

DARPA-SN-09-20 Request for Information (RFI): Technologies for the Applications of Social Computing (TASC)

The Department of Defense now gives as much importance to stability operations such as peacekeeping, nation building and other military support for stability, security, transition, and reconstruction (SSTR) operations as it does to traditional offensive and defensive military combat operations. The complexity of SSTR operations and the large amount of data required to capture this complexity require new technologies to support leadership decision making at the strategic, operational, and tactical levels.

To fulfill this need, the Defense Advanced Research Projects Agency (DARPA), Information Processing Techniques Office (IPTO), invites white paper responses from all qualified vendors interested in exploring the development of new technologies to rapidly create theoretically-informed, data-driven models of complex human, social, cultural, and behavioral dynamics that are instantiated in near-real-time simulations. These technologies would leverage the entire social science community and provide a rich test bed for establishing the empirical validity of alternative theories, and identifying gaps in knowledge that cannot be accounted for by the current body of social science theory. Other important technologies of interest include the formalization and semantic representation of social science theories, the semantic integration of disparate types of social science data, techniques for analyzing these data, and efficient computational techniques for rapid data processing. DARPA refers to this range of technologies as “Technologies for the Applications of Social Computing (TASC).” DARPA anticipates all these technologies would be integrated to develop a flexible, modular social simulation system that integrates sound social science theory with real world data, that facilitates a wide spectrum of military and intelligence applications, and that supports reliable, real-world decisions at multiple levels of analysis.

Specifically, this RFI is looking for solutions which focus around two major objectives, as outlined below:

1. Building the infrastructure for a social computing synthetic lab to facilitate rigorous social scientific experiments. The lab would include elements to become the gold standard for assessing social computing tools and alternatives; evaluate competing social theories; identify gaps in knowledge; test contributions to unexplained phenomenon; and continuously improve the foundation of social simulations in an open-source, non-proprietary manner, pushing these improvements to military and intelligence applications as they mature.
2. Incrementally developing specific military applications focused on supporting decision making by a Joint Task Force (JTF) commander during Phases 0-4 of military operations. These applications would be ultimately demonstrated and tested in the synthetic lab.

DARPA is seeking white papers addressing a range of issues associated with TASC, including, but not limited to:

- Overall system design of the synthetic lab;
- Specific technologies required to develop the synthetic lab, such as technologies to formalize, integrate and model social science theories; technologies to perform real-time simulation set up, real-time data ingest and processing, real-time execution, and real-time analysis; technologies to automate the set-up, execution and analysis of simulations;

- Technologies to integrate multiple simulation architectures, modeling techniques, and data streams;
- Specific military applications and use cases that will demonstrate and test the functionality of the synthetic lab and support Phase 0 through Phase 4 decision-making by a JTF commander;
- Metrics and methods to assess the functionality and value of the synthetic lab, and to perform some form of Verification, Validation and Accreditation (VV&A) on the military and intelligence applications generated by the synthetic lab;
- Concept of operations for the synthetic lab and its ability to continuously generate and upgrade military and intelligence applications; in particular where this lab resides, how it is funded in the long run, how it interfaces with the academic social science community, the social computing performer community, and the military/intelligence community.

Respondents are encouraged to address more than one of these issues in their white papers. If the respondent's paper focuses on a particular piece of technology that addresses a single issue of this program, the respondent should make it clear how this technology contributes to the overall program.

WHITE PAPER SUBMISSION INSTRUCTIONS AND FORMAT

White papers must be submitted per the instructions here no later than 1200 ET on 25 March 2009. White papers should not exceed 6 pages, including figures and each response should be as succinct as possible while at the same time providing actionable insight. Format specifications include 12 point font, single-spaced, single-sided, 8.5 by 11 inches paper, with 1-inch margins in either Microsoft Word or Adobe PDF format. **NO CLASSIFIED INFORMATION SHOULD BE INCLUDED IN THE RFI RESPONSE**, however, proprietary information is acceptable.

1. Cover Page (1 page)
 - a. Title of paper (the title should describe succinctly the issue associated with TASC addressed in the paper)
 - b. Organization
 - c. Respondent's technical and administrative points of contact (names, addresses, phones and fax numbers, and email addresses)
2. Technical Content (up to 5 pages)
 - a. Executive summary
 - b. Detailed description of the technical solution proposed

INSTRUCTIONS TO RESPONDENTS

DARPA appreciates responses from all sources. DARPA will employ an electronic upload submission system for responses to this RFI. To respond to this RFI, interested parties must complete an online [RFI Cover Sheet](#) for each response, which will include the submitter's name, organization and contact information, as well as the title of their paper. Cover Sheet submissions are made by going to www.csc-ballston.com/rfi/rfiindex.asp?RFId=09-20. After finalizing the [Cover Sheet](#), a Confirmation screen will appear, along with instructions for uploading your white paper. Submissions must be in Microsoft Word or Adobe PDF and **encrypted using Winzip or PKZip with 256-bit AES encryption**. An encryption password must be emailed to DARPA-SN-09-20@darpa.mil at the time of submission. See https://www.CSC-Ballston.com/baa/Encryption_Instructions.htm for additional encryption information. Note: the word, "PASSWORD", must appear in the subject line of the above email and there are

minimum security requirements for establishing the encryption password. Failure to provide the encryption password will result in the submission not being read. **Since respondents may encounter heavy traffic on the web server, they SHOULD NOT wait until the day the submissions are due to fill out a coversheet and upload their white paper.**

Failure to comply with these submission procedures may result in the white paper not being read.

ELIGIBILITY

DARPA invites participation from all those engaged in related research activities and appreciates responses from all capable and qualified sources including, but not limited to, universities, university-affiliated research centers, Federally-Funded Research and Development Centers (FFRDC), private or public companies and Government research laboratories.

DISCLAIMERS AND IMPORTANT NOTES

This is an RFI issued solely for information and program planning purposes; this RFI does not constitute a formal solicitation for proposals or proposal abstracts. In accordance with FAR 15.201(e), responses to this notice are not offers and cannot be accepted by the Government to form a binding contract. DARPA will not provide reimbursement for costs incurred in responding to this RFI. Submission of a white paper is not required to propose to subsequent Broad Agency Announcements or research announcements (if any) on this topic. **NO CLASSIFIED INFORMATION SHOULD BE INCLUDED IN THE RFI RESPONSE.** Respondents are advised that DARPA is under no obligation to acknowledge receipt of the information received or provide feedback to respondents with respect to any information submitted under this RFI. Responses to this RFI do not bind DARPA to any further actions related to this topic including requesting follow-on proposals from vendors responding to this RFI.

Submissions may be reviewed by: the Government (DARPA and partners); Federally Funded R&D Centers (such as MIT Lincoln Laboratory); and Scientific, Engineering, Technical and Administrative (SETA) support contractors (such as Schafer Corporation, Science and Technology Associates, CACI International, and System Analysis, Inc.).

POINT OF CONTACT

Dr. Sean O'Brien, IPTO Program Manager, DARPA. **ANY INQUIRIES ON THIS RFI MUST BE SUBMITTED TO DARPA-SN-09-20@darpa.mil. NO TELEPHONE INQUIRIES WILL BE ACCEPTED.**