

A -- Request for Information (RFI): Contact-Lens Scale See-Through Displays

General Information

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Contracting Office Address

Other Defense Agencies, Defense Advanced Research Projects Agency, Contracts Management Office, 3701 North Fairfax Drive, Arlington, VA, 22203-1714, UNITED STATES

Description

The Defense Advanced Research Projects Agency (DARPA) Information Processing Techniques Office (IPTO) is requesting information on technology areas for the creation of micro- and nano-scale display technologies for the purpose of creating displays that could be worn as transparent contact lenses.

A limiting factor to un-tethered augmented and/or mixed reality applications is the bulkiness, power consumption, cost, limited resolution, and limited field of view of head-mounted displays. DARPA seeks to leap beyond incremental, evolutionary enhancement of head-mounted display technologies to a see-through contact lens on which images can be displayed. This information might be command-and-control information, not unlike information provided to players of first-person, shooter-type video games or synthetic entities and effects in a live training environment.

As a first step in solving this problem, DARPA/IPTO is soliciting brief white papers describing technologies in this area. Specifically, these white papers should address the following questions.

1. What are the basic technologies needed to develop a see-through display of this size and form factor, in a way that would be safe for humans to wear for extended periods of time (comparable to normal contact lenses)? These should include:
 - display technologies used, such as LED's, lasers, OLED's, etc.,
 - antennas and radios with which to send the signal to the device to display, and
 - other electronic circuitry.
2. How such a small display could be practically manufactured on flexible substrates?
3. How images could be sent safely and wirelessly to the contact lens display?

4. How power could be sent safely and wirelessly to the contact lens display?
5. What display resolutions and fields of view could be achieved in three to five years, and how will the near-field images could be created that would be comparable to the resolution, frame rate, and color palette of head mounted displays?

Interested parties should submit brief white papers per the instructions below no later than 1200 Noon ET, 02 April 2008.

INSTRUCTIONS TO RESPONDENTS

DARPA appreciates responses from all capable and qualified 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 accessing the URL below:

www.csc-ballston.com/rfi/rfiindex.asp?RFIid=08-23

After finalizing the Cover Sheet, a Confirmation screen will appear, along with instructions for uploading your position 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 RFI08-23@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 position paper.

White papers are limited to five (5) pages in length (not including the cover page). Format specifications include 12-point font, single spaced, single-sided, 8.5" by 11" paper, with 1-inch margins. Each response should address the five questions posed above (on page 1) and should be as succinct as possible while at the same time providing actionable insight. Graphics and citations are highly encouraged.

Failure to comply with these submission procedures may result in the position paper not being reviewed.

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. Submission of a white paper, and/or attendance at any subsequent Workshop, is strictly voluntary and is not required to propose to subsequent Broad Agency Announcements (if any) or research solicitations (if any) on this topic. DARPA will not provide reimbursement for costs incurred in responding to this RFI or participating in any subsequent Workshop. **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, to include hosting a Workshop or requesting follow-on proposals from vendors responding to this RFI.

Submissions may be reviewed by: the Government (DARPA and partners) and Systems Engineering and Technical Assistance (SETA) contractors (such as Science and Technology Associates, and CACI International).

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