DHS Science and Technology Directorate

The Robotic Aircraft for Public Safety project will evaluate SUAS for first responder and border security applications

Robotic Aircraft for Public Safety

Small Unmanned Aircraft Systems (SUAS) are a valuable tool for emergency responders for rapid response and gaining invaluable situational awareness before responding and engaging in potentially dangerous operations. To assist emergency response agencies in the analysis and potential acquisition of these tools, the Department of Homeland Security Science and Technology Directorate (S&T) is conducting the Robotic Aircraft for Public Safety (RAPS) project, evaluating current SUAS platforms available to the first responder and homeland security operational communities, and providing valuable findings in support of their agency planning.

SUAS in a First Responder Context

Unmanned Aircraft Systems (UAS) have been utilized in military operations for years, becoming more prevalent as a tool for Intelligence, Surveillance, and Reconnaissance (ISR) — keeping the United States and allied soldiers safe on the field of battle. Application has been broadened to the homeland, where U.S. Customs and Border Protection (CBP) currently operates a fleet of MQ-9 Predator B UAS to protect our land and maritime border domains.

The use of SUAS – typically weighing less than 55 lbs. – by first responders and homeland security operators will make the following capabilities stronger, safer, and more cost effective:

- **Real-Time Law Enforcement Operational Support**
- **Special Event Response**
- **Crime Scene Situational Awareness**
- **Border Security**
- **Fire/Wildfire Response**
- **Disaster Evaluation and Response**

The RAPS Approach

S&T's RAPS project builds upon an S&T-sponsored pilot activity in Los Angeles County where tests were conducted on three SUAS platforms in scenarios related to law enforcement, fire/wildfire imaging, radiological detection, and search and rescue missions. Using a similar model for RAPS testing, SUAS vendors will be invited to have their systems tested at the U.S. Army's Fort Sill training range near Lawton, OK.

The RAPS team will evaluate each system using key performance parameters (i.e. endurance, stability, resolution, etc.) under a wide variety of simulated but realistic and relevant real-world operational scenarios, focusing on response to situations where human lives are in imminent danger. Safety concerns will also be assessed, including the aircraft's capability for safe flight in the event of a loss of communications between the aircraft and the ground controller.

For each test, a report will be generated with all nonproprietary information and made available on Firstresponder.gov, along with guidelines for safe use, Federal Aviation Administration protocols, and criteria for meeting privacy restrictions. S&T will serve as a transition agent between the vendor community and the ultimate users of this technology, as well as the American public.

Privacy Concerns

A key goal of the RAPS project is to address the privacy concerns that draw media interest and controversy and present a significant hurdle to the public acceptance of SUAS. S&T recognizes that the use of SUAS has privacy implications and is examining the need to limit circumstances under which SUAS may be deployed, limit and secure the types of data to be collected, and provide public notice.

Throughout the course of the RAPS project, S&T will actively work to learn how to eliminate or reduce potential privacy risks associated with the use of SUAS, and will work with federal, state, and local first responders to identify and minimize or eliminate privacy risks in live settings.

Homeland Security
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To learn more about the Robotic Aircraft for Public Safety project at DHS S&T, contact sandt.bordersmaritime@hq.dhs.gov

2012-07-17