



**REQUEST FOR INFORMATION (RFI)  
RFI Number: DHS 13-01**

**“Robotic Aircraft for Public Safety”**

**1. BACKGROUND/PROGRAM DESCRIPTION**

The Science and Technology (S&T) Directorate is the Department’s primary research and development arm. The S&T Directorate provides federal, state and local officials with the technology and capabilities to protect the homeland. The Directorate’s mission is to protect the homeland by providing Federal and local officials with state-of-the-art technology and other resources. The Borders and Maritime Security Division (BMD) in S&T supports this mission by developing and transitioning technical capabilities that enhance U.S. border security without impeding commerce and travel.

In support of this mission, BMD will conduct flight testing and evaluation of airborne sensors and small unmanned aerial systems (SUAS) for transition to its customers. The Robotic Aircraft for Public Safety (RAPS) project will invite SUAS vendors to a chosen location and evaluate each system using key performance parameters under a wide variety of simulated but realistic and relevant real-world operational scenarios, such as law enforcement operations, search and rescue, and fire and hazardous material spill response. The SUAS vendors will provide technically mature, flight proven vehicles and their fully-integrated sensors for evaluation. Safety concerns will also be assessed such as the aircraft’s capability for safe flight in the event of a loss of communications between the aircraft and the ground controller.

**2. PROBLEM STATEMENT/REQUIREMENTS**

The goal of this RFI is to solicit participation in the RAPS project from the SUAS vendor community (“SUAS providers”). S&T is completing an agreement with the state of Oklahoma for utilizing the U.S. Army’s Fort Sill test range for ongoing SUAS evaluation. The range will provide restricted airspace for unimpeded access for SUAS flight in addition to various environs for simulating realistic first responder, law enforcement and border security scenarios.

The SUAS providers are asked to submit a white paper describing the capabilities, maturity, flight experience, and safety performance of each platform. Each SUAS provider, if chosen for the RAPS project, will be provided a test plan and assigned five (5) consecutive flight days in advance of their systems' evaluation by S&T. The test plan provided will be the same for all SUAS providers, and range support and airspace access will be provided at cost to S&T. Travel and other associated expenses will be incurred by the SUAS provider.

During each flight test, the systems will be subject to an evaluation against the given parameters and will result in a report detailing its performance. The information within each test report will be classified as For Official Use Only, and will not be shared with the general public. All company-restricted information will remain proprietary to the SUAS provider, and not shared publicly without explicit consent.

Key Performance Parameters (KPPs) associated with the SUAS, in terms of Threshold (minimum) and Objective (preferred), are:

**Common Requirements**

	<b>Threshold</b>	<b>Objective</b>
Lost Link Procedures	Rally Point	Rally Point and after time return to launch
Airframe Accumulated Flight Time	> 1,000 hours	> 2,000 hours
Sensors	Electro-optical and infrared	EO/IR and Chemical/biological/radiological
Sensors (EO/IR)	Fixed	Gimbaled
Laser Designation	None	Laser spotter integrated
Training (operator)	One week	One day
Deployment	Bungee/catapult launch	Hand launched
Recovery	Line/net capture	Deep stall/hover
Assembly	< five minutes	< one minute
Ready to launch (after assembly)	< five minutes	< one minute
Mean time between lost link	> 100 hours flight time	> 250 hours flight time
Airworthiness – Operator’s Manual	Provide written Operator’s Manual	Provide written Operator’s Manual

Airworthiness – Maintenance Manual	Provide written Maintenance Manual	Provide written Maintenance Manual
Weight	< 25 pounds	< 25 pounds

In addition to the above KPPs, these criteria are added:

***Rotary-winged UAS***

	Threshold	Objective
Endurance	30 minutes	One hour
Range	One mile	Three miles
Speed (dash)	10 mph	30 mph
Speed (endurance)	0 mph	20 mph
Altitude	400 ft AGL	1000 ft AGL
Service Ceiling	6,000 ft MSL	10,000 ft MSL
Acoustic signature (at 400 ft AGL)	TBD	TBD

***Fixed-wing UAS***

	Threshold	Objective
Endurance	30 minutes	Two hours
Range	Three miles	Six miles
Speed (dash)	20 mph	40 mph
Speed (endurance)	15 mph	30 mph
Altitude	400 ft AGL	1000 ft AGL
Service Ceiling	6,000 ft MSL	10,000 ft MSL
Acoustic signature (at 400 ft AGL)	TBD	TBD

### **3. RESPONDING TO THIS RFI**

Sources able to satisfy the above capabilities are invited to submit information describing their system.

Please limit White Paper submissions to a maximum of 6 pages (including a cover page) and provide the following information:

#### **Cover page** (maximum 1 page)

- Contact and company information
  - Name
  - Title
  - Company Name
  - Date of incorporation
  - Number of years in business
  - Brief overview of company history
  - FY09 and 10 sales
  - Number of employees
  - Location
  - Mailing address
  - Phone number
  - Website address
  - Email address
  - Note that RFI respondents shall designate a single Point of Contact for receipt of all information pursuant to this RFI.
- List any pertinent GSA schedule should you have any
- Name/type of technology or model
- Technology maturity: Existing technology or technology concept; technology readiness level

#### **Body of White Paper** (maximum 5 pages)

Provide a technical description to include existing or expected performance characteristics/capabilities for key components of the technology/concept proposed for evaluation. This shall include:

- Platform description(s) (size, weight, sensor payloads, endurance, etc.)
- Ability to meet KPPs (see requirements)
- Operational use of platform(s) and any available performance metrics
- Safety of flight capabilities (method during lost link, command and control frequencies, mean time between lost link, etc.)
- Overall flight history and platform-sensor system technical maturity
- Ability to process, evaluate, and disseminate sensor information (format, support equipment, etc.)
- Flight crew experience
- Training requirements
- Ability to support demonstration schedule and location

- Brief overview of operator's and maintenance plans

White Papers should be submitted in the following font: Times New Roman/Size = 12. Any company proprietary information, performance capabilities, and/or future modification should be clearly identified and marked. To aid the Government, please segregate proprietary information. Please be advised that all submissions become Government property and will not be returned. Method of submission: one electronic submission in machine-readable format (typically PDF, ASCII, MS Word, or Word Perfect format).

Responses to this request for information are to be submitted electronically to DHS at RAPS\_RFI@hq.dhs.gov. Please include the RFI Number (DHS 13-01) and title in the subject line of your email and provide one electronic submission in PDF format.

Submissions must be received no later than 5:00 PM, U.S. Eastern Daylight Savings Time, October 31, 2012.

DHS reserves the right to review late submissions but makes no guarantee to the order of, or possibility for, review of late submissions.

Respondents are solely responsible for any and all expenses incurred pursuant to responding to this RFI.

Responses to the RFI may be used to develop Government documentation.

Unsolicited proposals in response to this RFI will not be considered.

#### **4. GOVERNMENT PLANS**

This RFI is issued solely for market research, planning and information purposes and is not to be construed as a commitment by the Government to issue a subsequent solicitation (Broad Agency Announcement, Request for Proposal, etc.). While the Government, after a detailed review and thorough analysis of the RFI submissions, expects to issue a solicitation for additional characterization of several of these technologies, it has not committed itself to doing so.

#### **5. CLASSIFIED SUBMISSION**

Any classified information regarding any proposed system should be omitted from the white paper.

Please limit your White Paper responses to this RFI to Sensitive Security Information (SSI), company proprietary or unrestricted information, and please mark submissions appropriately. SSI submissions can be submitted as normal by password protecting the document, and then sending the password separately to the contract specialist.

The following is an abbreviated description of SSI:

“SSI is a control designation used by the Department of Homeland Security, and particularly the Transportation Security Administration. It is applied to information about security programs, vulnerability and threat assessments, screening processes, technical specifications of certain screening equipment and objects used to test screening equipment, and equipment used for communicating security information relating to air, land, or maritime transportation. The applicable information is spelled out in greater detail in 49 CFR 1520.7.

When transmitted by e-mail, SSI must be in a password-protected attachment. The password should be transmitted separately of the protected document.”

## **6. QUESTIONS AND REQUESTS FOR ADDITIONAL INFORMATION**

Questions and requests for additional information should be sent to DHS at [RAPS\\_RFI@hq.dhs.gov](mailto:RAPS_RFI@hq.dhs.gov).