United States Government Accountability Office

Report to Congressional Committees

April 2014

INFORMATION TECHNOLOGY

IRS Needs to Improve the Reliability and Transparency of Reported Investment Information

GAO-14-298

April 2014

GAO Highlights

Highlights of GAO-14-298, a report to congressional committees

INFORMATION TECHNOLOGY

IRS Needs to Improve the Reliability and Transparency of Reported Investment Information

Why GAO Did This Study

IRS relies extensively on IT systems to annually collect more than $2 trillion in taxes, distribute more than $300 billion in refunds, and carry out its mission of providing service to America's taxpayers in meeting their tax obligations. For fiscal year 2014, the agency's budget request is $2.6 billion for IT. Given the size and significance of IRS's IT investments, and the challenges inherent in successfully delivering these complex IT systems, it is important that Congress be provided reliable cost, schedule, and scope information to assist with its oversight responsibilities.

Accordingly, GAO's objectives were to (1) summarize the reported cost and schedule performance for IRS's major IT investments and assess the reporting of the performance information (2) for selected investments, evaluate the reliability of reported cost and schedule variances; and (3) determine IRS's progress in implementing a quantitative measure of functionality delivered for projects. To address these objectives, GAO reviewed documentation, including monthly cost and schedule variance reports, and interviewed staff, including those from selected investments which are critical to IRS's mission.

What GAO Recommends

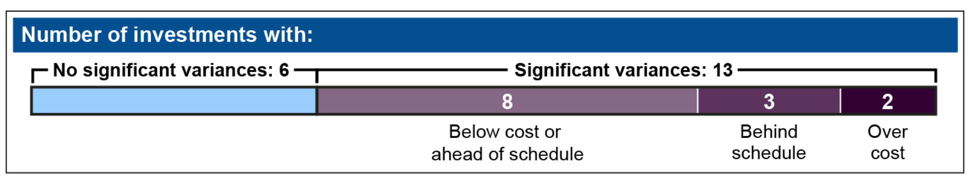
GAO is making recommendations for IRS to report more comprehensive and reliable cost and schedule information and improve the transparency of reported scope information for its major investments. IRS agreed with GAO's recommendations and stated it believed it had addressed one of them. GAO continues to believe further actions are needed.

View GAO-14-298. For more information, contact David A. Powner at (202) 512-9286 or pownerd@gao.gov.

What GAO Found

According to the Internal Revenue Service (IRS), 6 of its19 major information technology (IT) investments were within 10 percent of cost and schedule estimates during fiscal year 2013. The remaining 13 were reported as having significant cost and schedule variances for at least 1 month of the year. Specifically, IRS reported 8 investments as being below cost or ahead of schedule; 3 as behind schedule; and 2 as over cost (see figure). IRS reported a range of reasons for these variances, including cost savings from contract negotiations and scope deferrals for those below cost or ahead of schedule, and procurement delays for those behind schedule. It is important to note that the reported monthly cost and schedule variances are for the fiscal year only. IRS's reporting would be more meaningful if it were supplemented with cumulative cost and schedule variances for the investments or investment segments, consistent with the Office of Management and Budget's guidance for measuring progress towards meeting investment goals.

Summary of Investments with Significant Variances



Source: GAO analysis of IRS data.

The reported variances for six investments reviewed were not always reliable because the projected and actual cost and schedule amounts on which they depend were not consistently updated in accordance with OMB and Treasury reporting requirements. Specifically, projected amounts were not always updated on a monthly basis for in-process (i.e., ongoing) activities for a range of reasons; and actual information was not consistently updated for completed activities within the 60-day time frame required by Treasury guidance. Addressing these issues would help IRS improve the reliability of reported information and provide Congress with a more accurate report of the agency's performance in meeting cost and schedule goals.

IRS is currently not working on developing a quantitative measure of scope (i.e., functionality) as GAO recommended in June 2012 and does not plan on doing so, because it believes it is difficult to develop a single measure that would allow it to measure progress in delivering scope for the range of IRS's investments. However, the agency could develop measures using different methods as appropriate. In addition, IRS has started to include scope performance (in the functional performance section) in its quarterly reporting to Congress. However, this information does not include a quantitative measure of performance. In addition, it does not show how delivered scope compares to what was planned. Providing transparency into progress in delivering scope by reporting qualitatively in the congressional reports until a quantitative measure is developed would help IRS provide Congress a complete picture of the agency's performance in managing its major investments.

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Abbreviations

ACA	IRS Affordable Care Act
CADE	Customer Account Data Engine
CIO	Chief Information Officer
IMF	Individual Master File
IRDM	Information Reporting and Document Matching
IRS	Internal Revenue Service
IT	information technology
MeF	Modernized e-File
OMB	Office of Management and Budget
RRP	Return Review Program
TIGTA	Treasury Inspector General for Tax Administration
Treasury	Department of Treasury

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April 2, 2014

Congressional Committees

The Internal Revenue Service (IRS) relies extensively on information technology (IT) systems to annually collect more than $2 trillion in taxes, distribute more than $300 billion in refunds, and carry out its mission of providing service to America's taxpayers in meeting their tax obligations. For fiscal year 2014, the agency's budget request is $2.6 billion for IT, about 20 percent of IRS's total budget request for the year.

Given the size and significance of IRS's IT investments, and the challenges inherent in successfully delivery these complex IT systems, it is important that Congress be provided ongoing, accurate, and objective information on the progress toward completion and the risks facing these projects. Accordingly, the Conference Report accompanying the Consolidated Appropriations Act, 2012 and the Consolidated and Further Continuing Appropriations Act, 2013 mandated GAO to review the cost and schedule performance of IRS's major IT investments.[1] Specifically, our objectives were to (1) summarize the reported cost and schedule performance for IRS's major IT investments and assess the reporting of the performance information;[2] (2) for selected investments, evaluate the

[1] H.R. Rep. No. 112-331, at 901 (2011) (Conf. Rep.); Consolidated Appropriations Act, 2012, Pub. L. No. 112-74, 125 Stat. 786, 884, div. C, title I (2011); and Consolidated and Further Continuing Appropriations Act, 2013, Pub. L. No. 113-6, 127 Stat. 198, 412, Div. F, title I (2013).

[2] At the time of the mandate, Affordable Care Act, which refers to IRS's IT efforts to implement selected provisions of the Patient Protection and Affordable Care Act, Pub. L. No. 111-148, 124 Stat. 119 (2010), as amended by the Health Care and Education Reconciliation Act of 2010, Pub. L. No. 111-152, 124 Stat. 1029 (2010) was not classified as a major investment because IRS reportedly did not have time to prepare the documentation required to classify it as such for fiscal year 2013. We nevertheless included it in our review due to its criticality to IRS's mission and expected costs. Also, at the start of fiscal year 2014, IRS started reporting on it as a major investment. In this report, we are not evaluating the healthcare.gov initiative headed by the Centers for Medicare and Medicaid Services.

reliability of reported cost and schedule variances;[3,4] and (3) determine IRS's progress in implementing a quantitative measure of functionality delivered for projects.

To address our first objective, we obtained and analyzed monthly cost and schedule variances for IRS's major IT investments from October 2012 to September 2013, as reported by IRS. Additionally, we identified significant cost and schedule variances—those variances that were 10 percent greater or less than planned cost and schedule goals.

For our second objective, we analyzed monthly cost and schedule variance reports to determine whether they reflected monthly updates for both in-process and completed activities. We also interviewed relevant IRS officials to determine IRS's progress in addressing our recent recommendation to establish guidance for determining projected cost and schedule amounts—which are critical to calculating variances—in accordance with best practices.

To address our third objective, we followed up with IRS officials to determine what progress had been made in putting in place a quantitative measure of functionality delivered as we had previously recommended.[5] When we learned IRS had not addressed our recommendation and was not planning on doing so, we followed up on the causes and, for each of the investments in our selection, identified the qualitative methods IRS stated it was using to manage scope.

[3]The selected investments for this review are: Customer Account Data Engine (CADE) 2; Modernized e-File (MeF); IRS.gov—which is comprised of the Public User Portal, Registered User Portal, and Employee User Portal—Return Review Program (RRP); Information Reporting and Document Matching (IRDM); e-services; and ACA. We performed a detailed analysis of the cost and schedule performance for these seven investments in our April 2013 review of IRS's major investments summarized in GAO, *IRS 2013 Budget: Continuing to Improve Information on Program Costs and Results Could Aid in Resource Decision Making,* GAO-12-603 (Washington, D.C.: June 8, 2012). We selected them again for this review because (1) we identified reliability issues in our prior review that we wanted to follow up on, and (2) these investments are still critical to IRS's mission.

[4]Variances measure differences between estimated cost and schedule goals and actual or projected cost and schedule at one point in time. As such, variances provide indicators of performance or progress in meeting goals.

[5]GAO-12-603.

We conducted this performance audit from June 2013 to April 2014 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. Details on our objectives, scope, and methodology can be found in appendix I.

Background

The mission of IRS, a bureau within the Department of the Treasury (Treasury), is to provide America's taxpayers top quality service by helping them understand and meet their tax responsibilities and by applying the federal tax laws with integrity and fairness to all. In carrying out its mission, IRS annually collects over $2 trillion in taxes from millions of individual taxpayers and numerous other types of taxpayers and manages the distribution of over $300 billion in refunds. To guide its future direction, the agency has two strategic goals: (1) improve taxpayer service to make voluntary compliance easier and (2) enforce the law to ensure everyone meets their obligations to pay taxes.

IRS is organized into four primary operating divisions to meet the needs of specific taxpayer segments.

- The Wage and Investment Division services individual taxpayers and provides the information, support, and assistance these taxpayers need to fulfill their tax obligations.
- The Small Business and Self-Employed Division services all fully or partially self-employed individuals and corporations and partnerships with assets of $10 million or less.
- The Large Business and International Division services corporations and partnerships with assets greater than $10 million.
- The Tax Exempt and Government Entities Division services a large and unique economic sector of organizations, which include pension plans, exempt organizations, governmental entities, and tax-exempt bond issuers.

IRS's Information Technology organization is responsible for delivering IT services and solutions to support tax administration as well as the operations of the broader organization. Information Technology is headed by the Chief Technology Officer who reports to the Deputy Commissioner for Operations Support.[6] It includes nine subordinate offices; among those are:

- The Associate CIO for Applications Development builds, tests, delivers, and maintains integrated information application systems that will support modernized systems and the production environment. It is the development organization for systems that manage taxpayer accounts from the initial filing of a tax return, interactions with the taxpayers, and potential audit and collection activities. It also provides enterprisewide administrative systems related to workforce support, human capital, financial, and facilities. Application Development is responsible for two of the seven programs we selected for detailed analysis in our review.

- The Associate CIO for Enterprise Operations is responsible for supporting the mainframe and server environment by providing efficient, cost-effective, secure and reliable server and mainframe services for all IRS business entities and taxpayers. It also is responsible for financial management, human resources, training support and general business administration, developing an enterprisewide development and test environment and establishing security management. The Associate CIO is responsible for one of the seven programs we selected for detailed analysis in our review.

- The Associate CIO for Strategy and Planning is to facilitate the alignment of IT and business. This is to be done through strategic planning and financial management practices that offer transparency of overall IT demand, supply, and the value of IT investments. This office includes a suboffice that is responsible for optimizing the efficiency and effectiveness of the IT portfolio through fiscally sound portfolio management processes. The office also serves as the primary interface with Treasury's capital planning and investment control organizations to coordinate actions including baseline change requests, budget formulation documents, and IT Dashboard reporting.

- The Associate CIO for Enterprise IT Program Management Office is responsible for the delivery of integrated solutions for several of IRS's large-scale programs. It plays a key role in establishing change, configuration, and release plans and implementing new information

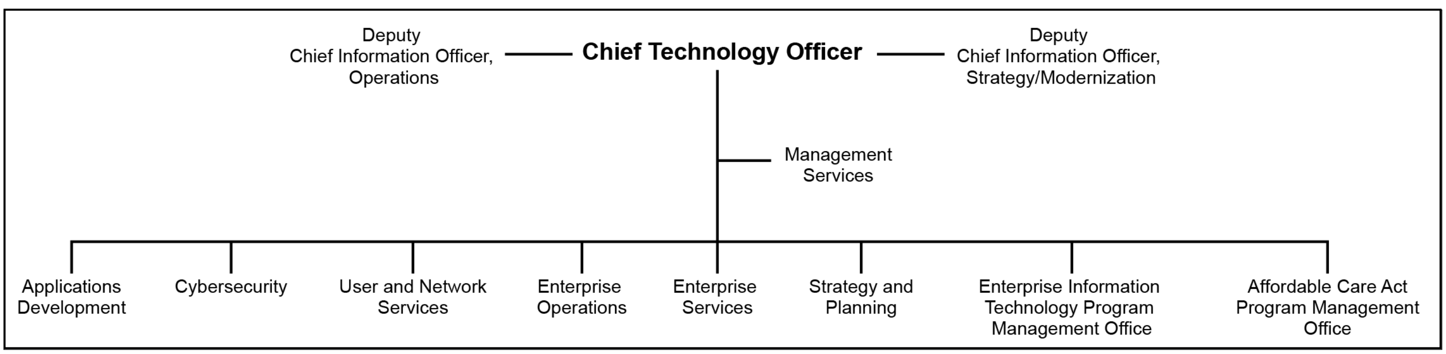
[6] IRS's Chief Technology Officer also acts as the agency's Chief Information Officer.

system functional capabilities. This Associate CIO is responsible for three of the seven programs we selected for detailed analysis in our review.

- The Associate Chief Information Officer (CIO) for the Affordable Care Act Program Management Office is responsible for setting the overall direction, providing day-to-day management and oversight and delivery of IRS IT's contribution for implementing provisions of the Patient Protection and Affordable Care Act. This Associate CIO is responsible for one of the seven programs we selected for detailed analysis in our review.

Figure 1 shows the structure of IRS's Information Technology organization.

Figure 1: IRS's Information Technology Organization



Source: IRS.

IRS Relies on IT to Carry Out Its Mission

IT plays a critical role in enabling IRS to carry out its mission and responsibilities. For example, the agency relies on information systems to process tax returns, account for tax revenues collected, send bills for taxes owed, issue refunds, assist in the selection of tax returns for audit, and provide telecommunications services for all business activities, including the public's toll-free access to tax information.

For fiscal year 2014, IRS requested about $2.6 billion for IT investments. This included about $1.8 billion, about 69 percent, of the total amount for 19 major investments, and about $800 million, or 31 percent, of the total amount for 130 non-major investments. For IRS, a major investment is one that costs $10 million in either current year or budget year, or $50 million over the 5-year period extending from the prior year through the budget year +2. The following table provides a list of the 19 investments and their descriptions.

Table 1: IRS's Major Investments and Their Descriptions

Investment	Description
Account Management Services	Enhances customer support by providing applications that enable IRS employees to access, validate, and update individual taxpayer accounts on demand.
Affordable Care Act[a]	Encompasses the planning, development, and implementation of IT systems needed to support IRS's tax administration responsibilities associated with certain provisions of the Affordable Care Act. Initiatives that have already been deployed include the initial release of the Branded Prescription Drug Industry Fee project and an effort intended to provide a secure connection between IRS and the Department of Health and Human Services/Centers for Medicare and Medicaid Services to support health insurance exchange open enrollment for the Fall of 2013. Future capabilities to be provided include performing at-filing checks of tax returns for reporting a premium tax credit, leveraging third-party data from the Insurance Marketplaces, and pre-refund compliance activities related to healthcare credits claimed by citizens.
Customer Account Data Engine (CADE) 2	Is IRS's new program for processing individual taxpayer returns that is intended to eventually replace the Individual Master File (IMF).The initial phase, which IRS began using in January 2012, modified the IMF processing cycle to allow for daily (rather than weekly) processing and posting of taxpayer returns and established the database that will serve as the authoritative source for all individual taxpayer data. In the second phase, which is still in the early planning stages, IRS expects, among other things, to (1) rewrite applications so they can directly access and update the database, and (2) ensure compliance with Federal Financial System Requirements.
Electronic Fraud Detection System	Intended to detect fraud at the time tax returns are filed in order to eliminate the issuance of fraudulent tax refunds.
e-Services	Comprises several web-based self-assisted services that are intended to allow authorized individuals to do business with IRS electronically.
Foreign Account Tax Compliance Act	Intended to implement provisions of the Foreign Account Tax Compliance Act regarding financial institutions reporting to IRS information about financial accounts held by U.S. taxpayers, or foreign entities in which U.S. taxpayers hold a substantial ownership interest.
Return Review Program (expected to replace Electronic Fraud Detection System)	Currently under development, is intended to maximize fraud detection at the time that tax returns are filed to eliminate issuance of questionable refunds. IRS expects to begin phasing this system in starting in filing season 2014.
Individual Master File (IMF)	Represents the authoritative data source for individual tax account data. All other IRS information systems that process IMF data depend on output from this source. This investment is a critical component of IRS's ability to process tax returns.
Information Reporting and Document Matching (IRDM)	Intended to establish a new business information matching program in order to increase voluntary compliance and accurate income reporting.
Integrated Customer Communication Environment	Includes several projects that are intended to simplify voluntary compliance using voice response, Internet, and other computer technology such as the Modernized Internet Employee Identification Number, which allows third parties to act on the behalf of taxpayers.

Investment	Description
Integrated Data Retrieval System	Intended to provide systemic review, improve consistency in case control, alleviate staffing needs, issue notices to taxpayers, and allow taxpayers to see status of refunds. It is a mission-critical system used by 60,000 IRS employees.
Integrated Financial System/CORE Financial System	Used by IRS for budget, payroll, accounts payable/receivable, general ledger functions, and financial reporting; also used to report on the cost of operations and to manage budgets by fiscal year.
Integrated Submission and Remittance Processing System	Processes paper tax returns, and updates tax forms to comply with tax law changes.
IRS End User Systems and Services	Supports products and services necessary for daily functions for over 100,000 IRS employees at headquarters and field sites.
IRS Main Frames and Servers Services and Support	Intends to support the design, development, and deployment of server storage infrastructures, software, databases, and operating systems.
IRS Telecommunications Systems and Support	Supports IRS's broad and local network infrastructure such as servers, and switches for voice, data, and video servicing of about 1,000 IRS sites.
IRS.gov – Portal Environment	Provides web-based services such as tax filing and refund tracking, to internal and external users, such as IRS employees and other government agencies, taxpayers, and business partners.
Modernized e-File (MeF)	Designed to provide a secure web-based platform for electronic tax filing of individual and business tax and information returns by registered Electronic Return Originators.
Service Center Recognition/Image Processing System (SCRIPS)	Used as a data capture, management, and image storage system using high-speed scanning and digital imaging to convert data from the 940, 941, K-1, and paper returns from Information Returns Processing, into electronic format.

Source: GAO analysis of IRS data.

[a]Although IRS did not include ACA as a major IT investment in its fiscal year 2014 budget request because it reportedly did not have time to prepare the required information, the agency started publicly reporting on the investment as a major investment for fiscal year 2014 (in November 2013). In addition, officials told us of their plans to classify it as a major investment in the fiscal year 2015 budget request.

GAO and the Treasury Inspector General for Tax Administration Have Previously Reported on IRS's Key Major IT Investments

GAO and the Treasury Inspector General for Tax Administration (TIGTA) have previously reported on IRS's ongoing effort to modernize its tax administration and internal management systems, the agency's investment management process and key major investments—CADE 2, IRDM, and ACA.

- Regarding investment management, in July 2011 we found that IRS had established most of the foundational practices needed to effectively manage its IT investments by executing 30 of the 38 key practices identified by the information technology investment management framework, including all of those needed for effective project oversight.[7]

- Further, we reported in October 2011 that CADE 2 was one of seven investments considered to be successfully acquired in that it best achieved its respective cost, schedule, scope, and performance goals. Officials cited active engagement with program stakeholders as a critical factor to the success of those investments and, overall nine common factors that were critical to the success of major IT investments were identified.[8]

- We reported in April 2013 that the majority of IRS's major IT investments were reportedly within 10 percent of cost and schedule estimates and 8 major IT investments reported significant cost and/or schedule variance. We also reported that weaknesses existed, to varying degrees, in the reliability of reported cost and schedule variances; and key risks and mitigation strategies were identified.[9] As result, we made recommendations for IRS to improve the reliability of reported cost and schedule information by addressing the identified weaknesses in future updates of estimates. We also recommended that IRS ensure projects consistently follow guidance for updating performance information 60 days after completion of an activity and develop and implement guidance that specifies best practices to consider when determining projected amounts. IRS agreed with three of our four recommendations and partially disagreed with the fourth recommendation related to guidance on projecting cost and schedule amounts. The agency specifically disagreed with the use of earned value management data as a best practice to determine projected cost and schedule amounts, stating that the technique is not part of IRS's current program management processes and the cost and burden to use it outweighs the value added. While we disagreed with IRS's view of earned value management because best practices have

[7]GAO, *Investment Management: IRS Has a Strong Oversight Process but Needs to Improve How It Continues Funding Ongoing Investments*, GAO-11-587 (Washington, D.C.: July 20, 2011).

[8]GAO, *Information Technology: Critical Factors Underlying Successful Major Acquisitions*, GAO-12-7 (Washington, D.C.: Oct. 21, 2011).

[9]GAO, *Information Technology: Consistently Applying Best Practices Could Help IRS Improve the Reliability of Reported Cost and Schedule Information*, GAO-13-401 (Washington, D.C.: Apr. 17, 2013).

found that the value generally outweighs the cost and burden of implementing it, we provided it as one of several examples of practices that could be used to determine projected amounts. We also noted that implementing our recommendation would help improve the reliability of report cost and schedule variance information, and that IRS had flexibility in determining which best practices to use to calculate projected amounts. For those reasons, we believed our recommendation was still warranted.

- In our September 2013 review, we reported that IRS had updated the ACA cost estimate we had reviewed in our June 2012 budget report and noted that it reflected best practices to a greater extent.[10] For example, the estimate reflected the full life-cycle cost of the program. However, we noted a few areas remained where IRS could continue to improve the reliability of the estimate. We will continue to monitor IRS's progress in revising this estimate.

- In September 2013, TIGTA reported that the CADE 2 database cross-functional triage team effectively managed and resolved more than 1,000 data defects.[11] However, TIGTA's review determined that the downstream system interfaces were not implemented due to data quality issues and revised the implementation date of these interfaces to January 2014, raising the estimated cost of transition state 1. Finally, the lack of security systems integration prevents transaction-level tracking of employee access to the database. As a result of these findings, TIGTA made recommendations aimed at improving the management of the CADE 2 program, including not exiting transition state 1 milestone 5 until interfaces with selected downstream systems are implemented into production; ensuring the CADE 2 database is accurate, complete, timely, and available; deploying the CADE 2 database as the transactional database architected for transition state 2 and the target state; and ensuring that user access to the CADE 2 database is traced at the transaction level by individual user's identification. IRS agreed to certify the database as accurate, complete, timely, and available but disagreed with the remaining three recommendations.

[10]GAO, *IRS 2014 Budget: Improvements Made to Budget Request and Cost Estimate, but Further Actions Needed*, GAO-13-835 (Washington, D.C.: Sept. 26, 2013).

[11]TIGTA, *Customer Account Data Engine 2 Database Deployment Is Experiencing Delays and Increased Costs*, 2013-20-125 (Sept. 23, 2013).

Most of IRS's 19 Major Investments Reportedly Within or Below Cost or Schedule Goals, but Reported Information Is Only for the Current Fiscal Year

According to IRS, 6 of 19 investments were within 10 percent of cost and schedule estimates during fiscal year 2013. The remaining 13 were reported as having significant cost and schedule variances for at least 1 month of the year. Specifically, IRS reported 8 investments as being below cost or ahead of schedule;[12] 3 as behind schedule; and 2 as over cost (see fig. 2). IRS reported a range of reasons for these significant variances, including cost savings from contract negotiations and scope deferrals for those below cost or ahead of schedule, and procurement delays for those behind schedule. Specifically, IRS reported that

- CADE 2, Integrated Financial System, Integrated Submission and Remittance Processing System, IRS.gov, Main Frames and Servers Services and Support, and RRP were within 10 percent of cost and schedule estimates.

- Account Management Services, Electronic Fraud Detection System, e-Services, Foreign Account Tax Compliance Act, Integrated Customer Communication Environment, IMF, IRDM, and Integrated Data Retrieval System were significantly below cost or ahead of schedule for reasons including early delivery of scope, redesign of releases, prematurely closing of an activity, and actual costs being lower than expected.

- End User Systems and Services and SCRIPS were reported as being behind schedule for reasons such as scope changes, and hardware and software procurement issues.

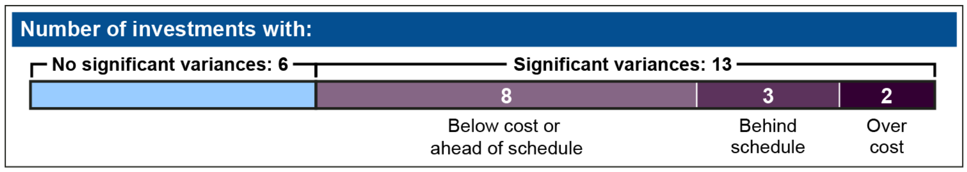
- MeF and ACA were reported as being significantly under cost and over cost at different times of the year, and Telecommunications Systems and Support was reported as being significantly under cost and behind schedule at different times during the year.

According to IRS officials, the significant variances experienced by its major investments had no impact on the delivery of expected benefits.

For a detailed list of reasons associated with the significant variances see appendix II. Figure 2 shows a summary of investments with significant cost and schedule variances.

[12] We are highlighting this group of investments because reasons for being below cost or ahead of schedule sometimes include scope changes or deferrals.

Figure 2: Summary of Investments with Significant Variances



Source: GAO analysis of IRS data.

It is important to note that the reported monthly cost and schedule variances are for the fiscal year only. IRS's reporting would be more meaningful for determining whether IRS is effectively managing its investments if it included cumulative cost and schedule variances for the investments or investment segments, consistent with OMB's guidance for measuring progress towards meeting investment goals. Specifically, OMB's fiscal year 2015 guidance on the planning, budgeting, acquisition, and management of IT capital assets instructs agencies to structure their efforts into "useful segments" (such as projects which accomplish a unique product or service with a defined start and end point and specific objectives that, when attained, signify completion), and to establish systems to measure progress towards these useful segments in terms of cost and schedule, among other things.[13]

IRS's monthly reports—and thus the quarterly reports to Congress that are derived from them—provide cost and schedule variance information for all investment projects and activities underway in any portion of the fiscal year.[14] However, this fiscal year focus does not provide cumulative cost and schedule information at the useful segment level because it does not account for activities that were completed in previous fiscal years. In addition, it does not provide a realistic representation of performance because it includes activities which are not scheduled to begin until later in the fiscal year and reports these activities as having

[13]Office of Management and Budget, *Guidance on Exhibits 53 and 300 – Information Technology and e-Government,* OMB Guide (July 1, 2013).

[14]Projects and activities underway during the fiscal year include those that started in a previous fiscal year and were not completed by the beginning of the current fiscal year; those that are scheduled to start and finish in the current fiscal year and budget year; and those scheduled to start in the current fiscal year and budget year that will not be completed until the following fiscal year.

zero cost and schedule variances.[15] For example, in the June 2013 monthly report, IRS reported a 5.07 percent cost underrun for RRP. The cost variance calculation included a zero variance for an activity that was not scheduled to start until the following month. The variance not including this activity would have been 6.06 percent.

Officials told us that the way the agency reports is consistent with Treasury guidance and OMB reporting requirements. Nonetheless, while IRS's reporting is aligned with the manner in which budgets are allocated, it does not provide a measure of progress towards the useful segments[16] which are associated with specific functionality as recommended in OMB guidance, and therefore does not fully capture IRS's performance in meeting overall project and investment level cost or schedule goals. Providing Congress with cost and schedule information at the useful segment level—in addition to the current fiscal year reporting—in the quarterly reports would provide a more meaningful gauge of whether the agency is effectively managing its investments.

Reported Cost and Schedule Information Not Always Reliable

Although OMB and Treasury require cost and schedule variances to be updated on a monthly basis using actual cost and schedule amounts or projected cost and schedule amounts when actual information is not available, the reported variances for six investments reviewed were not always reliable because the projected and actual cost and schedule amounts on which they depend were not consistently updated.[17] Specifically, projected amounts were not always updated on a monthly basis for in-process (i.e., ongoing) activities for a range of reasons, including apparent confusion among investment staff on what to report and instructions not to update information until baseline change requests have been approved; and actual information was not consistently updated for completed activities within the 60-day time frame required by Treasury guidance. Addressing these issues would help IRS improve the reliability

[15] Internally, IRS tracks cost and schedule performance at the activity level. Activities are rolled up into projects and related projects make up the investments.

[16] IRS's investments are typically structured by milestones or releases which are consistent with the definition of a useful segment.

[17] ACA was the seventh investment in our selection. We did not include it as part of this analysis because it did not report monthly to Treasury and OMB or quarterly to the congressional appropriations committees like the other major investments. Instead ACA prepared quarterly reports for internal review summarizing the investment's cost and schedule performance which we obtained and analyzed.

of reported information and provide Congress with a more accurate report of the agency's performance in meeting cost and schedule goals.

Cost and Schedule Variances for In-process Activities Are Not Consistently Reported

Cost and schedule variances, which OMB and Treasury require to be updated on a monthly basis, are determined by subtracting actual cost and schedule from planned amounts or using projected information if actual information is not available. In addition, as we previously reported, according to best practices, projected cost and schedule can be determined in a number of ways, including evaluating critical path (for projected schedule), using earned value management data, evaluating the performance of completed work and comparing it to the remaining budget, assessing commitment values for material needed to complete remaining work, and estimating future conditions.[18]

Although required, IRS's monthly reports for fiscal year 2013 showed that all six investments reviewed did not consistently include updated variances for in-process activities. For two of the six investments, staff told us they did not include variances for in-process activities for several reasons, including that activities are usually 6 months or less. However, OMB and Treasury's guidance do not provide exceptions for shorter periods of time such as 6 months or less. Staff for the remaining four investments told us they update cost and schedule variances on a monthly basis; however, our analysis of the reports we reviewed showed that they did not. This is partly due to an inconsistent understanding among investment staff of the information that was to be included in the monthly reporting—which the Strategy and Planning group responsible for overseeing monthly variance reporting also acknowledged.

Regarding the calculation of projected cost and schedule amounts, IRS has not yet updated its guidance to include best practices to consider as we recommended in April 2013.[19] According to officials, the agency has experienced delays in addressing the recommendation due to budget issues, staffing shortages, and the government shutdown. However, officials reported that they have begun evaluating practices and processes currently in use as inputs for standard, repeatable, best practices for determining cost and schedule projections but they did not specify a time frame for fully addressing our recommendation. Developing

[18] GAO-13-401.

[19] GAO-13-401.

and implementing the guidance will provide greater assurance that projected amounts, when reported, are determined consistent with best practices and therefore reliable.

Cost and Schedule Variances for Completed Activities Were Not Always Updated with Actual Information in a Timely Manner

Treasury's guidance states that investments have 60 days to report actual cost and schedule from the time an activity has been completed. According to the guidance, this requirement is one of several intended to ensure the accuracy of the monthly reporting data.

The quarterly reports submitted to the appropriations committees between December 2012 and September 2013 for performance between January 2013 and September 2013 show that, for the six investments featured in the reports, IRS updated investment cost and schedule variance information with actual amounts within the 60-day time frame required by Treasury in 78 percent of the cases, a slight improvement from last year. Specifically, four investments—e-Services; IRS.Gov; MeF; and RRP—updated all activities within the required time frame. However, most of the variances for CADE 2 activities were not updated in a timely manner. In addition variances for several IRDM activities were not updated on time. Table 2 identifies the number of activities which were updated within the 60-day window.

Table 2: Timeliness of Reporting Status of Activities

Investments and total number of activities	Number of activities completed or intended to be completed	Number of activities completed or intended to be completed that were updated within 60 days (percentage)
CADE 2 54	18	5 (28%)
e-Services 26	11	11 (100%)
IRDM 62	35	28 (80%)
IRS.Gov 29	10	10 (100%)
MeF 18	11	11 (100%)
RRP 20	8	8 (100%)

	Number of activities completed or intended to be completed	Number of activities completed or intended to be completed that were updated within 60 days (percentage)
Total (209)	**93**	**73 (78%)**

Source: GAO analysis of IRS documentation.

In April 2013, we reported on this issue and noted that, according to IRS officials, actual information is sometimes not updated within the 60-day time frame because of delays associated with approval through the governance process.[20] We stated that we believed 60 days to be a reasonable amount of time to provide information on the status of an activity that was expected to be completed and recommended that IRS take action to ensure projects consistently follow guidelines for updating performance information 60 days after completion of an activity. Staff from IRS's Strategy and Planning Office told us that, starting in fiscal year 2014, Treasury has addressed the timeliness issue for schedule calculations by having the monthly reporting system automatically calculate a variance based on the current date for any activity where the planned completion date has passed and investment staff have not provided an actual figure within 45 days of that projected date. We believe this is a positive step towards ensuring actual information is more consistently reported for completed activities within the required 60-day time frame and improving the reliability of their variances so they better reflect cost and schedule performance.

Ensuring the variances for completed activities are consistently updated with actual information within the 60-day time frame required by Treasury as we previously recommended would provide more reliable information on which to gauge IRS's performance in meeting cost and schedule goals.

[20] GAO-13-401.

IRS Has Yet to Develop a Quantitative Measure of Scope

According to OMB guidance,[21] in managing their IT investments, agencies must use a performance-based acquisition management system or earned value management system in which work progress is quantified to measure both what was spent to perform the work and what was scheduled to have been accomplished. Consistent with this concept, we previously reported that having a quantitative measure of scope is a good practice as it provides an objective measure of whether an investment delivered the functionality that was paid for, and, in June 2012,[22] we recommended that IRS develop such a measure for all its major investments. At that time, IRS agreed with our recommendation.

IRS is currently not working on developing a quantitative measure of scope and does not plan on doing so because it believes it is difficult to develop a single measure that would allow it to measure progress in delivering scope for the range of IRS's investments. In addition, IRS stated that its current scope reporting is adequate for its project management purposes. Finally, it has begun reporting on scope performance in its quarterly reports to the appropriations committees.

First, we believe IRS could develop quantitative measures using different methods as appropriate. For example, it could use earned value management, a technique which integrates the technical scope of work with schedule and cost elements for investment planning and control or it could leverage its requirements management processes to assign value to planned work. Second, while IRS has identified several processes for managing scope,[23] they are primarily used for internal management purposes. Finally, while to its credit, IRS has started to include scope performance (in the functional performance section) in its quarterly reporting to Congress, there are no quantitative measures of progress made. In addition, the descriptions provided do not show how delivered scope compares to what was planned.

Staff for four of the seven investments we reviewed said their investments have a fixed schedule (tied to the filing season) and they often revert to

[21]Office of Management and Budget, *Guidance on Exhibits 53 and 300 – Information Technology and e-Government,* OMB Guide (July 1, 2013).

[22]GAO-12-603.

[23]These processes include milestone exit reviews, stakeholder review and acceptance of deliverables, meetings with executives, and baseline change requests which, according to officials, must be approved by Treasury and OMB.

modifying scope to meet this constraint. These changes in scope—which staff stated are tracked internally—are often not apparent in reported cost and schedule variances, and underline the importance of reporting on progress in delivering scope. As an example, in April 2013, data assurance, performance tuning, and downstream systems work that was planned for CADE 2 Transition State 1 was put into a new release—Transition State 1 release 1.5—allowing IRS to "exit" Transition State 1 by the end of fiscal year 2012, in time for the filing season.

As previously mentioned, a quantitative measure of scope would provide an objective indicator of performance. Until such a measure is developed, being more transparent about progress in delivering scope by reporting qualitatively on how delivered scope compares to what was planned in the congressional reports would help IRS provide Congress a complete picture of its performance in managing its major investments—particularly in those cases where functionality is deferred.

Conclusions

For fiscal year, 2013, the cost and schedule performance for IRS' major IT investments was mixed, with six investments reported as being within 10 percent of cost and schedule goals throughout the year, eight reported as being significantly below cost or ahead of schedule—although in some cases, these are due to scope deferrals or poor estimating practices—and 5 behind schedule or over cost. While the current fiscal year focus of the reported information is aligned with the manner in which budgets are allocated, reporting cumulative information at the investment or major investment segment level—consistent with the delivery of functionality—would provide a better indicator of IRS's performance in meeting cost and schedule goals. However, the reported cost and schedule variance information is not always reliable and Congress therefore may not have the most accurate information to inform its decisions. Specifically, the variances for in-process and completed activities are not consistently updated due to, among other reasons, an inconsistent understanding of the information to be included in the monthly reports. IRS's unreliable reporting of cost and schedule variance information is further exacerbated by the fact that the agency has not yet developed a quantitative measure of scope that would help provide a complete picture of how IRS is managing its major investments.

Recommendations for Executive Action

To improve the reliability of reported cost and schedule variance information for major investments, we recommend that the Commissioner of IRS direct the Chief Technology Officer to take the following three actions:

- report cumulative investment and investment segment cost and schedule information in the quarterly reports to Congress, consistent with OMB requirements for measuring progress towards meeting goals;
- ensure that projected cost and schedule variances for in-process activities are updated monthly, for the six investments for which we reviewed monthly updates, consistent with OMB and Treasury reporting requirements, by ensuring investment staff have a consistent understanding of the information to be included in monthly reports; and
- until a quantitative measure of scope is developed, qualitatively report on how delivered scope compares to what was planned in its quarterly reports to Congress, for the seven investments for which we reviewed scope reporting.

While we did not review the monthly update process and scope reporting for all of IRS's major IT investments, the agency should extend the related recommendations we are making as appropriate to other investments that are featured in the quarterly reports to Congress.

Agency Comments and Our Evaluation

We obtained written comments on a draft of this report from IRS's Commissioner, which are reprinted in appendix V. In his written comments, the Commissioner stated that IRS agreed with our recommendations and recognizes the importance of consistent reporting to Congress on cost, schedule, and scope and will continue its effort to improve management of its investment process and values our support and guidance. He further stated IRS believed it had addressed our first recommendation to report cumulative investment and investment segment cost and schedule information in the quarterly reports to Congress as well as the recommendation we previously made to develop a quantitative measure of scope relating to our third recommendation. He added that the agency would provide a detailed corrective action plan addressing our second recommendation with its response to the final report.

Regarding the recommendation to report cumulative investment cost and schedule information, the Commissioner stated that cumulative life-cycle investment costs for each investment are included in the quarterly report to Congress. While the report includes cumulative costs, they are cumulative for the fiscal year, not for the investment or investment segment as we recommended and they therefore do not account for cost variances from prior fiscal years. As noted in this report, such reporting would be consistent with OMB guidance for measuring progress towards useful segments and provide a more meaningful gauge of whether the agency is effectively managing its investments.

Relating to the recommendation we previously made to develop a quantitative measure of progress in delivering scope, the Commissioner noted that the agency has practices and process in place to assess and report on the delivery of scope in conjunction with cost and schedule management. He cited the quarterly report to Congress which draws on the Exhibit 300 SharePoint Investment Knowledge Exchange data (i.e., the monthly variance information we reviewed) and the baseline change request process, which specifically addresses the changes that are occurring within investments, as examples illustrating the implementation of the recommendation. However, we do not believe that these actions address our recommendation. Specifically, our review of the monthly variance reports show they report cost and schedule variances, not scope information. In addition, while the baseline change request process may document changes in scope, it does not provide a quantitative measure of progress in delivering scope as recommended. Further, while IRS has started to include scope performance (in the functional performance section) in its quarterly reports to Congress, there are no quantitative measures of progress in delivering scope. Finally, as noted in our report, the qualitative information (i.e., descriptions) provided do not show how delivered scope compares to what was planned. For these reasons, we believe our prior recommendation to develop a quantitative measure of progress in delivering scope and our new recommendation to qualitatively report on how delivered scope compares to what was planned in its quarterly reports to Congress until such measure is developed are still warranted. IRS also provided us with technical comments, which we incorporated into this report as appropriate.

We are sending copies of this report to interested congressional committees and the Commissioner of IRS. This report will also be available at no charge on our website at http://www.gao.gov.

If you or your staffs have any questions on matters discussed in this report, please contact me at (202) 512-9286 or pownerd@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 major contributions to this report are listed in appendix VI.

David A. Powner
Director
Information Technology Management Issues

List of Committees

The Honorable Tom Udall
Chairman
The Honorable Mike Johanns
Ranking Member
Subcommittee on Financial Services and
General Government
Committee on Appropriations
United States Senate

The Honorable Ander Crenshaw
Chairman
The Honorable Jose E. Serrano
Ranking Member
Subcommittee on Financial Services and
General Government
Committee on Appropriations
House of Representatives

Appendix I: Objectives, Scope, and Methodology

Our objectives were to (1) summarize the reported cost and schedule performance for IRS's major information technology (IT) investments and assess the reporting of the performance information; (2) for selected investments, evaluate the reliability of reported cost and schedule variances; and (3) determine IRS's progress in implementing a quantitative measure of functionality delivered for projects.

To address the first objective, we obtained and analyzed monthly cost and schedule variance data for IRS's major IT investments for October 2012 through September 2013. The variance data provided were from the Department of Treasury's (Treasury) monthly variance reporting tool which the department uses for internal oversight and external reporting purposes. We identified the investments with reported variances of 10 percent or more from estimates as having significant variances and determined the number of months they reported significant variances. For these investments, we obtained the reason for the significant variances from the information reported by Treasury on OMB's IT Dashboard (in Treasury's Chief Information Officer comments) and followed up with IRS for clarification as needed. Because the Affordable Care Act (ACA) investment was not reporting monthly cost and schedule variances in Treasury's reporting tool, we requested and analyzed the quarterly project management reports summarizing the investment's cost and schedule performance. We also identified OMB reporting requirements for measuring progress towards useful segments and analyzed IRS's monthly cost and schedule variance reports and the quarterly reports to Congress that are derived from them against these requirements.

For our second objective, we selected seven investments: Customer Account Data Engine (CADE) 2; Modernized e-File (MeF); IRS.gov—which is comprised of the Public User Portal, Registered User Portal, and Employee User Portal—Return Review Program (RRP); Information Reporting and Document Matching (IRDM); e-services; and ACA. We performed a detailed analysis of the cost and schedule performance for these seven investments in our April 2013 review of IRS's major investments summarized in our prior report.[1] We selected them again for this review because (1) we identified reliability issues in the April 2013 review that we wanted to follow up on, and (2) these investments are still critical to IRS's mission. As noted earlier, while ACA is not classified as major investment in fiscal year 2013, we included it in our selection

[1]GAO-13-401.

because of its criticality to IRS's mission and expected costs. In addition, IRS began reporting on it as a major investment in fiscal year 2014.

We identified how each of the six investments in our selection which reported monthly cost and schedule variances during fiscal year 2013 calculated projected amounts.[2] We interviewed IRS officials responsible for performing these calculations. We also determined the extent to which these variances were included in the monthly reports by reviewing monthly variance reports from October 2012 through September 2013. In addition, to determine, for these investments, the extent to which the IRS included variance data for completed activities in its external reporting within the 60-day time frame specified in Treasury guidance, we analyzed the four quarterly reports on the performance of IT investments submitted by IRS to the appropriations committees and GAO between December 2012 and September 2013. Further, we identified all the activities included in the variance calculations by analyzing monthly variance reports and supplementing our analyses with interviews of IRS officials cognizant of the manner in which IRS reports these variance data to Treasury, including the Acting Manager of the IRS's Strategy and Planning group which has oversight responsibility for this reporting. We recently reported that IRS did not have guidance from Treasury for calculating the variances associated with in-process activities. As such, we did not perform a qualitative assessment of the investments' process for calculating cost and schedule variances.[3]

To address our third objective, we interviewed IRS officials to determine what progress the agency had made in developing a quantitative measure of progress in delivering scope as we recommended in June 2012.[4] When we learned IRS had not addressed our recommendation, we followed up on the causes, and, for each of the investments in our selection, identified the qualitative methods IRS said it was using instead. We also analyzed the "functional performance" information IRS has begun to include in its quarterly reports to the congressional committees

[2]ACA was the seventh investment in our selection. We did not include it as part of this analysis because it did not report monthly to Treasury and OMB or quarterly to the congressional appropriations committees like the other major investments.

[3]GAO-13-401.

[4]GAO, *IRS 2013 Budget: Continuing to Improve Information on Program Costs and Results Could Aid in Resource Decision Making,* GAO-12-603 (Washington, D.C.: June 8, 2012).

and GAO to determine the extent to which it completely and clearly describes how delivered scope compares to what was planned.

We conducted this performance audit from June 2013 to April 2014 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: Reasons for Significant Variances

In the Treasury Chief Information Officer's comments on the federal IT dashboard, IRS provided the specific reasons why its investments experienced significant cost and schedule variances.

For investments that were significantly below cost or ahead of schedule, the agency reported that:

- Account Management Services experienced a cost underrun in October 2012 due to an over-estimation of a task order.
- Electronic Fraud Detection System experienced cost underruns from February 2013 to September 2013. The underruns noted were due to (1) scope being moved to a future release, (2) cost savings from contract negotiations, (3) unrealized staffing gains, (4) early delivering of business functional changes for filing season 2013, (5) premature closure of an activity, and (6) actual amount being less than projected amount. The investment submitted, and received approval for, two baseline change requests during this period in order to correct completion cost and metric description and to align planned and projected costs and schedule for filing season 2014 work. The investment experienced schedule underruns from November 2012 to January 2013. The variances noted were due to (1) early delivery of enhancements for filing season 2013 and (2) late delivery of Record Layouts for Electronic Filing System.
- e-Services experienced cost underruns in October 2012 and again from June 2013 through September 2013. The variances noted were due to (1) early delivery of mid-year changes, (2) fewer changes required from previous years, (3) lower than expected defect resolution time, (4) lower than expected system acceptance test tickets, and (5) IRS staff incorrectly charging time.
- Foreign Account Tax Compliance Act experienced cost underruns from January 2013 to September 2013. The variances noted were due to (1) significant scope changes for release 1, (2) a redesign in release 1.1 that did not require as much hardware be purchased because investment was able to leverage existing hardware, and (3) an overspend on release 1.1, drop 1. A baseline change request was approved in February 2013
- Integrated Customer Communication Environment experienced cost underruns in October 2012 and from June 2013 to September 2013. The variances noted were due to (1) high original estimates for the Federal Student Aid activity that over-estimated the complexity of the

development work and (2) contractor over-estimates of development costs.

- IMF experienced a cost underrun in October 2012. The variance noted was due to resource contention—staff were pulled off of IMF to work on CADE 2 development and testing.

- IRDM experienced cost underruns from April 2013 to September 2013. The variances noted were due to, among other things, (1) delivery partner services costing less than planned because of a delay in the contract award being utilized and (2) costs were less than planned because resources were reduced on the Business Master File Analytics project and utilized on the Case Inventory Selection and Analytics project.

- Integrated Data Retrieval System experienced a cost underrun in September 2013. The variance noted was due to actual labor costs being lower than planned due in part to retirements, attrition, and the government-wide pay freeze.

For investments that were significantly behind schedule, the Treasury Chief Information Officer's comments on the federal IT dashboard identified the following reasons:

- End User Systems and Services experienced a schedule overrun in October 2012. The variance noted was due to several factors: (1) scope changes and new funding and resource requirements; (2) a schedule change for site assessments; and (3) the need for an additional site walk through.

- SCRIPS experienced a schedule overrun from February 2013 to April 2013 because the Technical Refresh project was delayed due to issues with the procurement of the required and approved hardware and software. A baseline change request was submitted and approved in April 2013.

For ACA, MeF, and TSS, IRS reported the following reasons:

- ACA experienced a cost overrun for the last quarter of fiscal year. The overrun noted was due to a timing difference between planned obligations and actual contract award dates. ACA also experienced cost underruns throughout the first three quarters of the fiscal year. The underruns noted were due to (1) delays in contract awards, (2) re-evaluation of the needs for technical contractor support, and (3) underrun in IRS labor because of slower than expected hiring due to sequestration.

- MeF experienced a cost overrun in October 2012. The variance noted was due to a delay in the roll out of new forms and added performance tuning stabilization and monitoring into the production system; and baseline change request submitted. Additionally, MeF experienced cost underruns from May 2013 to June 2013 and from August 2013 to September 2013. The variances noted were due to (1) the under-budget cost as the result of significantly lower infrastructure costs than originally anticipated and the decoupling of XML enhancement work, (2) lower infrastructure costs, (3) removal of scope, and (4) fewer than anticipated change requests received from business partners.

- Telecommunications Systems and Support experienced schedule overruns from November 2012 through September 2013. The variances noted were due to (1) delays associated with two projects—Video Conferencing and Enterprise Electronic Fax and Networks Convergence, (2) construction delays associated with Hurricane Sandy, and (3) delays associated with the phone carrier providing toll free numbers. A baseline change request was submitted to address the schedule variance. The investment also experienced cost underruns from July 2013 to September 2013. The variances noted were due to (1) changes in project scope, (2) projected costs being incorrectly reported, and (3) a reduction in planned spending. A baseline change request was submitted to correct projected cost figures.

Appendix III: Investment Variances Reported by IRS from October 2012 to September 2013

The following table shows significant cost and schedule variances reported monthly for IRS's major investments from October 2012 to September 2013.

Table 3: Variances for IRS' Major IT Investments from October 2012 to September 2013

<table>
<tr><th></th><th></th><th colspan="12">Fiscal year 2013</th></tr>
<tr><th></th><th></th><th>Oct-12</th><th>Nov-12</th><th>Dec-12</th><th>Jan-13</th><th>Feb-13</th><th>Mar-13</th><th>Apr-13</th><th>May-13</th><th>Jun-13</th><th>Jul-13</th><th>Aug-13</th><th>Sep-13</th></tr>
<tr><td rowspan="2">Affordable Care Act (ACA) Administration[a]</td><td>Cost</td><td colspan="2">54.83%</td><td colspan="4">59.90%</td><td colspan="3">27.68%</td><td colspan="3">-220.21%</td></tr>
<tr><td>Schedule</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td rowspan="2">Account Management Services</td><td>Cost</td><td>11.62%</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Schedule</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td rowspan="2">Customer Account Data Engine 2 (CADE 2)</td><td>Cost</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Schedule</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td rowspan="2">Electronic Fraud Detection System</td><td>Cost</td><td></td><td></td><td></td><td></td><td>33.62%</td><td>30.23%</td><td>30.23%</td><td>27.47%</td><td>23.39%</td><td>23.39%</td><td>20.42%</td><td>20.42%</td></tr>
<tr><td>Schedule</td><td></td><td>10.34%</td><td>10.34%</td><td>10.34%</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td rowspan="2">e-Services</td><td>Cost</td><td>17.31%</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>10.01%</td><td>10.01%</td><td>10.54%</td><td>10.54%</td></tr>
<tr><td>Schedule</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td rowspan="2">Foreign Account Tax Compliance Act</td><td>Cost</td><td></td><td></td><td></td><td>23.23%</td><td>32.52%</td><td>16.75%</td><td>16.75%</td><td>16.75%</td><td>16.75%</td><td>16.75%</td><td>16.75%</td><td>15.70%</td></tr>
<tr><td>Schedule</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td rowspan="2">Individual Master File</td><td>Cost</td><td>14.06%</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Schedule</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td rowspan="2">Information Reporting and Document Matching</td><td>Cost</td><td></td><td></td><td></td><td></td><td></td><td></td><td>11.60%</td><td>11.60%</td><td>13.11%</td><td>14.26%</td><td>14.26%</td><td>13.88%</td></tr>
<tr><td>Schedule</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td rowspan="2">Integrated Customer Communication Environment</td><td>Cost</td><td>17.50%</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>11.87%</td><td>13.62%</td><td>17.24%</td><td>17.14%</td></tr>
<tr><td>Schedule</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td rowspan="2">Integrated Data Retrieval System</td><td>Cost</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>10.83%</td></tr>
<tr><td>Schedule</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>

		Fiscal year 2013											
		Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13
Integrated Financial System/CORE Financial System	Cost												
	Schedule												
Integrated Submission and Remittance Processing System	Cost												
	Schedule												
IRS.gov – Portal Environment	Cost												
	Schedule												
IRS End User Systems and Services	Cost												
	Schedule	-63.89%											
Modernized e-File	Cost	-20.93%							16.15%	16.15%	3.72%	13.89%	13.89%
	Schedule												
IRS Main Frames and Servers Services and Support	Cost												
	Schedule												
Implement Return Review Program	Cost												
	Schedule												
IRS Telecommunications Systems and Support	Cost										15.92%	10.73%	10.73%
	Schedule		-27.35%	-33.23%	-33.23%	-33.23%	-39.32%	-35.43%	-35.43%	-35.43%	-36.83%	-28.23%	-28.23%
Service Center Recognition/ Image Processing System	Cost												
	Schedule					-73.30%	-29.59%	-29.59%					

Source: GAO analysis of IRS data.

Note: Blank cells are an indication of where a monthly variance was less than +/- 10 percent.
Positive variance indicates that cost or schedule is less than originally planned.
Negative variance indicates that cost or schedule is greater than originally planned.

[a]ACA did not report monthly but quarterly during fiscal year 2013. In addition, this investment has not been included in the quarterly reports to the congressional committees.

Appendix IV: Investment Profiles

This appendix contains the profiles for the seven key investments we reviewed. Information contained within these profiles includes, but is not limited to:

- Current life-cycle phase: Life-cycle phases can be represented as planning; development, modernization, and enhancement; operations and maintenance; or mixed. Planning refers to preparing, or acquiring the information used to design the asset; assess the benefits, risks, and risk-adjusted costs of alternative solutions; and establish realistic cost, schedule, and performance goals for the selected alternative, before proceeding to full acquisition or termination of a project. Development, modernization, and enhancement refers to projects and activities that result in new assets/systems or projects and activities that result in changes or modifications to existing assets that lead to substantive improvements, implement legislative or regulatory requirements, or meet an agency leadership request. Operations and maintenance refers to those projects and activities that are operating in a production environment. Finally, mixed refers projects and activities that are a combination of development, modernization, and enhancement and operations and maintenance. Having detailed information allows for clear tracking of a program's costs as it moves through its various life-cycle phases.

- Development methodology: This is a framework that is used to structure, plan, and control the process of developing an information system. There are a number of approaches that can be utilized by an investment. IRS's Enterprise Lifecycle methodology includes the following approaches: waterfall, planned maintenance, iterative, and managed services. Waterfall is a sequential development of a solution with planned reviews and formal approvals required before continuation of work. The planned maintenance approach manages change in an organized manner, minimizes the disruption caused by frequent system changes, and increases the efficiency and effectiveness of the system change process. Additionally, the iterative approach is an adaptive development approach in which projects start with a conceptual vision of the solution and end with deployment, with repeated cycles of requirement discovery, development, and testing in between. Finally, the managed services approach is designed to capitalize on the benefits of managed services provided by either an outside service, internal business processes, and/or existing infrastructure service provider. This provides useful information on the requirements of how a project is to progress through the life cycle.

- Contract type: For purposes of this report, this can be broken down into two categories. The first is firm, fixed price contracts in which the price is not subject to any adjustments. The second is cost reimbursement contracts which provide for the payment of allowable incurred costs, to the extent prescribed in the contract. Types of cost reimbursement contracts include, but are not limited to (1) cost plus fixed fee in which actual costs and a fixed fee can be charged; however, costs are not allowed to exceed the agreed upon estimate without approval; and (2) cost plus incentive fee that provides for an initially negotiated fee to be adjusted later by a formula based on the relationship of total allowable costs to total target costs.

- Number of rebaselines: Rebaselines are changes to projects' cost, schedule, and performance goals (i.e., baselines). According to officials, scope changes must go through a baseline change request process and be approved by Treasury and OMB.

Affordable Care Act

ACA – Investment Details

Program start date: June 2010

Full operational capability: 2018

Life-cycle costs: $1.89 billion

Current life-cycle phase: Mixed (development/operations and maintenance)

Development methodology: Iterative

Contractor/full-time equivalent mix: 35/65

Contract type: Firm fixed price/cost plus fixed fee

Number of rebaselines (past 2 years): 2

Source: IRS officials and IRS data.

According to IRS, the Affordable Care Act investment encompasses the planning, development, and implementation of IT systems needed to support IRS' tax administration responsibilities associated with certain provisions of the Affordable Care Act. Initiatives that have already been deployed include the initial release of the Branded Prescription Drug Industry Fee project and an effort intended to secure connection between IRS and the Department of Health and Human Services/Centers for Medicare and Medicaid Services (CMS) to support health insurance exchange open enrollment for the Fall of 2013. Future releases of the ACA include:

- ACA 4.0: CY2014 Information Sharing and Reporting
- ACA 4.1: CY2014 Non-Marketplace Provisions
- ACA 5.0: Filing Season 2015
- ACA 6.0: CY 2015 Compliance Activities
- ACA 6.1: Additional CY 2015 Compliance Activities

Customer Account Data Engine 2 (CADE 2)

CADE 2 – Investment Details

Program start date: January 2010

Full operational capability: 2020

Life-cycle costs: $1.48 billion

Current life-cycle phase: Mixed (development/operations and maintenance)

Development methodology: Waterfall/ Iterative

Contractor/full-time equivalent mix: 54/46

Contract type: Cost plus fixed fee/firm fixed price

Number of rebaselines (past 2 years): 5

Source: IRS officials and IRS data.

CADE 2 began in 2010 as a new strategy for accelerating completion of a modernized database and converting to a single processing system sooner than CADE (which was intended to provide a modernized system of taxpayer accounts, with the ultimate goal of eventually replacing IMF) would allow. CADE 2 is expected to deliver its functionality incrementally through transition states. Transition state 1 includes: (1) daily batch processing of individual taxpayer returns provided by modifying the IMF to run on a daily, rather than weekly, basis; and (2) a comprehensive database for housing all individual taxpayer accounts and loaded with data from CADE and IMF to provide timelier updates of taxpayer information for use by IRS employees for compliance and customer service. Transition state 2, which IRS started in October 2010 and IRS plans to complete in March 2015, includes re-writing IRS's legacy core tax processing applications in modern programming language, and is intended to increase flexibility, scalability, reliability, and security.[1]

According to IRS, the database component of transition state 1 has been in production as of May 2012, and in August 2012, daily updates to the database began. In addition, according to IRS, intense focus was placed on optimizing performance of the CADE 2 database in 2013. For 2014, the database will be kept in sync with the Individual Master File; data quality will be validated through the 2014 filing season; and risk-based decisions will be used to determine readiness to feed data downstream to other IRS systems.

[1] CADE 2 will not completely resolve IRS's existing financial management deficiencies related to unpaid tax assessments. This is because CADE 2 is designed only to replace IRS's IMF and not the Business Master File and resolving the financial management deficiencies would require addressing issues related to both master files.

e-Services

e-Services – Investment Details

Program start date: August 2011

Full operational capability: Not applicable

Life-cycle costs: $211.43 million

Current life-cycle phase: Mixed (development/operations and maintenance)

Development methodology: Planned maintenance

Contractor/full-time equivalent mix: 50/50

Contract Type: Cost-plus incentive fee and fixed price

Number of rebaselines (past 2 years): 0

Source: IRS officials and IRS data.

e-Services is a suite of web-based products that are intended to allow tax professionals and payers to conduct business with IRS electronically. These services are only available to tax practitioners, registered agents, and other third parties and are not available to the general public. The program is available via the Internet 24 hours a day, 7 days a week, and it contains products such as registration, an e-file application, a Transcript Delivery System (a system which tax professionals may use to request and receive account transcripts, wage and income documents, tax return transcripts, and verification of non-filing letters), and Taxpayer Identification Number Matching (a pre-filing service which allows authorized payers to match up to 25 payee taxpayer identification number and name combinations against IRS records prior to submitting an information return).

Information Reporting and Document Matching (IRDM)

IRDM – Investment Details

Program start date: August 2010

Full operational capability: Not applicable

Life-cycle costs: $186.49 million

Current life-cycle phase: Mixed (development/operations and maintenance)

Development methodology: Waterfall

Contractor/full-time equivalent mix: 33/67

Contract type: Cost plus fixed fee/firm fixed price

Number of rebaselines (past 2 years): 2

Source: IRS officials and IRS data.

IRDM is aimed at helping close the tax gap—the difference between what business taxpayers should have paid and actually did. It is intended to improve voluntary compliance and accurate reporting of income by establishing a new business tax return and information returns that focus on merchant card payments and securities basis reporting. IRDM supports IRS business utilizing information systems that sort, match, identify, manage, and report on returns that are likely sources of tax gap-reducing revenue. To accomplish this, IRS requires operational resources and systems to be put in place to implement business and technology changes that are intended to expand and improve its automated matching of data on information returns to the data submitted on tax returns filed. The program consists of the following five projects that the IRS implemented in 2011 and 2012:

- **Data Assimilation**: Identifies the link between tax forms and information returns filed for the same taxpayer to identify potential under-reporter cases. The project then groups these into specific categories to support IRS compliance programs associated with merchant card payments, securities cost basis, and government payments.
- **Data Correlation**: Matches tax return and information return data and applies business rules to identify potential under-reporter cases for use in the IRDM case selection process. After case selection, Data Correlation builds a complete case record for analysis by a tax examiner to support IRS compliance programs.
- **Business Master File Analytics**: Provides IRS users the ability to define and execute logic for the intelligent selection of business taxpayer case inventory to ensure cases selected result in the largest financial return.
- **Case Inventory Selection and Analytics**: Provides IRS users the ability to define and execute logic for the intelligent selection of individual taxpayer case inventory and creates an analytical environment that offers a greater ability to evaluate case data to improve the selection of cases worked.
- **Case Management**: Enables IRS users to manage and work business cases selected through Business Master File Analytics with identified discrepancies that could potentially affect tax liability.

IRS .Gov

IRS.Gov – Investment Details

Program start date: July 2009

Full operational capability: 2020

Life-cycle costs: $612.03 million

Current life-cycle phase: Mixed (development/operations and maintenance)

Development methodology: Managed Services

Contractor/full-time equivalent mix: 92/8

Contract type: Firm fixed price and time/materials

Number of rebaselines (past 2 years): 11

Source: IRS officials and IRS data.

The IRS.Gov investment consists of a public user portal—IRS.Gov, a registered user portal, and an employee user portal. The key goals of the program include simplifying and transforming the user web experience, consolidating and advancing IRS web technology to industry standards, implementing a high-performing contract structure and terms, and marketing competitive costs throughout the program's life cycle.

Additionally, this effort supports the framework and functionality of IRS portals services used by the American taxpayer, IRS employees, and registered users. The overall objectives of this program are to:

- provide a high-performing partnership between IRS and its contractor;
- provide industry-leading web practices and innovations;
- provide a compelling program performance management framework;
- create a new IRS web environment that is the trusted taxation website;
- Create a simple and manageable IRS web environment;
- provide single point, end-to-end operational accountability and visibility;
- provide a cost effective and affordable program cost structure; and
- transition successfully from the old programs to the new program.

Modernized e-file (MeF)

MeF – Investment Details

Program start date: November 2005

Full operational capability: Not applicable

Life-cycle costs: $575.30 million

Current life-cycle phase: Mixed (development/operations and maintenance)

Development methodology: Planned Maintenance/Waterfall

Contractor/full-time equivalent mix: Information not available

Contract type: Firm fixed price/cost reimbursement/cost plus fixed fee/cost plus incentive fee

Number of rebaselines (past 2 years): 3

Source: IRS officials and IRS data.

MeF is the primary system to receive and process all tax returns submitted electronically. When MeF receives an electronic tax return, the system determines if it satisfies the acceptance rules required for further processing. MeF is intended to benefit the tax preparation community and enables the IRS to answer questions quickly and helps to resolve issues. MeF is also intended to benefit corporations and tax-exempt organizations that must file tax returns or annual information returns electronically and is intended to reduce the handling/mailing of voluminous paper returns.

MeF stores all tax return data in Extensible Markup Language format in a Modernized Tax Return Database, allowing authorized IRS viewers (IRS Help Desk personnel and tax examiners) to see tax returns securely online. According to IRS, as of September 10, 2013, taxpayers used MeF to submit over 223 million individual returns and nearly 15 million business returns.

Release 9, which IRS planned to deploy for Filing Season 2014, is intended to add the Employment/Unemployment Tax family of forms (Forms 94x) and the U.S. Income Tax Return for Estates and Trusts (Form 1041) to the MeF environment, as well as a new Return Review Program interface.

Return Review Program (RRP)

RRP – Investment Details

Program start date: April 2010

Full operational capability: Time frame not available

Life-cycle costs: $169.13 million

Current life-cycle phase: Mixed (development/operations and maintenance)

Development methodology: Waterfall

Contractor/full-time equivalent mix: 55/45

Contract type: Cost plus incentive

Number of rebaselines (past 2 years): 1

Source: IRS officials and IRS data.

RRP is a web-based automated system that is currently in development, and is intended to replace the legacy Electronic Fraud Detection System (EFDS) built in the mid-1990s. It is intended to deliver functionality incrementally through transition states. Transition State 1 is scheduled to be completed in March 2014. Transition State 2, the final transition state, is scheduled to be completed in March 2015. RRP is to provide, among other things, the following functionality:

- enable more effective routing of returns;
- detect noncompliant and fraudulent returns;
- ensure timely issuance of refunds and credits;
- prevent issuance of refunds and credits not legally due to filers; and
- streamline business processes used by the IRS criminal investigative analysts, aids, and civil employees.

The new system is comprised of three major activities:

- **Detection.** The system will incorporate several existing models as well as new models to enhance detection of probable noncompliance. Using algorithms and business rule sets, the system will detect questionable information on each return as the return is processed. The system will also detect returns with potential fraud characteristics, thereby allowing criminal investigators to link and analyze groups of returns to identify schemes for potential criminal prosecution.

- **Resolution.** The system will accommodate existing treatment streams and new treatment streams. Returns will be routed systemically to the best treatment stream, opened into the treatment stream's inventory and, if applicable, the system will send an initial contact letter to the taxpayer.

- **Prevention.** The system will automatically integrate the results of each return's resolution into the detection models. The results can be used to help target education and outreach efforts to taxpayers and preparers on how to avoid unintentional noncompliance. The system will also allow analysis and identification of fraud and noncompliance not identified by the predictive detection models.

Appendix V: Comments from the Department of the Treasury

DEPARTMENT OF THE TREASURY
INTERNAL REVENUE SERVICE
WASHINGTON, D.C. 20224

COMMISSIONER

March 21, 2014

Mr. David A. Powner
Director, Information Technology Management Issues
U.S. Government Accountability Office
441 G Street, N.W.
Washington, D.C. 20548

Dear Mr. Powner:

Thank you for the opportunity to review the draft report titled, *Information Technology: IRS Needs to Improve the Reliability and Transparency of Reported Investment Information* (GAO-14-298). We recognize the importance of consistent reporting to Congress on cost, schedule and scope. We will continue our effort to improve the management of our investment process and value your support and guidance.

Overall, we agree with the recommendations provided in this report.

With regard to your first recommendation, the IRS believes we have addressed this as we are reporting "cumulative investment and investment segment cost and schedule information in the quarterly reports to Congress." The cumulative life-cycle investment costs for each of our investments are shown at the beginning of each project commentary in our pictorial quarterly report to Congress. Also included as part of the Addendum is the most current data as reported in Treasury SharePoint Investment Knowledge Exchange (SPIKE) for each investment that shows detailed cost and schedule performance on all open usable segments. We believe this provides necessary transparency to assess IRS performance in managing our investments and aligns with OMB guidance.

With regard to your third recommendation, the IRS agrees with the concept of a quantitative measure of scope and believes we have addressed this matter. The Service has practices and processes in place to assess and report on the delivery of scope. These practices and processes are conducted in conjunction with cost and schedule management. For example, the Omnibus Information Technology Investment Report has consistently and clearly reported the status on cost, schedule, and scope using the Exhibit 300 SPIKE data as the authoritative source. Any alterations to planned scope are identified within the E300 Baseline Change Request process, which specifically addresses the changes that are occurring within investments.

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We will provide a detailed corrective action plan addressing your second recommendation with our response to the final report. If you have any questions, please contact me or a member of your staff may contact Terence V. Milholland, Chief Technology Officer, at (202) 317-5000.

Sincerely,

John A. Koskinen
Commissioner

Appendix VI: GAO Contact and Staff Acknowledgements

GAO Contact

David A. Powner, (202) 512-9286 or pownerd@gao.gov

Staff Acknowledgements

In addition to the contact name above, individuals making contributions to this report included Sabine Paul (Assistant Director), Mary Evans, Rebecca Eyler, Paul Middleton, and Bradley Roach.