

AFRL RESEARCH TOPIC CALL FOR FY13

1. **Research Title:** Human Supervision of Multiple Autonomous Unmanned Aerial Systems
2. **Individual Sponsor:** *List the AFRL research topic sponsor's contact information:*
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3. **Academic Area/Field and Education Level:** Human Factors Engineering, Computer Scientist (MS or Ph.D. level)
4. **Objectives:** Identify and mitigate human automation issues as related to the control of multiple semi-autonomous unmanned systems. Research, develop, and evaluate interface features that: 1) provide intuitive methods of interacting with complex automation, 2) improve operator awareness of automation mode and rationale for its decisions, 3) employ appropriate levels of automation per task/vehicle, 4) provide automation aids to improve decision making and/or reduce workload, and 5) employ appropriate dialogue style/etiquette for maximum human-automation bandwidth.
5. **Description:** It is envisioned that "intelligent" unmanned systems will have the ability to make higher-order assessments and decisions independent of operator input and pre-defined mission plans. Hence, this automation capability affords a vastly different type and level of human-automation interaction. The operator interaction will move from a human-directed mode selection and activation to more collaboration, negotiation, and even conflict resolution across a range of situations. The proposed effort investigates the interface paradigm for control of multiple next-generation unmanned aerial systems (UAS) from a single workstation. The operator interface will also need to enable effective interaction with automated entities that are performing at an 'individual' level and at a 'team' level. In addition, the interface must take into account issues associated with automation management including vigilance, automation brittleness, visibility, feedback, etc.
6. **Research Classification/Restrictions:** This research is unclassified and for public distribution.
7. **Eligible Research Institutions:** (Check all that apply.)

Universities (DAGSI)

AFIT (only)

USAFA

8. **Interest in Summer USAFA Cadet:**

If you are submitting a topic for the USAFA, please indicate if you are also interested in sponsoring a USAFA Cadet in summer of 2013. (**Avg Cost for USAFA Cadet for 33 days is \$5000**):

I would like to sponsor an USAFA Cadet in the summer of 2013: Yes No