

**Statement of  
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before the  
United States House of Representatives  
Committee on Homeland Security  
Subcommittee on Transportation Security  
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Chairman Katko, Ranking Member Rice and distinguished Members of the Subcommittee, I am pleased to appear before you today to discuss the Transportation Security Administration's (TSA) use of technology to meet key mission objectives.

TSA was created in the wake of the attacks on September 11, 2001, to protect the Nation's transportation systems and ensure freedom of movement for people and commerce. Our operations use a range of capabilities in a risk-informed approach to screen nearly 660 million passengers and nearly 2 billion carry-on items and checked bags annually. As a result, Transportation Security Officers (TSOs) were able to prevent 119,000 dangerous items from being carried onto airplanes in Fiscal Year 2015. Our screening technology evolves to meet the dynamic threat through our extensive partnerships across government, academia, and industry.

**Passenger Screening**

Congress established TSA through the Aviation and Transportation Security Act (ATSA) (P.L. 107-71), which designated passenger screening as a Federal responsibility. TSA prioritizes its technology investments based on Intelligence Community assessments concerning the evolving nature of terrorist capabilities, tools and intent. TSA performs risk analyses as the foundation for deriving operational needs and requirements, taking into consideration potential threats, vulnerabilities to those threats given current system capabilities, and the consequences in the event of an attack. To meet these challenges, passenger screening technology, processes, and systems must continually adapt and evolve. TSA utilizes a range of technological capabilities to screen passengers and accessible property. Passenger screening technologies include Advanced Imaging Technology (AIT), metal detectors, explosives trace detectors (ETD), and bottled liquids scanners (BLS). Carry-on baggage is screened using Advanced Technology X-Ray, BLS and ETD technologies.

Prior to the development and fielding of AIT and dual view AT X-ray, metal detection and single view X-ray were the most common methods for screening passengers and carry-on baggage, respectively. These new AIT and AT X-ray technologies provide a substantial improvement in detection capability for the most significant concealments over the previous

generation, and specifically strengthen TSA's ability to detect non-metallic explosives, which current intelligence has identified as an ongoing threat to aviation security.

TSA closely partners with the Department of Homeland Security (DHS) Science and Technology Directorate (S&T) on Research and Development (R&D) to ensure development efforts align with program goals and expectations for achieving and implementing higher levels of performance detection. DHS S&T is assisting TSA in the advancement of detection capabilities by characterizing new threats to aviation. These efforts will assist TSA, as well as small and large business equipment manufacturers, in the development of enhanced future systems. TSA is seeking to acquire a robust adaptive passenger screening system that builds upon existing capabilities while advancing functionality to ensure a higher level of system effectiveness and efficiency.

### **Transportation Security Acquisition Reform Act (TSARA) Background**

The TSARA was signed into law on December 18, 2014 (P.L. 113-245) and mandated increased transparency and the application of acquisition best practices for security technology acquisitions. The law includes provisions for TSA to advance small business contracting goals, adhere to acquisitions and inventory policy and procedures, and develop a Five-Year Strategic Technology Investment Plan. Building on a previously developed strategic and capability investment plans, TSA developed the Five-Year Strategic Technology Investment Plan, which the Agency found to be an opportunity to further our partnership with industry and aviation security stakeholders, communicate future focus areas and themes, and articulate planned technology initiatives and purchases.

In developing the Five-Year Plan, TSA augmented ongoing Industry Days and vendor communication with a series of Industry Forum Working Groups and released a Request for Information (RFI) to solicit industry input. TSA then incorporated this industry feedback into a draft copy of the Plan. This report was also reviewed by the Aviation Security Advisory Committee (ASAC) before being finalized and submitted to Congress on August 12, 2015. The Plan was published on the FedBizOpps.gov website on September 2, 2015.

TSA received thoughtful insight from stakeholders throughout the development of the report, which provided a strong framework for TSA's Five-Year Strategic Technology Investment Plan. Four key themes anchor the Plan:

- Integrating principles of Risk-Based Security (RBS) in capabilities, processes, and technologies;
- Enhancing core mission delivery by focusing on a system (or systems) that analyzes threats, risks and opportunities across the aviation security environment;
- Streamlining acquisitions, requirements, and test and evaluation processes; and
- Increasing transparency in engagement with stakeholders to enable innovation.

Streamlining acquisitions and increasing transparency of the acquisition process is an area of focus for TSA. TSA is continuing to pursue advanced concepts and capabilities to enable TSA's vision of the future of security screening. To better focus these investments, TSA generates a list of capability gaps to drive continued technology development and enhancement using a structured, repeatable process. Technology solutions are developed by industry to close capability gaps, strengthen aviation security, and drive toward future screening innovations. Recognizing that the threat environment is constantly evolving, TSA actively pursues enhanced capability development to address capability gaps, optimize existing technologies, and develop future technologies. Capability development occurs in tandem with recapitalization and enables

TSA to upgrade existing platforms with new capabilities. This allows TSA to upgrade existing technology by improving detection algorithms (or other similar methods) as new capabilities arise, instead of requiring complete system replacements. In addition to the upgrade process, TSA also outlined planned technology recapitalization. Transparency about the acquisition process as well as technology priorities provides stakeholders better insight on how to partner with TSA.

Since enactment of TSARA, TSA has worked to enhance transparency and partnerships with stakeholders and execute technology initiatives as identified in the Five-Year Strategic Technology Investment Plan. TSA's end goal is accelerated capability development through rapid identification, testing, prototyping, and piloting with the ability to quickly evaluate products and push forward promising capabilities. TSA continues to engage with industry through forums such as Washington Homeland Security Roundtable, Security Manufacturer's Coalition and ASAC, in addition to regular Industry Days. TSA is also developing a concept to enable early capability demonstration and allow industry access to data and real-time user feedback, which has been a frequent request from industry.

### **Test and Evaluation Process Updates**

When a vendor fails a Qualification Test (QT) and Operational Test (OT) multiple times, TSA's acquisitions deadlines are extended and the government's Test & Evaluation (T&E) and acquisition costs increase. To alleviate some of these concerns, TSA is pursuing Third-Party Testing as an opportunity to allow vendors to refine their products with an outside entity, which reduces TSA's cost and time from test delays.

TSA is working with the National Institute of Science and Technology (NIST) to develop a Third Party Test Program to ensure capabilities are mature enough to enter TSA's formal T&E process. To support the implementation of third party testing, TSA approved the Third Party Test Strategy on April 21, 2015. TSA plans to begin implementing the Third Party Test Program in a phased approach by December 31, 2016.

TSA also created a Policy and Guidebook to standardize TSA roles, responsibilities, and policy and provide vendors guidance on how to prepare a Qualification Data Package. This will assist in reducing the acquisition timeline and the amount spent on retest costs. Additionally, TSA developed a Master Tracker to better manage and monitor testing events and information. The tool delivers a comprehensive understanding of all T&E events and will aid TSA in closing a Government Accountability Office's (GAO) recommendation to conduct a root-cause analysis of testing challenges and their impact on the acquisition processes. The incorporation of a Third Party Test Strategy reduces cost and time associated with test delays, shortens the acquisition timeline, and streamlines the incorporation of future technology initiatives.

### **Future Technology Initiatives and System Architecture**

TSA has invested in the future of aviation security by pursuing enhanced technology to enable a flexible, adaptable, and robust multi-capability approach to detecting and disrupting an evolving range of threats. The key to this vision is a holistic "system-of-systems" perspective, which integrates technology, data, and processes within and across airports. TSA is developing a system architecture that will enable expanded implementation of RBS by developing an integrated security screening system that defines business rules, equipment functionality, information exchange, and decision making. This system architecture approach will allow TSA to proactively identify gaps and define capabilities at a system level. TSA will continue to

collaborate with stakeholders to develop this shared vision for the future state of aviation security where business, data, and next-generation platforms combine to enable near-real-time decision-making and response capabilities to address emerging and evolving threats.

TSA has determined functional enhancements that will address existing capability gaps over the next five years outlined in the technology initiatives in the Five-Year Plan. Technology enhancements will enable a future system defined by:

- Enhanced algorithms for Explosives Detections Systems that decrease false alarm rates to minimize officer resolution and the removal of items from passenger bags;
- Dynamic algorithm switching and the application of risk profiles facilitate the evolution of RBS, ensuring passengers and baggage are screened at the appropriate risk level;
- Biometrics to enable real-time identity verification of passengers at the checkpoint; and
- Next generation carry-on screening capabilities to more precisely screen carry-on baggage, improving detection capabilities and false alarm rates.

## **Conclusion**

TSARA mandated certain best practices for procuring and using best available technology to meet critical mission needs. The Five-Year Strategic Technology Investment Plan mandated by the law presents a forward-looking investment plan that supports best practices and improved transparency in security technology acquisition programs. Now, one year after TSARA was signed into law, TSA has increased transparency and alignment across security technology acquisitions to deploy an effective, adaptive and flexible system of security capabilities to safeguard the American public from terrorist attacks on transportation systems.

I want to thank the Subcommittee for your continued partnership on this and other important issues, and I look forward to answering your questions.