

September 25, 2007

FILED ELECTRONICALLY

Mr. James Burtle, Chief
Experimental Licensing Branch
Office of Engineering and Technology
Federal Communications Commission
Washington, DC 20554

**Re: Request for Expedited Processing and Grant by October 15, 2007
BAE Systems Information and Electronic Systems Integration Inc.
Request For Special Temporary Authority - File No. 0464-EX-ST-2007**

Dear Mr. Burtle:

On behalf of BAE Systems Information and Electronic Systems Integration Inc. ("BAE Systems"), this letter is to request expedited processing of the above-referenced application ("STA Request"), to permit BAE Systems to commence operation of the requested facilities by October 15, 2007.

In the "Broad Agency Announcement" ("BAA") issued by DARPA seeking Optical Lasercom and RF CDL capability for a program called ORCA ("Optical RF Communication Adjunct"), the agency specifies a ***Proposal Due Date of October 5, 2007*** (See attached BAA, p.3), with ***oral presentations and demonstrations to "occur not later than 30 days following proposal submittal"*** (See attached BAA, p.20). Accordingly, ***BAE Systems' initial demonstrations for this effort must occur on or around October 15, 2007.***

Since the filing of the STA Request, BAE Systems has attempted to determine whether DARPA has any flexibility with respect to the commencement date of the requested testing. However, DARPA has advised BAE Systems that:

- DARPA intends to keep a tight schedule; and
- If BAE Systems cannot conduct its RF demonstration during the 30 day period following proposal submittal, the company's response will be non-compliant.

Accordingly, although BAE Systems at all times attempts to resolve its frequency assignment requirements without seeking expedited consideration, it is respectfully submitted that in this case it is necessary for the above-referenced STA Request to be processed expeditiously to permit grant by no later than October 15, 2007.

Mr. James Burtles, Chief
Experimental Licensing Branch
Office of Engineering and Technology
Page 2

In support of this Request, the following additional factors are shown:

Agency-Imposed Demonstration Requirements

In connection with this STA Request, DARPA has solicited Optical Lasercom and RF CDL capability for a program called ORCA ("Optical RF Communication Adjunct"). In order to fully evaluate this critical warfighter capability, DARPA is requiring BAE Systems to demonstrate a Ku-Band (15 GHz) Common Data Link system running at a data rate of 274 Mbps. Demonstration of these capabilities are tied directly to a DoD user need. DARPA's current schedule specifies that initial demonstration evaluations must occur in October 2007. As explained above, although BAE Systems has sought to determine whether there is any flexibility in this demonstration schedule, there is none, therefore requiring BAE Systems to seek expedited processing and grant by October 15, 2007 in this instance.

The relevant contract/program information is as follows:

Agency/Customer:	DARPA
Contract/Solicitation No.:	BAA 07-55
DARPA Contact Person:	Larry Stotts Larry.stotts@darpa.mil (571) 218-4346

Very Limited Frequency Request

This STA Request seeks authority to operate on only two frequencies, namely 14.615 GHz and 15.245 GHz. Although BAE Systems understands that NTIA coordination may be necessary for this STA Request, the limited selection of frequencies should help reduce the burden of coordination on an expedited basis.

Highly Directional Antennas

The experimental antennas being used for this experiment are highly directional, thereby minimizing potential for interference. Specifically, the half power beamwidth is 3°, and the polarization is Right Hand Circular Polarization (RHCP). The directional antennas will lock on its targets during transmission rather than rotating during transmission.

Mr. James Burtle, Chief
Experimental Licensing Branch
Office of Engineering and Technology
Page 3

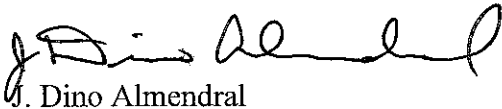
Non-Continuous Operations

Operation of the requested Facilities will not be continuous. Rather, authority for only limited and sporadic operation of the Facilities is requested during the authorized timeframe, i.e., at any given authorized location, the cumulative period of operation in any given 24 hour period will be no more than 8 hours. In the off state, no measurable power will be radiated.

Based on the above, processing and grant of the above-referenced STA Request by October 15, 2007 is respectfully requested.

Please let me know if you have any questions.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "J. Dino Almendral". The signature is fluid and cursive, with a large initial "J" and a long, sweeping underline.

J. Dino Almendral
Legal Counsel
BAE Systems Network Systems

STO Broad Agency Announcement (BAA)

Optical RF Communications Adjunct (ORCA) Effort

BAA 07-55

PART ONE: OVERVIEW INFORMATION

- Federal Agency Name – Defense Advanced Research Projects Agency (DARPA), Strategic Technology Office (STO)
- Funding Opportunity Title – DARPA Optical RF Communications Adjunct (ORCA)
- Announcement Type – Initial Announcement
- Funding Opportunity Number – Broad Agency Announcement (BAA) 07-55
- Catalog of Federal Domestic Assistance Numbers (CFDA) – N/A
- Proposal Due Date: 5 October 2007, 2:00 PM EDT
- This BAA announces an opportunity for research in optical and Radio Frequency (RF) communications to provide a high data rate gateway network capability to warfighters. This includes airborne nodes; on-the-move (OTM) and on-the-halt (OTH) ground vehicles; and Global Information Grid (GIG) Points of Presence. In this capability, the ground vehicles will act as stub networks. To ensure technical maturity of what is being developed, there will be a series of demonstrations and experiments throughout this effort. The program duration and funding recommendations will be provided by the proposers in their submission. The proposer is encouraged to outline the least possible time and funding to complete these tasks. No information on expected timeline or funding will be provided in this BAA.
- Anticipated individual awards: Multiple awards are anticipated, but not required. The Government reserves the right to award one, several, or no awards on this BAA.
- Types of instruments that may be awarded: Procurement contract, or other transaction.
- Any cost sharing requirements: Not required.
- Agency contact
The technical POC for this effort is Larry Stotts, PhD
Electronic mail: larry.stotts@darpa.mil.
DARPA/STO
ATTN: BAA 07-55
3701 North Fairfax Drive
Arlington, VA 22203-1714

PART TWO: FULL TEXT ANNOUNCEMENT

1. FUNDING OPPORTUNITY DESCRIPTION

The Defense Advanced Research Projects Agency often selects its research efforts through the Broad Agency Announcement (BAA) process. The BAA will appear first on the FedBizOpps website, <http://www.fedbizopps.gov/> and Grants.gov website at <http://www.grants.gov/>. The following information is for those wishing to respond to the BAA.

The Defense Advanced Research Projects Agency's (DARPA) Strategic Technology Office (STO) is soliciting proposals under this BAA for the performance of research, development, design, and testing to support the DARPA Optical RF Communications Adjunct (ORCA) program.

1.1. PROGRAM OVERVIEW

There is a need for high-capacity communications networks for tactical applications. The military needs to transmit and receive video, voice, chat, and other important information simultaneously among various dismounted and maneuver force elements, airborne assets and the upper echelons. This aggregated information is placing increasing demands on the capacities of current military RF systems and applicable military and commercial RF satellite links. The result is that new, unallocated spectrum must be utilized if the projected future military requirements are to be met given the oversubscription of VHF-UHF-L band frequencies. The spectrum regimes that appear to fit these criteria are Free Space Optical and RF frequencies in higher bands such as Ku and Ka.

The DARPA ORCA prototyping program shall design, build, and test a secure hybrid Free Space Optical (FSO) and RF Internet Protocol-based Gateway Network system for tactical reach-back applications. ORCA is a logical outgrowth of the previous DARPA Optical RF Combined Link Experiment (ORCLE) Program. The ultimate objective of the ORCA effort is an actual prototype demonstration of a tactical network containing ground based On the Move/On the Halt (OTM/OTH) and airborne nodes. Airborne nodes will be expected to communicate between each other up to ranges of 200 km and with ground nodes up to 50 km slant range. Nominal aircraft altitude is expected to be 25,000 ft.

Objective usable data rates for the system include a nominal node to node uncorrected 274 Mbps data rate for the RF portion of the hybrid link and an uncorrected 5 Gbps data rate (or higher is acceptable) for the FSO portion of the hybrid link. Another objective is to complete the ORCA program with a Technology Readiness Level 6 (TRL-6) system and provide a leave-behind capability for users of this equipment. [Note: Applicable definitions for TRL are included in Appendix B.]

This effort is divided into three Phases. Proposers should provide the Government their program plan, cost, and expected milestones. They should include a Preliminary Design Review (PDR) milestone at the end of Phase 1, a Critical Design Review (CDR) milestone at the end of Phase 2, and a Technology Maturity Assessment (TMA) for TRL-6 at the end of Phase 3. The timelines and other subsequent program reviews are suggested in this BAA and the proposers are encouraged to provide their tailored program plan in the proposal. It should be noted that the timeliness in accomplishing the specific phases and overall program schedule is an evaluation factor, as well as

4.5 ORAL PRESENTATION AND DEMONSTRATION EXPECTATIONS

The proposer is requested to plan for oral presentations and demonstrations in support of the technical and cost proposal. This event will occur not later than 30 days following proposal submittal or a time negotiated between DARPA and the proposer.

The oral presentations should not exceed 4 (four) hours with agenda planned to discuss key aspects of the proposed approach as well as addressing factors contained in paragraph 5.

The proposer also should plan on approximately one day to demonstrate ~TRL-6 components and subsystems, which will be integrated into a TRL-5 system, for ORCA Phases 1. The proposer is expected to show the ability to deliver high data rate RF; FSO; and a capability for networking. These demonstrations must allow the evaluation team to see high fidelity laboratory component integration and test in simulated environments.

Proposers are encouraged to use outside ranges or demonstration sites, if possible, to show ability to operate in relevant environments.

The oral presentations and demonstrations should result in showing that the proposer has met the basic program entry criteria to prove the equipment, algorithm, network, etc. are mature enough to enter this program.

4.6 SUBMISSION DATES AND TIMES

4.6.1 Proposal Submission Address and Date

The full proposal (original and designated number of hard and electronic copies) must be submitted to DARPA/STO, 3701 North Fairfax Drive, Arlington, VA 22203-1714 (Attn.: BAA 07-55) on or before 4:00 p.m., local time, 5 October 2007 in order to be considered during the initial round of selections; however, proposals received after this deadline may be received and evaluated up to one year from date of posting on FedBizOpps. Full proposals submitted after the due date specified in the BAA or due date otherwise specified by DARPA after review may be selected contingent upon the availability of funds.

DARPA will acknowledge receipt of complete submissions via email and assign control numbers that should be used in all further correspondence regarding proposals.

Failure to comply with the submission procedures may result in the submission not being evaluated.

4.6.2 Oral Presentations and Demonstrations Date

The dates of the oral presentations and demonstrations will be scheduled within 30 days of the receipt of the full proposals. The lead organization of each of the proposals will be contacted to schedule a site visit by the Government review team.