023

Kevin Walsh
Director, Information Technology and Cybersecurity
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548-0001

Re: Management Response to Draft Report GAO-24-105980, "ARTIFICIAL
       INTELLIGENCE: Agencies Have Begun Implementation but Need to Complete
       Key Requirements"

Dear Mr. Walsh:

Thank you for the opportunity to comment on this draft report. The U.S. Department of
Homeland Security (DHS or the Department) appreciates the U.S. Government
Accountability Office's (GAO) work in planning and conducting its review and issuing
this report.

DHS leadership is pleased to note GAO's positive recognition of the Department's
compliance with requirements in Executive Order (EO) 13960, "Promoting the Use of
Trustworthy Artificial Intelligence in the Federal Government," dated December 3, 2020[1]
by publishing the DHS Artificial Intelligence (AI) Use Case Inventory on August 17,
2022[2] and designating appropriate responsible AI Officials. The DHS Office of the Chief
Information Officer (OCIO) also annually revises the DHS AI Use Case inventory in
compliance with EO 13960, and the 2023 DHS AI Use Case inventory has been updated
as of July 26, 2023, including all required information.

Additionally, OCIO, in coordination with the DHS Office of Strategy, Policy, and Plans
(PLCY), have set a timeline to ensure consistency with Office of Management and
Budget (OMB) Memorandum M-21-06, "Guidance for Regulation of Artificial
Intelligence Applications," dated November 17, 2020.[3] The Department takes seriously
its role and responsibilities for acquiring and using AI and has developed guiding
principles for AI use at DHS (see DHS Policy Statement 139-06, "Acquisition and Use of

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[1] https://www.federalregister.gov/executive-order/13960
[2] https://www.dhs.gov/publication/ai-use-case-inventory
[3] https://www.whitehouse.gov/wp-content/uploads/2020/11/M-21-06.pdf

Artificial Intelligence and Machine Learning Technologies by DHS Components," dated August 8, 2023).[4]

The draft report contained 35 recommendations, including three for DHS with which the Department concurs. Enclosed find our detailed response to each recommendation. DHS previously submitted technical comments addressing several accuracy, contextual, and other issues under a separate cover for GAO's consideration.

Again, thank you for the opportunity to review and comment on this draft report. Please feel free to contact me if you have any questions. We look forward to working with you again in the future.

Sincerely,

JIM H
CRUMPACKER

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CRUMPACKER
Date: 2023.11.16 13:01:39 -05'00'

JIM H. CRUMPACKER, CIA, CFE
Director
Departmental GAO-OIG Liaison Office

Enclosure

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[4] https://www.dhs.gov/sites/default/files/2023-09/23_0913_mgmt_139-06-acquistion-use-ai-technologies-dhs-components.pdf

2

**Enclosure: Management Response to Recommendations
Contained in GAO-24-105980**

GAO recommended that the Secretary of Homeland Security:

Recommendation 16: Ensure that the Department of Homeland Security develops a plan to either achieve consistency with EO 13960 section 5 for each AI application or retires AI applications found to be developed or used in a manner that is not consistent with the order.

Response: Concur. On August 8, 2023, the Secretary of Homeland Security issued Policy Statement 139-06, establishing an AI Policy Working Group (AIPWG). The Working Group, led by OCIO, was directed to update or revise existing policies, procedures and processes for the responsible, ethical, and authorized acquisition and use of AI/Machine Learning technologies across the DHS enterprise to ensure compliance. As part of this, the AIWPG will establish a DHS-wide framework that will include plans to achieve consistency with EO 13960 section 5 by August 30, 2024. Estimated Completion Date (ECD): January 31, 2025.

Recommendation 17: Ensure that the Department of Homeland Security (a) reviews the department's authorities related to applications of AI, and (b) develops and submits to OMB plans to achieve consistency with the Regulation of AI Applications memorandum (M-21-06).

Response: Concur. DHS OCIO and PLCY will meet M-21-06 requirements and submit the required template for agency plans to OMB. As part of this effort, PLCY will leverage DHS taskings pursuant to the Executive Order 14110 "Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence," signed on October 30, 2023.[5] ECD: July 31, 2024.

Recommendation 18: Ensure that the Department of Homeland Security updates its AI use case inventory to include all the required information, at minimum, and takes steps to ensure that the data in the inventory aligns with provided instructions.

Response: Concur. As previously noted, DHS OCIO annually revises the DHS AI Use Case inventory in compliance with Executive Order 13960. As of July 26, 2023, the 2023 DHS AI Use Case Inventory has been updated and includes all required information. Accordingly, DHS requests that GAO consider this recommendation resolved and closed as implemented.

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[5] https://www.federalregister.gov/executive-order/14110

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Appendix VI: Comments from the Department of the Interior

United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, DC 20240

Kevin Walsh
Director, Information Technology and Cybersecurity
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Walsh:

Thank you for providing the U.S. Department of the Interior (Department, Interior) the opportunity to review and comment on the draft Government Accountability Office (GAO) report titled, *ARTIFICIAL INTELLIGENCE: Agencies Have Begun Implementation but Need to Complete Key Requirements* (GAO-24-105980). We appreciate GAO's review of the Department's artificial intelligence (AI) program.

The GAO issued several recommendations to multiple agencies, including three to the Department to address its findings. The Department concurs with the following recommendations issued by GAO:

Recommendation 19: The Secretary of the Interior should ensure that the Department of the Interior develops a plan to either achieve consistency with EO 13960 section 5 for each AI application or retires AI applications found to be developed or used in a manner that is not consistent with the order.

Response: Concur. Interior will develop a plan to ensure ongoing consistency with EO 13960 section 5 for AI applications or retire those applications not in compliance.

Recommendation 20: The Secretary of the Interior should ensure that the Department of the Interior (a) reviews the agency's authorities related to applications of AI and (b) develops and submits to the Office of Management and Budget (OMB) plans to achieve consistency with OMB Memorandum M-21-06, *Guidance for Regulation of Artificial Intelligence Applications*.

Response: Concur. Interior will review the agency's authorities related to application of AI. During the review, Interior will identify the authorities that are most relevant to the agency's implementation and usage of AI in the near future. The Department will then develop and submit a plan to achieve consistency with OMB M-21-06.

Recommendation 21: The Secretary of the Interior should ensure that the Department of the Interior [updates] its AI use case inventory to include all the required information, at minimum, and takes steps to ensure that the data in the inventory aligns with provided instructions (Recommendation 21).

Response: Concur. Interior will improve its processes to inventory AI use cases and future guidance will include required information and, at minimum, take steps to ensure that the data aligns with the instructions.

If you have any questions or need additional information, please contact Darren B. Ash, Chief Information Officer and Thomas Dabolt, Chief Data Officer at thomas_dabolt@ios.doi.gov.

Sincerely,

JOAN
MOONEY

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MOONEY
Date: 2023.11.07 15:28:50
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Joan M. Mooney
Principal Deputy Assistant Secretary
Exercising the Delegated Authority of the Assistant
   Secretary- Policy, Management and Budget

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Appendix VII: Comments from the Department of Veterans Affairs

DEPARTMENT OF VETERANS AFFAIRS
WASHINGTON

November 9, 2023

Mr. Kevin Walsh
Director
Information Technology and Cybersecurity Issues
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Walsh:

The Department of Veterans Affairs (VA) has reviewed the Government Accountability Office (GAO) draft report, *Artificial Intelligence: Agencies Have Begun Implementation but Need to Complete Key Requirements* (GAO-24-105980).

The enclosure contains the actions to be taken to address the draft report recommendation. VA appreciates the opportunity to comment on your draft report.

Sincerely,

Kimberly Jackson
Chief of Staff

Enclosure

Department of Veteran Affairs (VA) Response to
Government Accountability Office (GAO) Draft Report
*Artificial Intelligence: Agencies Have Begun Implementation but Need to
Complete Key Requirements*
(GAO-24-105980)

Recommendation 28: The Secretary of Veterans Affairs should ensure that the
Department of Veterans Affairs updates its AI use case inventory to include all
the required information, at minimum, and takes steps to ensure that the data in
the inventory aligns with provided instructions.

VA Response: Concur. It is a core mission of the Department of Veterans Affairs (VA)
to earn the trust of Veterans and exceed their expectations in the delivery of benefits
and services, which includes the Agency's promotion of advanced technologies like
artificial intelligence (AI). VA continues to assess and adapt its AI governance activities
to support Executive Order (EO) 13960, the White House Blueprint for an AI Bill of
Rights, the National Institute of Standards and Technology AI Risk Management
Framework and other trustworthy AI frameworks and doctrines that ensure America
maintains responsible AI leadership. To that end, VA is the first agency to develop and
adopt a unified Trustworthy AI Framework tailored to VA's mission to serve Veterans
that includes the EO, the White House Blueprint for an AI Bill of Rights, the National
Institute of Standards and Technology AI Risk Management Framework and other
important AI doctrines. VA strongly supports growth, evolution and advancement of AI in
health care. VA stands ready to assist in the development of, rapidly adapt to and
implement future AI requirements and guidance.

VA asserts that its use case data submissions do not have any gaps or inaccuracies in
the required data elements. Consistent with guidance from the Office of Management
and Budget (OMB), VA entered accurate terminology that was different from
standardized template choices when the standardized choices were inaccurate for the
VA application. The options in this case were to select an inaccurate label, leave a gap
or introduce the correct label. For example, VA entered the term "FDA approved" as a
lifecycle stage rather than using one of the standardized template options because none
of the standardized template options were accurate. OMB accepted VA's submission for
purposes of database accuracy and continued improvement on standardization as the
database matures to reflect the complexity of AI use cases. VA appreciates OMB's
partnership in AI advancement and looks forward to working with OMB to ensure
standardized data field options are added to reflect lifecycle stages for health care-
related research and development (R&D) projects.

VA asserts that it correctly included health care R&D use cases in its 2022 inventory.
VA assessed its 2022 AI use case inventory against OMB guidance provided at that
time and determined that it contained all required information that could be entered into
OMB's database. VA used OMB's published guidance to determine which health care
R&D use cases to include in the 2022 inventory. OMB's published guidance included a

Page 1 of 2

Enclosure

Department of Veteran Affairs (VA) Response to
Government Accountability Office (GAO) Draft Report
***Artificial Intelligence: Agencies Have Begun Implementation but Need to
Complete Key Requirements***
(GAO-24-105980)

Frequently Asked Questions document where question 4, scenario II, specifically addressed this issue.

Beyond following the 2022 guidance as stated above, VA completed additional actions to resolve the intent of this recommendation.

1. VA updated its AI use case inventory to include all required information and submitted its inventory to the OMB database in May 2023. This year, VA identified significantly more use cases across the agency and included them in the inventory.
2. VA continues to take steps to ensure data in the inventory aligns with provided instructions:
    a. In 2023, the VA Data Governance Council (DGC) established the AI Working Group (AIWG) under the DGC Analytics Sub Council. The AIWG is chartered, in part, to support the VA Responsible AI Official with reviewing and approving VA's EO 13960 activities. This includes review and approval of VA's annual AI use case inventory. VA's 2023 AI use case inventory submission underwent VA's required review and approval by AIWG.
    b. VA's AI use case inventory survey and assessment processes align to OMB's current *Quarterly Integrated Data Collection Instructions*. In VA, AI use case inventory submissions to OMB undergo a quality control check by VA's Office of Compliance, Risk and Remediation, which is independent from the National AI Institute.

VA has completed actions to resolve this recommendation and requests closure of the recommendation.

**Department of Veterans Affairs
November 2023**

Page 2 of 2

Appendix VIII: Comments from the Environmental Protection Agency

November 9, 2023

Mr. Alfredo Gomez
Acting Director
Natural Resources and Environment
U.S. Government Accountability Office
Washington, DC 20548

Dear Mr. Gomez:

Thank you for the opportunity to review and comment on GAO's draft report titled Artificial Intelligence, Agencies Have Begun Implementation but Need to Complete Key Requirements (GAO-24-105980).

The purpose of this letter is to provide the EPA's response to your recommendations. The U.S. Environmental Protection Agency agrees with the GAO's findings, conclusions, and recommendations.

Summary

GAO found that most agencies fully implemented three of the key AI requirements: (1) preparing an AI use case inventory, (2) making the inventory publicly available and (3) designating a responsible AI official (RAIO). Many agencies, including EPA, had missing or incomplete plans to ensure AI inventories are updated and achieve consistency with EO 13960.

EPA agrees that our inventory and plans needed updates. EPA has improved our inventory and made it fully compliant with AI requirements. Additionally, EPA is working to finalize our plan and processes to ensure new AI activities are captured and added to the inventory as appropriate. This plan includes processes to ensure compliance of AI activities covered under EO 13960 are consistent with the principles therein.

<u>GAO Recommendations</u>

The Administrator of the Environmental Protection Agency should ensure that the agency fully completes and approves its plan to either achieve consistency with EO 13960 section 5 for each AI application or retires AI applications found to be developed or used in a manner that is not consistent with the order. **(Recommendation 29)**

The Administrator of the Environmental Protection Agency should ensure that the agency updates its AI use case inventory to include all the required information, at minimum, and takes steps to ensure that the data in the inventory aligns with provided instructions. **(Recommendation 30)**

<u>EPA Response</u>

The GAO recommendations give the agency clear direction to ensure full implementation of federal AI requirements. EPA concurrence, actions or plans for each recommendation are as follows:

Recommendation 29:

- EPA agrees with the recommendation.

- EPA responded to GAO with the draft plan to either achieve consistency with EO 13960 section 5 for each AI application or retire AI applications found to be developed or used in a manner that is not consistent with the order. Thus, GAO evaluated EPA as in partial fulfillment of this requirement.

- EPA implemented parts of our plan and we are assessing their efficacy. We expect this assessment to be completed by end of Q1 FY 2024. After that evaluation we will formally finalize the plan and approve it through agency processes.

- EPA is working to build in the remaining parts of the plan into our processes, to be completed Q2 FY 2024.

Recommendation 30:

- EPA agrees with the recommendation.

- EPA provided the additional information that was not included in the initial survey. EPA will ensure that the inventory provided to GAO through MAX is updated to include any missing data by Q1 FY 2024.

- EPA also has revaluated our AI inventory to better identify those activities that should be considered research and development and removed them from our inventory.

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In closing, the EPA agrees with the findings and recommendations to help the Agency ensure full compliance with AI implementation requirements. We thank GAO for the opportunity to review the draft report. If there is a need for further clarification, please contact EPA's RAIO, Richard Allen, allen.richard@epa.gov, (919) 541-7786.

Sincerely,

VAUGHN
NOGA

Digitally signed by
VAUGHN NOGA
Date: 2023.11.09
09:07:34 -05'00'

Vaughn Noga, Chief Information Officer
Deputy Assistant Administrator for Information
Technology and Information Management

cc: Kevin Walsh WalshK@gao.gov
        Jessica Steele SteeleJ@gao.gov
        Paris Hall HallPN@gao.gov
        Sharonda Deloach DeloachS@gao.gov
        Andrew Avery AveryA1@gao.gov
        Quade Bywater BywaterQ@gao.gov
        David Alvarado
        Austin Henderson
        David Updike
        Monique Crewes
        Richard Allen
        Daniel Coogan
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        OMS_Audit_Coordination
        EPA GAO Liaison Team
        Susan Perkins

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GSA

The Administrator

November 16, 2023

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

Dear Comptroller General:

The U.S. General Services Administration (GSA) appreciates the opportunity to review and comment on the U.S. Government Accountability Office's (GAO) draft report, *Artificial Intelligence: Agencies Have Begun Implementation but Need to Complete Key Requirements* (GAO-24-105980).

GAO made the following recommendations to GSA:

031: The Administrator of General Services should ensure that the General Services Administration develops a plan to either achieve consistency with EO 13960 section 5 for each AI application or retires AI applications found to be developed or used in a manner that is not consistent with the order.

032: The Administrator of General Services should ensure that the General Services Administration updates its AI use case inventory to include all the required information, at minimum, and takes steps to ensure that the data in the inventory aligns with provided instructions.

GSA agrees with the recommendations and is developing a plan to address them.

If you have any questions or concerns, please contact me or Gianelle Rivera, Associate Administrator, Office of Congressional and Intergovernmental Affairs, at (202) 501-0563.

Sincerely,

Robin Carnahan
Administrator

cc: Mr. Kevin Walsh, Director, Information Technology and Cybersecurity, GAO

U.S. General Services Administration
1800 F Street NW
Washington DC 20405-0002
www.gsa.gov

Appendix X: Comments from the Office of Personnel Management

UNITED STATES OFFICE OF PERSONNEL MANAGEMENT
Washington, DC 20415

Merit System
Accountability and
Compliance

November 29, 2023

Kevin C. Walsh
Director, Information Technology and Cybersecurity
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Mr. Walsh:

Thank you for providing us the opportunity to respond to the Government Accountability Office (GAO) draft report, *ARTIFICIAL INTELLIGENCE: Agencies Have Begun Implementation but Need to Complete Key Requirements*, GAO-24-105980, GAO job code 105980.

Responses to your recommendations are provided below. In addition, technical comments are attached.

<u>Recommendation 4:</u> The Director of OPM should ensure that the agency (a) establishes or updates and improves an existing occupational series with AI-related positions; (b) establishes an estimated number of AI-related positions, by federal agency; and, based on the estimate, (c) prepares a 2-year and 5-year forecast of the number of federal employees in these positions, in accordance with federal law.

Management Response: We partially concur. OPM has completed (b) and (c). The AI in Government Act required OPM to (a) establish an AI occupational series, update, or improve an existing occupational job series. OPM conducted a comprehensive occupational study in collaboration with Office of Science and Technology Policy (OSTP), which was issued on July 6, 2023. The occupational study was designed to identify AI Competencies to support agencies hiring for AI talent. OPM study findings confirmed that AI work is performed in various occupational series in the Federal government and specializations. OPM determined creating one occupational series or multiple AI series was not conducive to individual agency needs and missions. Instead, OPM developed and will issue the AI Position Classification Interpretive Guide to assist agencies in identifying AI work; determine how to classify positions that perform AI work; and how to qualify applicants for AI positions.

OPM was required to (b) establish an estimated number of AI-related positions, by federal agency; and, based on the estimate, (c) prepare a 2-year and 5-year forecast of the number of federal employees in these positions, in accordance with federal law. On June 20, 2023, a data call was sent to the 24 Chief Human Capital Officer (CHCO) Act agencies. OPM collected data from 23 of the 24 agencies. The data collected included the total number of employees by occupational series performing AI work as of June 1, 2023. From that data, OPM estimated the number of employees by occupational series needed to perform AI work in FY 25, and estimated the number of employees by occupational series needed to perform AI work in FY 28. In

www.opm.gov   Empowering Excellence in Government through Great People   www.usajobs.gov

Appendix X: Comments from the Office of Personnel Management

UNITED STATES OFFICE OF PERSONNEL MANAGEMENT
Washington, DC 20415

Merit System
Accountability and
Compliance

November 29, 2023

Kevin C. Walsh
Director, Information Technology and Cybersecurity
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Mr. Walsh:

Thank you for providing us the opportunity to respond to the Government Accountability Office (GAO) draft report, *ARTIFICIAL INTELLIGENCE: Agencies Have Begun Implementation but Need to Complete Key Requirements*, GAO-24-105980, GAO job code 105980.

Responses to your recommendations are provided below. In addition, technical comments are attached.

<u>Recommendation 4:</u> The Director of OPM should ensure that the agency (a) establishes or updates and improves an existing occupational series with AI-related positions; (b) establishes an estimated number of AI-related positions, by federal agency; and, based on the estimate, (c) prepares a 2-year and 5-year forecast of the number of federal employees in these positions, in accordance with federal law.

Management Response: We partially concur. OPM has completed (b) and (c). The AI in Government Act required OPM to (a) establish an AI occupational series, update, or improve an existing occupational job series. OPM conducted a comprehensive occupational study in collaboration with Office of Science and Technology Policy (OSTP), which was issued on July 6, 2023. The occupational study was designed to identify AI Competencies to support agencies hiring for AI talent. OPM study findings confirmed that AI work is performed in various occupational series in the Federal government and specializations. OPM determined creating one occupational series or multiple AI series was not conducive to individual agency needs and missions. Instead, OPM developed and will issue the AI Position Classification Interpretive Guide to assist agencies in identifying AI work; determine how to classify positions that perform AI work; and how to qualify applicants for AI positions.

OPM was required to (b) establish an estimated number of AI-related positions, by federal agency; and, based on the estimate, (c) prepare a 2-year and 5-year forecast of the number of federal employees in these positions, in accordance with federal law. On June 20, 2023, a data call was sent to the 24 Chief Human Capital Officer (CHCO) Act agencies. OPM collected data from 23 of the 24 agencies. The data collected included the total number of employees by occupational series performing AI work as of June 1, 2023. From that data, OPM estimated the number of employees by occupational series needed to perform AI work in FY 25, and estimated the number of employees by occupational series needed to perform AI work in FY 28. In

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Appendix X: Comments from the Office of Personnel Management

UNITED STATES OFFICE OF PERSONNEL MANAGEMENT
Washington, DC 20415

Merit System
Accountability and
Compliance

November 29, 2023

Kevin C. Walsh
Director, Information Technology and Cybersecurity
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Mr. Walsh:

Thank you for providing us the opportunity to respond to the Government Accountability Office (GAO) draft report, *ARTIFICIAL INTELLIGENCE: Agencies Have Begun Implementation but Need to Complete Key Requirements*, GAO-24-105980, GAO job code 105980.

Responses to your recommendations are provided below. In addition, technical comments are attached.

<u>Recommendation 4:</u> The Director of OPM should ensure that the agency (a) establishes or updates and improves an existing occupational series with AI-related positions; (b) establishes an estimated number of AI-related positions, by federal agency; and, based on the estimate, (c) prepares a 2-year and 5-year forecast of the number of federal employees in these positions, in accordance with federal law.

Management Response: We partially concur. OPM has completed (b) and (c). The AI in Government Act required OPM to (a) establish an AI occupational series, update, or improve an existing occupational job series. OPM conducted a comprehensive occupational study in collaboration with Office of Science and Technology Policy (OSTP), which was issued on July 6, 2023. The occupational study was designed to identify AI Competencies to support agencies hiring for AI talent. OPM study findings confirmed that AI work is performed in various occupational series in the Federal government and specializations. OPM determined creating one occupational series or multiple AI series was not conducive to individual agency needs and missions. Instead, OPM developed and will issue the AI Position Classification Interpretive Guide to assist agencies in identifying AI work; determine how to classify positions that perform AI work; and how to qualify applicants for AI positions.

OPM was required to (b) establish an estimated number of AI-related positions, by federal agency; and, based on the estimate, (c) prepare a 2-year and 5-year forecast of the number of federal employees in these positions, in accordance with federal law. On June 20, 2023, a data call was sent to the 24 Chief Human Capital Officer (CHCO) Act agencies. OPM collected data from 23 of the 24 agencies. The data collected included the total number of employees by occupational series performing AI work as of June 1, 2023. From that data, OPM estimated the number of employees by occupational series needed to perform AI work in FY 25, and estimated the number of employees by occupational series needed to perform AI work in FY 28. In

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addition to the Act's requirement for agency totals, OPM requested additional data to include occupational series. Agencies indicated AI work is performed in 84 wide-ranging occupations. OPM believes that it is extremely premature to conduct this type for forecast as agencies have yet to concretely determine which occupations are performing AI work and these numbers will dramatically change as agencies mature in their ability to identify AI work across their workforce. Nevertheless, we completed tasks (b) and (c), based on the information we had available.

Recommendation 5: The Director of OPM should ensure that the agency creates an inventory of federal rotational programs and determines how these programs can be used to expand the number of federal employees with AI expertise, consistent with EO 13960.

Management Response: We concur. OPM created an inventory of rotational programs through the information collected during the June 2023 data call. While the data collected showed that agencies had a limited number of rotational programs, OPM is prepared to evaluate and determine how the agency programs can be used to expand the number of federal employees with AI expertise.

Recommendation 6: The Director of OPM should ensure that the agency issue a report with recommendations for how the programs in the inventory can be used to expand the number of federal employees with AI expertise and shares it with the interagency coordination bodies identified by the CIOC, consistent with EO 13960.

Management Response: We concur. OPM is finalizing a report with recommendations for how programs in the inventory can best be used to expand the number of employees with AI expertise at agencies and share it with the Chief Information Officers Council (CIOC) for distribution to interagency coordination bodies that the Council identifies as well as the CHCOs, as required by EO 13960. We expect to share this report in the coming weeks.

Recommendation 7: The Director of OPM should ensure that the agency develops a plan to either achieve consistency with EO 13960 section 5 for each AI application or retires AI applications found to be developed or used in a manner that is not consistent with the order.

Management Response: We concur. OPM is currently conducting an AI landscape review to identify the opportunities and challenges OPM faces leveraging AI applications. The landscape review will include the steps OPM needs to take to systematically govern the review and development of AI applications consistent with the requirements of EO 13960.

I appreciate the opportunity to respond to this draft report. If you have any questions regarding our response, please contact Jason Barke at (202) 606-7994 or Jason.Barke@opm.gov.

Sincerely,

MARK LAMBERT

Digitally signed by MARK LAMBERT
Date: 2023.11.29 19:23:18 -05'00'

Mark W. Lambert
Associate Director, Merit System
Accountability and Compliance

Appendix XI: Comments from the Department of Education

UNITED STATES DEPARTMENT OF EDUCATION

OFFICE OF THE CHIEF INFORMATION OFFICER

November 9, 2023

Mr. Kevin C. Walsh
Director, Information Technology and Cybersecurity
Government Accountability Office
441 G Street, N.W.
Washington, D.C. 20548

Dear Mr. Walsh:

As the Chief Information Officer, I am pleased to provide the U.S. Department of Education's (ED's or Department's) response to the Government Accountability Office's (GAO's) draft report, *ARTIFICAL INTELLIGENCE: Agencies Have Begun Implementation but Need to Complete Key Requirements* (GAO-24-105980). We understand that GAO conducted this audit to review the Department's use of artificial intelligence (AI). We appreciate the opportunity to respond to the one recommendation for ED in the GAO draft report.

We also note that since the time that GAO provided the Department the draft report for comment, the President issued on October 30, 2023, a new Executive Order 14110 (EO 14110) regarding AI titled "Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence" available at: https://www.whitehouse.gov/briefing-room/presidential-actions/2023/10/30/executive-order-on-the-safe-secure-and-trustworthy-development-and-use-of-artificial-intelligence/ and published at: https://www.federalregister.gov/documents/2023/11/01/2023-24283/safe-secure-and-trustworthy-development-and-use-of-artificial-intelligence.

In light of EO 14110 and other related developments, GAO may want to consider updating sections of its report regarding applicable Federal requirements to avoid confusion including clarifying its proposed recommendations that were based on EO 13960 section 5. Additionally, Section 10(e) of EO 14110 requires OMB to annually issue instructions to agencies for the collection, reporting, and publication of agency AI use cases, pursuant to section 7225(a) of the Advancing American AI Act and specifically update or replace the guidance originally established in section 5 of Executive Order 13960.

GAO Recommendation 12: The Secretary of Education should ensure that the Department of Education develops a plan to either achieve consistency with EO 13960 section 5 for each AI application or retires AI applications found to be developed or used in a manner that is not consistent with the order.

Response: The Department concurs in part with the GAO recommendation. The Department is currently developing additional guidance to address the specifics for the proper oversight of AI technologies and use cases that will address both EO 13960 and new EO 14110.

You may direct your questions to Mr. Walter McDonald, Director of Information Technology Program Services, at (202) 245-6794 or at Walter.McDonald@ed.gov.

Sincerely,

GARY
STEVENS

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STEVENS
Date: 2023.11.09
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Luis R. Lopez
Chief Information Officer

Appendix XII: Comments from the National Aeronautics and Space Administration

National Aeronautics and Space Administration

Mary W. Jackson NASA Headquarters
Washington, DC 20546-0001

Office of Chief Scientist

Mr. Kevin Walsh
Director
Information Technology and Cybersecurity
United States Government Accountability Office
Washington, DC 20548

Dear Mr. Walsh:

The National Aeronautics and Space Administration (NASA) appreciates the opportunity to review and comment on the Government Accountability Office (GAO) draft report entitled, "Artificial Intelligence Agencies Have Begun Implementation but Need to Complete Key Requirements" (GAO-24-105980), dated October 12, 2023.

In the draft report, GAO found that 20 of the 23 federal agencies reviewed reported about 1,200 current and planned artificial intelligence (AI) use cases - a specific challenge or opportunity that AI may solve. NASA had the highest number of cases (390 of the reported 1,200). GAO also determined that AI capabilities and the government's use of AI have expanded rapidly over the past few years. Additionally, GAO stated that although federal agencies have taken initial steps to comply with guidance and statutory requirements, many have missed deadlines and not yet completed many actions.

In the draft memorandum, GAO makes 35 recommendations to 18 agencies. GAO makes two recommendations addressed to the NASA Administrator.

Specifically, GAO recommends the NASA Administrator should:

Recommendation 1: Ensure that the agency updates and approves the agency's plan to achieve consistency with EO 13960 section 5 for each AI application, to include retiring AI applications found to be developed or used in a manner that is not consistent with the order.

Management's Response: NASA Concurs

NASA's Responsible Artificial Intelligence Officials will conduct a review of NASA's AI applications in production and retire those that are not consistent with the order. This review will be held annually beginning in 2024. NASA's intent is to foster AI adoption in safe, secure, responsible manner. For use cases in research & development, NASA will take steps to foster executive order compliance by the time use cases achieve production status. NASA is in the process of restructuring its AI management to provide better insight and oversight.

NASA is developing a public-facing website which will summarize NASA activities in AI.

2

Estimated Completion Date: December 31, 2024

Recommendation 2: Ensure that the agency updates its AI use case inventory to include all the required information, at minimum, and takes steps to ensure that the data in the inventory aligns with provided instructions.

Management's Response: NASA Partially Concurs

NASA relies on its AI practitioners to report faithfully on their activities using the NASA developed web tool. NASA will ensure reporting is comprehensive, however some information requested may not be available. As was noted in our debrief, NASA cannot verify or provide information on costs associated with AI as it is embedded in other project activities and it is employed, as needed, in facilitating project work. Further, some AI applications might be used in part in multiple projects. NASA will endeavor to report as accurately as possible on its AI activities.

Estimated Completion Date: June 30, 2025 (completed after the next two AI inventory iterations)

We have reviewed the draft report for information that should not be publicly released. As a result of this review, we have not identified any information that should not be publicly released.

Once again, thank you for the opportunity to review and comment on the subject draft report. If you have any questions or require additional information regarding this response, please contact Laverne Drayton at (202)-358-1909

Sincerely,

Katherine Calvin
Digitally signed by Katherine Calvin
Date: 2023.11.08 15:51:59 -05'00'

Dr. Kate Calvin
NASA Chief Scientist and Responsible AI Official

Appendix XIII: Comments from the Department of State

United States Department of State
Comptroller
Washington, DC 20520

NOV - 7 2023

Jason Bair
Managing Director
International Affairs and Trade
Government Accountability Office
441 G Street, N.W.
Washington, D.C. 20548-0001

Dear Mr. Bair:

We appreciate the opportunity to review your draft report, "ARTIFICIAL INTELLIGENCE: Agencies Have Begun Implementation but Need to Complete Key Requirements." GAO Job Code 105980.

The enclosed Department of State comments are provided for incorporation with this letter as an appendix to the final report.

Sincerely,

James A. Walsh

Enclosure:
    As stated

cc: GAO – Kevin C. Walsh
       OIG - Norman Brown

Department of State Comments on Draft GAO Report

ARTIFICIAL INTELLIGENCE: Agencies Have Begun Implementation but Need to Complete Key Requirements
(GAO-24-105980, GAO Code 105980)

Thank you for providing the Department of State with the draft report titled, *"ARTIFICIAL INTELLIGENCE: Agencies Have Begun Implementation but Need to Complete Key Requirements"* and for highlighting areas where we can enhance our AI use case inventory.

Recommendation 20: The Secretary of State should ensure that the State Department updates its AI use case inventory to include all the required information, at minimum, and takes step to ensure that the data in the inventory aligns with provided instructions.

Response:

The Department is committed to updating the AI inventory to include all required information and will align our published inventory with the instructions provided in both E.O. 13960 and the CIO Council's guidance.

In alignment with this commitment, the Department of State suggests the following revision to Recommendation 20:

"The Secretary of State should ensure that the Department of State updates its AI use case inventory to align with the instructions provided in the CIO Council's guidance and maintain ongoing compliance with E.O. 13960."

Appendix XIV: Comments from the Department of the Treasury

DEPARTMENT OF THE TREASURY
WASHINGTON, D.C.

October 27th, 2023

Kevin Walsh
Director, Information Technology and Cybersecurity
General Accountability Office
441 G St., NW
Washington, DC 20548

Thank you for the opportunity to review and provide comments on GAO's draft report entitled "Artificial Intelligence: Agencies Have Begun Implementation but Need to Complete Key Requirements" (GAO-24-105980).

We appreciate the work performed by your team, and that our significant efforts to date implementing the current AI guidance have been acknowledged. We do have activities in place to address the items outlined in Recommendations 26 and 27 and look forward to sharing our progress with GAO in the future.

If you have any further questions, please direct your staff to contact the Office of the CIO directly.

Respectfully,

Antony P. Arcadi
2023.10.30
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Antony Arcadi

Treasury Deputy Assistant Secretary for Information Technology and Chief Information Officer

Appendix XV: Comments from the U.S. Agency for International Development

![USAID logo - FROM THE AMERICAN PEOPLE]

November 8, 2023

Kevin C. Walsh
Director, Information Technology and Cybersecurity
U.S. Government Accountability Office
441 G Street, N.W.
Washington, D.C. 20548

Re: *ARTIFICIAL INTELLIGENCE: AGENCIES HAVE BEGUN IMPLEMENTATION BUT NEED TO*
     COMPLETE KEY REQUIREMENTS (GAO-24-105980)

Dear Mr. Walsh:

I am pleased to provide the formal response on behalf of the U.S. Agency for
International Development (USAID) to the draft report produced by the U.S. Government
Accountability Office (GAO) titled, *Artificial Intelligence: Agencies Have Begun Implementation
but Need to Complete Key Requirements* (GAO-24-105980).

I am transmitting this letter and the enclosed comments from USAID for inclusion in the
GAO's final report. Thank you for the opportunity to respond to the draft report, and for the
courtesies extended by your staff while conducting this engagement. USAID appreciates the
opportunity to participate in the complete and thorough evaluation of its Artificial Intelligence
management.

Sincerely,

Colleen R Allen

Colleen Allen
Assistant Administrator
Bureau for Management

Enclosure: a/s

1

COMMENTS BY THE U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT ON THE DRAFT REPORT PRODUCED BY THE U.S. GOVERNMENT ACCOUNTABILITY OFFICE (GAO) TITLED, Artificial Intelligence: Agencies Have Begun Implementation but Need to Complete Key Requirements (GAO-24-105980)

The U.S. Agency for International Development (USAID) would like to thank the U.S. Government Accountability Office (GAO) for the opportunity to respond to this draft report. We appreciate the extensive work of the GAO engagement team, and the specific findings that will help USAID achieve greater effectiveness in Artificial Intelligence management. The draft report contains one recommendation for USAID:

> **The Administrator of the U.S. Agency for International Development should ensure that the Agency updates its AI use case to include all the required inventory information, at minimum, and takes steps to ensure that the data in the inventory aligns with the provided instructions.**

USAID regrets any errors in our first AI Inventory submission. We have taken steps to ensure the 2023 AI Inventory submission includes all required information and the data in the inventory aligns with provided instructions. USAID believes the errors that GAO identified during the first submission were due to the evolving and developing nature of a new reporting requirement. USAID has incorporated various "lessons learned" to develop a more robust collection process, thus ensuring all required information is included and that the data in the inventory aligns with provided instructions.

During the first AI Inventory Use Case collection, USAID conducted outreach via emails and interviews. Going forward, USAID is employing a more automated, uniform, and structured approach to collecting the data, which includes employing one common survey that provides clearer instructions for identifying AI use cases. Once users complete the survey, all responses will be reviewed by the RAIO or their delegate to ensure the data in the final product is non-duplicative, thorough, and accurate.

Given that USAID has already implemented the corrective measures detailed above to address this finding, USAID requests that GAO close this audit recommendation when issuing the audit report.

USAID would also like to submit a correction to GAO-24-105980. The last bullet on page 45, *"Describe and Plan for AI regulatory authorities,"* is not an accurate statement in regards to USAID. USAID is not a "regulatory authority" for AI as defined in EO 13950 and M-21-06.

In summary, based on the cited factors in this enclosure, USAID affirms that duplicate information and other specified errors in the data have been corrected. USAID additionally affirms that the planned actions outlined in this response memorandum will work to eliminate the introduction of errors into the data. USAID thus respectfully requests that GAO close the audit recommendation in its issuance of the final audit report.

2

Appendix XVI: Comments from the Office of Management and Budget

November 9, 2023

Kevin Walsh
Director, Information Technology and Cybersecurity
United States Government Accountability Office
Washington, DC 20548

Dear Mr. Walsh,

Thank you for the opportunity to review and provide comment on the Government Accountability Office's (GAO) draft report, *Artificial Intelligence: Agencies Have Begun Implementation but Need to Complete Key Requirements* (GAO-24-105980). The White House Office of Management and Budget (OMB) provides the following response to address GAO's two recommendations for OMB in the draft report.

Recommendation #1: "The Director of OMB should ensure that the agency issues guidance to federal agencies in accordance with federal law, that is to (a) inform the agencies' policy development related to the acquisition and use of technologies enabled by AI; (b) include identifying responsible AI officials (RAIO); (c) recommend approaches to remove barriers for AI use; (d) identify best practices for addressing discriminatory impact on the basis of any classification protected under federal nondiscrimination laws; and (e) provide a template for agency plans that includes the required contents." (p. 47)

OMB Response: OMB agrees with this recommendation and is actively working to fulfill its statutory obligations and to provide guidance to agencies as directed by the President.

On October 30, 2023, President Biden signed Executive Order 14110, *Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence*.[1] Subsection 10.1(b) of this landmark Executive order tasks the Director of OMB to "issue guidance to agencies to strengthen the effective and appropriate use of AI, advance AI innovation, and manage risks from AI in the Federal Government" within 150 days of the date of the order. On November 1, 2023, OMB released a draft memorandum providing such guidance for public comment and is seeking public input until December 5, 2023.

As proposed, the draft memorandum would establish AI governance structures in Federal agencies, recommend approaches to remove barriers for AI use, and manage risks from government uses of AI, including through a series of required steps to identify and mitigate discrimination and disparate impact caused by AI. Consistent with Section 104(c)-(d) of the AI in Government Act, after a final version of this memorandum is released, each agency will be

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[1] Executive Order 14110, *Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence*, https://www.govinfo.gov/content/pkg/FR-2023-11-01/pdf/2023-24283.pdf

required to submit to OMB and post publicly on the agency's website either a plan to achieve consistency with the memorandum, or a written determination that the agency does not use and does not anticipate using covered AI. OMB will provide full templates for these compliance plans as part of the finalization of its AI policy.

Executive Order 14110 also tasks OMB to "develop an initial means to ensure that agency contracts for the acquisition of AI systems and services align with the guidance described in subsection 10.1(b)...and advance the other aims identified in section 7224(d)(1) of the Advancing American AI Act (Public Law 117-263, div. G, title LXXII, subtitle B)." Following OMB's finalization of its draft policy, and consistent with section 7224(d) of the Advancing American AI Act, OMB will develop this initial means regarding agency acquisition of AI systems and services.

Additionally, Executive Order 14110 establishes the role of the agency Chief Artificial Intelligence Officer, which subsumes the responsibilities performed by a "responsible official" as described in section 8(c) of Executive Order 13960 and section 4(b) of Executive Order 14091. As a result, the formal designation of a responsible AI official is no longer required.

Recommendation #2: "The Director of OMB should ensure that the agency develops and posts a public roadmap for the agency's policy guidance to better support AI use, and, where appropriate, include a schedule for engaging with the public and timelines for finalizing relevant policy guidance, consistent with EO 13960." (p.47)

OMB Response: OMB disagrees with this recommendation and believes this action has been superseded by the publication of Executive Order 14110. The order contains a clear list of actions for OMB, alongside deadlines for finalizing relevant policy guidance. OMB believes it is not necessary to post a separate schedule, as the deadlines in Executive Order 14110 effectively provide a public roadmap.

We look forward to implementing President Biden's AI Executive Order and hope our responses were helpful in informing GAO's analysis of OMB actions.

Sincerely,

Jason Miller
Deputy Director for Management

2

Appendix XVII: Comments from the Social Security Administration

SOCIAL SECURITY
Office of the Commissioner

November 1, 2023

Kevin Walsh
Director, Information Technology and Cybersecurity
United States Government Accountability Office
441 G Street, NW
Washington, DC 20548

Dear Director Walsh:

Thank you for the opportunity to review the Draft Report, "Artificial Intelligence: Agencies Have Begun Implementation but Need to Complete Key Requirements" (105980). We have no comments.

Please contact me at (410) 965-2611 if I can be of further assistance. Your staff may contact Trae Sommer, Director of the Audit Liaison Staff, at (410) 965-9102.

Sincerely,

Scott Frey
Chief of Staff

Appendix XVIII: GAO Contact and Staff Acknowledgments

GAO Contact	Kevin Walsh at (202) 512-6151 or WalshK@gao.gov
Staff Acknowledgments	In addition to the individual named above, principal contributors to this report were Jessica Steele (Assistant Director), Paris Hall (Analyst-in-Charge), Andrew Avery, Christopher Businsky, Quade Bywater, Chase Carroll, Sharhonda Deloach, Rebecca Eyler, Farahnaaz Khakoo-Mausel, Andrew Knox, Jon Menaster, and Andrew Stavisky.