TREASURY INSPECTOR GENERAL FOR TAX ADMINISTRATION

Governance Efforts Should Be Accelerated To Ensure the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence

November 12, 2024

Report Number: 2025-IE-R003

HIGHLIGHTS: Governance Efforts Should Be Accelerated To Ensure the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence

Final Evaluation Report issued on November 12, 2024   Report Number 2025-IE-R003

Why TIGTA Did This Evaluation

Artificial intelligence (AI) is defined generally as computing systems that "learn" how to improve their performance. The IRS has been working with AI-like technology since as early as 2008 and continues to expand on its use of AI in recent years.

The use of AI has the potential to improve everyday operations of the IRS as well as creating operational efficiencies and more effective ways to deliver tax administration. Recognizing the need for guidance for federal agencies, the Administration issued executive orders and memorandums to promote the safe and trustworthy use of AI.

We initiated this evaluation to assess the IRS's current and planned use of AI in tax administration.

Impact on Tax Administration

Although the use of AI can improve IRS operations and overall tax administration, the IRS must be diligent in its use to ensure that taxpayer rights are adequately protected. The use of AI has the potential to amplify existing biases and concerns related to civil liberties, ethics, and social disparities. Biases may arise when AI systems are created using data that may reflect preexisting biases or social inequities.

What TIGTA Found

AI is a broad and fast evolving area of technology. We found that the IRS has been leveraging AI-related technology for several years now. As of February 2, 2024, the IRS reported 68 projects that involve the use of AI. As the figure below shows, these include projects currently in use and ones in development. These projects focus on improving overall IRS operations, customer service, and enforcement.
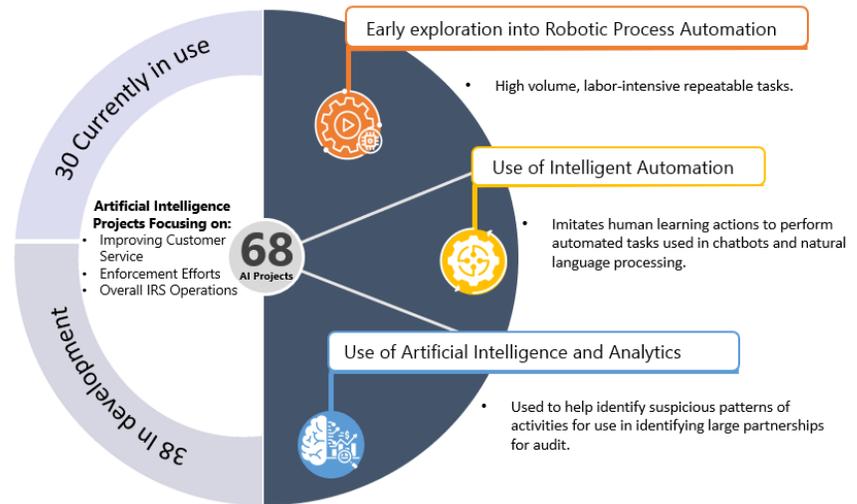
Our evaluation further identified that it is imperative that the IRS accelerate implementation of governance and oversight structures to ensure accountability and responsible use of AI in the programs and processes it develops. The IRS has taken the initiative to stand up a new organization to govern its AI projects and has designated its Chief Data and Analytics Officer as its official whose responsibilities include monitoring and overseeing AI at the IRS.

However, we found that, although the IRS had a process to track and report its inventory of AI projects as required, the reporting was inconsistent due to the evolving guidance and efforts to interpret such guidance. As such, we could not independently identify the IRS's AI project inventory during our evaluation. We were provided or obtained multiple listings of projects the IRS defined as AI that differed throughout our evaluation.

Finally, the IRS noted that the supplemental funding it received through the Inflation Reduction Act of 2022 presents the IRS with increased opportunities to expand its use of AI to improve the efficiency of its own operations as well as areas for tax administration. The IRS noted that its deployment of AI needs to be cautious and thoughtful as it has a fundamental responsibility to protect taxpayer rights.

What TIGTA Recommended

We recommended that the IRS: (1) identify accesses to external generative AI domains and platforms from traffic logs and update its rulesets to restrict further accesses and (2) accelerate standing up the new governance structure and processes. IRS management agreed with both recommendations.

TREASURY INSPECTOR GENERAL
for Tax Administration

DATE: November 12, 2024

MEMORANDUM FOR: COMMISSIONER OF INTERNAL REVENUE

FROM: Russell P. Martin
Deputy Inspector General for Inspections and Evaluations

SUBJECT: Final Evaluation Report – Governance Efforts Should Be Accelerated To Ensure the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence (Evaluation No.: IE-23-034)

This report presents the results of our review to assess the Internal Revenue Service's (IRS) current and planned use of artificial intelligence in tax administration. This review was part of our Fiscal Year 2024 Annual Program Plan and addresses the major management and performance challenge of *Improving Taxpayer Services*.

Management's complete response to the draft report is included as Appendix III. If you have any questions, please contact me or Kent Sagara, Director, Inspections and Evaluations.

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Background

Artificial intelligence (AI) is a broad and fast evolving area of technology. AI has a variety of definitions, even within the government, depending on the context and circumstances it is being used. For example, the Government Accountability Office (GAO) generally refers to AI as computing systems that "learn" how to improve their performance. Whereas the Internal Revenue Service (IRS) defines AI in accordance with the National Defense Authorization Act for Fiscal Year 2019,[1] which states that AI includes a system that:

1. Is designed to perform 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. Is developed in computer software, physical hardware, or other context that solves tasks requiring human-like perception, cognition, planning, learning, communication, or physical action.

3. Is designed to think or act like a human, including cognitive architectures and neural networks.

4. Is 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.

5. Consists of a set of techniques, including machine learning, which is designed to approximate a cognitive task.

Recognizing the need for AI guidance for federal government agencies, the Administration issues two executive orders and an Office of Management and Budget memorandum

- *Executive Order 13960, Promoting the Use of Trustworthy Artificial Intelligence in the Federal Government (December 3, 2020)* – states that the ongoing adoption and acceptance of AI will depend significantly on public trust, so agencies must design, develop, acquire, and use AI in a manner that fosters public trust and confidence while protecting privacy, civil rights, civil liberties, and American values. The executive order established nine principles for agencies to follow when designing, developing, acquiring, and using AI in the federal government. In addition, the executive order recognized that some agencies are already leading the way in the use of AI. As such, many of its milestones and deliverables focus on identifying and reporting on inventories of AI Use Cases (hereafter to be referred to as AI projects) and designating a Responsible Official to coordinate the implementation set forth in this executive order.

- *Executive Order 14110, Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence (October 30, 2023)* – continues to emphasize the urgency on governing the

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[1] Pub. L. No. 115-232, 132 Stat. 1697 to 1698. During our evaluation, the Office of Management and Budget issued additional guidance with its Memorandum 24-10, which we discuss on the next page. Because of this memorandum, the IRS informed us that it uses the definition and technical context to define AI from this memorandum.

development and use of AI safely and responsibly. Many of the milestones and deliverables from this executive order have government-wide perspective. For example, it requires that the National Institute of Standards and Technology establish guidelines and best practices by July 2024, for developing and deploying safe, secure, and trustworthy AI systems. It also directed the Office of Management and Budget (OMB) to require the designation of a Chief Artificial Intelligence Officer, who shall hold primary responsibility in their agency for coordinating the use of AI, promoting AI innovation, managing risks from the use of AI, and carrying out the responsibilities described in each executive order In addition, this executive order required that the OMB issue guidance to agencies to strengthen the effective and appropriate use of AI. This guidance was in the form of OMB Memorandum 24-10 that was issued on March 28, 2024 (see next bullet).

- *OMB Memorandum 24-10, Advancing Governance, Innovation, and Risk Management for Agency Use of Artificial Intelligence (March 28, 2024)* – directs agencies to advance AI governance and innovation while managing risks from the use of AI in the federal government. This memorandum establishes ten agency actions to be taken, including designating a Chief AI Officer, convening AI governance bodies, submitting plans to achieve consistency with the memorandum, inventorying AI projects, and identifying which use cases are safety-impacting and rights-impacting.

In addition to the above executive orders, the GAO has issued nearly 50 products on AI since 2018. These include the reports below that relate or may apply to the Department of the Treasury and the IRS:

- *Artificial Intelligence: Agencies Have Begun Implementation but Need to Complete Key Requirements (December 2023)* – presented the results of the GAO's review of the implementation of AI at major federal agencies, including the Department of the Treasury. Specifically, the GAO assessed the extent to which AI reporting was comprehensive and accurate, as well as whether agencies have complied with selected federal policy and guidance on AI. Results related to the Department of the Treasury are discussed later in the report. The GAO reported that the scientific community nor the industry agree on a common definition for AI. Even within the federal government, definitions vary. The GAO further explained that AI has three distinct waves of development:

  - *First Wave of AI Systems* – are rules-based systems whereby a computer was programmed based on **expert knowledge and logical reasoning** and produced outputs consistent with its programming.

  - *Second/Current Wave of AI Systems* – are systems based on **machine/statistical learning** that begins with data and infers rules or decision procedures to predict specified outcomes.

  - *Third Wave of AI Systems* – is the future systems of AI that could combine the strengths of first and second waves, while also being capable of **contextual adaption** with 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.

- *Artificial Intelligence: An Accountability Framework for Federal Agencies and Other Entities (June 2021)* – identified key practices to help ensure accountability and

responsible AI use by federal agencies and other entities involved in the design, development, deployment, and continuous monitoring of AI systems. To develop this framework, the GAO convened a Comptroller General Forum with AI experts from across the federal government, industry, and nonprofit sectors. It also conducted an extensive literature review and obtained independent validation of key practices from program officials and subject matter experts. In addition, the GAO interviewed AI subject matter experts representing industry, state audit associations, nonprofit entities, and other organizations, as well as officials from federal agencies and offices of inspectors general.
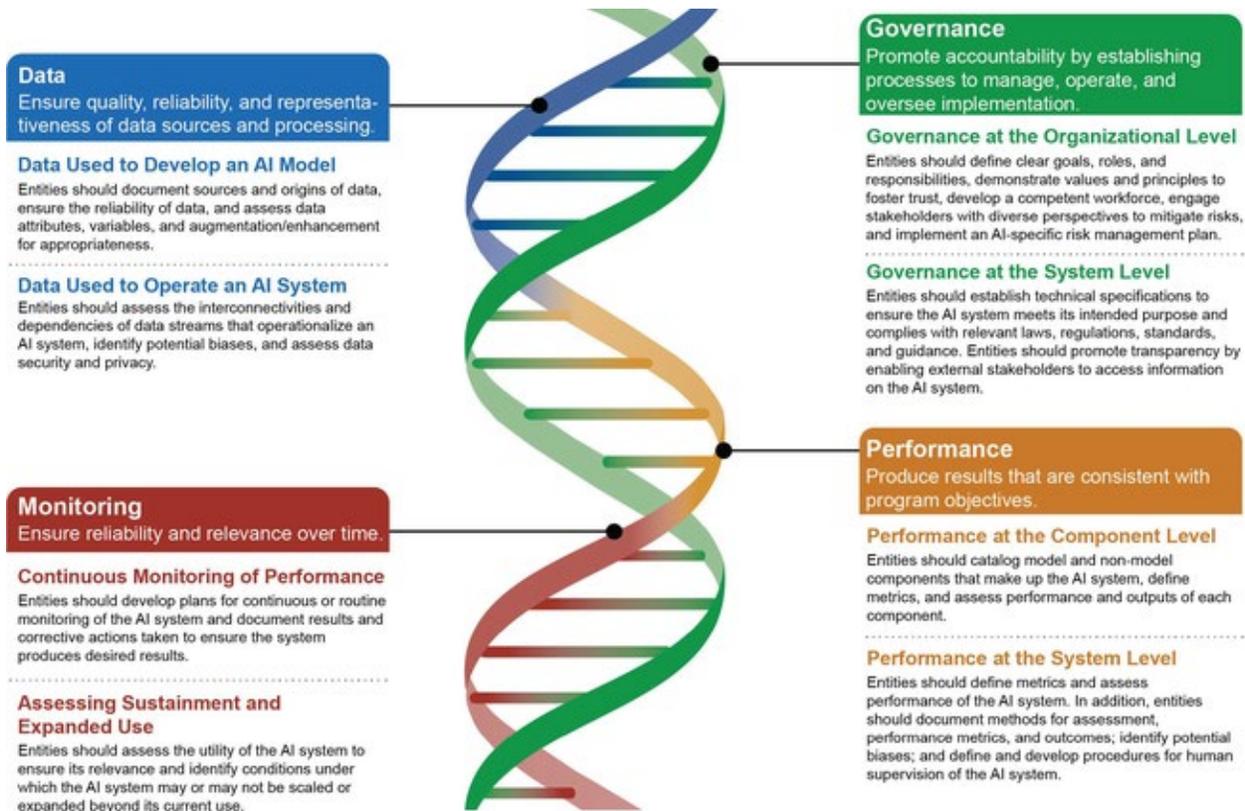
This report helps federal agency managers ensure accountability and responsible use of AI in government programs and processes by developing an AI accountability framework. The GAO's AI accountability framework is organized around four principles:

- **Governance:** Promote accountability and responsible use of AI systems. Among its key practices are to define clear goals and objectives, define roles and responsibilities, recruit, develop, and retain personnel with multidisciplinary skills on AI, include diverse perspectives from stakeholders, and implement an AI-specific risk management plan.

- **Data:** Use data that are appropriate for the intended use of each AI system. Among its key practices are to document sources and origins of data used to develop the models underpinning the AI system, assess reliability of data used to develop models, and assess the use of synthetic, imputed, and/or augmented data.

- **Performance:** Ensure AI systems produce results that are consistent with program objectives. Among its practices are to catalog model and non-model components along with operating specifications and parameters, define performance metrics that are precise, consistent, and reproducible, assess the performance against defined metrics to ensure that it functions as intended, and assess whether outputs are appropriate for the operational context of the AI system.

- **Monitoring:** Ensure reliability and relevance of the AI system over time. Among its key practices are to develop plans for continuous monitoring of the AI system to ensure that it performs as intended, establish the range of data and model drift that is acceptable, and document results for monitoring activities and corrective actions taken to promote traceability and transparency.

Figure 1 provides a high-level overview of the GAO's recommended framework to help ensure accountability and responsible AI use by federal agencies and other entities involved in the design, development, deployment, and continuous monitoring of AI systems.

Figure 1: Government Accountability Office AI Framework

Data
Ensure quality, reliability, and representativeness of data sources and processing.

Data Used to Develop an AI Model
Entities should document sources and origins of data, ensure the reliability of data, and assess data attributes, variables, and augmentation/enhancement for appropriateness.

Data Used to Operate an AI System
Entities should assess the interconnectivities and dependencies of data streams that operationalize an AI system, identify potential biases, and assess data security and privacy.

Monitoring
Ensure reliability and relevance over time.

Continuous Monitoring of Performance
Entities should develop plans for continuous or routine monitoring of the AI system and document results and corrective actions taken to ensure the system produces desired results.

Assessing Sustainment and Expanded Use
Entities should assess the utility of the AI system to ensure its relevance and identify conditions under which the AI system may or may not be scaled or expanded beyond its current use.

Governance
Promote accountability by establishing processes to manage, operate, and oversee implementation.

Governance at the Organizational Level
Entities should define clear goals, roles, and responsibilities, demonstrate values and principles to foster trust, develop a competent workforce, engage stakeholders with diverse perspectives to mitigate risks, and implement an AI-specific risk management plan.

Governance at the System Level
Entities should establish technical specifications to ensure the AI system meets its intended purpose and complies with relevant laws, regulations, standards, and guidance. Entities should promote transparency by enabling external stakeholders to access information on the AI system.

Performance
Produce results that are consistent with program objectives.

Performance at the Component Level
Entities should catalog model and non-model components that make up the AI system, define metrics, and assess performance and outputs of each component.

Performance at the System Level
Entities should define metrics and assess performance of the AI system. In addition, entities should document methods for assessment, performance metrics, and outcomes; identify potential biases; and define and develop procedures for human supervision of the AI system.

Source: ARTIFICIAL INTELLIGENCE: An Accountability Framework for Federal Agencies and Other Entities, June 2021, GAO-21-519SP.

Results of Review

Although the use of AI can improve IRS operations and overall tax administration, the IRS must be diligent in its use to ensure that taxpayer rights are adequately protected. In its framework, the GAO noted that bias is not specific to AI, but the use of AI has the potential to amplify existing biases and concerns related to civil liberties, ethics, and social disparities. Biases arise from the fact that AI systems are created using data that may reflect preexisting biases or social inequities. As such, it is imperative that the IRS accelerate implementation of governance and oversight structures to ensure accountability and responsible use of AI in the programs and processes it develops.

The IRS has been leveraging AI-related technology for several years now. Figure 2 outlines the IRS's use of AI technology.

Figure 2: IRS Projects Currently in Use And in Development with Examples of the Types of AI Technology Used
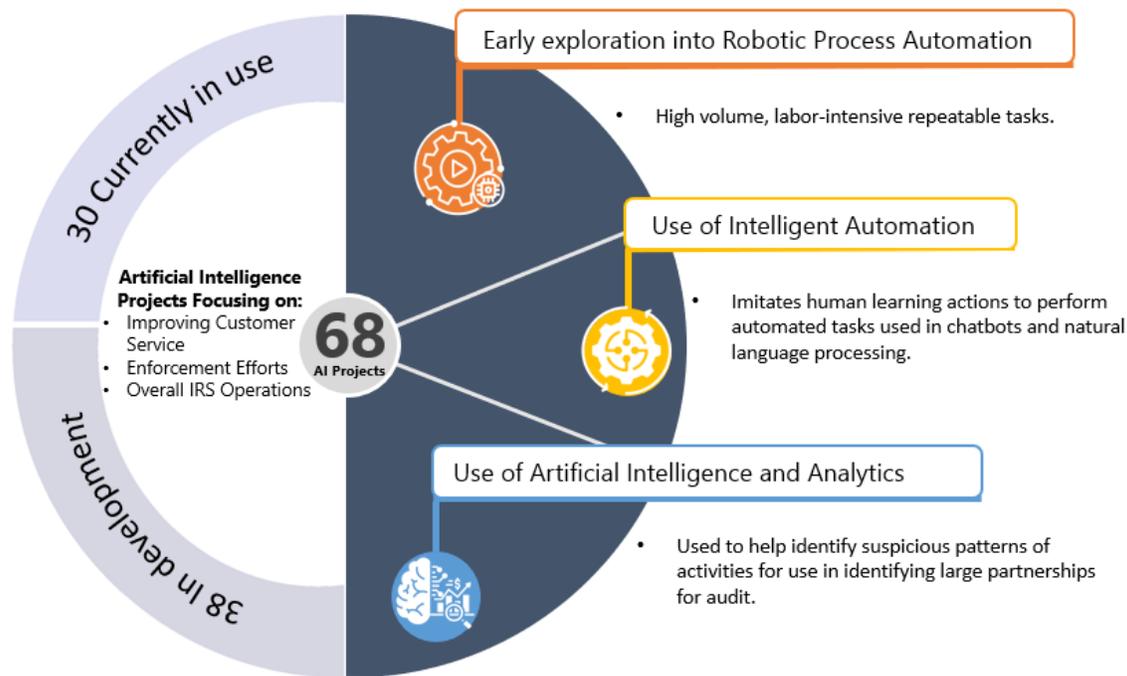
Source: Treasury Inspector General for Tax Administration (TIGTA) analysis of IRS AI projects.

Efforts to date include:

Early exploration into Robotic Process Automation software to perform high-volume, labor-intensive, repeatable tasks.[2] Use of Robotic Process Automation software allows employees to focus on higher value-added work while the software performs the repetitive work. Use of this type of automation can increase quality, reduce human error, increase compliance, and strengthen control environments.

Use of Intelligent Automation, which imitates human learning actions to perform automated tasks used in chatbots and natural language processing.[3] For example, the IRS developed a Collection chatbot that was launched in 2021 to provide taxpayers with self-service assistance for common questions, such as those relating to payments. The IRS reported that the chatbot has handled more than 450,000 interactions.

Use of AI and Analytics to identify patterns and trends in the nation's largest partnerships, and open examination on large hedge funds, private equity groups, real estate investors and law firms.

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[2] OMB Memorandum 24-10 states that these types of systems are no longer included in the definition of AI.

[3] Chatbots are computer programs, known as virtual assistants, which simulate conversations with human users over the internet. The end user makes a statement or asks a question, which is interpreted or recognized for its intent, and then the intent is mapped to a specific task. Natural language processing deals with how computers understand, process, and manipulate human languages. The process involves analyzing, understanding, and generating the languages that humans use naturally to interface with computers in both written and spoken contexts using natural human languages instead of computer languages.

Our evaluation also identified that the IRS has taken the initiative to stand up a new organization to govern its AI projects. Specifically, in compliance with Executive Order 13960, the IRS designated its Chief Data and Analytics Officer as its Responsible AI Official with its Research, Applied Analytics and Statistics (RAAS) organization assigned responsibility for monitoring and overseeing AI at the IRS. Since the issuance of Executive Order 13960, the RAAS organization is taking steps to create the *Enterprise Data and Analytics Governance Program Management Office*, which will be a separate and distinct unit providing policy and operating support for the IRS AI governance framework.

However, we found that, although the IRS had a process to track and report its inventory of AI projects as required by Executive Order 13960, the reporting was inconsistent due to the evolving guidance and efforts to interpret such guidance. As such, we could not independently identify the IRS's AI project inventory during our evaluation. We were provided or obtained multiple listings of projects the IRS defined as AI that differed throughout our evaluation. For example:

- On July 31, 2023, the IRS gave us an initial listing that showed 33 AI projects. After further review, we determined that 16 of these 33 were not AI projects.

- On February 2, 2024, the IRS provided us with an updated inventory that showed 68 AI projects, as of December 30, 2023. These projects focus on improving customer service, enforcement efforts, and overall IRS operations. IRS management noted that 30 of these projects have been implemented and are in use with the remaining 38 in development.

Finally, the supplemental funding the IRS received through the Inflation Reduction Act of 2022 presents the IRS with increased opportunities to expand its use of AI to improve the efficiency of its own operations, as well as areas for tax administration such as taxpayer customer service. [4] For example, transformation objective four in the IRS's Strategic Operating Plan developed in response to the IRA sets forth a goal to deliver cutting-edge technology, data, and analytics to operate more effectively, which furthers the IRS's goal to strategically use data to improve tax administration. A key project is to develop best-in-class advanced analytics by continually experimenting with advanced analytics techniques to identify and address complex and emerging tax administration challenges.

Uses of Artificial Intelligence at the Internal Revenue Service

How is AI being used?

The IRS provided us a list of 68 projects that involve the use of AI models to improve IRS operations. Appendix II provides specific details on each of these projects. We segmented the 68 projects into the following project focus categories:

12 projects focus on improving customer service. For example, the *Wage and Investment Refunds Chatbot Project*, enables taxpayers to ask frequently asked questions (FAQs) regarding refunds and Advanced Child Tax Credit topics. The chatbot processes the questions to provide a predetermined response.

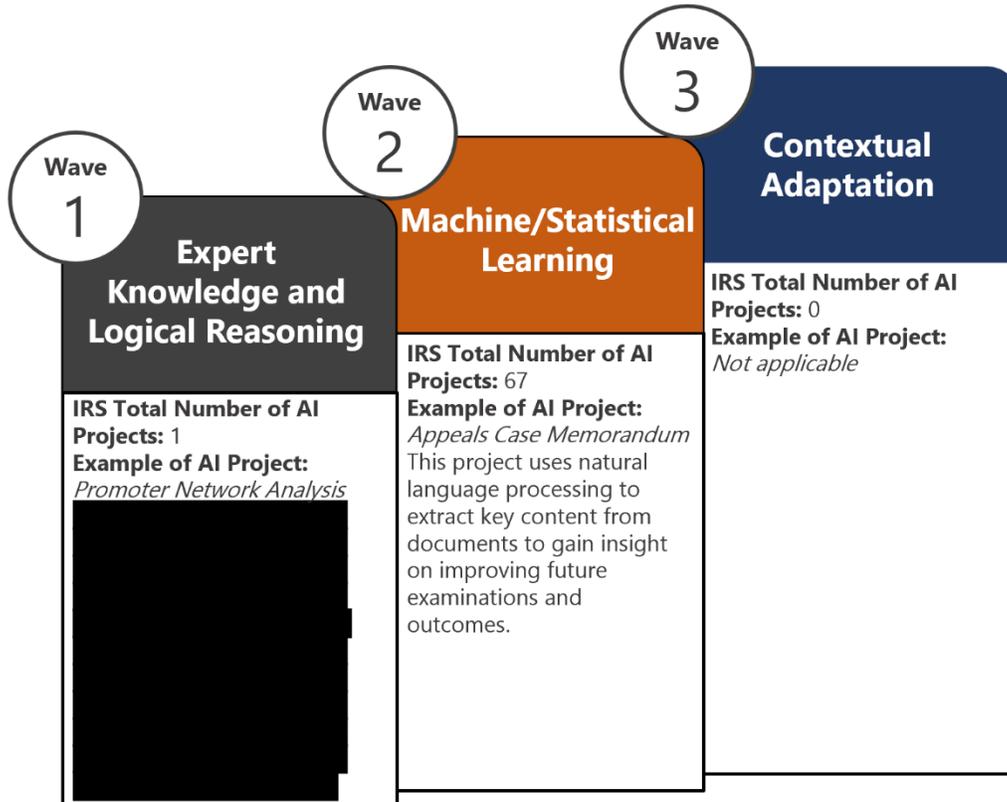[4] Pub. L. No. 117-169, 136 Stat. 1818.

27 projects focus on improving enforcement. For example, the *National Research Program Redesign Project* uses state-of-the-art AI machine learning methods to provide a lower opportunity cost method of estimating a compliance baseline to support Tax Gap estimation, improper payments reporting, development and validation of workload identification and selection models, and inform policy analysis. Another project is the *Issue Recommender F1040 Classification Model* that automates the identification of anomalous line items of Form 1040, *U.S. Individual Income Tax Return*, returns and recommends an appropriate grade level examiner to audit the return.

29 projects focus on improving overall IRS operations. For example, the *Appeals Case Memorandum Project* uses natural language processing to extract key content from documents to gain insights on improving future examinations and outcomes. Another project is the *Machine Translation Project* which is a commercial cloud-based application the IRS uses to translate existing text and labels into Spanish.

Figure 3 categorizes the IRS's 68 projects using the GAO's definition of the three waves of AI development (see page 2 of this report).

Figure 3: GAO's Three Waves of AI Development and IRS AI Projects

Wave 1

Expert Knowledge and Logical Reasoning

IRS Total Number of AI Projects: 1
Example of AI Project:
Promoter Network Analysis

Wave 2

Machine/Statistical Learning

IRS Total Number of AI Projects: 67
Example of AI Project:
Appeals Case Memorandum
This project uses natural language processing to extract key content from documents to gain insight on improving future examinations and outcomes.

Wave 3

Contextual Adaptation

IRS Total Number of AI Projects: 0
Example of AI Project:
Not applicable

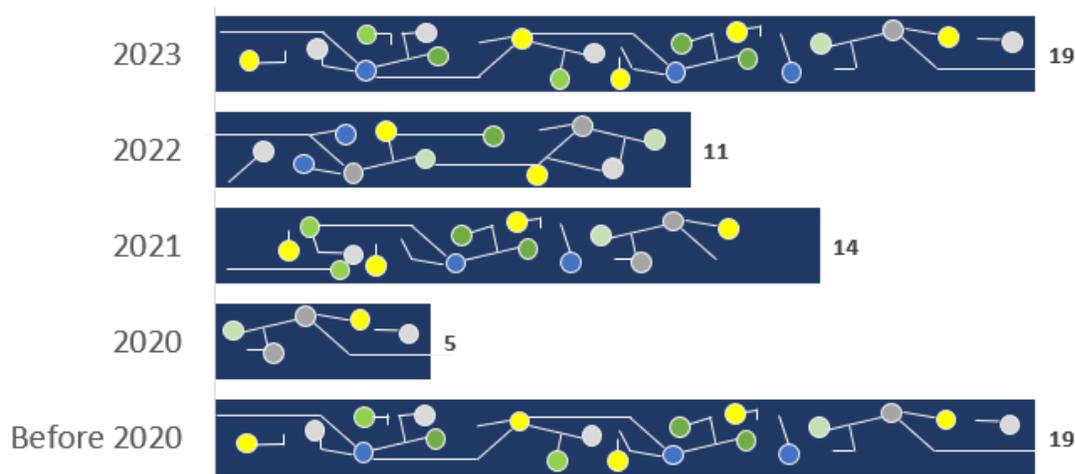Source: TIGTA analysis of IRS AI projects.

As the figure shows, all IRS projects fall into the first two waves of the GAO's definition of AI development. The attributes of the third wave are defined as being able to adapt to new situations as they arise and explain how it adapted. While many IRS projects involve systems that can train themselves after an initial dataset, they are not able to explain the reasoning behind

outputs of the process. Therefore, no third wave cases were identified as the IRS's use of AI is still evolving, which is like other federal agencies in the government as reflected in Executive Order 14110.

How long has the IRS used AI?

The list of 68 AI projects shows that the IRS has been working on AI modeling for many years with one project - the *Special Agent Attrition Project* - started and implemented in January 2008. This project leverages data analytics and logistic regression to predict attrition rates of Criminal Investigation special agents so the IRS can proactively address staffing levels and hiring needs. Figure 4 shows when the IRS AI projects were initiated by Calendar Year.

### Figure 4: When IRS AI Projects Were Initiated

Source: TIGTA analysis of IRS AI projects.

As the figure above shows, Calendar Year 2023 saw the highest number of AI projects initiated. This is likely the result of the IRA funding that the IRS received. In October 2023, the IRS announced the start of a sweeping, historic effort to restore fairness in tax compliance by shifting more attention onto high-income earners, partnerships, large corporations, and promoters abusing the nation's tax laws. Several of the AI projects initiated focus on these efforts.

How many AI projects are operational versus in development?

From an operational standpoint, the IRS notes it has 30 (44 percent) AI projects that are in implementation or operational status. Specifically, these projects have been deployed and are actively serving their intended purposes. The remaining 38 (56 percent) projects consist of 32 projects that are in the development and acquisition stage (*i.e.*, currently being worked on) and 6 projects that are in the project initiation stage. Figure 5 presents the operational statuses of the 68 projects.

### Figure 5: AI Project Development Life Cycle
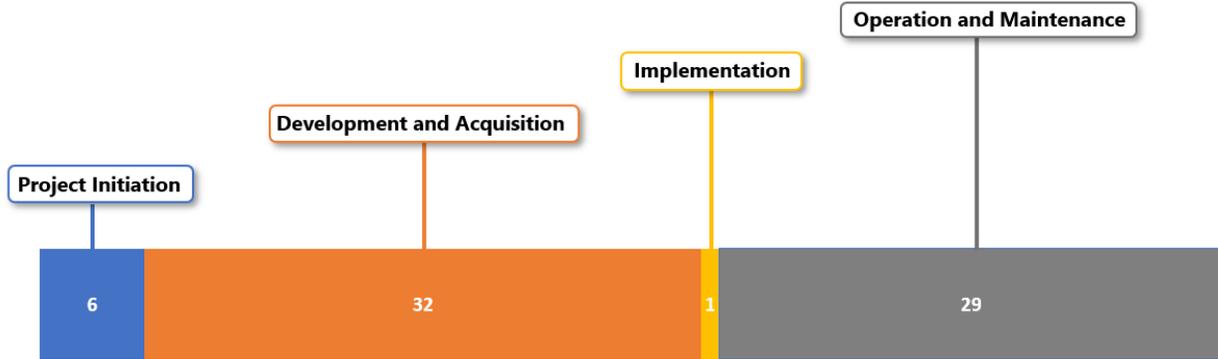
Source: TIGTA analysis of IRS AI projects.

How many AI projects are considered externally focused (services to taxpayers) versus internally focused (creating operational efficiencies)?

External projects are those that require taxpayer engagement whereas internal projects are those that support IRS operations. However, for some of these projects the results or deliverables may ultimately affect taxpayers or affect how the IRS interacts with taxpayers. The IRS classifies 56 (82 percent) of its 68 AI projects as internally focused, with the remaining 12 (18 percent) projects classified as externally focused to the public or internet-facing. Figure 6 presents the breakdown between internal and external AI projects.

Figure 6: External and Internal AI Projects
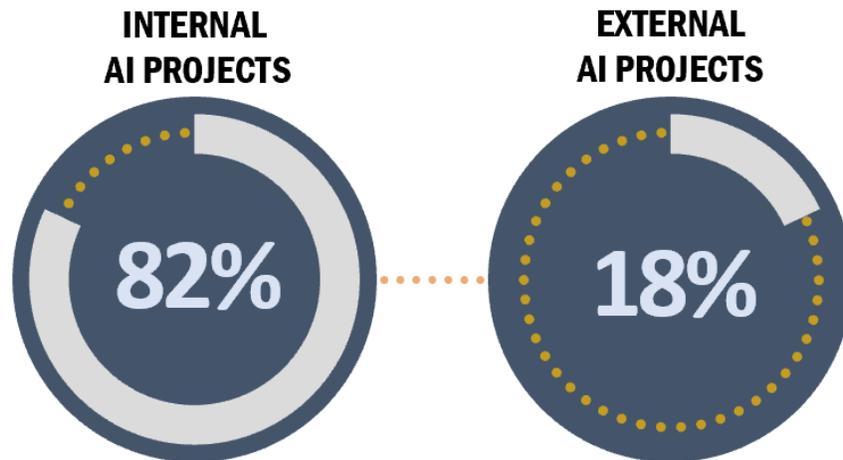
*Source: TIGTA analysis of IRS AI projects.*

As an agency that inherently engages with the public, the IRS is taking advantage of AI-related technology to benefit taxpayers in their interactions with the IRS. Ten of the 12 externally focused AI projects are either chatbots or voicebots that all taxpayers can access via the IRS.gov website or by calling and navigating an interactive voice response system.[5] For example, the IRS's *Small Business/Self-Employed (SB/SE) Payments Topics Chatbot*, provides taxpayers with

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[5] Voicebots are software using natural language processing that allow a caller over the phone to navigate an interactive voice response system without the presence of a live assistor.

an option to obtain information on payment topics, such as making one-time payments, setting up a payment plan, or seeking financial relief. Once the taxpayer accesses the IRS.gov webpage, the taxpayer can select the "Pay" tab from the menu bar and access a chat feature by clicking on the chat button. Figure 7 illustrates the chatbot screens that pop up when the taxpayer initiates a chat session.

Figure 7: Screenshots for the SB/SE Payment Topic Chatbot Captures

Source: https://www.irs.gov/payments.
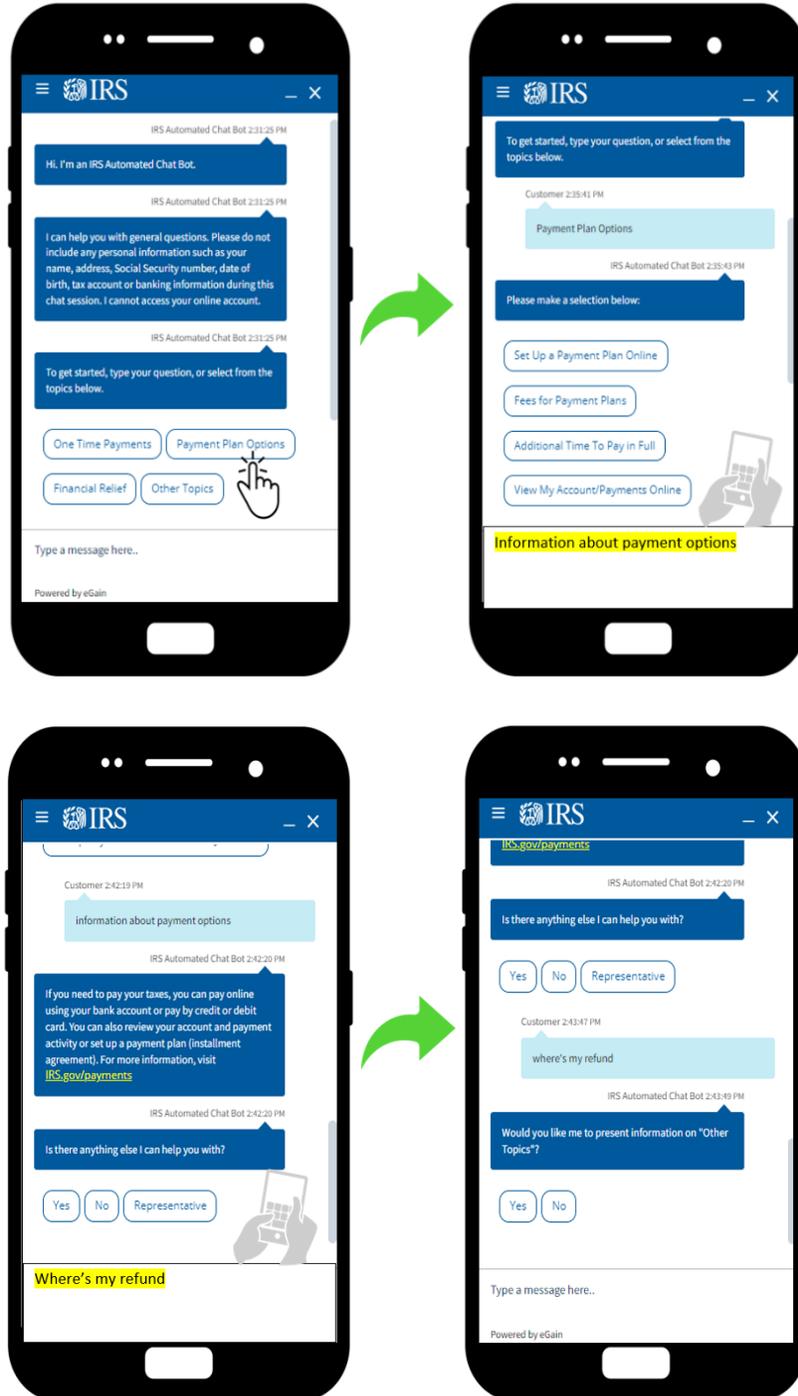
The first screenshot is the first chat response when the taxpayer initiates a chat session on the website. The second screenshot is what appears when the taxpayer clicks on "Payment Plan Options." The corresponding response gives the taxpayer the option of choosing a more specific category on which the taxpayer would like more information, such as "Set Up a Payment Plan Online."

The taxpayer can also type free-form text in the box that says "Type a message here…" instead of choosing one of the options presented. The second screenshot shows the taxpayer typing "information about payment options." The AI component of the chatbot processes free-form text input from taxpayers and attempts to match it to an appropriate pre-determined business response. The third screenshot shows that the bot responded appropriately by providing information about different options taxpayers have to pay their taxes. It then followed up by asking whether there was anything else it could help the taxpayer with or provides the option to connect the taxpayer to a live representative. If a taxpayer types a question that the chatbot cannot understand, or that is outside the scope of questions the chatbot is able to answer, it may present a list of topics that the taxpayer can select from.

As the above example shows, this project automates the preconstructed conversations created through a series of queries based on the available premade options selected by the taxpayer, or the taxpayer's free-text input. The entire chat session has been flowcharted with all pre-determined questions and possible responses for the taxpayer. The role of AI is to correctly match any free-form text input to the appropriate pre-determined response. All responses in the chatbot are determined by business rules, not produced by generative AI.[6]

How many AI projects are supported by contractors?

The IRS uses contractors to support its operations and programs. AI represents another area where the IRS is leveraging contractor support to hire personnel with the knowledge, skills, and experiences to assist on its AI projects. The IRS reports that 46 (68 percent) of its 68 AI projects involve some level of contractor support. We identified that 11 contractors are providing support on the 45 AI projects with four contractors supporting 35 of the 45 projects.[7] For all contracts, we found that the base year contract costs to be over $146 million with additional option years' costs to be approximately $621 million.

Challenges Exist in Maintaining an Accurate and Complete Inventory of Artificial Intelligence Projects, and Identifying and Restricting Employee Access to Generative Artificial Intelligence Websites

The current Administration issued two executive orders that in part address the rapidly expanding use of AI by government agencies (see pages 1 and 2 of this report). Specifically, these executive orders detail specific requirements government agencies need to complete as it

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[6] Generative AI means the class of AI models that emulate the structure and characteristics of input data to generate derived synthetic content, such as images, video, audio, text, and other digital content. For example, ChatGPT is a generative AI tool.

[7] One project requiring contract support is still in the process of identifying a contractor.

relates to their use of AI. Figure 8 shows that the IRS met the certain requirements by its due date.[8]

Figure 8: IRS Compliance with Executive Orders

Executive Order Requirement	IRS Compliance Status
Identify, review, and assess existing AI deployed and operating in support of agency missions for any inconsistencies with this order. (Executive Order 13960, §5c)	✓ In Compliance with Requirement
In coordination with the Agency Data Governance Body and relevant officials from agencies not represented within that body, agencies shall strive to implement the approved plans within 180 days of plan approval, subject to existing resource levels. (Executive Order 13960, §5c)	✓ In Compliance with Requirement
Within 60 days of the completion of their respective inventories of projects of AI, agencies shall share their inventories with other agencies, coordinated through the Chief Information Officer and Chief Data Officer Councils, to improve interagency coordination and information sharing for common projects. (Executive Order 13960, §5d)	✓ In Compliance with Requirement
Within 120 days of completion of their inventories, agencies shall make their inventories available to the public, 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. (Executive Order 13960, §5e)	✓ In Compliance with Requirement
Each agency shall 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 (Section 6). (Executive Order 13960, §8c)	✓ In Compliance with Requirement
Agencies are encouraged to employ risk-management practices, such as training their staff on proper use, protection, dissemination, and disposition of federal information; negotiating appropriate terms of service with vendors, implementing measures designed to ensure compliance with record-keeping, cybersecurity, confidentiality, privacy, and data protection requirements; and deploying other measures to prevent misuse of federal government information in generative AI. (Executive Order 14110, §10f)	✓ In Compliance with Requirement

Source: TIGTA analysis and interviews with IRS officials.

However, our evaluation did identify the challenge the IRS had in compiling an accurate and complete inventory of its AI projects. In our opinion, the inconsistent and changing inventory of AI projects we identified can be attributed to the newness of this technology and limited guidance from a government-wide perspective. Additionally, the IRS will have an ongoing challenge to identify and restrict employee access to generative AI websites.

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[8] Executive Order 14110 contains several requirements due later in Fiscal Years 2024 and 2025.

Challenges exist in the development of an accurate and complete inventory of AI projects

During our evaluation, we obtained and/or were provided with multiple and different listings of what the IRS noted were AI projects. The following provides examples of the various AI inventory reports we obtained and/or were provided during our evaluation:

- Using federal agencies' 2021 AI inventory submitted to the OMB, the GAO reported that the Department of the Treasury AI inventory in Fiscal Year 2022 included 25 AI projects.[9] We met with the GAO auditors who performed this review, and they indicated that 22 of the 25 were IRS projects. This report also stated the Department of the Treasury was planning to or already had efforts underway to develop a plan for AI inventory updates.[10]

- In August 2022, in the Department of the Treasury response to Executive Order 13960, the IRS reported having 10 IRS AI projects.

- In June 2023, the Department of the Treasury AI project report cites the IRS as having 9 AI projects.

- In July 2023, the RAAS organization provided us with a spreadsheet of 356 data analytics projects it was directly involved with or was notified by other IRS business divisions of the projects. To provide us with only those projects involving AI, RAAS filtered on the field "*This project involves: (check all that apply)*" for AI terms and identified 33 AI projects.[11]

  However, our review of the 33 projects identified that 7 projects were misclassified as AI. In addition, we identified two other projects that should have been classified as AI, which gave us a total of 28 AI projects. We reached out to project owners for the 28 projects and found that seven more projects were not using AI technology.

  We learned that RAAS's method of accounting for and tracking an AI project was dependent on what the project owner entered in the RAAS tracking spreadsheet tool. In addition, the information on the spreadsheet did not appear to be updated on a regular basis. Toward the end of our fieldwork in June 2024, RAAS officials informed us that they use several internal methods for the identification and tracking of AI projects. However, we were not able to independently identify all the IRS's AI projects. After we pointed out the inconsistencies between the AI use cases reporting and its own spreadsheet, the RAAS organization remedied its inventory processes.

- After the issuance of Executive Order 14110 on October 30, 2023, IRS officials noted that they made improvements to their AI project inventory and tracking system to identify the 68 projects they reported to the Department of the Treasury on December 30, 2023, and shared with us on February 2, 2024.

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[9] GAO, GAO-24-105980, *ARTIFICIAL INTELLIGENCE: Agencies Have Begun Implementation but Need to Complete Key Requirements* (December 2023).

[10] This effort was more than a year past the August 2022 due date.

[11] This field provided a drop-down list of seven classifications involving Artificial Intelligence, Behavioral Research, Inflation Reduction Act, Tax Reform Research, Taxpayer Experience, Covid-19, and None of the above.

## Ongoing efforts are needed to ensure compliance with Treasury's continued restriction on generative AI

Executive Order 14110 states that "As generative AI products become widely available and common in online platforms, agencies are discouraged from imposing broad general bans or blocks on agency use of generative AI. Agencies should instead limit access, as necessary, to specific generative AI services based on specific risk assessments; establish guidelines and limitations on the appropriate use of generative AI; and, with appropriate safeguards in place, provide their personnel and programs with access to secure and reliable generative AI capabilities."

Prior to the issuance of Executive Order 14110, the Department of the Treasury Chief Information Officer sent an email on June 16, 2023, to their bureaus (including the IRS) on "Guidance on the use of Generative AI for official business," which provided preliminary guidance on the use of Generative AI. Specifically, the email states that:

> "Treasury employees should not be sending user queries to ChatGPT or other public Large Language Models that might reveal sensitive or other non-public information regarding questions that Treasury is grappling with or initiatives that it is considering."

The IRS informed us that in response to the Department of the Treasury directive it implemented controls to ensure that employees are blocked from accessing certain generative AI websites and AI features on existing products are disabled for users. The IRS noted that its Office of Information Technology's Computer Security Incident Response Center (CSIRC) currently blocks 39 AI-related websites from employee access through the IRS network. Specifically, the IRS noted that it created access rules to deny access to various generative AI websites. When an employee attempts to access these websites from their work issued laptops using the IRS network, the employee will be denied access and get the following error message shown in Figure 9.

Figure 9: Denied Access Warning Message
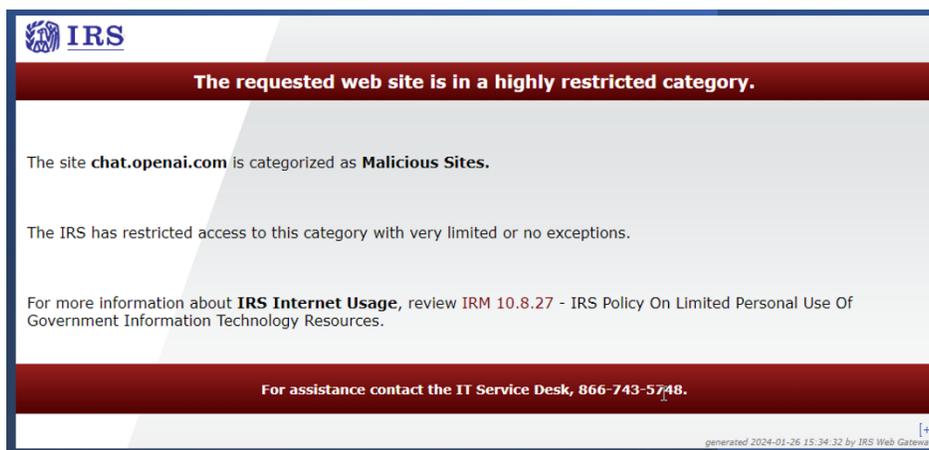
Source: IRS CSIRC personnel.

The IRS further noted that its Office of Information Technology is monitoring employee traffic to AI-related sites that are being made available on the internet. Our review of the IRS's traffic logs showed that existing rulesets were working to deny access to generative AI websites.

Our review showed that employees are in fact attempting to access generative AI websites. For example, traffic logs provided by the CSIRC show that for the period October 31, 2023, to January 29, 2024, 531 attempts were made to access ChatGPT, a prohibited generative AI website. We recognize the ongoing challenge the IRS has in identifying and restricting access to these types of websites as new generative AI websites are continually being added. For example, during our meeting with the CSIRC personnel in January 2024, we became aware of two situations where CSIRC needed to create business rules to prohibit employees who were able to successfully access generative AI websites:

- CSIRC identified a specific AI website that employees should not access. Although identified, a business rule was not created to deny access to this specific AI website. As a result, IRS employees were able to access this website. We requested the traffic logs from CSIRC for the period October 31, 2023, to January 29, 2024, which showed 191 successful accesses to this AI website.

- Employees could access a generative AI website through the IRS's External e-Learning and Collaborative platform. This platform was set up to allow employees to access external training and web conferencing that is not allowed from the IRS enterprise network.[12] CSIRC identified one employee who was able to successfully circumvent security controls through this platform and access a generative AI website. Like in the above example, we requested traffic logs for the period October 31, 2023, to January 29, 2024, which showed the successful access.

When employees send queries to generative AI online tools, they might inadvertently reveal sensitive or non-public information to the generative AI tool entities, which might be available to access by other users. In response to our providing the above two examples, CSIRC created rulesets to deny access to the site we identified including the ability to access from the e-Learning platform.

Recommendation 1: The Chief Information Officer should continue to comply with Treasury's preliminary guidance on generative AI by identifying accesses to external domains and internet platforms from traffic logs and updating rulesets to restrict further access to these sites so the IRS is not inadvertently revealing sensitive and non-public information outside of the IRS.

> **Management's Response:** IRS management agreed with our recommendation. The Chief Information Officer will issue guidance requiring that IRS Cybersecurity regularly review traffic logs to identify accesses to generative AI services and adopt rulesets to restrict access where necessary.

An Enterprise Data and Analytics Governance Office is Being Established to Provide Separate and Distinct Governing Structure Over Artificial Intelligence Technology and Projects

When we initiated our evaluation, we found that the IRS was leveraging its existing Enterprise Data and Analytics operating model to address specifications of decision rights and an

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[12] IRS Information Technology personnel stated that the e-Learning platform is isolated via virtual hosting from the IRS enterprise network, so activity within the e-Learning platform cannot be brough back into the IRS's production environment.

accountability framework to ensure appropriate behavior in the valuation, creation, consumption, and control of data and analytics. This model also established the Data and Analytics Strategic Integration Board, Data and Analytics Advisory Group, and various sub-councils. Figure 10 shows the IRS governance structure for overseeing AI projects.

Figure 10: IRS Data and Analytics Governance Structure
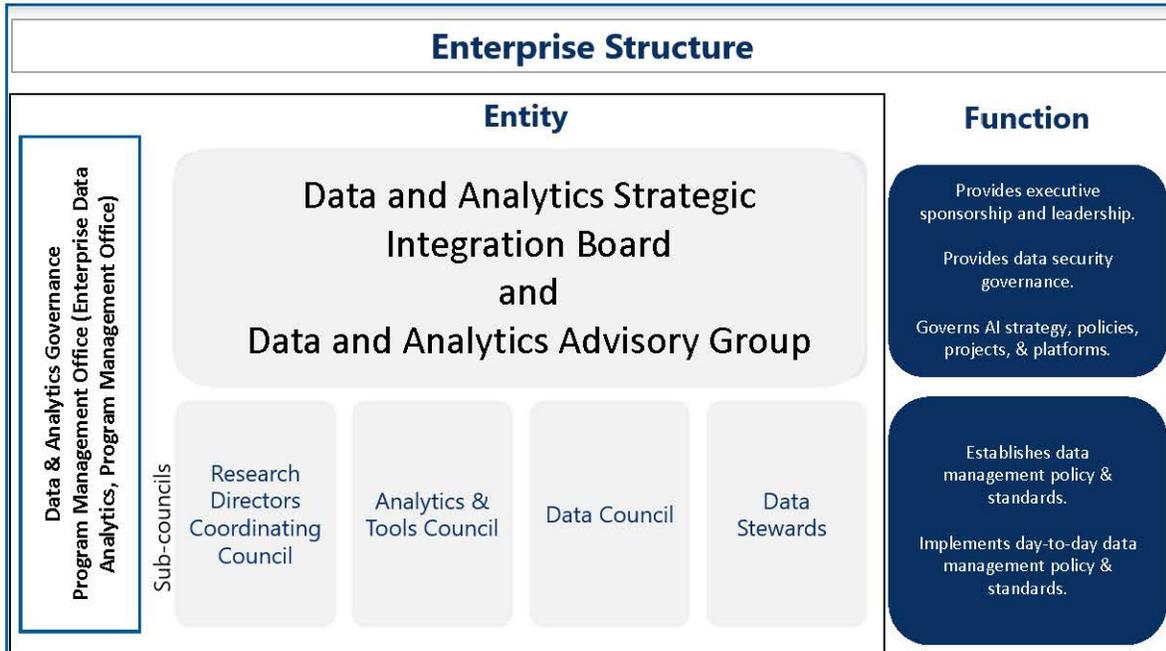
Source: IRS Data and Analytics Governance Structure.

Since the issuance of Executive Order 13960, the RAAS organization is taking steps to create the Enterprise Data and Analytics Governance Program Management Office, which will be a separate and distinct unit providing policy and operating support for the IRS AI governance framework. In addition, OMB Memorandum 24-10 provides more clarification on strengthening AI governance, advancing responsible AI innovation, and managing risks from the use of AI. In April 2024, the IRS also established an AI Assurance Team made up of subject-matter experts from various IRS organizations to validate compliance with AI policies and procedures and provide AI governance bodies on AI projects' readiness for deployment. The IRS also provided interim guidance and proposed additions to a new internal guidance document on AI governance and principles on May 20, 2024.

Although not required at the bureau level, deliverables from this memorandum include the following that are required at the departmental level and the IRS will support.

- Designate a Chief AI Officer by May 27, 2024. Based on a prior executive order, the IRS designated its Chief Data and Analytics Officer as the Responsible AI Official.

- Convene an agency AI Governance Board by May 27, 2024. Figures 10 and 11 present information on the IRS's proposed governance board and structure.

- Complete plans on how the agency will meet the requirements of the memorandum by September 24, 2024.

- Inventory each AI project at least annually, beginning in 2024.

- Complete a strategy for identifying and removing barriers to the responsible use of AI and achieving enterprise improvements in AI maturity.

Figure 11 shows proposed enhancements to the current governance structure.

Figure 11: Proposed Enhancements to the Current Data and Analytics Governance Model
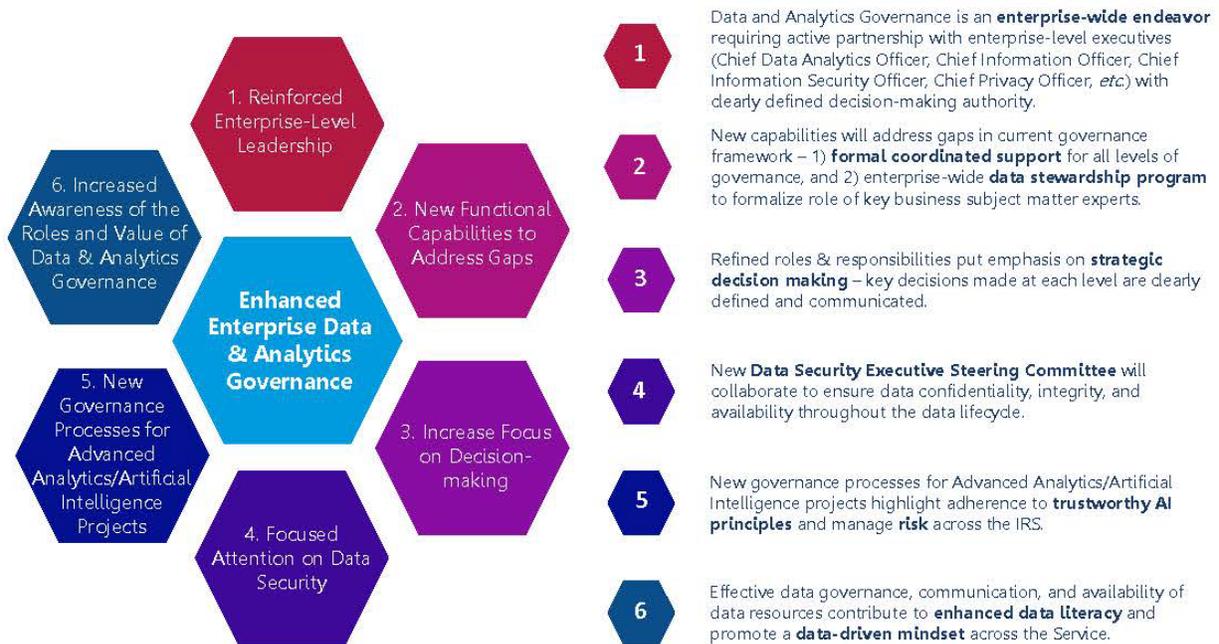
Source: IRS Proposed Future Direction for IRS Data and Analytics Governance, July 21, 2023.

In addition, as we noted in the background section of this report, the GAO issued a report, *ARTIFICIAL INTELLIGENCE: An Accountability Framework for Federal Agencies and Other Entities*, in June 2021, that identified key practices to help ensure accountability and responsible AI use by federal agencies and other entities involved in the design, development, deployment, and continuous monitoring of AI systems. The report reviewed a variety of federal government departments which emphasizes the importance of reviewing AI work done across all of government, especially for those that have direct impact with the public such as the IRS.

In our discussion with RAAS officials regarding the IRS use of the GAO's AI Framework, we were informed that the GAO is part of the Legislative Branch of federal government, and the IRS did not necessarily have to follow or abide by its framework. Although the IRS does not have to follow or abide by this framework, including the GAO AI Framework as it continues to stand up its new organizations, practices, and disciplines, in our opinion doing so will put the IRS in a better position to ensure that there is accountability and the responsible use of AI on its programs and processes. The guidance provides a strong foundation for all federal agencies to apply to current and future AI systems. Our evaluation did find that the IRS's current or future activities appear to address the principles and practices suggested by the GAO.

Federal guidance for deploying and using AI systems is still relatively new. For example, the OMB issued a memorandum in March 2024 that addresses (1) strengthening AI governance, (2) advancing responsible AI innovation, and (3) managing risks from the use of AI. In addition,

Executive Order 14110 requires the National Institute of Standards and Technology to establish guidelines and best practices by July 26, 2024, for developing and deploying safe, secure, and trustworthy AI systems. As a result, federal agencies, including the IRS, will continue to face challenges in implementing AI policies and governance structures and processes until all guidance has been issued.

Recommendation 2: The Chief Data and Analytics Officer should accelerate standing up the new governance structure and processes to ensure the safe, secure, and trustworthy development and use of artificial intelligence.

> **Management's Response:** IRS management agreed with our recommendation. The Chief Data and Analytics Officer, with support from the Data and Analytics Strategic Integration Board and other stakeholders, will continue to improve the framework by taking the following steps: (1) hire additional IRS employees to support the governance functions; (2) execute organizational changes based on the final approval of the Request for Organizational Change; (3) refine the processes and procedures for the IRS Enterprise-Level AI Governance Board approval based on lessons learned from the initial phase of use case approvals in Calendar Year 2024 and update the Internal Revenue Manual 10.24.1 as needed.

Future Artificial Intelligence Initiatives in the Strategic Operating Plan for Fiscal Years 2023 through 2031

As part of the Inflation Reduction Act legislation, the IRS received almost $80 billion in supplemental funding to be used through September 30, 2031.[13] On April 5, 2023, the IRS issued its Inflation Reduction Act Strategic Operating Plan. The plan outlines five transformation objectives, which are comprised of 42 initiatives. The initiatives outline how the IRS plans to provide best-in-class customer service and transform how taxpayers interact with the IRS, modernize technology and analytics, reduce the Tax Gap by focusing on taxpayers with complex filings and high-dollar noncompliance, and become an employer of choice.

Transformation objective four is to deliver cutting-edge technology, data, and analytics to operate more effectively. Within this objective, Initiative 4.7 is to strategically use data to improve tax administration. One of the key projects is to develop best-in-class advanced analytics by continually experimenting with advanced analytics techniques to identify and address complex and emerging tax administration challenges. This effort may include exploring deep learning to address complex tax structures; using natural language processing methods to extract, consolidate, and categorize narrative text from tax forms, external reporting, and taxpayer interactions; and using techniques such as machine translation to improve taxpayer interactions in languages other than English. Figure 12 presents the milestones associated with Initiative 4.7.

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[13] In August 2022, Congress enacted the IRA, giving the IRS approximately $80 billion over the next decade to improve the administration of the tax system and the services provided to taxpayers. By March 2024, Congress reduced IRA funding to $57.8 billion. The Further Consolidated Appropriations Act, 2024, Pub. L. No. 118-47, 138 Stat. 460 (rescinded $20.2 billion); and the Fiscal Responsibility Act of 2023, Pub. L. No. 118-5, 137 Stat. 10 (rescinded $1.4 billion).

Figure 12: Milestones for Initiative 4.7 of the IRS's
Inflation Act Reduction Strategic Operating Plan

*Source: Internal Revenue Service Inflation Reduction Act Strategic Operation Plan,
Fiscal Years 2023 – 2031 (Publication 3744, (Rev. 4-2023).*

A prior TIGTA report stated that the IRS is making progress toward the first milestone from Initiative 4.7.[14] Specifically:

- On June 2, 2023, the IRS provided recommendations to enhance the existing data governance framework and proposed changed language to existing charters for data governance bodies, such as the Data and Analytics Advisory Group, the Data Council, *etc.*, and relevant internal guidance. Associated updates are currently in progress.

- On July 17, 2023, the IRS proposed a strategy for data and advanced analytics/artificial intelligence governance to RAAS stakeholders and members of the Data and Analytics Strategic Integration Board and Data and Analytics Advisory Group.

- On July 21, 2023, the IRS, in collaboration with the Acting Chief Information Officer and Deputy Chief Privacy Officer, presented the proposed data and analytics/artificial intelligence governance strategy to the IRS Commissioner, deputy commissioners, and other senior advisors.

During a public sector event on April 17, 2024, the IRS Commissioner said the IRS is using Inflation Reduction Act funding to increase AI use in future tax collection operations at the agency. The Commissioner also said that employing AI capabilities will allow taxpayers the opportunity to be assisted in an increasingly virtual world and provide answers to the questions they have using AI powered solutions. Lastly, the Commissioner stated:

> "*We have to be cautious and thoughtful with how we deploy AI. We have a fundamental responsibility that is primary for us, and that is to protect taxpayer rights. And those rights include things like the right to privacy and the right that we will not add unnecessary intrusion into that privacy. We need to stay 1,000 miles away from even the perception that AI is in any way violating the responsibility we have to protect taxpayer privacy.*"

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[14] TIGTA, Report No. 2024-IE-R010, *Inflation Reduction Act: Continued Assessment of Transformation Efforts – Evaluation of Fiscal Year 2023 Delivery of Initiatives* (Mar. 2024).

Detailed Objective, Scope, and Methodology

The overall objective of this project was to assess the IRS's current and planned use of AI in tax administration. To accomplish our objective, we:

- Determined compliance with applicable federal guidance on AI including Executive Orders 13960 and 14110.

- Reviewed relevant oversight reports on AI used in the federal government and recommendations that were made.

- Obtained and identified current and past AI projects up to December 30, 2023, to evaluate the latest inventory of current and past projects.

- Evaluated the overall strategy and level of governance on the use of AI to identify processes and procedures to ensure accountability and responsible use of AI in tax administration.

- Evaluated the Department of the Treasury and IRS policies and procedures to prevent generative AI use by employees on government issued devices to determine if they are consistent with federal guidance.

- Obtained contract data related to all AI projects that involved the use of contractors.

Performance of This Review

This review was performed at the IRS Office of Information Technology Headquarters in Lanham, Maryland, and with information obtained from the RAAS organization located in Washington, D.C. during the period July 2023 through May 2024. We conducted this evaluation in accordance with the Quality Standards for Federal Offices of Inspector General. Those standards require that the work adheres to the professional standards of independence, due professional care, and quality assurance and followed procedures to ensure accuracy of the information presented. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions.

Major contributors to the report were James Douglas, Director; Kent Sagara, Supervisory Evaluator; Matthew Pham, Lead Evaluator; and Kristina Bernabe, Evaluator.

Data Validation Methodology

We performed tests to assess the reliability of AI inventory data from the RAAS organization. We evaluated the data by (1) reviewing the narrative information for each AI project to determine whether the project fit into the AI definition, (2) engaging with the RAAS organization and the project owners to confirm the use of AI technologies, and (3) comparing the data with other data sets from the Department of the Treasury and the GAO. In this report, we explain the challenges we encountered with the AI inventory. We determined that the data were sufficiently reliable for purposes of this report.

<div align="right">

Appendix II

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List of IRS Artificial Intelligence Projects

This table presents the 68 IRS AI projects. The projects shaded in gray are in use and implemented while the others are still in development as of December 30, 2023.

Project Name	Summary of Project
Special Agent Attrition Model	This model is used to predict how many special agents Criminal Investigation can expect to lose to attrition by generating the probability a special agent will separate from the IRS in each given fiscal year.
Large Corporate Compliance	This Large Business & International Division learning model identifies the highest risk large corporate returns.
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Translation Software	This software uses the neural-based translation engine to translate English or Non-English documentation to a target language.

Project Name	Summary of Project
Appeals Case Memorandum	This model uses natural language processing to extract key content from unstructured text to gain insights on improving future examinations and outcomes.
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███████████████	██.
███████████████	██.
Economic Impact Payment FAQ Voicebot - Commercial Cloud Interactive Voice Response (IVR)	This voicebot responds to general taxpayer inquiries regarding the Economic Impact Payment and includes options to route calls to live assistors during normal business hours.
SB/SE - Payments Topics Chatbot	This Small Business/Self-Employed chatbot provides self-service FAQs about payments, payment plans, financial relief, and offer-in-compromise topics.
One-Time Payment Voicebot - Commercial Cloud IVR	This voicebot responds to general taxpayer inquiries regarding the one-time payments and includes options to route the call to live assistors during normal business hours.
FAQs/Notice Clarifications Voicebot - Commercial Cloud IVR	This voicebot responds to general taxpayer inquiries regarding notice clarifications and includes options to route the call to live assistors during normal business hours.
Advance Child Tax Credit Voicebot - Commercial Cloud IVR	This voicebot responds to general taxpayer inquiries regarding Advance Child Tax Credit.
Digital Accountability and Transparency Act Bot	This bot uses natural language processing to automate verifying that IRS Federal Procurement Data System reporting matches information in contract documents.

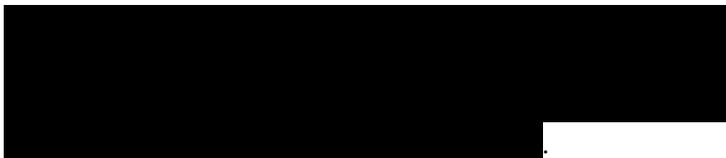| Project Name	Summary of Project
Issue Recommender F1040 classification model	This model automates the classification process for Form 1040 returns by identifying anomalous line items on a return and recommends an appropriate examiner grade level.
SB/SE Automated Collection System Conversational IVR Phase1-4 Voicebot	This voicebot allows taxpayers to mitigate various issues regarding payments, balance dues, account history and other topics. Using National Language Processing and AI algorithms, this voicebot processes taxpayers' questions and tries to provide the correct predetermined response. The four phases address balance due, location and transcript, payoff and view credit, and view debit.
Large Partnership Compliance	This Large Business & International unsupervised model assesses returns against a combination of data science risks and risk provided by experienced partnership revenue agents and produces a prioritized list of returns that are reviewed by human classifiers to be sent for further examination.
Wage and Investment Refunds Chatbot	This Wage and Investment chatbot provides responses to frequently asked questions regarding refunds and Advance Child Tax Credit topics.
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███████████████	█████████████████████████████████
Employee Resource Center Chatbot	This internal chatbot provides responses regarding administrative support, benefit topics, credit card services, HR system questions and other related topics.
SB/SE FAQ Voicebot - Automated Collection System Conversational IVR Platform	This Small Business/Self-Employed voicebot provides answers to general questions regarding one-time payment and notice clarifications and includes options to route the call to live assistors during normal business hours.
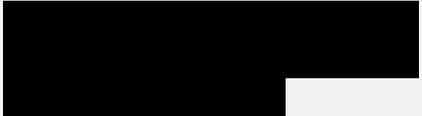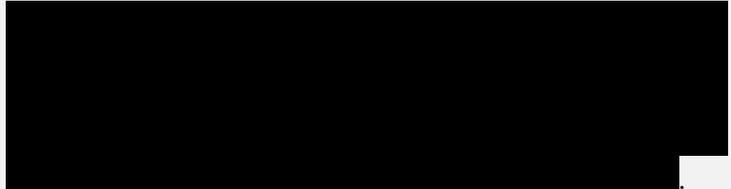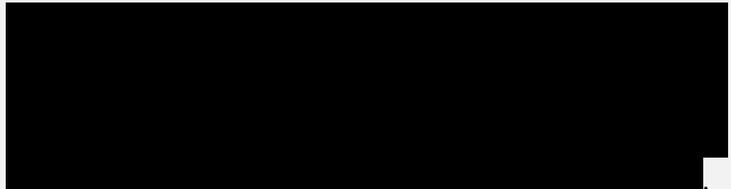
Project Name	Summary of Project
Machine Translation	This cloud-based commercial-off-the-shelf solution translates existing text and labels into Spanish with the goal of becoming an enterprise solution for a variety of non-English translations.
Winnie Chatbot	This internal chatbot provides self-service responses to frequently asked questions regarding Information Technology topics.
Information Technology-Robotic Processing Automation Digitalization Enablement Platform Release 3 941-X	This project leverages digital processing of Form 941X, *Adjusted Employer's Quarterly Federal Tax Return or Claim for Refund*, using Artificial Intelligence and Intelligent Document Processing to read scanned forms, extract data in usable format and distribute the data to downstream systems.
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Governance Efforts Should Be Accelerated To Ensure the
Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence

Evaluation No. IE-23-034 • Page 24

Project Name	Summary of Project
A6020(b) Combined Annual Wage Reporting Automation	This project automates processes to perfect potential cases that can be started in the Automated 6020(b) program.
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█████████████████████ ███████████	█████████████████████████ ████████████████████ ███.
Simulation of the Nation	This synthetic data engine generates synthetic data to represent a wide range of cases without copying federal tax information. It uses publicly available statistical data combined with AI and Machine Learning to generate simulated businesses and households with a variety of tax scenarios.
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Project Name	Summary of Project
Accounts Management Where's My Refund and Where's My Amended Return Voicebot	The Where's My Refund voicebot allows taxpayers to obtain the status of their refund and fact of filing information; initiate a refund trace, or re-issue their refund check for current year refunds. The Where's My Amended Return voicebot allows taxpayers to request the status of their amended return.
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Tax Exempt/Government Entity Exempt Organization Referral Model	This machine learning model will assist Tax Exempt/Government Entity Division with identifying and ranking referrals of exempt organizations that may be operating illegitimately.
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██████████████████	████████████████████████
RAAS-Return Integrity & Compliance Services Collaboration on Exam Disparity - Pilot Model Development	This project involves two pilot models that are being built for exam case selection to improve economic outcomes and reduce racial disparity in audits.

Project Name	Summary of Project
Automated Underreporter Voicebot	This voicebot will authenticate taxpayers using "shared secrets" and answer questions requiring account look ups and/or updates. It will give answers to provide confirmation that the IRS received their response, the current status of their case, and grant requests for additional time to respond if they are eligible.
Wage and Investments 1040 IVR Voicebot	This voicebot allows taxpayers to check on their individual tax information and could direct taxpayers to the appropriate customer service representative.
███████████████	██.
AI Powered Chatbot that Answers Cryptocurrency Questions	This internal natural language chatbot provides responses to inquiries about complex Bitcoin transactions.
Tax Disclosure Clustering Analysis	This internal project extracts text data from various tax disclosure documents and groups by disclosures based off similarity, which creates a hierarchical clustering for disclosures.
███████████	██.
███████████	██.
Automated Data Ingestion and Analysis	This machine learning project will provide financial analysis and lead generation by ingesting structured and semi-structured data, converting raw data into knowledge graphs, and performing advanced analytics, such as entity resolution, link predictions, and semantic mapping.
CX Analytics	This project will extract insights from data in the customer service domain to better understand service interactions and create new opportunities to improve customer experience.

Project Name	Summary of Project
███████████████	██.
SB/SE Insolvency and Specialty Collection Offer-In-Compromise Voicebot	This voicebot responds to general taxpayer inquiries regarding the Offer-In-Compromise Program or insolvency along with the option to route the call to live assistors during normal business hours.
AI Contract Document Toolbox	This project explores the use of generative AI to assist with contract document tasks such as drafting contract statements of work, reviewing contracts and supporting documents for completeness, consistency, and policy compliance, and reducing barriers for small businesses or new entrants to bid on Treasury contracts.
Vendor Risk Analytics	This project assesses contractor responsibility and whether a potential vendor would perform successfully.
National Research Program Redesign	This innovative active learning project provides a lower opportunity cost method of estimating a compliance baseline to support tax gap estimation, improper payments reporting, development and validation of workload identification and selection models, and inform policy analysis.
SB/SE Financial Relief Voicebot	This chatbot responds to general taxpayer inquiries regarding financial relief and includes options to route the call to a live assistor during normal business hours.

Appendix III

Management's Response to the Draft Report

DEPARTMENT OF THE TREASURY
INTERNAL REVENUE SERVICE
WASHINGTON, DC 20224

RESEARCH, APPLIED ANALYTICS
AND STATISTICS

October 15, 2024

MEMORANDUM FOR RUSSEL P. MARTIN
                        DEPUTY INSPECTOR GENERAL FOR INSPECTIONS AND
                        EVALUATIONS

FROM: Barry W. Johnson   Barry W. Johnson   Digitally signed by Barry W. Johnson
                                                                        Date: 2024.10.15 16:03:33 -04'00'
                Chief Data and Analytics Officer

SUBJECT: Draft Audit Report – Governance Efforts Should Be Accelerated
                         To Ensure the Safe, Secure, and Trustworthy Development and
                         Use of Artificial Intelligence (Evaluation # IE-23-034)

Thank you for the opportunity to review your draft report titled "Governance Efforts Should Be Accelerated To Ensure the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence".

Your report examined IRS' current and planned use of AI in tax administration. We appreciate your report's recognition of IRS accomplishments to date. The IRS strives to leverage opportunities from AI-based methods to improve IRS operations and overall tax administration. As you note, IRS use cases as of December 30, 2023 (reported to you February 2, 2024) totaled 68 projects, with 30 deployed and 38 in some phase of development. Our focus moving forward will continue to be on strategically employing AI to improve customer service, tax law enforcement, and operational efficiencies.

We appreciate your acknowledgement that the IRS is not solely focusing on internal uses of AI: "[a]s an agency that inherently engages with the public, the IRS is taking advantage of AI-related technology to benefit taxpayers in their interactions with the IRS." Our use of chatbots and voicebots described in the report illustrates the IRS's commitment to using AI to improve taxpayer access to information and services.

We also recognize and appreciate your caution that while AI provides a great opportunity, we "must be diligent in its use to ensure taxpayer rights are adequately protected." You emphasize that it is imperative that "the IRS accelerate implementation of governance and oversight structures to ensure accountability and responsible use of AI in the programs and processes it develops". We appreciate your acknowledgement of IRS progress, including establishing the Chief Data and Analytics Officer (CDAO) as the IRS'

Responsible AI Official whose responsibilities include monitoring and overseeing AI at the IRS; establishing the Data Security Executive Steering Committee as a key governance entity to ensure balance between data protection practices and beneficial uses of data, and to oversee data security and protection implications related to the IRS' enhanced use of advanced analytics and Artificial Intelligence (AI); and standing up the Enterprise Data and Analytics Governance Program Management Office within my organization, Research, Applied Analytics and Statistics.

As you describe in the report, we have created robust AI governance framework and processes. On March 15, 2024, the IRS Data and Analytics Strategic Integration Board voted to approve the proposed governance process and accept its role as the IRS' enterprise-level AI governance board. On April 2, 2024, the AI Assurance Team (AIAT) first met to start reviewing use cases, including classifying IRS use cases based on the OMB rights- and safety-impacting categorizations, and addressing baseline standards. As of August 28, 2024, the AIAT has met 13 times, reviewed more than 30 use cases, and made 29 consensus rights-impacting determinations. In addition, on May 20, 2024, the CDAO issued interim guidance in the Internal Revenue Manual, IRM 10.24.1 *"Artificial Intelligence (AI) Governance and Principles"*.

To enable the above processes, RAAS has submitted a request for organization change to ensure adequate resources to support policy and operational activities of AI governance. These resources will fill out the newly formed Deputy CDAO Enterprise Data and Analytics Services organization, which will have primary responsibility for enterprise-wide AI governance.

Your report correctly notes that many of the OMB Memorandum 24-10 directives apply at the Department level but require support from each bureau. The IRS will continue to work with Treasury's AI Governance Board and Chief AI Officer as part of the overall AI governance framework. In late August, IRS provided extensive comments to Treasury on its draft M-24-10 Compliance Plan, and we will make any needed changes to IRS governance once the Treasury requirements are finalized. Through the above governance framework and processes, and within the larger Treasury framework, the IRS will continue to execute and improve its governance to ensure the safe, secure, and trustworthy development and use of artificial intelligence.

We appreciate your review of IRS' compliance with executive order requirements and your review of our AI use case inventory reporting. As you note in your report, there were changes in our inventory across annual reporting cycles due to a number of factors, including "evolving guidance" from OMB on what to report and our evolving "efforts to interpret that guidance". It is also important to note that each annual inventory update represents the IRS' AI use cases at a particular point in time and reflects new projects added and existing pilot projects completed or ended since the last reporting period. This accounts for some of the year-to-year changes in our AI use case inventory noted in your report.

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Your report correctly highlights the additional challenge that "AI has a variety of definitions, even within the government, depending on the context and circumstances it is being used". Guidance from OMB and Treasury on how to define AI has evolved over time and contributed to changes in the IRS's official annual inventory and internal project tracking procedures, as highlighted in your report. Thank you for noting the challenges raised by "the newness of this technology and limited guidance [received] from a government-wide perspective".

The IRS is committed to transparently and accurately reporting its AI use case inventory in compliance with OMB and Treasury requirements in order to foster public trust in our responsible use of these methods. As requirements continue to evolve, the IRS will adapt its processes as needed to ensure we are fully compliant with public reporting expectations.

Finally, we appreciate your review of our restrictions on employee access to generative AI services and your acknowledgement of their general effectiveness. We also appreciate your recognition of our prompt responses to the two incidents identified over the course of your review and agree that continued diligence is required to mitigate the risks related to use of external generative AI services.

Thank you for the valuable feedback you have provided in assessing opportunities for further enhancing responsible use of AI at the IRS. We are committed to continuously improving IRS use of artificial intelligence in a trustworthy and responsible manner. The continued support, assistance, and guidance your team provides is very valuable to us. Our corrective action plan for the recommendations is attached. If you have any questions, please contact me at (202) 803-9794 or a member of your staff may contact Reza Rashidi at (703) 832-1588.

TIGTA IE-23-034

Attachment

RECOMMENDATION #1:
The Chief Information Officer should continue to comply with Treasury's preliminary guidance on generative AI by identifying accesses to external domains and Internet platforms from traffic logs and updating rulesets to restrict further access to these sites so the IRS is not inadvertently revealing sensitive and non-public information outside of the IRS.

CORRECTIVE ACTION:
The IRS agrees with this recommendation. The Chief Information Officer will issue guidance requiring that IRS Cybersecurity regularly review traffic logs to identify accesses to generative AI services and adopt rulesets to restrict access where necessary.

IMPLEMENTATION DATE:
4/15/2025

RESPONSIBLE OFFICIAL:
Chief Information Officer

RECOMMENDATION #2:
The Chief Data and Analytics Officer should accelerate standing up the new governance structure and processes to ensure the safe, secure, and trustworthy development and use of artificial intelligence.

CORRECTIVE ACTION:
The IRS agrees with this recommendation. The Chief Data and Analytics Officer, with support from the Data and Analytics Strategic Integration Board and other stakeholders, will continue to improve the framework by taking the following steps: (1) hire additional IRS employees to support the governance functions; (2) execute organizational changes based on the final approval of the Request for Organizational Change; (3) refine the processes and procedures for the IRS Enterprise-Level AI Governance Board approval based on lessons learned from the initial phase of use case approvals in Calendar Year 2024 and update the IRM 10.24.1 as needed.

IMPLEMENTATION DATE:
9/30/2025

RESPONSIBLE OFFICIAL:
Chief Data and Analytics Officer

Appendix IV

Glossary of Terms

Term	Definition
Generative AI	The class of AI models that emulate the structure and characteristics of input data to generate derived synthetic content.
Intelligent Document Processing	A workflow automation technology that scans, reads, extracts, categorizes, and organizes meaningful information into accessible formats from large streams of data.
Machine learning	A set of techniques that can be used to train AI algorithms to improve performance at a task based on data.
Natural Language Processing	A branch of artificial intelligence that deals with analyzing, understanding, and generating the languages that humans use naturally to interface with computers in both written and spoken contexts using natural human languages instead of computer languages.
Neural Networks	A type of artificial intelligence modeled on the brain. There are nodes or artificial neurons that are each responsible for a simple computation. These nodes are networked together with connections of varying strengths, and learning is reflected in changes to those connections.

Appendix V

Abbreviations

AI	Artificial Intelligence
CSIRC	Computer Security Incident Response Center
FAQ	Frequently Asked Question
GAO	Government Accountability Office
IRS	Internal Revenue Service
IVR	Interactive Voice Response
OMB	Office of Management and Budget
RAAS	Research, Applied Analytics and Statistics
SB/SE	Small Business/Self-Employed
TIGTA	Treasury Inspector General for Tax Administration

**To report fraud, waste, or abuse,
contact our hotline on the web at
https://www.tigta.gov/reportcrime-misconduct.**

**To make suggestions to improve IRS policies, processes, or systems
affecting taxpayers, contact us at www.tigta.gov/form/suggestions.**

Information you provide is confidential, and you may remain anonymous.