



## Trust in Autonomy for Human Machine Teaming

Solicitation Number: BAA-AFRL-RQKH-2015-0008

Agency: Department of the Air Force

Office: Air Force Materiel Command

Location: AFRL/RQK - WPAFB

---

**Notice Type:**

Presolicitation

**Posted Date:**

May 7, 2015

**Response Date:**

-

**Archiving Policy:**

Automatic, on specified date

**Archive Date:**

May 6, 2016

**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:**

Added: May 07, 2015 10:26 am

The Air Force Research Laboratory (AFRL), 711th Human Performance Wing (711 HPW), Human-Centered ISR Division, Human Trust and Interaction Branch (711 HPW/RHXS), has a need to understand the human-machine trust process within pilots, Intelligence, Surveillance, and Reconnaissance (ISR) operators and analysts, maintenance domains, and advanced human-robot teaming concepts. The Air Force has proposed human-machine teaming as a primary research thrust, yet to achieve this ambitious vision we need research on how to harness the socio-emotional elements of interpersonal team/trust dynamics and inject them into human-robot teams. These human-machine teaming dynamics can involve research studying the interplay of individual differences, machine characteristics, robot design, robot interaction patterns, human-machine interaction, and contextual facets of human-machine teaming. Research is needed to identify the factors that drive human-machine teaming effectiveness as defined by calibrated trust between the machine and human; effective team processes such as communication, coordination, and collaboration; and shared awareness and shared intent between the humans and machine.

The objective of this contract is to conduct research and develop technology for understanding the trust calibration process. Domains of interest include semi-autonomous, symbiotic, human-machine teaming (HMT) research; research to identify the psychological and physiological antecedents and consequences of suspicion within a human-machine context; research to understand the factors that shape trust calibration within a human-machine context; and research to understand the most significant components driving trust and performance within human-

robotic interaction. Examples of area of application for this research may include automated tools within cockpits; analyst tools/aids for ISR analysis and exploitation; software code; interactive platforms such as automated translation capabilities; and advanced robotic systems within the Air Force. The anticipated dollar amount for this acquisition is \$7.5M.

This is a pre-solicitation notice only. It is anticipated that a BAA providing more details into this program will be released in the June-July 2015 timeframe. The BAA will be available at [www.FedBizOps.gov](http://www.FedBizOps.gov). An Industry Day will be held shortly after the BAA is posted. Direct any questions to the contracting points of contact identified in this announcement or the technical point of contract, Francine Schaffner, 711 HPW/RHXS, 937-656-4914, e-mail: [francine.schaffner@us.af.mil](mailto:francine.schaffner@us.af.mil). Appropriate base access must be obtained in advance. Questions regarding base access may be directed to the technical point of contact above. All visitors to the base must be U.S. citizens. Please note that requirements may change and this is not a guarantee that a solicitation will follow.

**Contracting Office Address:**

AFRL/RQK  
2130 Eighth Street, Building 45  
Wright-Patterson AFB, Ohio 45433  
United States

**Place of Performance:**

Wright-Patterson AFB OH

United States

**Primary Point of Contact.:**

Devon Banks,  
Contract Specialist  
[devon.banks@us.af.mil](mailto:devon.banks@us.af.mil)  
Phone: 937-713-9867

**Secondary Point of Contact:**

Kimberly D. Warren,  
Contracting Officer  
[kimberly.warren.2@us.af.mil](mailto:kimberly.warren.2@us.af.mil)  
Phone: 937-713-9844

---

**Opportunity History**

■ **Original Synopsis**

May 07, 2015  
10:26 am