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Cohen on the DHS perspective

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"I have to deal with the Sheriff of Mayberry, the NYPD, [Native American] tribal first responders, and the Chicago Fire Department," said Jay Cohen, explaining the interactions he encounters during his normal course of business. The Honorable Mr. Cohen, Department of Homeland Security Under Secretary for Science and Technology, is a retired Rear Admiral and former Chief of Naval Research. He summarized the mission of the DHS as "eliminating the seams." That is, by merging a large number of government agencies, the DHS hopes to catch "the bad guys who work the seams."

The Honorable Jay Cohen Department of Homeland Security Under Secretary for Science and Technology. Photo credit: DHS.
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The DHS S&T program focuses on six main areas: explosives (excluding nuclear or radiological); chemical and biological threats; borders and the maritime environment; command, control, and interoperability; human factors (psychology and related fields); and infrastructure and geophysical sciences. Cohen describes his approach as "customer focused, output oriented, while still respecting discovery and invention."

The command, control, and interoperability efforts focus on what Cohen calls the "disenfranchised user," referring to responders in the field, including police officers and firefighters who often find that their communications systems are incompatible. He explained that integrating these systems poses technical problems, but leaders of responder organizations also must be persuaded to relinquish some degree of operational control in order to enable such integration.

Cohen initiated the DHS work on human factors, a continuation of his work at ONR, that includes improving detection of hostile intent and better understanding of various types of enemies. He referred to the Global War on Terrorism as a war of ideas, and noted that the U.S. could be doing better than it currently is. By comparison, he said, "Madison Avenue can sell you something you didn't want, and you enjoy it."

Taking on greater risk during the research and development phases helps resolve practical problems and lessens the risk to potential buyers during the acquisition phase, Cohen said. He noted that much of the resistance that customers have to adopting new technologies is based on practical aspects, such as weight, maintenance, and cost, that often are not addressed adequately during the development phase.

Often, innovation consists of adapting existing technologies to new purposes, Cohen said. He cited the example of infrared sensors, which were used as a preliminary

screening device for visitors to the Taipei Medical University-Wan Fang Hospital in Taipei, Taiwan, during the 2003 SARS epidemic. The sensors successfully identified visitors who were running a high fever, one of the distinguishing symptoms of SARS.

In the future, Cohen speculated, these devices might be used at airports or large public gatherings to detect persons under severe stress, such as might be expected for a suicide bomber. Such applications are not without risk, however, he pointed out. Could an infrared sensor distinguish between a terrorist and a person under stress because of a family crisis or a last-minute dash to the ticket counter?

Would-be beneficiaries of new sensor technologies have expressed concern at their potential for misuse. Cohen cited the example of a survey regarding the installation of hazardous material detectors in commercial cell phones. He explained, "You put random sensors in everybody's cell phones, and the phones send a signal to a data center if they get a hit. If the data center registers enough hits in a given location, it puts out a call to alert all of the cell phone users in that area to evacuate."

Objections on the grounds of privacy issues were no surprise to the survey team. One objection they didn't anticipate was raised by a large number of cell phone users: whose cell phone minutes would be charged for the calls to the data centers?

Apparently, in addition to the Sheriff of Mayberry, the NYPD, tribal first responders, and the Chicago Fire Department, Cohen should have a little talk with the "can you hear me now" guy in the cell phone commercial.

Jay Cohen spoke earlier this month at the NDIA Pacific Operational S&T Conference in Honolulu, Hawaii. This article is one of three in this month's NRE Navigator highlighting science and technology programs from the military, civilian, and entrepreneurial points of view.