**Summary of Closing Remarks**
**at the MAR Industry Day**
3 March 09

DARPA is interested in additional feedback on the objectives and approach of the MAR program.

The primary purpose of the MAR program is to develop and demonstrate adaptive rotor technologies. However, a critical enabler for the effort is to understand the benefits that the envisioned technologies would have on future rotorcraft. During Phase I, DARPA expects that successful Proposers will compare (1) a new-design rotorcraft (used as a baseline) that is designed to the government-provided reference missions (and/or Proposer-supplied missions) using current state-of-the-art fixed-geometry technologies vs. (2) a new-design rotorcraft designed to the government-provided reference missions (and/or Proposer-supplied missions) using MAR technologies. The fuselage and all other systems (besides the rotor) must be at the same technology level (current SOA) for both of these notional rotorcraft.

The notional future rotorcraft with MAR technology will be used as the initial point-of-departure for defining the technologies to be ground and flight demonstrated during the MAR program. This technology demonstration rotor is the primary focus of the MAR program, but the two notional rotorcraft designs (the baseline and the MAR rotorcraft) will help the government to understand the potential operational benefits.

DARPA is interested in specific feedback on the following program objectives (slightly revised and clarified from those in SN-09-14; changes are underlined):

- **Demonstration rotor:** Flight demonstrate – on a man-rated system – a technology demonstration rotor that produces hover thrust in the 18,000 lb – 36,000 lb class (sea level, standard day, per rotor if a multi-rotor system) and demonstrates the key features of the MAR objective rotor
- **Objective rotor:** Compared to a new-design rotorcraft using a current state-of-the-art technology, fixed-geometry (non-adaptive) rotor as a baseline, the notional MAR objective rotorcraft (with the same level of vehicle technology) with an adaptive rotor has the following performance improvements:
    - 30% increase in payload and 40% increase in range over the thresholds provided in the reference missions
    - 50% reduction in rotor acoustic detection range during the low-noise mission segment(s)
    - 90% reduction in vibration, in all axes of the non-rotating system, for the low-vibration mission segment(s) without relying on fuselage-mounted vibration absorbers or rotor bifilars; no increase in vibrations over the baseline fixed-geometry rotor in other mission segments
- **Objective rotor:** Improvements in other key system attributes – availability, speed, maneuverability and agility, safety and survivability, affordability, shipboard capable, etc – are also highly desirable, but maintaining at or near current levels is expected.

Interested parties are invited to provide written feedback on these specific questions (using the Government-provided reference missions presented at Industry Day):

1. Do you think that the objectives for the MAR objective rotor are achievable?
2. If not, what specific values do you feel would be achievable?

3. What should the thresholds be for the MAR objective rotor?
4. Can all of these performance objectives be achieved on the same mission?
5. Is the scope of Phase I – notionally 12 months to a tailored DOD systems engineering-level Systems Requirements Review (SRR) – appropriate? Should the duration be shorter or longer? (See Industry Day charts for the notional Phase I schedule.) Please provide critical comments on the notional schedule, overall program plan and approach (including the above baseline).

Those wishing to respond to these questions or provide other comments should email feedback NLT 5 pm EDT, March 24, 2009 to DARPA-SN-09-14@darpa.mil. These responses will not be posted or distributed.