

**Request for Information (RFI)
DARPA-SN-15-06**

**Distributed Airborne Capabilities
Defense Advanced Research Projects Agency (DARPA)
Tactical Technology Office (TTO)**

Responses due November 26, 2014, 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 may be used to support potential new DARPA programs that could enable revolutionary new approaches to achieving distributed airborne capabilities. Intellectual, confidential, or other privileged or proprietary information contained in responses to this RFI will not be distributed outside of the Department of Defense (DoD) or U.S. Government employees from other Government agencies who are working with DARPA on this RFI. 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:

Conventional air operations rely on the effectiveness and survivability of individual platforms. Small unmanned aircraft systems (UAS) and emerging small payloads offer the potential for enabling distributed warfare and enhanced effectiveness and survivability via collaborative operations among multiple small UAS. Small UAS have limited range and responsiveness, however, compared to larger airborne platforms. Launching and recovering small UAS from those larger platforms could provide a cost-effective capability over a spectrum of operating environments to greatly extend the range of UAS operations as well as enable an entirely new operational concept for mission sets that benefit from distributed employment.

DARPA is interested in proving the feasibility and potential value of the ability to launch and recover volleys of small UAS from one or more existing large platforms (e.g., B-52, B-1, C-130, etc.). The agency hopes to leverage significant investments in the area of precision relative navigation as well as recent and ongoing small payload (<100 pounds) development. Keeping the cost of individual vehicles low is critical for a usable capability.

DESCRIPTION:

DARPA is interested in exploring the feasibility of small UAS airborne launch and recovery approaches for providing distributed airborne capabilities from existing air platforms. The agency envisions a large aircraft that, with minimal modification, could launch and recover multiple small unmanned systems from a standoff distance. It is postulated that there is a useful trade space in terms of launch platforms; recovery platforms; recovery techniques; the number of UAS employed; the size (and cost) of the UAS; UAS speed, range, and endurance; UAS propulsion; UAS survivability; payload types; and operational concepts.

This RFI seeks information on concept feasibility, unique and enabling platform technologies, system architectures, concepts of operation, modeling and simulation, potential demonstration

platforms and approaches, and reusable low-cost delivery vehicle (UAS) platform concepts. DARPA is primarily interested in platform-related technologies and concepts. This RFI also seeks rough order of magnitude (ROM) cost and schedule information to assist in planning a potential future DARPA program in this area.

REQUESTED INFORMATION:

Responses are welcome from all capable sources including, but not limited to, private or public companies, individuals, universities, university-affiliated research centers, not-for-profit research institutions, and U.S. Government-sponsored labs. DARPA is interested in responses that must address all of the following areas:

1. System-level conceptual designs, including affordable small UAS and airborne launch and recovery systems; feasibility analysis, including substantiating preliminary data if available.
2. High-payoff operational concepts and mission applications for distributed operations concept and architecture; relative capability; and affordability vs. conventional approaches (e.g., monolithic aircraft and payloads; missile-based approaches). Include details on payloads and quantity of UAS employed in concept.
3. Program plans for achieving a rapid yet compelling system demonstration within four years. DARPA is not only interested in what system functionality could be reasonably achieved within that timeframe, but also how to best demonstrate this functionality to potential users and transition partners. These program plans should include ROM cost and schedule information for a potential demonstration program, including interim risk reduction and demonstration events to evaluate program progress and validate system feasibility and interim capabilities, and culminating in full-system flight demonstrations.

SUBMISSION:

Respondents to this RFI should be concise. Responders should submit a single integrated response addressing the areas described above. DARPA will only review responses submitted in a Microsoft Word (.doc or .docx) file or unprotected Adobe Acrobat (.pdf) file. Each response is limited to not more than 8 pages using 11-point font and 1-inch margins on 8.5-inch by 11-inch paper. Effective responses that can be provided in fewer than 8 pages are encouraged. Any submitted material in excess of this limit will not be reviewed.

Submissions should include the following exact titles to facilitate sorting:

1. Submission title
2. Technical response to each area
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 e-mail 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-15-06@darpa.mil. Please refer to "Distributed

Airborne Capabilities RFI; RFI DARPA-SN-15-06” in all correspondence. E-mail sent directly to individual DARPA program managers will not receive a response.

DISCLAIMERS AND IMPORTANT NOTES:

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.

Classified responses should be coordinated with DARPA prior to submission. Responders wishing to provide a classified response should send an e-mail 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-15-06@darpa.mil.**

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 partners) and support contractors bound by appropriate non-disclosure agreements.

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.

Point of Contact:
DARPA/TTO
DARPA-SN-15-06@darpa.mil