DHS SCIENCE AND TECHNOLOGY

Screening at Speed

10/6/2021
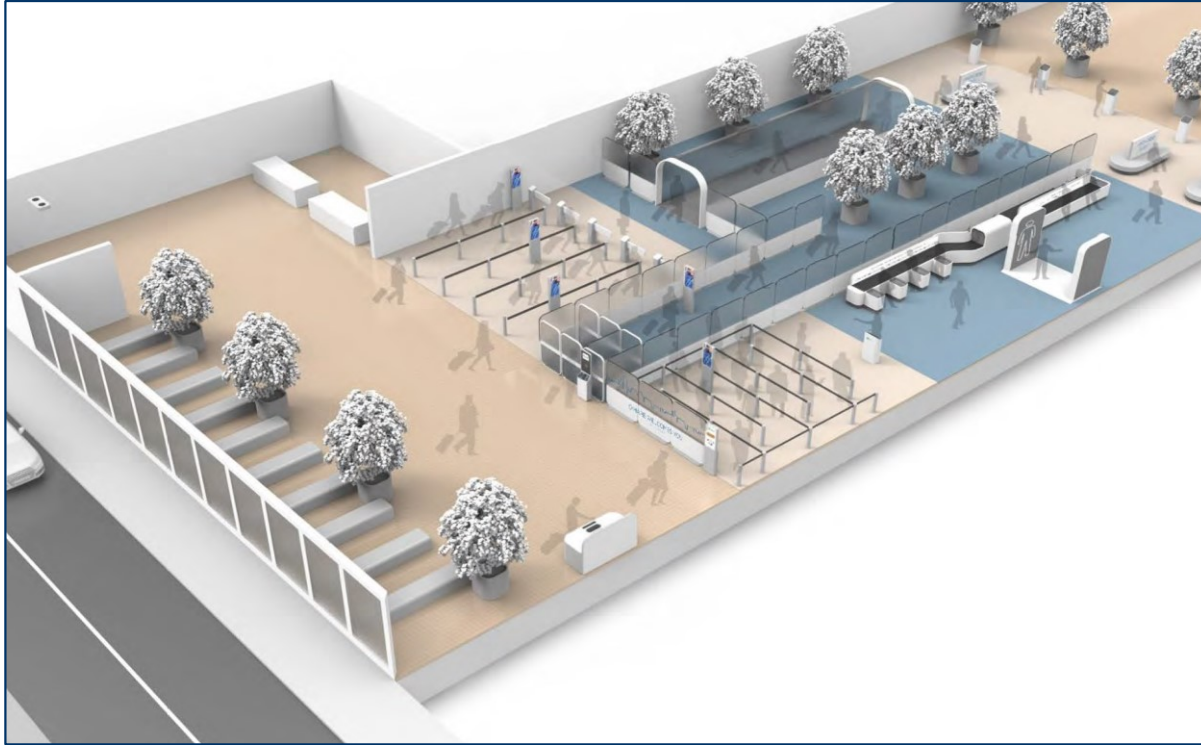
Homeland Security
Science and Technology

Dr. John Fortune
Program Update
Mission Support and Capability
Science and Technology Directorate

Screening at Speed Overview

Project Thrust Areas

Passenger Screening	Passenger Analysis	Carry-On Screening
Overarching Architecture	Enabling Capabilities	

Screening at Speed pursues transformative R&D to increase security effectiveness from curb-to-gate while dramatically reducing wait times and improving the passenger experience.

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Recent Program Accomplishments

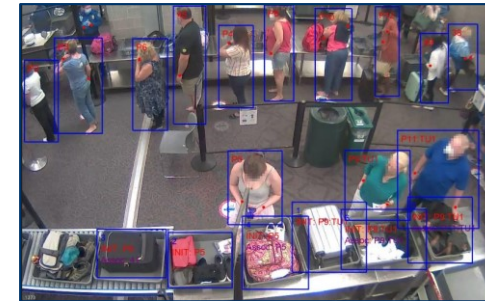**Moved TSA closer to next generation concept of operations**
- Demonstrated passenger-to-bag association using airport video.
- Passenger Self-Screening Project contracts awarded for system concept design, video analytics maturation, and hardware subsystem development.
- Filed three patents covering Screening at Speed next-generation capabilities.

Passenger-Bag Correlation with Airport Data

Commercialized High Definition – Advanced Imaging Technology and R&D 100 winning Shoe Scanner passenger screening systems
- Design for manufacture activities ongoing for future TSA acquisition.
- Won FLC Mid-Atlantic Region Interagency Partnership Award.
- High performing automatic threat recognition algorithm testing underway to meet TSA's highest detection standards while reducing pat-downs.

HD-AIT and Shoe Scanner Prototypes at the Transportation Security Laboratory

Kicked-off three airport demonstrations
- Computed Tomography X-ray diffraction screening system tests at Miami International.
- Detection algorithms for weapons and other non-explosive threats in carry-on baggage demonstrated at the Las Vegas International Airport Innovation Checkpoint.
- Terminal-wide video analytics at Boston-Logan International Airport.

X-ray Diffraction Demonstration at Miami International Airport

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Collaboration Vehicles

Developed System Prototypes

Shoe Scanner	High Definition-AIT
Real-Time AIT	CT X-ray
Augmenting X-ray Technologies	Video Analytics
Risk Assessment Models	Open Platform Software Library
Automatic Threat Recognition Algorithms	

- Interagency Agreements (IA)
- Long-Range Broad Agency Announcement (LRBAA)
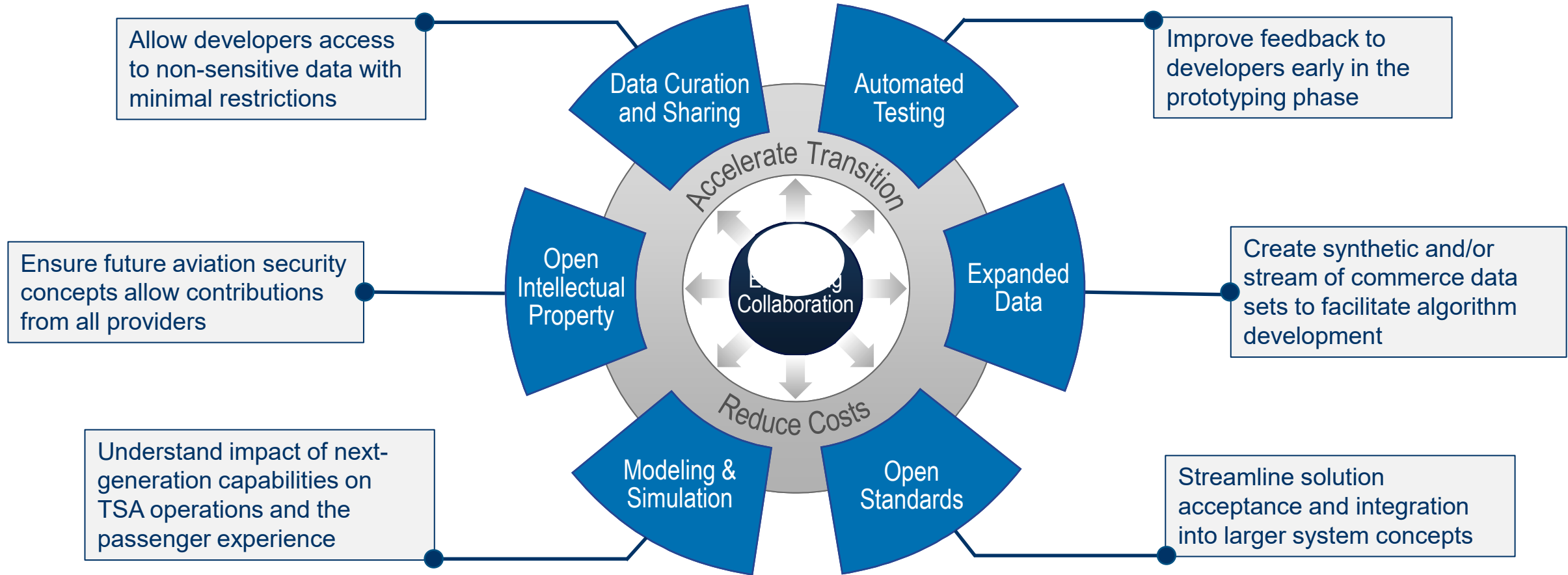- Screening at Speed Broad Agency Announcement (BAA)
- University Center of Excellence Agreements
- Small Business Innovation Research (SBIR)
- Silicon Valley Innovation Program (OTA)
- Cooperative Research and Development Agreements (CRADA)

Initiatives to Enhance Collaboration

Allow developers access to non-sensitive data with minimal restrictions

Improve feedback to developers early in the prototyping phase

Ensure future aviation security concepts allow contributions from all providers

Create synthetic and/or stream of commerce data sets to facilitate algorithm development

Understand impact of next-generation capabilities on TSA operations and the passenger experience

Streamline solution acceptance and integration into larger system concepts

Accelerate Transition

Reduce Costs

Data Curation and Sharing

Automated Testing

Open Intellectual Property

Expanded Data

Enabling Collaboration

Modeling & Simulation

Open Standards

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DIVERSE PERSPECTIVES + SHARED GOALS = POWERFUL SOLUTIONS