



DHS SCIENCE AND TECHNOLOGY

Apex Screening at Speed

July 23, 2019



**Homeland
Security**

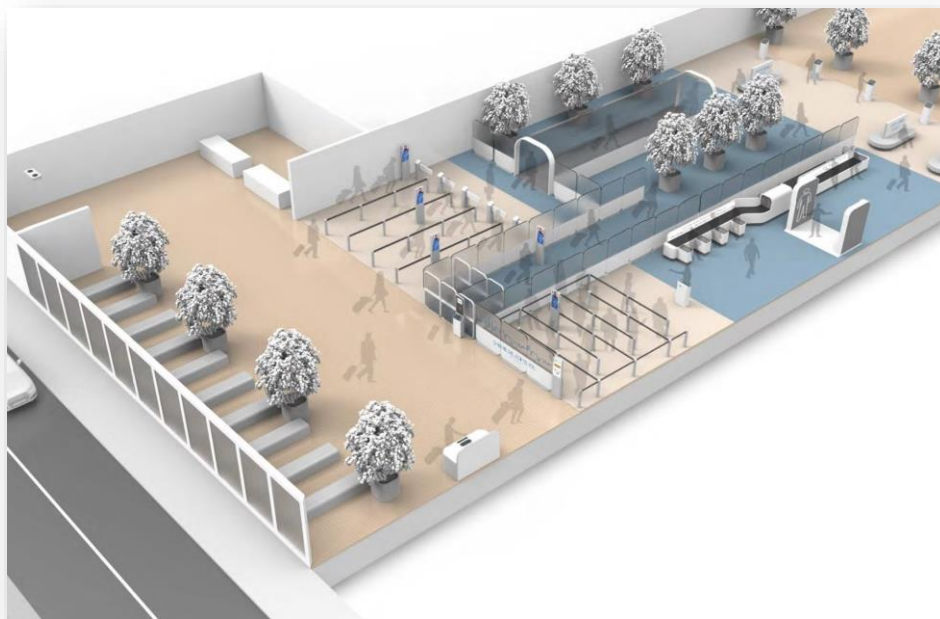
Science and Technology

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Apex Screening at Speed pursues transformative R&D activities that support a future vision for increasing security effectiveness from curb to gate while dramatically reducing wait times and improving the passenger experience.

Thrust Area	R&D Areas
Passenger Analysis	<ul style="list-style-type: none"> • Video Surveillance • Passenger-Bag Correlation • Identity Verification
Passenger Screening	<ul style="list-style-type: none"> • High-definition Advanced Imaging Technology (AIT) • Walk-by AIT • Shoe Scanner • Automated Threat Recognition (ATR) • Material Discrimination
Carry-On Screening	<ul style="list-style-type: none"> • Computed Tomography (CT) X-ray • Augmenting X-ray Technologies • ATR Algorithms • CT Human-Systems Interfaces
Enabling Capabilities	<ul style="list-style-type: none"> • Optical Trace Detection • Adaptive Algorithms • Augmented Reality Human-Systems Interface • Synthetic Data • Low-latency Network Interconnects
Overarching Architecture	<ul style="list-style-type: none"> • Open Threat Assessment Platform (OTAP) • Airport Risk Assessment Model (ARAM) • Futures Workshop / Systems Architecture Development • Sensor Fusion Open Architectures

Apex Screening at Speed Core Capabilities

Modularization

- Upgrade detection components as capabilities become available

Integration

- Share data across sensors, fused with passenger metadata

Open Architectures

- Independently develop and upgrade hardware and algorithms

Identity Management

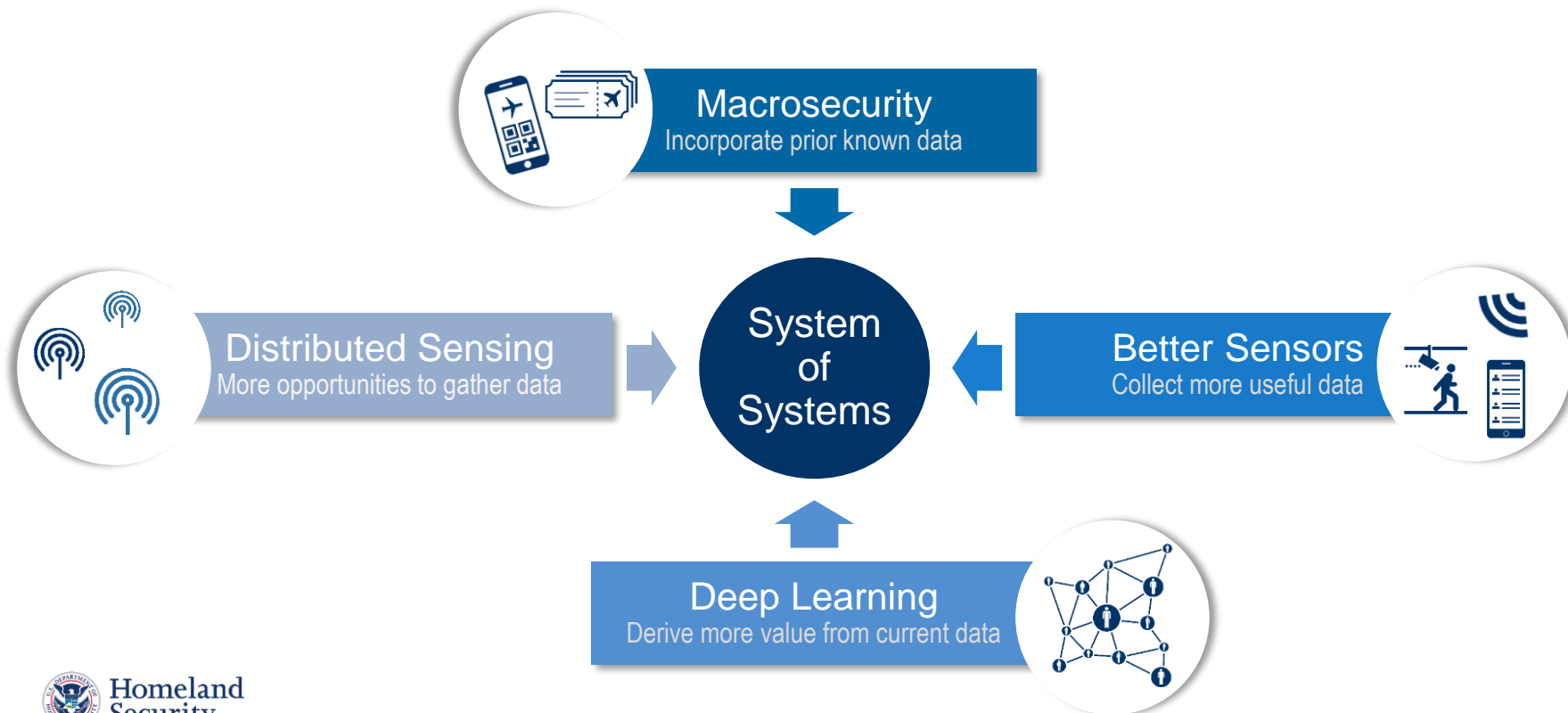
- Leverage identity while respecting privacy to inform algorithms and implement risk-based security within a single lane

Throughput

- Deploy high performance computing with high speed interconnects for faster decisions and fewer pat-downs and bag searches

Future State Concepts

A system of systems approach will allow efficient screening to better balance security and passenger throughput.



Updated Long-Range Broad Agency Announcement

- The **LRBAA** is our standing, open invitation to the scientific and technical communities to propose novel ideas that address DHS Components' highest priority operational needs.
 - ✓ Transparent, simplified announcement with more details
 - ✓ Streamlined efficient submission procedures
 - ✓ Notification of DHS interest in your research in 10 days
 - ✓ Flexible communications including dialogue with topic program managers, a virtual pitch, and submission of an optional video

<https://www.dhs.gov/science-and-technology/st-lrbaa>



Questions?



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DIVERSE PERSPECTIVES + SHARED GOALS = POWERFUL SOLUTIONS