# BAA 07-34

# Revolution in Fiber Lasers (RIFL)

Joseph Mangano, Ph.D.
Program Manager
DARPA/MTO
3701 N. Fairfax Drive
Arlington, VA 22203-1714
Fax: (703) 696-2206
Email: BAA07-34@darpa.mil

Table of Contents:

Part I: Overview Information.....3
Part II: Full Text of Announcement
Sec. I: Funding Opportunity Description.....4
A. Background and Description
B. Program Objectives
C. Program Scope
D. Technical Areas of Interest
E. Deliverables
F. Technical Transition
Sec. II: Award Information.....9
Sec. III: Eligibility Information.....9
A. Eligible Applicants
B. Cost Sharing and Matching
C. Collaborative Effort
Sec. IV: Application and Submission Information.....11
A. Address to Request Application Package
B. Content and Form of Application Submission
C. Submission Dates and Times
Sec. V: Application Review Information.....19
A. Evaluation Criteria
B. Review and Selection Process
Sec. VI: Award Administration Information.....21
A. Award Notices
B. Administrative and National Policy Requirements
C. Reporting Requirements
Sec. VII: Agency Contacts.....29

## Part One: Overview Information

- **Federal Agency Name** – Defense Advanced Research Projects Agency (DARPA), Microsystems Technology Office (MTO)
- **Funding Opportunity Title** – Revolution in Fiber Lasers (RIFL)
- **Announcement Type** – Initial Announcement
- **Funding Opportunity Number** – Broad Agency Announcement (BAA) 07-34
- **Catalog of Federal Domestic Assistance Numbers (CFDA)** – 12.910 Research and Technology Development
- **Dates**
    - Proposal Abstract Due Date – Sept. 28, 2007
    - Proposal Due Date and time – Jan. 25, 2008, 4:00 p.m. local time, Arlington, VA

- **Concise description of the funding opportunity** - DARPA is soliciting innovative research proposals to investigate scaling single-mode fiber laser amplifiers to multi-kilowatt power levels. Specifically, this solicitation is focused on developing monolithic (no free space power transport), multi-kilowatt, polarization-maintaining fiber laser amplifiers that can ultimately be coherently combined to form a single, very high power, narrowline, near-diffraction-limited laser beam in the far field with high efficiency. Wavelengths near 1 μm (Yb) are desired in this effort. The RIFL program will culminate in a high power (> 3 kW) fiber laser amplifier operating near 1 μm wavelength, with an overall electrical efficiency of ≥ 30% and a beam quality factor of less than 1.4x diffraction-limited.
- **Anticipated individual awards** – Multiple awards are anticipated.
- **Types of instruments that may be awarded** -- Procurement contract, grant, cooperative agreement or other transaction.
- **Agency contact**

    Joseph Mangano, Ph.D.
    DARPA Program Manager
    ATTN: BAA 07-34
    Defense Advanced Research Projects Agency
    Microsystems Technology Office
    3701 North Fairfax Drive
    Arlington, VA 22203-1714
    Fax: (703) 696 2206
    Email: BAA07-34@DARPA.mil

# Part Two: Full Text of Announcement

## I. 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.

DARPA is soliciting innovative research proposals in the area of single-mode fiber lasers scaled to multi-kilowatt power levels. Proposed research should investigate innovative approaches that enable revolutionary advances in science, devices, and systems. Specifically excluded is research that primarily results in evolutionary improvements to the existing state of practice.

This solicitation is focused on developing monolithic (no free space power transport), multi-kilowatt, polarization-maintaining fiber laser amplifiers that can ultimately be coherently combined to form a single, very high power, narrowline, near-diffraction-limited laser beam in the far field with high efficiency. Wavelengths near 1 μm (Yb) are desired in this effort.

The RIFL program will culminate in a high power (> 3 kW) fiber laser amplifier operating near 1 μm wavelength, with an overall electrical efficiency of ≥ 30% and a beam quality factor of less than 1.4x diffraction-limited.

Fiber laser amplifiers suitable for coherent combining are preferably single-mode, polarization-maintaining, and capable of amplifying narrowline beams with fidelity. Narrowline refers to the bandwidth of noise-like phase perturbations inadvertently imposed on the output beam during amplification through the fiber amplifier. Any such noise-like phase perturbations must be within the control bandwidth of the technologies that are used for coherent phasing of each of the fiber laser amplifiers.

Nonlinear processes within high power fiber laser amplifiers such as stimulated Brillouin scattering (SBS) and stimulated Raman scattering (SRS) can impose noise-like very wide band modulation on the amplified beam that prevent coherent combination of output beams from fiber laser amplifiers. Such broadband operation can also prevent the use of dispersive, transmissive beam control elements that are used to electronically steer the laser beam efficiently through a large field-of-regard at high slew rates. Consequently, fiber laser amplifiers to be developed in this effort must operate below the threshold for such nonlinear processes.

Fiber laser amplifier performance can also be a sensitive function of the mechanical motion of the fiber and other component technologies. Consequently, the fiber laser amplifiers to be developed in this proposed effort will minimize these effects through careful design strategies, including monolithic design with fiber containment of light

from the pump diodes and the fiber laser preamplifiers through the high power fiber laser amplifier.

High power fiber laser amplifiers that can be coherently combined will enable a broad spectrum of military applications including more effective lasercom, target search and track, target identification, and ultimately high power laser weapons. Successful attainment of RIFL program objectives is expected to ultimately provide high power laser weapons systems with a weight metric of less than 5 kilograms of laser system weight per kilowatt of laser power.

Proposed research should investigate innovative approaches that enable revolutionary advances in scaling single-mode fiber laser amplifiers to multi-kilowatt power levels.

### A. Background and Description

There exist several constraints on scaling fiber laser amplifiers to high power, given the need for single-mode, polarization-maintaining, narrowline operation. These design constraints can be quantified and result from requirements to:

1. Establish and maintain efficient single-mode operation in the fiber core at high power and at single-pass amplifier stage gains of $\geq 10$
2. Maintain single polarization amplifier output
3. Operate below the threshold for the stimulated Brillouin scattering instability to promote narrowline (<1000 Hz linewidth) fiber amplifier operation
4. Operate below fiber core facet damage limits
5. Operate with efficient (>90%) transfer of diode pump power from cladding-to-core
6. Fabricate and integrate efficient, fiber-coupled, high brightness laser diode arrays so that sufficient pump power can be efficiently injected into the fiber laser cladding
7. Eliminate free space optics to increase overall efficiency and robustness of operation

In applying these constraints to the design of high power fiber laser amplifiers, design tradeoffs will occur. These tradeoffs will impact the design of the fiber laser amplifier structure as well as the pump diode arrays. Resolution of these tradeoffs can then lead to a quantitative preliminary design for a high power fiber laser system meeting all desired performance objectives.

By this process, the parameters of the fiber laser amplifier and the laser diode pump arrays can be specified, and a preliminary fiber amplifier design can be developed to meet performance metrics suggested in Table 1. These design parameters include the fiber laser cladding and core dimensions and numerical apertures, fiber cross sectional design including polarization-maintaining features, core doping levels and profiles, fiber length, brightness of laser diode pumps and fiber-combined laser diode

arrays, diode pump array isolation, and the efficiency of coupling diode pump light into the cladding of the primary fiber amplifier.

To promote quantitative evaluation of responses to this BAA, responders are strongly encouraged to develop such a preliminary point design for fiber laser amplifiers meeting the suggested metrics as part of their response to this solicitation. Methods of maintaining single mode operation under saturated gain conditions while achieving a stage gain of at least 10 and operating with a sufficiently large core diameter to obviate SBS should be quantified. Methods of reducing the ratio of cladding diameter to core diameter to promote efficient power transfer from cladding-to-core while minimizing fiber length (to increase the SBS threshold) should also be quantified. In addition, innovative strategies to increase the threshold for nonlinear processes (SBS and SRS) to maintain narrowline operation should be identified and quantified. The operating parameters (brightness, power to be coupled into a specified fiber cladding dimension and numerical aperture) of the individual pump diodes and arrays of pump diodes should also be quantified, and sources for such high brightness pump diode arrays should be detailed.

Generalized responses to this BAA in which the performance metrics in Table 1 are stipulated with no technical approach sufficiently detailed to allow quantitative evaluation by the Government are strongly discouraged. In addition, proposers are encouraged to identify additional metrics or dependent parameters that must be achieved to realize the stipulated metrics.

This solicitation is specifically aimed at developing high power fiber laser amplifiers that can ultimately be coherently combined. This solicitation is not aimed at developing technology for coherently combining such fiber laser amplifiers.

### B. Program Objectives

The objective of the RIFL program is to scale fiber laser amplifiers to > 1 kW in Phase 1, and then to explore scaling fiber laser amplifiers to > 3kW in Phase 2. In each case the high power output of the fiber laser amplifier must be single-mode, polarization-maintaining, and narrowline (consistent with coherent combination of multiple fiber laser amplifiers).

Suggested metrics for this program in Phases 1 and 2 are shown in Table 1. Also shown in Table 1 is the current commercially-available, state-of-the-art in coherently combinable fiber laser amplifiers.

| Performance Parameter | Now | Phase 1 | Phase 2 |
|---|---|---|---|
| Power | ~200 watts | > 1 kilowatt | > 3 kilowatts |
| Efficiency | -- | >15% | 30% |
| Fiber Amplifier Beam Quality | ~1.4x DL | ≤1.4 x DL | ≤1.4x DL |
| Saturated Stage Gain | 10 | ≥10 | ≥10 |
| Integrated Phase Noise | -- | Phase Noise of < λ/10 waves rms integrated over frequencies beyond <400 kHz | Phase Noise of < λ/10 waves rms integrated over frequencies beyond <1 kHz |
| Polarization | Linear | Linear Polarization Ratio > 20:1 | Linear Polarization Ratio > 30:1 |
| Architecture | -- | -- | Monolithic, All- Fiber |
| Runtime | CW | ≥ 200 sec | ≥ 200 sec |
| Lifetime | -- | 100 hrs. | 300 hrs. |

**Table 1: Suggested Metrics for RIFL Program**

All metrics suggested in each phase of the RIFL program are to be met simultaneously on the same fiber laser amplifier.

The proposer is required to define the period of performance to achieve the goals of each phase and supply a detailed schedule to justify the proposed timeline.

### C. Program Scope

The major technology development of the RIFL program is envisioned to occur in 2 phases, as described below.

Phase I: 1 kW Fiber Laser Amplifier

Phase II: 3 kW Fiber Laser Amplifier

### D. Technical Areas of Interest

The RIFL program has three technical areas of interest. **All proposals are required to address all technical areas of interest in a comprehensive manner.** The Government **strongly prefers** an integrated approach, developed through strategic teaming, which provides the required expertise in:

*Technical Area #1:* High power fiber laser amplifiers
Proposals should provide credible designs, supported by quantitative calculations, of kilowatt-class fiber laser amplifiers.

*Technical Area #2:* High brightness laser diode pumps
Proposals should demonstrate relevant expertise in the selection of, or development of, the required high brightness semiconductor laser diodes for optical pumping of high power fiber laser amplifiers.

*Technical Area #3:* High brightness arrays of laser diode pumps
Proposals should demonstrate expertise in the assembly and operation of arrays of semiconductor laser diodes for optical pumping of high power fiber laser amplifiers. Calculations and specifications of diode pump power that can be efficiently provided to a fiber amplifier of relevant cladding and numerical aperture are essential.

### E. Deliverables

The Government expects to test devices in order to validate performance consistent with the Go/No-Go (GNG) metrics. Provisions should be included in the technical and cost proposals to support two (2) weeks of performance testing on site by a government team. This will be a support task to be attached to the source selection package to provide for metrics verification by a team of government representatives such as from a Federally Funded Research and Development Center (FFRDC).

### F. Technology transition

DARPA is interested in the development of capabilities for producing fiber lasers that meet the objectives of a broad range of DoD systems and platforms. Evaluation of technology transition plans, therefore, is an important part of the proposal selection process. A clear and credible plan by which the technology developed will be commercialized and made available to DoD contractors for ultimate use in high power, coherently combined fiber laser amplifier arrays is an important element of the proposal.

## II. AWARD INFORMATION

Multiple awards are anticipated. The amount of resources made available under this BAA will depend on the quality of the proposals received and the availability of funds.

The Government reserves the right to select for negotiation all, some, one, or none of the proposals received in response to this solicitation, and to make awards without discussions with offerors. The Government also reserves the right to conduct discussions if the Source Selection Authority later determines them to be necessary. If warranted, portions of resulting awards may be segregated into pre-priced options. Additionally, DARPA reserves the right to accept proposals in their entirety or to select only portions of proposals for award. In the event that DARPA desires to award only portions of a proposal, negotiations may be opened with that offeror. If the proposed effort is inherently divisible and nothing is gained from the aggregation, offerors should consider submitting it as multiple independent efforts. The Government reserves the right to fund proposals in phases with options for continued work at the end of one or more of the phases.

Awards under this BAA will be made to offerors on the basis of the evaluation criteria listed below (see section labeled "Application Review Information", Sec. V.), and program balance to provide overall value to the Government. Proposals identified for negotiation may result in a procurement contract, grant, cooperative agreement, or other transaction depending upon the nature of the work proposed, the required degree of interaction between parties, and other factors.

## III. ELIGIBILITY INFORMATION

### A. Eligible Applicants

All responsible sources capable of satisfying the Government's needs may submit a proposal that shall be considered by DARPA. Historically Black Colleges and Universities (HBCUs), Small Businesses, Small Disadvantaged Businesses and Minority Institutions (MIs) are encouraged to submit proposals and join others in submitting proposals; however, no portion of this announcement will be set aside for these organizations' participation due to the impracticality of reserving discrete or severable areas of this research for exclusive competition among these entities. Independent proposals from Government/National laboratories may be subject to applicable direct competition limitations, though certain Federally Funded Research and Development Centers are excepted per P.L. 103-337§ 217 and P.L 105-261 § 3136.

Foreign participants and/or individuals may participate to the extent that such participants comply with any necessary Non-Disclosure Agreements, Security Regulations, Export Control Laws, and other governing statutes applicable under the circumstances.

### 1. Ethical Considerations, Procurement Integrity, and Organizational Conflicts of Interest

Certain post-employment restrictions on former federal officers and employees may exist, including special Government employees (including, but not limited to, Title 18, Section 207, United States Code, the Procurement Integrity Act, 41 U.S.C. 423, and FAR 3.104.) Current federal employees are prohibited from participating in particular matters involving conflicting financial, employment, and representational interests (18 USC 203, 205, and 208.) Prior to the start of proposal evaluations, the Government will assess whether any potential conflict of interest exists in regards to the DARPA Program Manager, as well as those individuals chosen to evaluate proposals received under this BAA. The Program Manager is required to review and evaluate all proposals received under this BAA and to manage all selected efforts. The Program Manager for this BAA is a detailee to DARPA under the Intergovernmental Personnel Act (IPA) from the Corporation for National Research Initiatives and, as such, is highly likely to have a conflict of interest with respect to proposals utilizing that institution as a performer. Proposers should carefully consider the composition of their performer team before submitting a proposal to this BAA.

All Proposers and proposed subcontractors must affirm whether they are providing scientific, engineering, and technical assistance (SETA) or similar support to any DARPA technical office(s) through an active contract or subcontract. All affirmations must state which office(s) the Proposer supports and identify the prime contract numbers. Affirmations shall be furnished at the time of proposal submission. All facts relevant to the existence or potential existence of organizational conflicts of interest (FAR 9.5) must be disclosed. The disclosure shall include a description of the action the Proposer has taken or proposes to take to avoid, neutralize, or mitigate such conflict. In accordance with FAR 9.503 and without prior approval or a waiver from the DARPA Director, a Contractor cannot simultaneously be a SETA and Performer. Proposals that fail to fully disclose potential conflicts of interests and include an effective mitigation plan, or that do not include a mitigation plan at all, will be returned without technical evaluation and withdrawn from further consideration for award.

If a prospective Proposer believes that any conflict of interest exists or may exist (whether organizational or otherwise), the Proposer should promptly raise the issue with DARPA by sending Proposer contact information and a summary of the potential conflict by email to the mailbox address for this BAA at BAA07-34@DARPA.mil, before time and effort are expended in preparing a proposal and mitigation plan. If, in the sole opinion of the Government after full consideration of the circumstances, any conflict situation cannot be effectively mitigated, the proposal may be returned without technical evaluation and withdrawn from further consideration for award under this BAA.

### B. Cost Sharing/Matching

Cost sharing is not required for this particular program; however, cost sharing will be carefully considered where there is an applicable statutory condition relating to the selected funding instrument (e.g., for any Other Transactions under the authority of 10 U.S.C. § 2371). Cost sharing is encouraged where there is a reasonable probability of a potential commercial application related to the proposed research and development effort.

### C. Collaborative Efforts

It is anticipated that no one organization will have the full capabilities in fiber manufacture, diode manufacture, and diode pump array fabrication combined with all of the laser physics expertise to conduct this program. As a result, it is strongly suggested that teams form that can demonstrate expertise in the full spectrum of technologies needed to successfully develop the high power fiber laser amplifiers meeting the metrics suggested in Table 1.

Teaming arrangements should be explained clearly in the proposals. Preference will be given to integrated teams capable of addressing all technological and scientific aspects of the RIFL program. Innovative proposals from small groups will be considered and a website (http://www.davincinetbook.com/teams) will be established to facilitate teaming between interested parties. Specific information content, communications, networking, and team formation are the sole responsibilities of the participants. Neither DARPA nor the Department of Defense (DoD) endorses the destination website or the information and organizations contained therein, nor does DARPA or the DoD exercise any responsibility at the destination. This website is provided consistent with the stated purpose of this BAA.

A "Proposer's Questions," website will be posted for BAA 07-34 on the DARPA, Microsystems Technology Office solicitations page (www.darpa.mil/baa/#eto). If you would like to have a question answered and posted on this site, please send your question to the following address: BAA07-34@darpa.mil.

## IV. APPLICATION AND SUBMISSION INFORMATION

### A. Confidentiality

It is the policy of DARPA to treat all proposals as competitive information and to disclose their contents only for the purpose of evaluation. No proposals will be returned. The original of each proposal received will be retained at DARPA and all other copies of non-selected proposals destroyed. Documentation related to the source selection process will be marked SOURCE SELECTION INFORMATION – SEE FAR 2.101 AND 3.104.

### B. Address to Request Application Package

This announcement contains all information required to submit a proposal. No additional forms, kits, or other materials are needed. This notice constitutes the total BAA. No additional information is available, nor will a formal Request for Proposal (RFP) or additional solicitation regarding this announcement be issued. Requests for same will be disregarded.

### C. Content and Form of Application Submission

#### 1. Abstract and Proposal Information

Proposers are strongly encouraged to submit a proposal abstract in advance of a full proposal. This procedure is intended to minimize unnecessary effort in proposal preparation and review. The time and date for submission of proposal abstracts is specified in Section C below. DARPA will acknowledge receipt of the submission and assign a control number that should be used in all further correspondence regarding the proposal abstract.

DARPA will respond to proposal abstracts with a recommendation to propose or not propose and the time and date for submission of a full proposal. DARPA will attempt to review proposal abstracts within thirty (30) calendar days after receipt and will allow proposers at least thirty (30) calendar days after review of their proposal abstracts in order to complete and submit their proposals. Proposal abstracts will be reviewed as they are received. Early submissions of proposal abstracts and full proposals are strongly encouraged because selections may be made at any time during the evaluation process. Regardless of the recommendation, the decision to propose is the responsibility of the proposer. All submitted proposals will be fully reviewed regardless of the disposition of the proposal abstract. Proposers not submitting proposal abstracts are required to submit full proposals at the time and date specified in the BAA 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 and Grants.gov. Full proposals submitted after the due date stated in the BAA or due date otherwise specified by DARPA after review of proposal abstracts may be selected contingent on the availability of funds.

The typical proposal should express a consolidated effort in support of one or more related technical concepts or ideas. Disjointed efforts should not be included into a single proposal.

Restrictive notices notwithstanding, proposals may be handled, for administrative purposes only, by a support contractor. This support contractor is prohibited from competition in DARPA technical research and is bound by appropriate nondisclosure requirements. Proposals and proposed abstracts may not be submitted by fax or e-mail; any so sent will be disregarded.

Proposals not meeting the format described in the BAA may not be reviewed.

All administrative correspondence and questions on this solicitation, including requests for information on how to submit a proposal abstract or full proposal to this BAA, should be directed to one of the administrative addresses below; e-mail or fax is preferred.

Fax: (703) 696 2206 (Addressed to: DARPA/MTO, BAA 07-34)
Email: BAA07-34@darpa.mil

DARPA intends to use electronic mail and fax for correspondence regarding BAA 07-34. Proposals and proposal abstracts may not be submitted by fax or e-mail; any so sent will be disregarded. DARPA encourages use of the Internet for retrieving the BAA and any other related information that may subsequently be provided.

**All proposals submitted electronically by means of an Electronic Business Application Tool or proposal submission web site (not including Grants.gov) must be encrypted using Winzip or PKZip with 256-bit AES encryption. Only one zipped/encrypted file will be accepted per proposal and proposals not zipped/encrypted will be rejected by DARPA. An encryption password form must be completed and emailed to (insert THE APPROPRIATE BAA MAILBOX) at the time of proposal submission. See https://www.tfims.darpa.mil/baa/ for the encryption password form.**

**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 may result in the proposal not being evaluated. For further information and instructions on how to zip and encrypt proposal files, see https://www.tfims.darpa.mil/baa/.**

### 2. Proposal Abstract and Full Proposal Submission

*Proposal Abstract Submission*

DARPA/MTO will employ an electronic upload process, the Technical Financial Information Management System (T-FIMS) Proposal Submission System, for all abstract submissions to this BAA. Electronic abstracts should be in Microsoft Word format or PDF and submitted via a web site interface: Web Site: https://www.tfims.darpa.mil/baa.

Please note that abstracts should not be submitted via Grants.gov.

*Full Proposal Submission*

Full proposals should be submitted electronically using one of the following two submission methods. Note that dual submissions are not required and a paper copy is not required.

a. University (prime) grant submissions may be made via the Grants.gov web site, http://www.grants.gov/, by using the "Apply" function.

b. Proposals may be submitted to this BAA via the T-FIMS Proposal Submission System. Electronic proposals should be in Microsoft Word format or PDF and submitted via a web site interface: Web Site: https://www.tfims.darpa.mil/baa.

*T-FIMS*

Organizations planning to submit proposals via T-FIMS must register at: http://www.tfims.darpa.mil/baa. Only the lead or prime organization should register. One registration per proposal should be submitted. This means that an organization wishing to submit to multiple technical topic areas should complete a single registration for each proposal. The proposer makes no commitment to submit by registering. Please note that it is recommended that proposers register on T-FIMS at least a week prior to the submission deadline to allow sufficient time for completing the registration process and uploading the submission. Please also note that proposers will receive a confirmation e-mail generated from the T-FIMS electronic system as receipt that their proposal has been received.

The T-FIMS Proposal Submission System supports the following file formats: Portable Document Format (PDF), Word Document (doc), Plain Text (txt), Comma-separated I-7 Values (CSV), PowerPoint Presentation (ppt), Excel Worksheet (xls), and Excel Workspace (xlw). Proposal submissions made through the T-FIMS Proposal Submission System must be no larger than 50 megabytes per file.

All material submitted electronically must be UNCLASSIFIED. Please DO NOT attempt to submit a CLASSIFIED material proposal through an electronic upload process as this is PROHIBITED. Offerors that intend to include classified, or potentially classified, information or data as part of their proposals shall submit an UNCLASSIFIED PROPOSAL referring to a classified annex. The offeror should contact the Technical POC for this BAA, or the Security POC cited below, for guidance on submitting the classified annex.

*Grants.gov*

Offerors may elect to use the Grants.gov APPLY function if the applicant is seeking a grant or cooperative agreement. The APPLY function replaces the proposal submission process that other offerors follow. The APPLY function does not affect the proposal content or format. The APPLY function is electronic; offerors do not submit paper proposals in addition to the Grants.gov APPLY electronic submission.

### 3. Proposal Abstract Format

Proposal abstracts are encouraged in advance of full proposals in order to provide potential offerors with a rapid response to minimize unnecessary effort. Proposal

abstracts should follow the same general format as described for Volume I under PROPOSAL FORMAT (see below), but include ONLY Sections I and II. The cover sheet should be clearly marked "PROPOSAL ABSTRACT" and the total length should not exceed **ten (10)** pages, excluding cover page and official transmittal letter. All pages shall be printable on 8-1/2 by 11 inch paper with type not smaller than 12 point. The page limitation for proposal abstracts includes all figures, tables, and charts. No formal transmittal letter is required. All proposal abstracts must be written in English.

### 4. Full Proposal Format

All full proposals must be in the format given below. Nonconforming proposals may be rejected without review. Proposals shall consist of two volumes. All pages shall be printable on 8-1/2 by 11 inch paper with type not smaller than 12 point. The page limitation for full proposals includes all figures, tables, and charts. Volume I, Technical and Management Proposal, may include an attached bibliography of relevant technical papers or research notes (published and unpublished) which document the technical ideas and approach upon which the proposal is based. Copies of not more than three (3) relevant papers can be included with the submission. The bibliography and attached papers are not included in the page counts given below. The submission of other supporting materials along with the proposals is strongly discouraged and will not be considered for review. Section I, Volumes II & III shall not exceed **fifty (50)** pages. Maximum page lengths for these sections are shown in braces { } below. All full proposals must be written in English.

***Volume I, Technical and Management Proposal***

Section I. Administrative

A. Cover sheet to include:

(1) BAA number

(2) Technical area

(3) Lead Organization Submitting proposal

(4) Type of business, selected among the following categories: "LARGE BUSINESS", "SMALL DISADVANTAGED BUSINESS", "OTHER SMALL BUSINESS", "HBCU", "MI", "OTHER EDUCATIONAL", OR "OTHER NONPROFIT"

(5) Contractor's reference number (if any)

(6) Other team members (if applicable) and type of business for each

(7) Proposal title

(8) Technical point of contact to include: salutation, last name, first name, street address, city, state, zip code, telephone, fax (if available), electronic mail (if available)

(9) Administrative point of contact to include: salutation, last name, first name, street address, city, state, zip code, telephone, fax (if available), electronic mail (if available), total funds requested from DARPA, and the amount of cost share (if any) and

(10) Date proposal was submitted.

B. Official transmittal letter.

Section II. Summary of Proposal

This section provides an overview of the proposed work as well as an introduction to the associated technical and management issues. Further elaboration will be provided in Section III.

A. {2} Innovative claims for the proposed research. This section is the centerpiece of the proposal and should succinctly describe the uniqueness and benefits of the proposed approach relative to the current state-of-art alternate approaches.
B. {1} Deliverables associated with the proposed research and the plans and capability to accomplish technology transition and commercialization. Include in this section all proprietary claims to the results, prototypes, intellectual property, or systems supporting and/or necessary for the use of the research, results, and/or prototype. If there are not proprietary claims, this should be stated.
C. {2} Cost, schedule and milestones for the proposed research, including estimates of cost for each task in each year of the effort delineated by the prime and major subcontractors, total cost and company cost share, if applicable. **Note: Milestones should be quantifiable and reasonable.** These milestones should enable and support a go/no go decision for the next part of the effort.
D. {2} Technical rationale, technical approach, and constructive plan for accomplishment of technical goals in support of innovative claims and deliverable production. (In the full proposal, this section should be supplemented by a more detailed plan in Section III.)
E. {1} General discussion of other research in this area.
F. {2} A clearly defined organization chart for the program team which includes, as applicable: (1) the programmatic relationship of team member; (2) the unique capabilities of team members; (3) the task of responsibilities of team members; (4) the teaming strategy among the team members; and (5) the key personnel along with the amount of effort to be expended by each person during each year.

Section III. Detailed Proposal Information

This section provides the detailed discussion of the proposed work necessary to enable an in-depth review of the specific technical and managerial issues. Specific attention must be given to addressing both risk and payoff of the proposed work that make it desirable to DARPA.

A. {3} Statement of Work (SOW) - In plain English, clearly define the technical tasks/subtasks to be performed, their durations, and dependencies among them. The page length for the SOW will be dependant on the amount of the effort. For each task/subtask, provide:
    - A general description of the objective (for each defined task/activity);

- A detailed description of the approach to be taken to accomplish each defined task/activity);
- Identification of the primary organization responsible for task execution (prime, sub, team member, by name, etc.);
- The exit criteria for each task/activity - a product, event or milestone that defines its completion.
- Define all deliverables (reporting, data, reports, software, etc.) to be provided to the Government in support of the proposed research tasks/activities.

*Note: It is recommended that the SOW should be developed so that each Phase of the program is separately defined.* Do not include any proprietary information in the SOW.

B. {4} Description of the results, products, transferable technology, and expected technology transfer path enhancing that of Section II. B.
C. {4} Detailed technical rationale enhancing that of Section II.
D. {10} Detailed technical approach enhancing and completing that of Section II.
E. {3} Comparison with other ongoing research indicating advantages and disadvantages of the proposed effort.
F. {2} Discussion of proposer's previous accomplishments and work in closely related research areas.
G. {1} Description of the facilities that would be used for the proposed effort.
H. {3} Detail support enhancing that of Section II, including formal teaming agreements which are required to execute this program.
I. {5} Cost schedules and milestones for the proposed research, including estimates of cost for each task in each year of the effort delineated by the primes and major subcontractors, total cost, and any company cost share. **Note: Milestones should be quantifiable and reasonable.** These milestones should enable and support a go/no go decision for the next part of the effort. Where the effort consists of multiple portions which could reasonably be partitioned for purposes of funding, these should be identified as options with separate cost estimates for each.
J. {5} Slides summarizing the detailed technical approach, unique features, program milestones including technical attributes (quantitative milestones) and budget.

Section IV. Additional Information

A brief bibliography of relevant technical papers and research notes (published and unpublished) which document the technical ideas upon which the proposal is based. Copies of not more than three (3) relevant papers can be included in the submission.

***Volume II, Cost Proposal – {No Page Limit}***

Cover sheet to include:
(1) BAA number;
(2) Technical area;
(3) Lead Organization Submitting proposal;

(4) Type of business, selected among the following categories: "LARGE BUSINESS", "SMALL DISADVANTAGED BUSINESS", "OTHER SMALL BUSINESS", "HBCU", "MI", "OTHER EDUCATIONAL", OR "OTHER NONPROFIT";
(5) Contractor's reference number (if any);
(6) Other team members (if applicable) and type of business for each;
(7) Proposal title;
(8) Technical point of contact to include: salutation, last name, first name, street address, city, state, zip code, telephone, fax (if available), electronic mail (if available);
(9) Administrative point of contact to include: salutation, last name, first name, street address, city, state, zip code, telephone, fax (if available), and electronic mail (if available);
(10) Award instrument requested: cost-plus-fixed-free (CPFF), cost-contract—no fee, cost sharing contract – no fee, or other type of procurement contract (*specify*), grant, cooperative agreement, or other transaction;
(11) Place(s) and period(s) of performance;
(12) Total proposed cost separated by basic award and option(s) (if any);
(13) Name, address, and telephone number of the offeror's cognizant Defense Contract Management Agency (DCMA) administration office (*if known)*;
(14) Name, address, and telephone number of the offeror's cognizant Defense Contract Audit Agency (DCAA) audit office (*if known*);
(15) Date proposal was prepared;
(16) DUNS number;
(17) TIN number; and
(18) Cage Code;
(19) Subcontractor Information; and
(20) Proposal validity period.

Detailed cost breakdown to include: (1) total program cost broken down by major cost items (direct labor, including labor categories; subcontracts; materials; other direct costs, overhead charges, etc.) and further broken down task and phase; (2) major program tasks by year; (3) an itemization of major subcontracts and equipment purchases; (4) an itemization of any information technology (IT) purchase; (5) a summary of projected funding requirements by month; and (6) the source, nature, and amount of any industry cost-sharing. Where the effort consists of multiple portions which could reasonably be partitioned for purposes of funding, these should be identified as options with separate cost estimates for each. NOTE: for IT and equipment purchases, include a letter stating why the offeror cannot provide the requested resources from its own funding.

Supporting cost and pricing information in sufficient detail to substantiate the summary cost estimates in B. above. Include a description of the method used to estimate costs and supporting documentation. Note: "cost or pricing data" as defined in FAR Subpart 15.4 shall be required if the offeror is seeking a procurement contract award of $650,000 or greater unless the offeror request an exception from the requirement to submit cost of pricing data. "Cost or pricing data" are not required if the offeror proposes an award

instrument other than a procurement contract (e.g., a grant, cooperative agreement, or other transaction.)

### D. Submission Dates and Times

#### 1. Proposal Abstract Date

The proposal abstract must be submitted to DARPA/MTO through the T-FIMS tool, on or before 4:00 p.m., local time, Arlington, VA, Sept. 28, 2007. Proposal abstracts received after this time and date may not be reviewed.

#### 2. Full Proposal Date

The full proposal must be submitted to DARPA/MTO through T-FIMS or Grants.gov, on or before 4:00 p.m., local time in Arlington, VA, Jan. 25, 2008 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 of proposal abstracts may be selected contingent upon the availability of funds.

The full proposal must be submitted in time to reach DARPA by 4:00 p.m., local time in Arlington, VA on Jan. 25, 2008 (initial closing), in order to be considered during the initial evaluation phase; however, BAA 07-34 will remain open until Oct. 21, 2008. Proposals may be submitted at any time from issuance of this announcement through Oct. 21, 2008; however, offerors are warned that the likelihood of funding is greatly reduced for proposals submitted after the initial closing date deadline.

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.

## V. APPLICATION REVIEW INFORMATION

### A. Evaluation Criteria

Evaluation of proposals will be accomplished through a scientific/technical review of each proposal using the following criteria,which are listed in descending order of relative importance: (a) Overall Scientific and Technical Merit; (b) Potential Contribution and Relevance to the DARPA Mission; (c) Plans and Capability to Accomplish Technology Transition; (d) Offeror's Capabilities and Related Experience; (e) Realism of Proposed Schedule; and (f) Cost Realism. Proposals will not be evaluated against each other since they are not submitted in accordance with a common work statement. DARPA's intent is to review proposals as soon as possible after they arrive; however, proposals may be

reviewed periodically for administrative reasons. The following are descriptions of the above listed criteria:

**(a) Overall Scientific and Technical Merit**

The proposed technical approach is feasible, achievable, complete and supported by a proposed technical team that has the expertise and experience to accomplish the proposed tasks. Task descriptions and associated technical elements provided are complete and in a logical sequence with all proposed deliverables clearly defined such that a final product that achieves the goal can be expected as a result of award. The proposal identifies major technical risks and planned mitigation efforts are clearly defined and feasible.

**(b) Potential Contribution and Relevance to the DARPA Mission**

The potential contributions of the proposed effort with relevance to the national technology base will be evaluated. Specifically, DARPA's mission is to maintain the technological superiority of the U.S. military and prevent technological surprise from harming our national security by sponsoring revolutionary, high-payoff research that bridges the gap between fundamental discoveries and their military use.

**(c) Plans and Capability to Accomplish Technology Transition**

The offeror's plans and capability to transition the technology to the research, industrial, and operational military communities in such a way as to enhance U.S. defense, to include the extent to which intellectual property rights limitations creates a barrier to technology transition.

**(d) Offeror's Capabilities and Related Experience**

The proposer's prior experience in similar efforts must clearly demonstrate an ability to deliver products that meet the proposed technical performance within the proposed budget and schedule. The proposed team has the expertise to manage the cost and schedule. Similar efforts completed/ongoing by the proposer in this area are fully described including identification of other Government sponsors.

**(e) Realism of Proposed Schedule**

The proposer's abilities to aggressively pursue performance metrics in the shortest timeframe and to accurately account for that timeframe will be evaluated.

**(f) Cost Realism**

The objective of this criterion is to establish that the proposed costs are realistic for the technical and management approach offered, as well as to determine the proposer's practical understanding of the effort. This will be principally measured by cost per labor-hour and number of labor-hours proposed. The evaluation criterion recognize that undue emphasis on cost may motivate proposers to offer low-risk ideas with minimum uncertainty and to staff the effort with junior personnel in order to be in a more competitive posture. DARPA discourages such cost strategies. Cost reduction approaches that will be received favorably include innovative management concepts that maximize direct funding for technology and limit diversion of funds into overhead.

After selection and before award the contracting officer will negotiate cost/price reasonableness.

Award(s) will be made to proposers whose proposals are determined to be the most advantageous to the Government, all factors considered, including the potential contributions of the proposed work to the overall research program and the availability of funding for the effort. Award(s) may be made to any proposer(s) whose proposal(s) is determined selectable regardless of its overall rating.

NOTE: PROPOSERS ARE CAUTIONED THAT EVALUATION RATINGS MAY BE LOWERED AND/OR PROPOSALS REJECTED IF SUBMITTAL INSTRUCTIONS ARE NOT FOLLOWED.

### B. Review and Selection Process

It is the policy of DARPA to ensure impartial, equitable, comprehensive proposal evaluations and to select the source (or sources) whose offer meets the Government's technical, policy, and programmatic goals. Pursuant to FAR 35.016, the primary basis for selecting proposals for acceptance shall be technical, importance to agency programs, and fund availability. In order to provide the desired evaluation, qualified Government personnel will conduct reviews and (if necessary) convene panels of experts in the appropriate areas.

Proposals will not be evaluated against each other since they are not submitted in accordance with a common work statement. DARPA's intent is to review proposals as soon as possible after they arrive; however, proposals may be reviewed periodically for administrative reasons. For evaluation purposes, a proposal is the document described in "Proposal Information", Section IV.B.. Other supporting or background materials submitted with the proposal will be considered for the reviewer's convenience only and not considered as part of the proposal.

Restrictive notices notwithstanding, proposals may be handled for administrative purposes by support contractors. These support contractors are prohibited from competition in DARPA technical research and are bound by appropriate non-disclosure requirements.

Subject to the restrictions set forth in FAR 37.203(d), input on technical aspects of the proposals may be solicited by DARPA from non-Government consultants /experts who are strictly bound by the appropriate non-disclosure requirements.

It is the policy of DARPA to treat all proposals as competitive information and to disclose their contents only for the purpose of evaluation. No proposals will be returned. Upon completion of the source selection process, the original of each proposal received will be retained at DARPA and all other copies will be destroyed.

# VI. AWARD ADMINISTRATION INFORMATION

## A. Award Notices

As soon as the evaluation of a proposal is complete, the offeror will be notified that 1) the proposal has been selected for funding pending contract negotiations, or 2) the proposal has not been selected. These official notifications will be sent via U. S. mail to the Technical POC identified on the proposal coversheet.

## B. Administrative and National Policy Requirements

### 1. Security

The Government anticipates that proposals submitted under this BAA will be unclassified. In the event that a proposer chooses to submit a classified proposal or submit any documentation that may be classified, the following information is applicable.

Security classification guidance on a DD Form 254 will not be provided at this time since DARPA is soliciting ideas only. After reviewing the incoming proposals, if a determination is made that the award instrument may result in access to classified information, a DD Form 254 will be issued and attached as part of the award. Proposers choosing to submit a classified proposal must first receive permission from the Original Classification Authority to use their information in replying to this BAA. Applicable classification guide(s) should be submitted to ensure that the proposal is protected appropriately.

Classified submissions shall be in accordance with the following guidance:

**Collateral Classified Information:** Use classification and marking guidance provided by previously issued security classification guides, the Information Security Regulation (DoD 5200.1-R), and the National Industrial Security Program Operating Manual (DoD 5220.22-M) when marking and transmitting information previously classified by another original classification authority. Classified information at the Confidential and Secret level may only be mailed via U.S. Postal Service (USPS) Registered Mail or U.S. Postal Service Express Mail. All classified information will be enclosed in opaque inner and outer covers and double wrapped. The inner envelope shall be sealed and plainly marked with the assigned classification and addresses of both sender and addressee. The inner envelope shall be address to:

Defense Advanced Research Projects Agency
ATTN: Microsystems Technology Office
Reference: BAA 07-34
3701 North Fairfax Drive
Arlington, VA 22203-1714

The outer envelope shall be sealed with no identification as to the classification of its contents and addressed to:

Defense Advanced Research Projects Agency
Security & Intelligence Directorate, Attn: CDR
3701 North Fairfax Drive
Arlington, VA 22203-1714

All Top Secret materials should be hand carried via an authorized, two-person courier team to the DARPA CDR.

**Special Access Program (SAP) Information**: Contact the DARPA Special Access Program Central Office (SAPCO) 703-526-6614 for further guidance and instructions prior to transmitting SAP information to DARPA. Top Secret SAP, must be transmitted via approved methods for such material. Consult the DoD Overprint to the National Industrial Security Program Operating Manual for further guidance. *Prior to transmitting SAP material*, it is strongly recommended that you coordinate your submission with the DARPA SAPCO.

**Sensitive Compartmented Information (SCI) Data**: Contact the DARPA Special Security Office (SSO) at 703-812-1994/1984 or 703-248-7318 for the correct SCI courier address and instructions. All SCI should be transmitted through your servicing Special Security Officer (SSO). SCI data must be transmitted through SCI channels only (i.e., approved SCI Facility to SCI facility via secure fax).

**Proprietary Data:** All proposals containing proprietary data should have the cover page and each page containing proprietary data clearly marked as containing proprietary data. It is the Offeror's responsibility to clearly define to the Government what is considered proprietary data.

Offerors must have existing and in-place prior to execution of an award, approved capabilities (personnel and facilities) to perform research and development at the classification level they propose. It is the policy of DARPA to treat all proposals as competitive information, and to disclose their contents only for the purpose of evaluation. Proposals will not be returned. The original of each proposal received will be retained at DARPA and all other non-required copies destroyed. A certification of destruction may be requested, provided that the formal request is received at this office within 5 days after unsuccessful notification.

**2. Intellectual Property**

a. *Procurement Contract Proposers*

1. *Noncommercial Items (Technical Data and Computer Software)*

Proposers responding to this BAA requesting a procurement contract to be issued under the FAR/DFARS shall identify all noncommercial technical data and noncommercial computer software that it plans to generate, develop, and/or deliver under any proposed award instrument in which the Government will acquire less than unlimited rights, and to assert specific restrictions on those deliverables. Proposers shall follow the format under DFARS 252.227-7017 for this stated purpose. In the event that proposers do not submit the list, the Government will assume that it automatically has "unlimited rights" to all noncommercial technical data and noncommercial computer software generated, developed, and/or delivered under any award instrument, unless it is substantiated that development of the noncommercial technical data and noncommercial computer software occurred with mixed funding. If mixed funding is anticipated in the development of noncommercial technical data and noncommercial computer software generated, developed, and/or delivered under any award instrument, then proposers should identify the data and software in question, as subject to Government Purpose Rights (GPR). In accordance with DFARS 252.227-7013 Rights in Technical Data - Noncommercial Items and DFARS 252.227-7014 Rights in Noncommercial Computer Software and Noncommercial Computer Software Documentation, the Government will automatically assume that any such GPR restriction is limited to a period of five (5) years in accordance with the applicable DFARS clauses, at which time the Government will acquire "unlimited rights" unless the parties agree otherwise. Proposers are admonished that the Government will use the list during the source selection evaluation process to evaluate the impact of any identified restrictions and may request additional information from the proposer, as may be necessary, to evaluate the proposer's assertions. If no restrictions are intended, then the proposer should state "NONE."

A sample list for complying with this request is as follows:

| NONCOMMERCIAL | | | |
|---|---|---|---|
| Technical Data Computer Software To be Furnished With Restrictions | Basis for Assertion | Asserted Rights Category | Name of Person Asserting Restrictions |
| (LIST) | (LIST) | (LIST) | (LIST) |

2. *Commercial Items (Technical Data and Computer Software)*

Proposers responding to this BAA requesting a procurement contract to be issued under the FAR/DFARS shall identify all commercial technical data and commercial computer software that may be embedded in any noncommercial deliverables contemplated under the research effort, along with any applicable restrictions on the Government's use of such commercial technical data and/or commercial computer software. In the event that proposers do not submit the list, the Government will assume that there are no restrictions on the Government's use of such commercial items. The Government may use the list during the source selection evaluation process to evaluate the impact of any identified restrictions and may request additional information from the proposer, as may be

necessary, to evaluate the proposer's assertions. If no restrictions are intended, then the proposer should state "NONE."

A sample list for complying with this request is as follows:

| COMMERCIAL | | | |
|---|---|---|---|
| Technical Data Computer Software To be Furnished With Restrictions | Basis for Assertion | Asserted Rights Category | Name of Person Asserting Restrictions |
| (LIST) | (LIST) | (LIST) | (LIST) |

b. NonProcurement Contract Proposers - Noncommercial and Commercial Items (Technical Data and Computer Software)

Proposers responding to this BAA requesting a Grant, Cooperative Agreement, Technology Investment Agreement, or Other Transaction for Prototype shall follow the applicable rules and regulations governing these various award instruments, but in all cases should appropriately identify any potential restrictions on the Government's use of any Intellectual Property contemplated under those award instruments in question. This includes both Noncommercial Items and Commercial Items. Although not required, proposers may use a format similar to that described in Paragraphs 1.a and 1.b above. The Government may use the list during the source selection evaluation process to evaluate the impact of any identified restrictions, and may request additional information from the proposer, as may be necessary, to evaluate the proposer's assertions. If no restrictions are intended, then the proposer should state "NONE."

*All Proposers – Patents*

Include documentation proving your ownership of or possession of appropriate licensing rights to all patented inventions (or inventions for which a patent application has been filed) that will be utilized under your proposal for the DARPA program. If a patent application has been filed for an invention that your proposal utilizes, but the application has not yet been made publicly available and contains proprietary information, you may provide only the patent number, inventor name(s), assignee names (if any), filing date, filing date of any related provisional application, and a summary of the patent title, together with either: 1) a representation that you own the invention, or 2) proof of possession of appropriate licensing rights in the invention.

*All Proposers-Intellectual Property Representations*

Provide a good faith representation that you either own or possess appropriate licensing rights to all other intellectual property that will be utilized under your proposal for the DARPA program. Additionally, offerors shall provide a short summary for each item asserted with less than unlimited rights that describes the nature of the restriction and the intended use of the intellectual property in the conduct of the proposed research.

### 3. Meeting and travel requirements

There will be a program kickoff meeting and all key participants are required to attend. Performers should also anticipate periodic site visits at the Program Manager's discretion.

### 4. Human Use

Proposals selected for contract award are required to comply with provisions of the Common Rule (32 CFR 219) on the protection of human subjects in research (http://www.dtic.mil/biosys/downloads/32cfr219.pdf) and the Department of Defense Directive 3216.2 (http://www.dtic.mil/whs/directives/corres/html2/d32162x.htm). All proposals that involve the use of human subjects are required to include documentation of their ability to follow Federal guidelines for the protection of human subjects. This includes, but is not limited to, protocol approval mechanisms, approved Institutional Review Boards, and Federal Wide Assurances. These requirements are based on expected human use issues sometime during the entire length of the proposed effort.

For proposals involving "greater than minimal risk" to human subjects within the first year of the project, performers must provide evidence of protocol submission to a federally approved IRB at the time of final proposal submission to DARPA. For proposals that are forecasted to involve "greater than minimal risk" after the first year, a discussion on how and when the offeror will comply with submission to a federally approved IRB needs to be provided in the submission. More information on applicable federal regulations can be found at the Department of Health and Human Services – Office of Human Research Protections website (http://www.dhhs.gov/ohrp/).
Any aspects of a proposal involving human use should be specifically called out as a separate element of the statement of work and cost proposal to allow for independent review and approval of those elements.

### 5. Animal Use

Any Recipient performing research, experimentation, or testing involving the use of animals shall comply with the rules on animal acquisition, transport, care, handling, and use in : (i) 9 CFR parts 1-4, Department of Agriculture rules that implement the Laboratory Animal Welfare Act of 1966, as amended, (7 U.S.C. 2131-2159); and (ii) the guidelines described in National Institutes of Health Publication No. 86-23, "Guide for the Care and Use of Laboratory Animals."

### 6. Publication approval

Offerors are advised if they propose grants or cooperative agreements, DARPA may elect to award other award instruments. DARPA will make this election if it determines that the research resulting from the proposed program will present a high likelihood of disclosing performance characteristics of military systems or manufacturing technologies

that are unique and critical to defense. Any resulting award will include a requirement for DARPA permission before publishing any information or results on the program.

The following provision will be incorporated into any resultant procurement contract or other transaction:

> When submitting material for written approval for open publication as described in subparagraph (a) above, the Contractor/Awardee must submit a request for public release to the DARPA TIO and include the following information: 1) Document Information: document title, document author, short plain-language description of technology discussed in the material (approx. 30 words), number of pages (or minutes of video) and document type (briefing, report, abstract, article, or paper); 2) Event Information: event type (conference, principle investigator meeting, article or paper), event date, desired date for DARPA's approval; 3) DARPA Sponsor: DARPA Program Manager, DARPA office, and contract number; and 4) Contractor/Awardee's Information: POC name, e-mail and phone. Allow four weeks for processing; due dates under four weeks require a justification. Unusual electronic file formats may require additional processing time. Requests can be sent either via e-mail to tio@darpa.mil or via 3701 North Fairfax Drive, Arlington VA 22203-1714, telephone (571) 218-4235. Refer to www.darpa.mil/tio for information about DARPA's public release process.

### 7. Export Control

Should this project develop beyond fundamental research (basic and applied research ordinarily published and shared broadly within the scientific community) with military or dual-use applications, the following apply:

(1) The Contractor shall comply with all U. S. export control laws and regulations, including the International Traffic in Arms Regulations (ITAR), 22 CFR Parts 120 through 130, and the Export Administration Regulations (EAR), 15 CFR Parts 730 through 799, in the performance of this contract. In the absence of available license exemptions/exceptions, the Contractor shall be responsible for obtaining the appropriate licenses or other approvals, for obtaining the appropriate licenses or other approvals, if required, for exports of (including deemed exports) hardware, technical data, and software, or for the provision of technical assistance.

(2) The Contractor shall be responsible for obtaining export licenses, if required, before utilizing foreign persons in the performance of this contract, including instances where the work is to be performed on-site at any Government installation (whether in or outside the United States), where the foreign person will have access to export-controlled technical data or software.

(3) The Contractor shall be responsible for all regulatory record keeping requirements associated with the use of licenses and license exemptions/exceptions.

(4) The Contractor shall be responsible for ensuring that the provisions of this clause apply to its subcontractors.

### 8. Subcontracting

Pursuant to Section 8(d) of the Small Business Act (15 U.S.C. 637(d)), it is the policy of the Government to enable small business and small disadvantaged business concerns to be considered fairly as subcontractors to contractors performing work or rendering services as prime contractors or subcontractors under Government contracts, and to assure that prime contractors and subcontractors carry out this policy. Each proposer who submits a contract proposal and includes subcontractors is required to submit a subcontracting plan in accordance with FAR 19.702(a) (1) and (2) should do so with their proposal. The plan format is outlined in FAR 19.704.

## C. Reporting Requirements

The number and types of reports will be specified in the award document, but will include as a minimum quarterly financial status reports. The reports shall be prepared and submitted in accordance with the procedures contained in the award document and mutually agreed on before award. Reports and briefing material will also be required as appropriate to document progress in accomplishing program metrics. A Final Report that summarizes the project and tasks will be required at the conclusion of the performance period for the award, notwithstanding the fact that the research may be continued under a follow-on vehicle.

1. Central Contractor Registration

Selected proposers not already registered in the Central Contractor Registry (CCR) will be required to register in CCR prior to any award under this BAA. Information on CCR registration is available at http://www.ccr.gov.

2. Representations and Certifications

In accordance with FAR 4.1201, prospective proposers shall complete electronic annual representations and certifications at http://orca.bpn.gov.

3. Wide Area WorkFlow (WAWF)

Unless using another approved electronic invoicing system, performers will be required to submit invoices for payment directly via the Internet/WAWF at http://wawf.eb.mil. Registration to WAWF will be required prior to any award under this BAA.

## VII. AGENCY CONTACTS

DARPA will use electronic mail for all technical and administrative correspondence regarding this BAA, with the exception of selected/not-selected notifications.

Administrative, technical or contractual questions should be sent via e-mail to BAA07-34@darpa.mil. If e-mail is not available, fax questions to (703) 696 2206, Attention: BAA 07-34. All requests must include the name, email address, and phone number of a point of contact.

Joseph Mangano, Ph.D.
DARPA Program Manager
ATTN: BAA 07-34
Defense Advanced Research Projects Agency
Microsystems Technology Office
3701 North Fairfax Drive
Arlington, VA 22203-1714
Fax: (703) 696 2206
Email: BAA07-34@DARPA.mil