Countering Unmanned Aircraft Systems

Eyes in the Sky

Under the Department of Homeland Security's unity of effort initiative, components and the Office of Intelligence & Analysis (I&A), Office of Policy, and Office of Public Affairs, work together to address threats such as threats from unmanned aerial systems (UAS). DHS's Science and Technology Directorate's Program Executive Office for Unmanned Aircraft Systems (PEO UAS), working with component counterparts, is developing an approach to evaluate Countering Unmanned Aerial Systems (CUAS) solutions to inform acquisition and utilization decisions based on the needs and requirements of specific DHS components.

The CUAS program aims to (1) ensure the Homeland Security Enterprise (HSE) is advised on the state-of-the-art technology and can readily access solutions, (2) ensure a quick reaction capability to address urgent gaps, and (3) ensure a capability to address future threats. To implement the strategic goals of the program, S&T will develop CUAS Capability Advisory and Review Tools, develop the quick reaction capability, address future threats, and provide technology transition and acquisition support to our operational users, U.S. Customs and Border Protection, U.S. Secret Service, National Protection and Programs Directorate, as well as the Federal Aviation Administration, and state and local first responders and law enforcement.
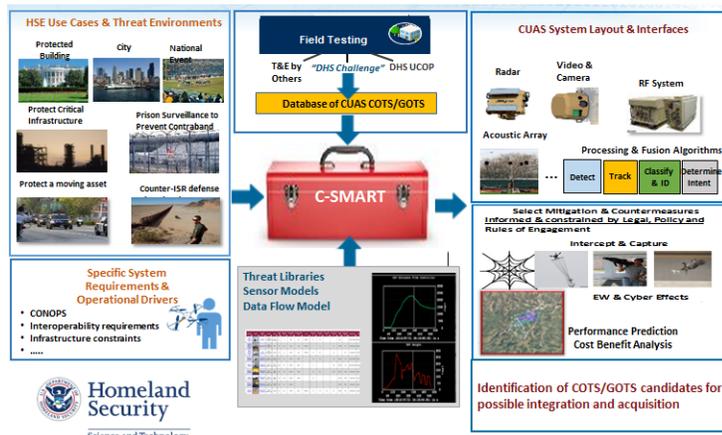
Developing a CUAS Toolkit

S&T will serve as a knowledge resource center using the Counter-Small UAS Advisory and Review Toolkit (C-SMART) and its application to homeland security.

C-SMART is a suite of computer models, databases, and analysis tools that help users analyze and plan C-UAS security postures for specific operations. This capability has helped (HSE partners understand the C-UAS threat and optimize security posture plans by leveraging Program Executive Office for Unmanned Aerial Systems (PEO UAS) technical expertise. S&T will transition C-SMART in direct support of national special security events (NSSEs) and special event assessment rating (SEAR) identified events.

The goal of countering UAS is to advise and provide readily accessible solutions to ensure quick reaction capabilities and the capability to address future threats to DHS components. These efforts include:

- **Counter UAS Capability Advisory & Review Toolkit (C-SMART).** DHS S&T will use C-SMART, its computer models, databases and analysis tools to help DHS customers lay out CUAS capabilities for specific operations, using commercial off-the-shelf/government off-the-shelf (COTS/GOTS) products.

- **Test and Evaluation Effort.** Quantifying the performance of CUAS COTS/GOTS for inclusion into the DHS database will provide inputs for and validation of modeling and simulation components of C-SMART, provide a basis for selecting system(s) to enter into the operational testing phase, and maximize efficiency by standardizing test method, data collection, and format, all while reducing the cost by pursuing interagency and international collaborations.

- **Urban CUAS Operational Testbed and Prototype Evaluation (UCOP).** DHS S&T conducted a test of a live CUAS capability for selected infrastructure in the National Capital Region (NCR). Phase 1: (1) integrated all currently deployed but disparate sensors, (2) distributed data products to NCR end-users, (3) pursued interagency architecture and standards for the tech 'plug in.' Phase 2: (1) evaluated new/improved technology for acquisition into the UCOP, and (2) validated and provided input for simulation exercises against scenarios/future threats that cannot be tested.

- **Quick Reaction Capability.** DHS S&T will tailor/integrate commercially available/mature technologies for its customers, with urgent needs. The testing and analysis capabilities and business processes will enable rapid evaluation/proofing of new equipment in the customer's operational setting.

- **Future Threats.** DHS S&T will anticipate, characterize, and assess future threats based on technology advancement and intelligence as well as incubating technologies for countermeasures.