Physical Security

Science and Technology

SAFELY DETECTING POTENTIAL THREATS

Law enforcement and security personnel need a way to safely detect potential threats concealed in vehicles, on people, and in their belongings that maintains personal privacy and does not involve physically searching them or impacting their flow of travel. Solutions to this challenging problem are currently limited, which is why the Department of Homeland Security (DHS) Science and Technology Directorate (S&T) is developing a layered and integrated capability to detect potential threat items at the speed of the traveling public.

LEVERAGING RESEARCH AND DEVELOPMENT ACROSS PARTNERSHIPS

The S&T Physical Security Program is working in collaboration with our component stakeholders, end-users, and our technology development partners to close the security gap through innovative technologies designed to work together and provide screening coverage of unstructured crowds.

Event Security Decision Support Tools: A Special Event Assessment Rating (SEAR) events protection portal, containing security decision-support tools for use by the DHS Cybersecurity and Infrastructure Security Agency (CISA), DHS Regional Protective Security Advisors, and other DHS operational components.

Advanced Video Analytics: Tools with a "user-in-the-loop" capable of quickly capturing the surrounding circumstances of a leave-behind event, allowing security personnel to clear suspicious packages without necessitating an emergency response.

Standoff Detection: Non-invasive imaging sensors using complementary parts of the electromagnetic spectrum, which can safely scan people and their belongings within soft-target venues and crowded places without physically contacting them. Also, chemical detectors capable of finding trace explosive or narcotic materials on vehicles while maintaining passenger safety.

The Washington Metropolitan Area Transit Authority (WMATA) serves as a test bed for several S&T-developed surface transportation security technologies.

Layered Architecture: Gathers input from distributed sensors of different modalities to achieve a more accurate and holistic threat assessment.

Transparent Curved Ceramic: Lightweight and affordable transparent armor for installation in armored vehicles.

SECURING SURFACE TRANSPORTATION AND SOFT TARGET VENUES

S&T is developing this technology for use in the surface transportation environment because it is the most difficult security challenge. However, these tools will also have applications to other parts of the homeland security e nterprise. They can be used to monitor events that take place at stadiums, convention centers, and schools and can enhance security in any soft-target venue or environment with unstructured crowds. It is impossible for law enforcement officials to be everywhere at all times; thus, S&T is developing these tools to serve as a force-multiplier, assisting security personnel in keeping the public safe.

To learn more, please visit the S&T Surface Transportation Explosive Threat Detection page.