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ANSI-HSSP Workshop Details Standards Needs for Non-Invasive Inspection Systems

New York May 14, 2010

Following the attempted car bombing of Times Square on May 1, explosives screenings are at the forefront of everyone's minds, from tourists, citizens, and security personnel on the ground to policy makers on Capitol Hill. No matter the type of explosives detection, standards and conformity assessment activities are critical to assuring that these technologies are interoperable, scalable, and properly implemented by the security teams working to keep people and facilities safe and secure.

On April 29-30, the American National Standards Institute (ANSI) Homeland Security Standards Panel (HSSP) hosted nearly 150 technical experts from the U.S. and abroad for a highly interactive *Workshop on Non-Invasive Inspection Systems for Homeland Security*. Held in Gaithersburg, MD, the event addressed standards and conformity assessment needs for non-invasive explosives detection, including ionizing radiation, non-ionizing radiation, metal detectors, and automated target recognition for screening persons, luggage, cargo containers, and vehicles.

Workshop co-chairs Larry Hudson, Ph.D., of the National Institute of Standards and Technology (NIST) Physics Laboratory and Lee Spanier of the U.S. Department of Homeland Security (DHS) Transportation Security Laboratory provided opening remarks and set the tone for the workshop as an interactive brainstorming session.

"Our goal is to communicate amongst ourselves and inform each other of the standards and tools that are out there and in use," explained Dr. Hudson. "Then we can work together to identify the gaps and prioritize standards development needs."

> **What are the most urgent standards development needs for explosives detection?**
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> Download the workshop summary presentation to find out.

Keynote speaker Dr. George Zarur, science advisor to the DHS Transportation Security Administration, gave a lively introduction on the importance of standards for faster, better, and more efficient security inspection systems.

"Standards improve quality, lower cost, and make it possible for equipment to be distributed to a much wider audience," said Dr. Zarur. "For example, fingerprint imaging equipment used to cost over seventy thousand dollars. After the FBI and DHS worked with NIST on a fingerprint standard, the technology became more widely implemented. Today, new fingerprint equipment is under five thousand dollars, thanks to standards."

Over the course of four panel presentations, participants shared information and analyzed gaps in the existing standards landscape, resulting in a summary presentation that outlines the most urgent standards development needs for explosives detection measures. This **summary presentation** is available online for all interested stakeholders, as is the full workshop agenda.

The first panel addressed ionizing radiation technology standards, which are most frequently used for bulk explosives detection in cargo. Issues surrounding imaging performance and radiation safety rose to the forefront, with participants citing the need to bridge the gap between the image quality or technical performance of equipment and its ability to detect threatening materials.

In contrast, explosives and other threats that are carried by individuals was the focus of the workshop's second panel, which focused on non-ionizing radiation. Uniform safety standards for detection equipment were a key area of concern, as were concept of operations (CONOPS) standards that would assist users in implementing explosives detection systems. Finally, panelists agreed that individual privacy must be assured through the screening process, and that standards are needed to help guide manufacturers and implementers alike.

The third panel examined another way to assess threats carried by individuals – metal detectors. Although this type of equipment has been in use for many years, technological developments and interoperability concerns are a few areas where more standardization work is needed. Panelists discussed the need for more sensitive equipment that can differentiate among types of metals, distinguishing innocuous metal objects like coins and belt buckles from weapons like guns or knives. Further research and standards are also needed to prevent metal detectors from interfering with personal medical devices like insulin pumps and pacemakers.

Automated target recognition (ATR) software, which can recognize targets or objects based on data obtained from sensors, was the topic of the workshop's fourth and final panel. Panelists agreed that with such a variety of vendors and products on the market, standards and conformance measures are greatly needed within the ATR field to assure that all machines are tested equally, that they perform up to standard all the time, and that there is a harmonized level of security. Standards are also needed for nomenclature, imaging quality, data format, and ATR testing, detection, and scoring methods.

"The need for more effective standards for explosives detection is not only a homeland security issue but it is also a business issue," explained Gordon Gillerman, ANSI-HSSP co-chair and conformity assessment advisor for homeland security at NIST, in his closing remarks. "The government has a stake in making sure that standards work and are effective, and emergency responders, security personnel, and other end users must have a voice in the standards development process to ensure that the guidelines and requirements put in place will work in the field."

For more information on the work of ANSI-HSSP related to non-invasive inspection systems and other homeland security initiatives, visit www.ansi.org/hssp.