WRITTEN TESTIMONY OF
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BEFORE THE
HOUSE OVERSIGHT AND GOVERNMENT REFORM COMMITTEE
ON IRS LEGACY INFORMATION TECHNOLOGY SYSTEMS
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INTRODUCTION

Chairman Chaffetz, Ranking Member Cummings, and Members of the Committee, thank you for the opportunity to appear before you today to discuss the IRS's ongoing efforts to modernize our information technology (IT) systems.

Information technology continues to transform the landscape of how the IRS interacts with its constituencies. The current pace of technological change exceeds the ability of a large, well-established organization such as the IRS to embrace all of these transformative technologies. The IRS, however, has found that effective enterprise IT management consists of thoughtful planning engineering and delivery, coupled with active and adaptive IT investment management. We continue to work to stay current and efficient in our data centers and core processing platforms, while remaining vigilant about the security of our systems.

Against that backdrop, the IRS continues to operate a number of legacy IT systems, although it is not our preference to do so, and our ultimate goal is to retire all of them as quickly as possible. We consider them to be "legacy" because their programming language and data structures generally were built decades ago when computer infrastructure, such as computer memory and storage media, was tape-based, and computational machinery was extremely expensive. These factors limited system capabilities. Thus, system designers had to be very creative in how they built and sustained IRS applications to operate in the early days of computers. At the time these systems were originally developed, they were constructed around a system that was dependent on the filing of paper returns. In effect, we automated the processing of paper returns. This makes it much more difficult than it should be in today's environment to efficiently access the information in the return.

Since our systems were initially developed over 50 years ago, we have upgraded the underlying hardware and operating systems of these legacy systems, while the application programming language and data structures have essentially remained static, although they are well-written and robust. This allows the IRS to handle annual legislative mandates and run the filing season each year. The situation is analogous to operating a 1960's automobile with the original chassis,

suspension and drive train, but with a more modern engine, satellite radio   and a GPS navigation system. It runs better than the original model but not nearly as efficiently as a system bought today.

Our ability to effectively manage enterprise IT despite our legacy systems, and within our limited resources, is evidenced by the fact that the IRS continues to deliver smooth filing seasons, amid steady growth both in the number of returns filed and the percentage of electronically filed returns over the past decade. Return processing goes smoothly even in years where passage of tax legislation late in a given year requires the IRS to move quickly to update our systems to accommodate tax changes enacted by Congress. To give the Committee an idea of what our systems are capable of handling, in the filing season that just concluded, our systems received 4.4 million tax returns on one of our busiest days. At the peak, our systems accepted more than 800,000 filings in a single hour, which equates to more than 225 filings each second.

TRANSITIONING THE IMF TO CADE2

The main challenge posed by our legacy systems is that their data structures do not allow us to easily use the data in our downstream service and compliance systems to best serve taxpayers. For that reason, we have been working diligently for many years, within the constraints of our budget, to make this data more available, so that we can update and modernize numerous key functions.

In addition to the challenge with data structures, another challenge we face involves the need to change the core programming language of our processing systems from a decades-old Assembly language code (ALC) used in the 1950s and 1960s to a more modernized programming language, such as JAVA. The IRS faces a significant shortage of programmers who understand very old programming languages and can maintain mission-critical applications required to deliver each filing season. Therefore, we are working to ensure that we are no longer dependent on these old languages to maintain legacy systems and can use the flexibilities provided by more modern languages. In fact, our IT engineering function has recently developed an in-house code translation methodology using automated tools to translate the programming language used in our legacy tax processing applications into the JAVA language. This is a technological breakthrough for which the IRS is applying for a U.S. patent.

Our most critical effort with regard to legacy systems to date has been the development of a centralized relational database for all individual taxpayer accounts, called the Customer Account Data Engine, or CADE2. When fully implemented, CADE2 will replace the legacy Individual Master File (IMF), which historically has been the primary data source for individual taxpayer accounts. In fact, IMF has the distinction of being the oldest system highlighted in the Government Accountability Office's (GAO) report on legacy IT systems The IRS

envisions that CADE2 will replace the IMF in three major steps, or transition states.

The IRS took the first step in implementing CADE2 with the launch of Transition State 1 in January 2012. Up to this point, the IRS had been performing core account processing on a weekly basis. The launch of CADE2 meant the IRS successfully migrated to daily processing and posting of individual taxpayer accounts. This has fundamentally changed the way the IRS provides information and services to taxpayers, and has delivered significant and lasting benefits to our tax system. With Transition State 1, CADE2 allowed taxpayers to receive faster refunds and gave IRS assistors quicker updates to account information. Today, when a taxpayer calls us, the account information available to the customer service representative is no more than 24 hours old.

Implementation of Transition State 2 of CADE2 will result in a major reengineering of the IMF. This step will: apply modern programing languages; establish CADE2 as the authoritative data source for legal and financial purposes; and implement functionality to address the IRS's Financial Material Weakness over unpaid tax assessments for individual taxpayer accounts. The IRS plans to implement Transition State 2 over the next several years, with the final release planned for deployment in the 2020 filing season. Upon completion of Transition State 2, the IRS will begin the third and final step toward replacing the IMF, which will complete the reengineering of the IMF architecture.

It is important to note that the modernization effort I have just described is a complex, multistep process – not a single, easily accomplished action. The steps we have undertaken thus far have already provided important improvements to our ability to interact with taxpayers efficiently and effectively.

Another important component of effective IT includes building key management capabilities. The IRS IT organization has implemented world-class IT processes for applications development and operations. These processes, known as CMMI and ITIL, are recognized throughout the IT industry for their efficiency and effectiveness. The IRS is the only government agency to be at maturity Level 3 for CMMI and ITIL across the entire IT organization. This is a significant accomplishment and means that IRS IT is recognized as maintaining a high level of competency in managing IT development and operations.

In regard to the transition of the IMF to CADE2, I would also note that the GAO has acknowledged the importance of the IRS's accomplishments in this area. In 2013, the GAO removed the agency's Business Systems Modernization program (BSM) from its high-risk list. The BSM program had been on the list since 1995. In its 2013 report, the GAO mentioned the advances made by the IRS over many years in addressing weaknesses in IT and financial management capabilities, and it singled out the successful delivery of the initial phase of CADE2 as the main reason for its determination that the BSM program was no longer high risk.

That same year, the Excellence.gov Awards Program sponsored by the American Council for Technology and the Industry Advisory Council recognized CADE2 for Excellence in Enterprise Efficiencies. This awards program honors government programs and projects that use information technology in innovative ways to enhance government operations, provide a more open and transparent government, and deliver important citizen resources.

LOOKING TO THE FUTURE

CADE2 is one component within our broader efforts to upgrade our legacy systems. Going forward, the IRS is prioritizing the transition of mission-critical legacy systems to more modern technology in accordance with our Future State and the IRS Technology Roadmap efforts. Both are the result of an enterprise-wide effort to determine how the IRS can best use the latest technology to improve taxpayer service and enforcement efforts.

Our Future State encompasses programs across the IRS and will transform the IRS to create efficiencies in IRS service efforts and internal operations and to improve the taxpayer experience. In developing this strategy, the IRS is considering evolving taxpayer expectations, the increasing risk and complexity of current processes and supporting technology, available funding, and increased occurrences of identity theft and fraud.

An important example of this effort in the compliance area has been the development and phase-in of the Return Review Program (RRP). The RRP is an integrated and unified system that enhances IRS capabilities to detect and potentially prevent criminal and civil tax non-compliance. During the 2016 filing season, RRP overtook the legacy Electronic Fraud Detection System (EFDS) as the primary system for detecting anomalies in tax returns. RRP selected more than 600,000 potentially fraudulent returns for which refunds were claimed totaling more than $4 billion. Continued investment in RRP will allow the IRS to retire EFDS and address more sophisticated instances of identity theft more quickly.

The IRS intends to further improve compliance programs through investment in an Enterprise Case Management (ECM) system, which is intended to modernize, upgrade, and consolidate more than 60 aging IRS case management systems. This common case management environment will yield efficiencies by implementing standard case management functions, providing the ability to transfer cases between IRS organizations and creating centralized case data accessibility and usability.

Another initiative that will help the IRS move toward the Future State is the Event Driven Architecture (EDA) framework, which will process returns in near-real

time. This will also enable robust online self-service tools, including immediately notifying taxpayers of errors on a return as soon as it is filed, and allowing taxpayers to self-correct return errors by logging into an online account.

NEED FOR ADEQUATE RESOURCES AND IT EXPERTISE

The IRS budget situation is the most critical challenge facing IT modernization. IRS funding was cut each year from 2010 to 2015. These cuts have taken a toll on taxpayer service, enforcement programs, and IT projects. Although Congress provided $290 million in additional funding for the agency for Fiscal Year (FY) 2016, which we appreciate, the IRS budget remains about $900 million below what it was in 2010, not accounting for inflation. We therefore remain under severe financial constraints. To illustrate the problem in the IT area, in FY 2015 alone, we were forced to delay critical IT investments of more than $200 million, including investments needed to continue replacing legacy systems.

A related challenge involves the fact that the IRS, during this same period, has begun to implement a number of significant legislative requirements, nearly all of which came with no additional funding. Satisfying these requirements has involved significant IT investments, requiring resources that would otherwise have gone to IT projects such as our legacy systems transition work.

These requirements include those stemming from: the Affordable Care Act (ACA); the Foreign Account Tax Compliance Act (FATCA); the Achieving a Better Life Experience (ABLE) Act, which includes a new certification requirement for professional employer organizations; and reauthorization of the Health Coverage Tax Credit (HCTC), among others. Two other legislative mandates that require additional resources were approved by Congress in December: a private debt-collection program and a registration requirement for newly created 501(c)(4) organizations.

While we have made and will continue to make progress in modernizing our IT systems within the constraints of our budget, making progress at a faster pace will require providing the IRS with significant additional resources. For example, the President's FY 2017 Budget proposes $53.5 million to leverage new technologies to advance the IRS mission for projects such as CADE2 and Modernized e-File; $48.5 million to improve taxpayer service, including the online taxpayer experience; and $90 million to help advance our efforts against identity theft and reduce improper payments. All of these initiatives include the resources for the technology improvements needed in these areas.

In addition to adequate funding, the IRS also needs to be able to attract individuals from the private sector with highly specialized IT skills and expertise, particularly for our leadership positions in IT. In the past, the IRS has successfully recruited such individuals using streamlined critical pay authority

that was enacted in 1998. In fact, the Treasury Inspector General for Tax Administration (TIGTA) in a 2014 report found that the IRS had appropriately used this authority, by adequately justifying the positions, demonstrating the need to recruit or retain exceptionally well-qualified individuals, and adhering to pay limitations. This authority expired at the end of FY 2013 and has not yet been renewed.

The loss of streamlined critical pay authority has created major challenges to our ability to retain employees with the necessary high-caliber expertise in IT and other specialized areas. In fact, out of the many expert leaders and IT executives hired under streamlined critical pay authority, there are only nine IT experts remaining at the IRS, and we anticipate there will be no staff left under this authority by this time next year. The President's FY 2017 Budget proposes reinstating this authority, and I urge the Congress to approve this proposal.

Chairman Chaffetz, Ranking Member Cummings, and Members of the Committee, this concludes my statement, and I would be happy to take your questions.

Terence V. Milholland

As the Service's first-ever Chief Technology Officer, Terry Milholland is responsible for all aspects of our systems that operate the nation's tax infrastructure. He oversees the 7,000-person Information Technology organization that maintains the 500+ systems and supports the processing of 200 million tax returns annually. He reports directly to the Deputy Commissioner for Operations Support.

Terry brings three decades of technology leadership to this position. Most recently, he served as the Executive Vice President and Chief Technology Officer for Visa International. Prior to that, Terry served as Chief Information Officer and Chief Technology Officer for Electronic Data Systems Corporation and Chief Information Officer for The Boeing Company. He has a proven track record of delivery in large and complex technology environments, and his experience and leadership will be a great complement to the critical work that our talented technology team performs every day on behalf of the American people.