

**Request for Information (RFI)  
DARPA-SN-16-58**

**Mobile Force Protection  
Defense Advanced Research Projects Agency (DARPA)  
Tactical Technology Office (TTO)**

Responses due Friday, August 26, 2016, by 4:00 PM ET.

This Request for Information from the Defense Advanced Research Projects Agency's Tactical Technology Office seeks ideas, methodologies, and approaches solely for information and planning purposes. Responses to this RFI will be used to determine attendees for a workshop in Arlington, Va. In addition, the information may potentially support the development of new DARPA programs that could enable a revolutionary layered defense approach to achieving mobile force protection, including counter-unmanned air systems (CUAS) capabilities. Intellectual, confidential, or other privileged or proprietary information contained in responses to this RFI will not be distributed outside of the U.S. Government. In the event that a new DARPA program is developed in response to this RFI and a solicitation is issued, no intellectual, confidential, or other proprietary information received in response to this RFI will be divulged to the research community.

**BACKGROUND:**

The rapid evolution of small unmanned air systems (sUAS) technologies is fueling the exponential growth of the commercial drone sector, creating new asymmetric threats for warfighters. sUASs' size and low cost enable novel concepts of employment, which present challenges to our current defense systems. Commercial interest and a large and active open source community enable very rapid improvement of sUAS capabilities in general, which adversaries could potentially use against U.S. warfighters. These emerging irregular systems and concepts of operations in diverse environments require technology advancements to detect, identify, track, and neutralize these systems on the move, on a compressed timeline, and while mitigating collateral damage and providing flexibility to operations in multiple mission environments.

**DESCRIPTION:**

DARPA is interested in identifying novel, flexible, mobile layered defense systems and component technologies that could be leveraged to improve force protection against a variety of sUAS threats and tactics, could be fielded within the next three to four years, and are structured to rapidly evolve with threat and tactic advancements. DARPA is interested in exploring the potential for developing and demonstrating system solutions, including sensors and effectors, to enable detection, identification, tracking, and neutralization of sUAS threats. The solution should be scalable and modular such that it could be deployed in multiple defense applications on a variety of platforms (vehicles and vessels); the solution is intended for the defense of fixed and mobile ground and naval forces. To the greatest extent possible, it should also address rocket, artillery, mortar, and other conventional threats. System flexibility, deployability, and affordability will be major design drivers, as the system will only be an effective deterrent and defensive capability if it can be widely deployed to protect a large number of assets. Therefore,

this RFI seeks information on concept performance capabilities, unique and enabling technologies, technology maturity levels, system architecture, concepts of operations, and system affordability.

**REQUESTED INFORMATION:**

Responses are requested from all capable sources including, but not limited to, private or public companies, individuals, universities, university-affiliated research centers, not-for-profit research institutions, foreign entities, and U.S. Government-sponsored laboratories. DARPA is interested in technical responses that are Technology Readiness Level 4 (component and/or breadboard validation in laboratory environment) or higher addressing either a fully integrated system capable of completing a complete neutralization sequence, or individual subsystems able to contribute to any part of the targeting chain.

Requested information for either category is described below:

1. Integrated System-Level Mobile Force Protection Conceptual Designs (including sensors and effectors)
  - a. Full system-level conceptual designs and performance capabilities, including substantiating preliminary performance data, if available, for the concept of operation(s)
  - b. Technology maturity assessment, including data to substantiate technology maturity and identification of key risk areas requiring mitigation to enable system demonstration
  - c. Program outline for maturing the system to the point where it would be ready for demonstration, including high-level rough order of magnitude (ROM) cost and schedule
  - d. System affordability assessment
  - e. Estimated size, weight, and power requirements
  - f. Ability to address other threats (any part of the targeting chain)
  - g. Ability to integrate third-party subsystems
2. Counter-sUAS Subsystems (e.g., individual sensors or effectors)
  - a. Subsystem conceptual designs and performance capabilities, including substantiating preliminary performance data, if available, and dependency on system-level inputs (cross-cueing, target tracks, etc.)
  - b. Technology maturity assessment, including data to substantiate technology maturity and identification of key risk areas requiring mitigation to enable system demonstration
  - c. Program outline for maturing the subsystem technology to the point where it would be ready for integration into a full system demonstration, including high-level ROM cost and schedule
  - d. Subsystem affordability assessment
  - e. Estimated size, weight, and power requirements
  - f. Ability to address other threats (any part of the targeting chain)

**SUBMISSION:**

Responders should submit a single integrated response that addresses the Integrated Mobile Force Protection System or Subsystem areas described above. DARPA will only review responses

submitted in a Microsoft Word (.doc or .docx) file or unprotected Adobe Acrobat (.pdf) file to assess participation to the workshop. Each response is limited to not more than five (5) pages (not including cover) using 11-point font and 1-inch margins on 8.5-inch-by-11-inch paper. Any submitted material in excess of this limit will not be reviewed. All responses must be written in English.

Submissions should include the following information on the title page to facilitate sorting:

1. Submission title
2. System or subsystem response
3. Contact information

The submission title should capture key concepts and facilitate keyword searches.

The contact information should include the responder's technical and/or administrative points of contact (names, addresses, phone numbers, fax numbers, and email addresses) to enable potential clarification discussions.

All technical and administrative correspondence and questions regarding this announcement and how to respond to this RFI should be sent to [DARPA-SN-16-58@darpa.mil](mailto:DARPA-SN-16-58@darpa.mil). Please refer to "Mobile Force Protection Systems RFI, DARPA-SN-16-58" in all correspondence. Email sent directly to individual DARPA program managers will not receive a response.

DARPA will review the RFI responses to assess technology and system relevance, potential performance capability, and technology maturity. Based on this review, DARPA may invite submitters to attend a Mobile Force Protection workshop to be scheduled for late September 2016. The purpose of this workshop would be to facilitate knowledge sharing amongst the various organizations working in this domain. DARPA intends to balance the invitees to ensure adequate representation across the solution space, including detection technologies (passive or active, such as RF/EO/IR/acoustic), processing analysis methods (such as crosscheck, fuse data, exploit, coordinate, or delegate actions) and effector approaches (such as track, hijack, disrupt, capture or destroy). Invited organizations will be required to provide a non-proprietary poster presentation that will facilitate interactions among participants in order to enable collaboration and teaming, should DARPA release a Broad Agency Announcement (BAA) in this area.

#### **DISCLAIMERS AND IMPORTANT NOTES:**

This announcement contains all information required to submit a response. No additional forms, kits or other materials are needed.

This is an RFI issued solely for information and new program planning purposes; it does not constitute a formal solicitation for proposals. In accordance with FAR 15.201(e), responses to this notice are not offers and cannot be accepted by the Government to form a binding contract. Submission of a response is strictly voluntary and is not required to propose to a subsequent Broad Agency Announcement (if any) or other research solicitation (if any) on this topic. No solicitation exists; therefore, do not request a copy of the solicitation. If a solicitation is released, it will be synopsisized on the Federal Business Opportunities website. It is the responsibility of any potential offerors/bidders to monitor this site for release of any solicitation or synopsis.

DARPA will NOT provide reimbursement for costs incurred in responding to this RFI or participating in any subsequent workshop.

Classified responses should be coordinated with DARPA prior to submission. Responders wishing to provide a classified response should send an email to the SN mailbox as soon as possible with the subject line “Classified Coordination Requested” to allow time for proper coordination. **NO CLASSIFIED INFORMATION SHOULD BE INCLUDED IN THE RFI RESPONSE SENT TO [DARPA-SN-16-58@darpa.mil](mailto:DARPA-SN-16-58@darpa.mil).**

To the maximum extent possible, please submit non-proprietary information. If proprietary information is submitted, it must be appropriately and specifically marked. It is the submitter's responsibility to clearly define to the Government what is considered proprietary data. Any proprietary information should be clearly labeled as “Proprietary.” DARPA will not publicly disclose proprietary information obtained as a result of the RFI. To the full extent that it is protected pursuant to the Freedom of Information Act and other laws and regulations, information properly identified by a respondent as “Proprietary” will be appropriately controlled and kept confidential. Submissions may be reviewed by the Government (DARPA) and support contractors bound by appropriate non-disclosure agreements. Responses to this RFI will not be returned.

With the exception of a potential workshop invitation, respondents are advised that DARPA is under no obligation to acknowledge receipt of the information received or provide feedback to respondents with respect to any information submitted under this RFI. Responses to this RFI do not bind DARPA to any further actions.

Point of Contact:  
DARPA/TTO  
[DARPA-SN-16-58@darpa.mil](mailto:DARPA-SN-16-58@darpa.mil)