COMMITTEE ON OVERSIGHT AND GOVERNMENT REFORM

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STATEMENT FOR THE RECORD

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Chairman Chaffetz, Ranking Member Cummings, and Members of the Committee, thank you for inviting me to discuss information technology at the Social Security Administration (SSA), including our agency's compliance with the Federal Information Security Management Act (FISMA) and implementation of the Federal Information Technology Acquisition Reform Act (FITARA).

In 2015, I was appointed to serve as SSA's Chief Technology Officer. Acting Commissioner Colvin subsequently appointed me to serve as SSA's Deputy Commissioner for Systems and Chief Information Officer. Prior to my appointment, I worked for a variety of technology firms based on the West Coast and in the Silicon Valley. I learned quickly that SSA has a committed and qualified IT workforce that maintains several significant information systems to meet its mission. To provide one measure of this, during fiscal year (FY) 2015, the agency paid more than $930 billion to almost 67 million beneficiaries representing around five percent of the U.S. Gross Domestic Product. The Acting Commissioner's written testimony provides an overview of how our IT supports our administration of the Social Security and Supplemental Security Income (SSI) programs. To support these payments, and the substantial other work that our agency performs, our total IT expenditure, in FY 2015, including our staff and contractors, was about $1.8 billion.

The SSA faces several IT challenges in the years ahead. The systems that serve our mission are old and they are primarily supported by the staff who developed them 30+ years ago. As this staff retires, the knowledge of these old applications and the knowledge of the legacy infrastructure they are built upon will diminish. We have to modernize these legacy systems before this knowledge is gone. Developing the new capabilities based on new technology to best serve the public is an expensive proposition if we have to build it upon this aging foundation. We have to modernize these legacy systems to provide these new services at a reasonable cost. In addition, we face threats to the security of the information we store at the Agency. Dealing with these threats requires constant vigilance. We need to modernize our legacy systems to provide the modern infrastructure that incorporates modern cyber defenses. (Ms. Eckert's testimony describes further our cybersecurity posture and our compliance with FISMA.) Below, I will detail some of the efforts we are making to improve how we invest in IT and our efforts to modernize our IT infrastructure. However, we need adequate and sustained funding from Congress to ensure that we can address these efforts over the long-term.

Implementation of FITARA and IT Investment

Many of our IT modernization and other practices align with the recently passed Federal Information Technology Acquisition and Reform Act, better known as FITARA. FITARA reforms aim to increase Federal CIO authority for IT planning and decision making, enhance management of Federal IT investments, and improve acquisition of IT human capital, products, and services.

We are fully engaged with our responsibilities pursuant to FITARA and the Office of Management and Budget (OMB) guidance to implement the law. We are making enterprise level improvements to important components of our Capital Planning and Investment Control

(CPIC) framework including: incorporating new policies and procedures for our IT investment review process; implementing a new integrated CPIC tool to replace a number of dated systems; and reorganizing several IT governance groups into a single, coordinated component.

FITARA and OMB guidance require agency CIOs to provide OMB on a regular basis information about major IT investments, including rating such investments according to risk. OMB reviewed our evaluations on our IT investments and found us in compliance with its guidance. We continue to revisit our process and rating criteria and our source documentation for improvement opportunities.

I am pleased to report that, over the last year, we developed a new IT Investment Process (ITIP) that will improve the way we manage and invest in IT at SSA. ITIP will focus on up-front project planning with outcomes tied to specific agency goals. Improved project planning and documentation will allow us to assess project costs, risks, and timelines with greater accuracy. In addition, an enterprise-wide executive IT investment board will meet throughout the year to make informed funding decisions on projects that provide the greatest benefit to our agency's mission. As a result, we will be better able to deliver the right project on time and within budget, and provide the best tools for our employees and superior service to the American public. Finally, the new process will include formal post-implementation reviews that look at the IT implementation process and at the ongoing return-on-investment, planned and actual, of the resulting business applications.

IT Modernization

In the late 1970s and early 1980s, because of the massive scale of our operations, SSA was aggressively developing systems and databases to store information about tens of millions of citizens. These systems were leading edge systems that pushed the state of the art in the 1980s.

Today, these legacy systems are out-of-date, and the cost required to bring them to a modern state represents a technical debt that accrues interest with each passing year. Their complexity makes it costly and challenging to add the functionality needed to meet the continually evolving requirements placed on us by the Administration, Congress and the people we serve. The extra cost of building on these aging systems represents part of this technical debt. Our university systems generally are no longer teaching the mainframe computer application languages, development, and operating environment, and the Federal staffs who developed and maintained these systems are retiring. As a result, the interest payments on this 30-year-old technical debt are compounding, and in the next five years, we could face a crisis keeping our systems running.

Generally, our approach to modernizing our major IT systems has been to replace components of systems rather than the system as a whole. This approach tends to reduce risk by reducing interdependencies in a single development effort and by reducing the scope of the modernization effort.

For several years, we have chipped away at the legacy code base as we add new business functionality, reducing our technical debt. This incremental and opportunistic approach worked well given the ebb and flow of annual funding. However, we are at a point where this approach

is no longer viable; technology is advancing faster than we can incrementally modernize. As a result, we have to undertake larger, multiyear tasks. To that end, we are focusing our efforts in three primary broad areas: database modernization, code modernization, and infrastructure modernization.

Our first broad area of focus is core database systems. Because of limitations in the technology available when our databases were designed, all updates were managed via a sequential, batch process that applied updates queued during the day. Modern databases update in real time. In addition, legacy databases were designed around specific applications rather than organized around data subjects. This creation of data silos makes adding broad agency-wide capabilities difficult and expensive. In the last year, we have started to re-organize our data into a modern architecture and began development of a framework to allow real-time updates. Unfortunately, all the legacy code base that we have becomes the issue.

Therefore, our second broad area of focus is modernizing that legacy code. Our efforts here are designed to address the complexity and pre-modern design of our oldest systems. We are exploring ways to capture value from the legacy code base, either through a code migration or by capturing the "gist" of the business rules. We are exploring different options, including "buy" as opposed to "build." We are also aggressively moving to modernize our software engineering tools and skills. In order to modernize the skill of our staff, with the aim of reducing the costs of modernization, we will develop an intensive training program. We have one very significant new project where we are using these skills to develop a brand new system and, so far, the impact is very positive. Finally, we are fully embracing agile development methods. This approach enables us to roll out more quickly new functionality to users while reducing the risk that what we produce will not meet users' needs.

The third broad area of focus is modernization of our infrastructure. For more than 30 years, we have been predominantly a user of mainframes for our mission-critical systems. For many years, only mainframes could handle our workload. In response to Acting Commissioner Colvin's direction to push us towards becoming a more data driven enterprise, we are deploying a modern business intelligence eco-system in the cloud. We are working to develop an on premises cloud environment and then a hybrid cloud environment to further enable us to take advantage of the economics of cloud computing. We have also established a Modern Development Environment (MDE) in the Amazon Web Services cloud. MDE is a suite of tools and engineering practices for supporting modern software development.

With our plan to leverage our new data capabilities, development techniques, and infrastructure, we are beginning a fundamental review of how we engage our customers and our employees. Through a new "Customer Connect" initiative, we are considering how better to meet customers experience in 2020. This initiative aims to reconsider not just our technology infrastructure, but to challenge SSA to reassess the business processes that have grown and evolved over the last eighty years.

Conclusion

Before we turn to cybersecurity, I would like to restate the core challenge I see.

As we head into this period where a significant portion of our IT staff becomes eligible for retirement, we need to begin long-term efforts to modernize our infrastructure, our data architecture, and our software intellectual property. We need to accomplish this while we keep the current systems incrementally advancing and while we continue to expand our commitment to cybersecurity.

Because our efforts have to be long-term, we need a stable long-term commitment to fund IT modernization, as discussed in the Acting Commissioner's testimony. We need funds to enable the modernization in the same way the nation needs funds to modernize other aging infrastructure, such as roads, dams, and the grid.

We look forward to working with Congress to overcome these challenges. Thank you and I would be glad to take any questions.

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Rob Klopp is the Chief Information Officer (CIO) for the Social Security Administration. Rob started at the Agency as the Chief Technology Officer in January of 2015 and assumed the role of CIO and Deputy Commissioner of Systems the following August. Rob was recruited by the United States Digital Services team specifically to support the Agency.

He comes to Baltimore from the Silicon Valley where he has worked for both large software enterprises and for smaller start-ups. You may know of some of the start-ups. Greenplum, for example, was acquired by EMC and Teradata is now a leading company in the relational database and data warehouse markets. Rob spent nearly two years based in Switzerland as the EMC/Greenplum CTO for Europe, the Middle East, and Africa. He also worked in the consulting services space for EDS, now part of HP, and for what is now KPMG, as well as in his own boutique consultancy. He founded a little software start-up that was sold to a large database company. Rob started his career out of college in the Government arena with the State of California where he was a mainframe systems programmer.

Within these firms, Rob has filled both technical and executive roles; sometimes facing the engineering and product side of the business and sometimes facing the end-users, but always with both feet grounded in the technology.

Rob also publishes a popular blog on database technology: the Database Fog Blog and is a regular contributor to the blog at the CIO.gov site.