Title: Briefing on Autonomy and Intelligence for VTOL Cargo UAS

Notice Type:
Special Notice

Response Due Date:
Date: 14 July 2010 Time: 4:00pm EDT

Original Set Aside:
N/A

Set Aside:
N/A

Classification Code:
A -- Research & Development

NAICS Code:
541 -- Professional, Scientific, and Technical Services/541712 -- Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)

Synopsis:
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The Office of Naval Research (ONR) Naval Air Warfare and Weapons Department (Code 35) is providing a briefing to industry, academia and government laboratories on an area of interest for potential future research.

ONR is interested in understanding the available autonomy technology options that address the need for an intelligent vertical take-off and landing (VTOL) unmanned aircraft system (UAS) to provide air cargo delivery in support of Marine Corps Expeditionary Warfare, without excessive complexity or cost.

The briefing will inform interested parties of ONR's overarching vision and potential approaches to achieve this end. Informal feedback via a question and answer period, followed by an opportunity to provide written feedback, will inform ONR of technologies relevant to this capability, so that it can advise the Marine Corps of available options, and can determine what technology development investments might be appropriate.

ONR is exploring the potential for the next generation of autonomous capabilities to permit reliable resupply / retrograde (and potentially even casualty evacuation) under adverse conditions by unmanned air cargo / utility systems for distributed small units in a theater of military operations. Specifically, ONR is interested in technologies relevant to cargo UAS missions in the areas of perception/sensing, autonomous control and planning, and human interaction.

It is envisioned that "application developers" would create modules for specific capabilities, such as:

- Autonomous approach selection and landing zone suitability assessment
- Launch / recovery with little or no human supervision, including by a relatively unskilled user with limited time in the field
- Operations to / from slopes, unprepared terrain and ships (sea state 4-5) in adverse weather, night, degraded visual environment, GPS denied conditions
- Highly automated mission planning and fully autonomous dynamic replanning when operating beyond line of sight
- Obstacle detection and avoidance
- Avoidance and evasion of known threats

ONR envisions an open-systems / non-proprietary architecture, integrated with these application modules that will permit the use of the best technologies, allow independent government assessments, and provide maximum UAS community benefit. ONR is looking for the most innovative and capable technologies that industry and academia are developing that could be flight demonstrated within the next 4-6 years (on an existing platform).

The briefing will be held on 21 July 2010 at the Executive Conference Center of Strategic Analysis, Inc, 4075 Wilson Blvd, Arlington, VA 22203, from 10:00 am to 12:00 pm. There is no cost to attend. Interested parties must register via the ONR conference website by 14 July 2010. Details can be found at:
https://secure.onr.navy.mil/events/regdetail.asp?cid=672

If requested attendance exceeds the capacity of the conference room, it will be necessary to limit attendance of personnel from each organization.

The briefing and a survey will be posted to the registration website prior to the meeting in order to facilitate understanding and improve the utility of informal and formal feedback on ONR's vision, goals and approach.

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