

ALERT

Awareness and Localization of Explosives-Related Threats (ALERT) is a Department of Homeland Security Center of Excellence.

THE ALERT MISSION

ALERT seeks to conduct transformational research, develop technology, and provide educational development to improve effective characterization, detection, mitigation and response to explosives-related threats facing the country and the world.

ALERT ORGANIZATION

The ALERT Center is a partnership made up of 28 national and international academic, industrial and government entities.

Apex Screening at Speed

Part of the DHS Science and Technology Directorate (DHS S&T), Apex Screening at Speed is pursuing 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.



ALERT's CLASP Project is using video technology to make airport security smarter, safer, and faster.



IMPROVING THE AIRPORT SECURITY EXPERIENCE

Passengers, their baggage, and other items are separated at security checkpoints during normal screening operations. Theft, increased wait times at the checkpoint, and other situations related to this separation lead to a more negative passenger experience.

Video analytics technology may soon be able to help improve the passenger experience in airport security by tracking both passengers and their luggage as they move through security. By successfully tracking passengers and their luggage, ALERT will enable advanced capabilities at the Transportation Security Administration (TSA) such as advanced risk-based screening and more efficient resource allocations.

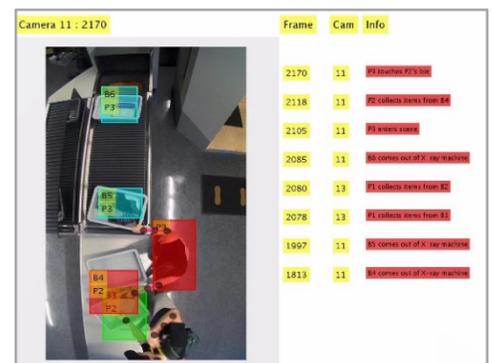
HOW ALERT IS AUTOMATING THE CHECKPOINT

The Correlating Luggage and Specific Passengers (CLASP) Project uses software trained to process data from video cameras to track passengers and their items through the airport security checkpoint.

- Automated Tracking Algorithms (ATAs) are trained to use video data to track passengers and their items through the checkpoint.
- ALERT's CLASP Project, as part of the DHS S&T Apex Screening at Speed Program, partnered with Massport, Rapiscan, and the Transportation Security Administration to better craft a real-world solution.
- Funded by the DHS Science and Technology Directorate through the DHS Office of University Programs.

This software can automatically identify when passengers enter and exit the checkpoint, what items belong to which people, and unusual behaviors, such as a theft or items left at the checkpoint.

The goal of CLASP is to assist the TSA in both improving the passenger experience through reduced wait times, enable more efficient screening processes, minimizing theft and keeping track of passenger items, as well as improving detection performance in airports.



CLASP software automatically identifying person3 reaching into person2's bin.

RESEARCH THRUSTS

- Characterization & Elimination of Illicit Explosives
- Trace & Vapor Sensors
- Bulk Sensors & Sensor Systems
- Video Analytics & Signature Analysis

CENTER MEMBERSHIP

By becoming an ALERT Industrial Member, you are not only linked to researchers that are top in their field, you also have the opportunity to request targeted research in an area of interest to your organization.

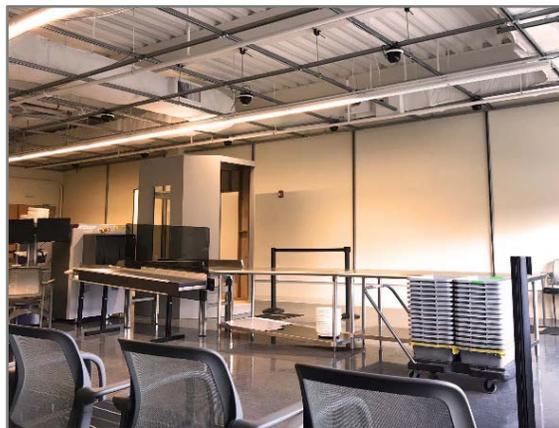
TRAINING THE HSE

ALERT supports the Homeland Security Enterprise by providing intensive explosives training courses to over 400 working HSE professionals and first responders a year.

For more information on any of our research or programs please visit us on the Web at:

www.northeastern.edu/alert

Setting The Scene



ALERT Video Analytics Laboratory with the CLASP mock airport security checkpoint.

The CLASP team needed to acquire video data that included a high number and variety of checkpoint security situations like a theft or a bag left at the checkpoint. Since these situations are relatively rare in actual airport video footage, and there can be limitations on the use or distribution of that footage, a mock airport security checkpoint was built and security cameras installed.

The checkpoint uses much of the same hardware currently used by the Transportation Security Administration (TSA) at many airports and its configuration follows TSA's design. To generate the video footage, actors pass through the checkpoint, recreating a variety of different scenes, while being recorded by security cameras above.

The CLASP Team @ ALERT

CLASP RESEARCH TEAM

[Boston University](#)

[Marquette University](#)

[Northeastern University](#)

[Purdue University](#)

[Rensselaer Polytechnic Institute](#)

The CLASP team is comprised of video analytics experts from five ALERT universities. The CLASP Leadership Team is:

- Michael Silevitch, CLASP Project Lead and Director of ALERT
- David Castanon, CLASP Technical Lead



ALERT
AWARENESS AND LOCALIZATION
OF EXPLOSIVES-RELATED THREATS
A DHS CENTER OF EXCELLENCE

360 Huntington Avenue
302 Stearns Center
Boston, MA 02115
Phone 617.373.4673
Fax 617.373.8627