Countering Unmanned Aircraft Systems

Science and Technology

CHALLENGE: MEETING MISSION NEEDS

Rapid increases in the availability and sophistication of small, unmanned aircraft systems (sUAS) represent a significant challenge as their capabilities progress faster than the ability to detect, track, identify, and potentially mitigate any potential threats. The Department of Homeland Security (DHS) Science and Technology Directorate (S&T) Counter Unmanned Aircraft Systems (C-UAS) Program is assessing C-UAS technologies and guiding the development of new capabilities for the Homeland Security Enterprise (HSE). The program supports requirements documentation, rapid development, system integration, and specification and performance testing based on the C-UAS needs and requirements of DHS Customs and Border Protection (CBP), Federal Protective Service (FPS), Transportation Security Administration (TSA), U.S. Secret Service (USSS), and U.S. Coast Guard (USCG).

PROGRAM GOALS

The S&T C-UAS program aims to:

- Advise the HSE on the performance and capabilities of state-of-the-art technology solutions in the C-UAS space.
- Ensure a quick reaction capability exists for DHS components to address urgent needs.
- Transition C-UAS capabilities to DHS components by researching, developing, testing, and evaluating various C-UAS technologies against their requirements.

CAPTURING TECHNOLOGICAL ADVANCES

Given the sUAS market's rise in sales and increase in capabilities, they have become a security concern due to the ease with which they can aid in intelligence gathering and/or can be used as a malicious delivery platform. This has created a need to identify available C-UAS technologies, evaluate the state of the market, monitor emerging threats, and support efforts to select and pilot suitable C-UAS technologies for a range of DHS missions.

In addition, S&T is collaborating with partners such as the U.S. Department of Justice and Department of Defense (DOD) to share test and evaluation results of best-in-class C-UAS technologies in operationally relevant environments. S&T also has an open Long-Range Broad Agency Announcement to engage traditional and non-traditional solution providers in various C-UAS technologies and solutions.

MISSION IMPACT

This program assists DHS components in defending the nation from UAS threats by providing research, development, test, and evaluation of C-UAS technologies.

FY23 ACCOMPLISHMENTS

- Transitioned over 15 C-UAS technologies to CBP, FPS, TSA, and USSS
- Technically supported six operational events in support of DHS components
- Executed eight high-visibility C-UAS technology test and demonstration events
- Performed over 10 specialized cybersecurity and spectrum tests to ensure secure and safe operation of C-UAS tech
- Evaluated 11 different types of C-UAS technologies for DHS operational components
- Drafted or updated over 15 privacy, environmental, safety, and/or health documents related to C-UAS Research Development Test and Evaluation.

UPCOMING MILESTONES

- Test airborne detect, track, and ID C-UAS capability aboard manned or unmanned platform(s)
- Conduct a second low collateral effect kinetic mitigation demonstration at closed military test range
- Evaluate C-UAS technologies with capabilities to detect, track, ID, and mitigate low observables, dark targets, and swarms

PERFORMERS AND PARTNERS

The C-UAS team is comprised of national labs, industry, federally funded research and development centers, DHS and DOD technical labs, and other interagency partners.