

Amendment 0002
Questions and Answers

**Actionable Intelligence Enabled by Persistent Surveillance (AIEPS) – Unmanned Air System (UAS)
Autonomous Collision Avoidance System (ACAS)
BAA 10-009**

Q1. Is it a requirement of the proposed system that it work at all times of the day and night?

A1. The solution we are seeking would have to have a day night capability. Although the FAA and OSD are still trying to set the boundaries for UAS Sense and Avoid (SAA), it was initially thought the Unmanned system would only have to match manned performance to be acceptable. Now it appears that both cooperative (e.g. ADS-B) and non-cooperative (e.g. sensors) approaches will be needed to produce an acceptable solution.

Q2. Is it a requirement of the proposed system that it work while the system is within a cloud? Does the system need to detect other air vehicles that are in or obscured by clouds?

A2. In our case the Fire Scout does have a Radar, and can be expected to keep track of aircraft and other objects in clouds in the forward hemisphere.

Q3. In the BAA, subsection 6.3 Design and Performance Goals, under "Range", "Full ADS-B capability for cooperatives, 5-10KM for non-cooperative targets" is stated. Can you please provide further clarification as to what "full-capability for ADS-B" means?

A3. The "full capability for ADS-B" refers to an ADS-B transponder development that is underway by R3 Engineering under an ONR contract. The 5-10 Km range is what R3 is planning to demonstrate in the next 2 years. It appears that at some point ADS-B will become a FAA mandate, so we are pursuing this development in anticipation of that occurrence.

Q4. Are both UAT and 1090MHz required data links for ADS-B or can only one be chosen?

A4. At this point R3 plans to demonstrate ADS-B at the UAT frequency of 978 MHz.

Q5. Currently ADS-B is not mandated, only a few aircraft are equipped, and broad coverage is not going to take place until 2020. Is an interim solution with the ability to interrogate existing transponders to get range, bearing, and altitude (as TCAS does) to get cooperative information an acceptable alternative until ADS-B is widespread?

A5. There are 2 bills in congress intended to move up the introduction of ADS-B. The first bill would mandate an ADS-B broadcast for all aircraft by 2015. The second bill would require an ADS-B input for all aircraft by 2018. Since ADS-B introduction aligns with the completion date for this FNC, it was our decision to use it as our baseline. TCAS is too big and costly to be considered on the class of UAS platforms we are addressing.

Q6. Just to confirm, white papers are due on January 4, 2010, and if accepted, full proposals would be due on March 8, 2010. Is this correct?

A6. White papers were due on 4 January 2010 and full proposals are due on 08 March 2010. As stated on page 7 of the BAA "Full proposals will not be considered under this BAA unless a white paper was received before the white paper due date specified above."

Q7. Is there a notion of how long Phase 1 of the project will be? As we read it, there is notion of total program length, and two phases, but we do not detect a notion for the relative length of the phases.

A7. We would like to complete Phase 1 in the first year of the program, so that the work will be clearly enough defined to warrant the signing of a Level B Technology Transition Agreement (TTA). Phase 2 can then encompass the rest of the schedule.

Q8. We believe doing the flight tests and demonstrations on Fire Scout and Shadow is the right objective for the project during phase 2 as stated. Is it the intent that these assets would be operated by the government during this activity - essentially being GFE (the contractor installs equipment, assists in the operation, etc.) - or some other arrangement (such as contractor provides relevant demonstration on its own)? Essentially, we will need to make some assumptions to roughly map out that part of the effort, and would like to know if there is something already in mind here.

A8. First we need to establish that Fire Scout is currently the only transition platform for the ACAS technology. Shadow 200 is really just a surrogate for whatever the STUAS program concludes will be the next generation UAS for the USMC. Although ultimately we intend to demonstrate a capability for Fire Scout, at least the initial airborne testing will be on a manned helicopter (TBD). In any case aircraft test assets are a NAVAIR responsibility.

Q9. Is there any notion at this time of the expected number of awards (initially and/or at the second phase)?

A9. At this point it would be hard to say how many Phase 1 awards would be made. In any case, only one effort will be carried into Phase 2.

Q10. The BAA announcement discusses both the Fire Scout and Shadow platforms. Does the government have a preference for which platform to use? Will a platform for the demonstration be provided as GFE?

A10. Currently ONR has only has a Technology Transition Agreement (TTA) with the Fire Scout platform so that is our first choice. The Shadow 200 is in the announcement because the USMC is using this Army platform until the STUAS becomes available. Since Shadow is an Army program of record, ONR cannot get a TTA from them. Ultimately we would like as much of the ACAS technology as possible to also be applicable to STUAS. The demonstrations for ACAS will probably be on a manned helicopter provided by NAVAIR.

Q11. A prototype demonstration will require significant integration with flight control software. Given the uncertainty of the platform, will the government provide support or data to enable other vendors (such as ourselves) to integrate into the existing flight software from the platform developer?

A11. Since the demonstration will be on a manned helicopter, it is only required that the ACAS system provide the correct and timely decisions based on inputs from cooperative and non-cooperative sources.

Q12. The design phase of the program is rather compressed for a predominately software development effort (12 months out of a 48 month program). Are the government milestones firm (6 months to PDR, then 6 months to CDR) or is the contractor free to propose a different schedule? If a different schedule is proposed, will that negatively impact the assessment of the proposal?

A12. You should propose a schedule which is appropriate for your approach. ONR's proposed schedule was intended to clearly define the approach, before the next level of TTA is required to let the program proceed. A delay in fully defining the program may result in a delay in obtaining the next level TTA which can result in a delay of funding.
