

IMPROVING AIR SECURITY SCREENING IN A CHANGING WORLD

The Department of Homeland Security (DHS) Transportation Security Administration (TSA) screens 750 million passengers and 850 million checked bags every year 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. Current security systems will not be capable of screening at the speed, capacity, and detail needed to stay ahead of emerging threats and keep pace with the speed and 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 uses 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 these programs 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, and reduced need to unload air cargo pallets.

Improvements in air security can also be applied elsewhere, such as along borders and at large-scale national security events.



RECENT ACCOMPLISHMENTS

- Demonstrated a video analytics capability that enables passenger screening automation
- Completed a technical design review of an X-ray augmentation technology that improves detection and reduces secondary screening
- Completed and tested the prototype design of a Computational Tomography (CT) X-ray detector configurable with existing system

UPCOMING MILESTONES

- Conduct a critical design review of a high-density cargo scanner
- Demonstrate and test an algorithm that assists operators with alarm resolution by identifying threat device components in addition to the explosives alarm
- Complete a design review for a small-bulk confirmatory prototype that screens through barriers
- Demonstrate an in-motion, advanced imaging technology prototype that enables passenger self-screening or high-throughput screening