Baggage/Cargo/People Screening Program

Science and Technology

IMPROVING AIR SECURITY SCREENING IN A CHANGING WORLD

The Department of Homeland Security (DHS) Transportation Security Administration (TSA) screened 904 million passengers and 500 million checked bags in 2024 and the numbers continue to rise. Air cargo is carried on nearly all commercial flights, makes up 35 percent of global trade, and is mandated to be 100 percent screened, while security threats continue to evolve and become more difficult to detect. All these factors create a complicated and massive screening requirement to protect people and infrastructure. Future screening systems will need to be capable of screening at the speed, capacity, and detail needed to stay ahead of emerging threats and keep pace with the growth of travel and commerce.

INVESTING IN THE FUTURE OF SCREENING

The DHS Science & Technology Directorate (S&T) Baggage, Cargo, People Screening Program is at the forefront of screening, detection, and mitigation research and development to detect explosives and prohibited items at airports and in air cargo. The program invests in solutions for these complicated requirements through a subset of programs covering four focus areas: Air Cargo, Checked Baggage, Next Generation Explosives Trace Detection, and Screening at Speed (which pursues next generation passenger and carry-on screening). All four work together with government, industry, and academic partners to develop new processes, technologies, and training to keep up with changing detection and security requirements.

SOLUTIONS THAT BENEFIT EVERYONE

The Baggage, Cargo, People Screening Program partners with TSA to use a system-of-systems approach with open architectures and layered aviation security assets from curb to gate, which reduces security risks, facilitates rapid system upgrades, improves responsiveness to evolving threats, and lowers security costs. Solutions created by the program also improve detection of explosives and prohibited items and reduce false alarms. That means fewer secondary inspections of checked and carry-on bags, fewer passenger pat downs, less divestment of personal items at the checkpoint, and reduced need to unload air cargo pallets.

These technologies can also be applied elsewhere, such as along borders and at large-scale national security events.

RECENT ACCOMPLISHMENTS

- Completed next generation air cargo skid scanner prototypes and initial testing with stream of commerce material
- Demonstrated enhanced Computed Tomography (CT) detectors with retrofit capability for checked bag systems to improve threat detection and reduce false alarms
- Delivered to the Transportation Security Laboratory for evaluation a Real-Time Advanced Imaging Technology passenger screening system
- Demonstrated a self-service screening system for both property and passenger screening at Harry Reid International Airport in Las Vegas

UPCOMING MILESTONES

- Complete pre-qualification testing and evaluation of next generation air cargo skid scanners
- Deliver CT/X-ray Diffraction checked bag operational prototype to improve detection and reduce false alarms
- Deliver two prototype explosive detections systems capable of detecting and identifying explosives through vials, bottles, and packages without opening them
- Demonstrate three self-service screening pods to evaluate performance and feedback from TSA and mock travelers
- Conduct an airport demonstration of a shoe scanner that detects threats in footwear without passengers having to remove them for screening

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