Research Announcement

DARPA-RA-09-35

Centers in Integrated Photonics Engineering Research (CIPhER)

Microsystems Technology Office (MTO)

April 27, 2009

As amended through 30 April 2009

Program Manager: Dr. Michael Haney

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Part One: Overview Information

- **Federal Agency Name** – Defense Advanced Research Projects Agency (DARPA), Microsystems Technology Office (MTO)
- **Funding Opportunity Title –** Centers in Integrated Photonics Engineering Research (CIPhER)
- **Announcement Type –** Research Announcement (RA).
- **Funding Opportunity Number –** DARPA-RA-09-35
- **Catalog of Federal Domestic Assistance Numbers (CFDA)** – 12.910 Research and Technology Development
- **Dates**
  - Posting Date: 27 April 2009
  - Proposal Abstract Date: June 25, 2009
  - Proposal Due Date: August 25, 2009
- **Anticipated individual awards** – Multiple awards are anticipated.
- **Types of instruments that may be awarded** -- Grant, cooperative agreement or Technology Investment Agreement (TIA).

Any cost sharing requirements: A significant level of cost-sharing by industry and university partners will be required. Years 1-2 will be funded with the following share requirements: DARPA 75% and Center partners 25%. Years 3-4 will be funded with the following share requirements: DARPA 50% and Center partners 50%. In-kind cost sharing may be included in the proposed efforts, but will be counted toward the cost share only to the extent that there is an explicit and accountable monetary value to the proposed university/industrial collaborative effort. All center partner share contributions must also conform to the associated requirements stipulated in the Department of Defense Grant and Agreement Regulations (DoDGARs)

- **Agency contact**

  The RA Coordinator for this effort can be reached at electronic mail: DARPA-RA-09-35@darpa.mil.
  DARPA/MTO
  ATTN: DARPA-RA-09-35
  3701 North Fairfax Drive
  Arlington, VA 22203-1714
  FAX: 703-696-2206

Part Two: Full Text of Announcement

I. FUNDING OPPORTUNITY DESCRIPTION

The Defense Advanced Research Projects Agency occasionally selects its research efforts through the Research Announcement (RA) process. The RA will appear 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 RA.

DARPA is soliciting innovative proposals for university research centers in the area of integrated photonics engineering. Proposed research should investigate innovative approaches that enable revolutionary advances in science, devices, or systems. Specifically excluded is research that primarily results in evolutionary improvements to the existing state of practice.

DARPA has a rich history of fostering influential basic photonics research important to the U.S. photonics industry. Much of this research has resulted in discoveries and achievements with important military and commercial applications, including vertical cavity surface-emitting lasers (VCSELs), organic light-emitting diodes (LEDs), and tunable semiconductor lasers. One important theme that has arisen from this work is the development of *integrated* photonics, in which an entire photonic system is fabricated on a single chip. Much like integrated electronics, integrated photonics has the potential to enable photonics systems with revolutionary new levels of performance and functionality, but with a wider application range than electronics, including such areas as imaging, energy conversion, signal processing, and computing. The rise of integrated photonics as a viable, practical technology combined with the utility of integrated photonics to many applications is slated to result in a more rapid transition of basic photonics research to system applications. As such, photonics research that is supported by organizations with both fundamental and commercial interests is ideally suited to fostering the growth of the nation's integrated photonics industry

The Centers for Integrated Photonics Engineering Research (CIPhER) program will use a government/industrial cost-share funding model to foster the next generation of fundamental university-based photonics research. The CIPhER program is directed toward achieving this objective through the establishment of collaborative theme-based focus centers. Focus centers will be comprised of university-led teams, with industrial partners, engaged in long-term basic research (6.1 funded) of photonic materials, devices, and microsystems.

DARPA seeks innovative proposals for focus centers in the following broad integrated photonics fundamental technology application areas:

- *Imaging Science and Technology:* Novel remote sensing technologies and architectures; chip-scale microscopy; nano-technology for focal plane arrays.

- *Energy Conversion and Manipulation:* Microsystems that exploit of solar, environmental, and biological energy sources; Technologies for capture, storage, and transport of energy in small platforms.

- *Chip-scale Photonic Computing*: Novel integrated computing devices and technology; Analog processing and computing architectures that exploit nano/quantum effects; Ultra-high-speed photonic logic and processing circuits

- *Chemical and Biological Sensing and Processing:* Sensing at the molecular and cellular level with high parallelism and specificity; Exploiting chip-scale photonic resonance phenomena to detect/classify threats; Photonic/biological interfacing.

- *Other Areas:* Any fundamental technical issues critical to continuing development of integrated photonics engineering technology that is also strongly mapped to the DARPA mission.

The above areas are intended to represent examples of research areas of interest for the CIPhER program. The list is not exhaustive and the inclusion of additional research areas consistent with stated overall program objectives is encouraged. Proposers do not need to confine their efforts to only one of the noted areas of interest. Proposals that attempt to generally address all of the above areas, however, are discouraged. The CIPhER focus center initiative is intended to support revolutionary research that results in the advancement of the core scientific knowledge base of integrated photonics technologies. DARPA is specifically interested in eliminating technology barriers that broadly impact the integrated photonics industry and inhibit the availability of emerging new capabilities potentially important to the DoD. Researchers are expected to create new technology options and establish new integrated photonics technology directions through exploratory research focused on the near-term, mid-term, and long-term needs of the integrated photonics industry and potential DoD end users. Proposing institutions shall emphasize how a proposed focus center and its organization will operate to produce new knowledge through the interaction of faculty investigators and associated researchers (e.g., research associates, post-doctoral scientists, industrial researchers-in-residence, graduate students, technicians and undergraduate students) with industry partners. Proposers shall also emphasize opportunities being pursued within a proposed focus center to enhance the technology infrastructure available to all CIPhER program participants. The organization of each focus center is critical to the eventual success of the program. Respondents to this solicitation shall ensure that their proposals address— at a minimum—the following key attributes:

- A compelling and well-articulated vision focused on exploratory research important for U.S. integrated photonics industry competitiveness and to the Department of Defense;

- An interactive, cross-disciplinary, dynamic environment, where the implications of all research plans and results are adequately comprehended by a team of focus center investigators from potentially multiple institutions;

- Substantial scientific and technical interactions among the university and industrial partners (including possible involvement of government and national laboratories as appropriate for the proposed research thrust areas);
- A dynamic process for focus center research evolution, including a methodology for adding, deleting, and/or modifying research directions within the center;
- A concise, motivating, and empowering mission that is used by all focus center participants as a guiding principle in making decisions;
- An up-to-date understanding of the most significant technology barriers within a center's area of focus, and an understanding of the larger context in which the center's work is performed.
- Clear definition of the industrial and/or academic cost sharing model. In kind funding can be included, but will count toward the cost share ratio for matching DARPA funds only to the extent that there is an explicit and accountable monetary value to the proposed university/industrial collaborative effort.
- Description of how and where all monies will be spent including work to be carried out by the awardee and all sub-contractors.

It is the proposers' responsibility to select quantitative goals to aid in the judging of progress of the proposed work. The proposer shall put forth sufficient goals to capture the overall performance and value of the proposed work as completely as possible. Proposers shall compare their proposed goal values to the values attainable with present state-of-the-art technology. Generally, the proposed values of the chosen goals should demonstrate a revolutionary advance over the state-of-the-art in the technology area chosen by the proposer.

Focus centers must develop a balance between basic long-term research requirements in the integrated photonics engineering area and the more common industry focus on short-term specific technical problems. All research conducted as part of the effort will be considered pre-competitive and must be openly shared among all participants through annual reviews. Performers will be expected to deliver an annual report at these reviews. Proposers may also consider offering additional deliverables in their proposals if they feel that this will strengthen the value of their center to integrated photonics application areas of interest to the DoD.

II. AWARD INFORMATION

Multiple awards are anticipated. The amount of resources made available under this RA 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 proposers. The Government also reserves the right to conduct discussions if it is later determined 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 proposer. If the proposed effort is inherently divisible and nothing is gained from the aggregation, proposers 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 RA will be made to proposers 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 grant, cooperative agreement, or other transaction depending upon the nature of the work proposed, the required degree of interaction between parties, and other factors. The Government reserves the right to request any additional, necessary documentation once it makes the award instrument determination. Such additional information may include but is not limited to Representations and Certifications. The Government reserves the right to remove proposers from award consideration should the parties fail to reach agreement on award terms, conditions and cost/price within a reasonable time or the proposer fails to timely provide requested additional information.

As of the date of publication of this RA, DARPA expects that program goals for this RA can be met by proposers intending to perform 'fundamental research,' i.e., basic and applied research in science and engineering, the results of which ordinarily are published and shared broadly within the scientific community, as distinguished from proprietary research and from industrial development, design, production, and product utilization the results of which ordinarily are restricted for proprietary or national security reasons. Notwithstanding this statement of expectation, DARPA is not prohibited from considering and selecting research proposals that, while perhaps not qualifying as 'fundamental research' under the foregoing definition, still meet the RA criteria for submissions. In all cases, the contracting officer shall have sole discretion to select award instrument type and to negotiate all instrument provisions with selectees.

III. ELIGIBILITY INFORMATION

A. Eligible Applicants

All responsible non-profit academic institutions capable of satisfying the Government's needs may submit a proposal that shall be considered by DARPA. Teams may be formed with participation from any type of organization or entity, but the intent is that only universities and academic entities obtain direct funding under this initiative. 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, provided that they are considered to be academic institutions; 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.

Federally Funded Research and Development Centers (FFRDCs) and Government entities (Government/National laboratories, military educational institutions, etc.) are subject to applicable direct competition limitations and cannot propose to this RA in any capacity unless they meet the following conditions. FFRDCs must clearly demonstrate that the work is not otherwise available from the private sector AND they must also provide a letter on letterhead from their sponsoring organization citing the specific authority establishing their eligibility to propose to government solicitations and their compliance with the associated FFRDC sponsor agreement and terms and conditions. This information is required for FFRDCs proposing to be prime or subcontractors. Government entities must clearly demonstrate that the work is not otherwise available from the private sector and provide written documentation citing the specific statutory authority (as well as, where relevant, contractual authority) establishing their ability to propose to Government solicitations. At the present time, DARPA does not consider 15 U.S.C. 3710a to be sufficient legal authority to show eligibility. While 10 U.S.C. 2539b may be the appropriate statutory starting point for some entities, specific supporting regulatory guidance, together with evidence of agency approval, will still be required to fully establish eligibility. DARPA will consider eligibility submissions on a case-by-case basis; however, the burden to prove eligibility for all team members rests solely with the Proposer. Proposer's failure to prove eligibility for all team members prior to the start of the agency-scheduled evaluations may result in nonselectability of the proposal.

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.

Applicants considering classified submissions (or requiring access to classified information during the life-cycle of the program) shall ensure all industrial, personnel, and information system processing security requirements are in place and at the appropriate level (e.g., Facility Clearance (FCL), Personnel Security Clearance (PCL), certification and accreditation (C&A)) and any Foreign Ownership Control and Influence (FOCI) issues are mitigated prior to such submission or access. Additional information on these subjects can be found at: www.dss.mil.

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

Current federal employees are prohibited from participating in particular matters involving conflicting financial, employment, and representational interests (18 USC 203, 205, and 208.) The DARPA program manager for this RA is Dr. Michael Haney. Once the proposals have been received and 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 RA. The Program Manager is required to review and evaluate all proposals received under this RA and to manage all selected efforts. The Program Manager for this RA is a detailee to DARPA under the Intergovernmental Personnel Act (IPA) from the University of Delaware and, as such, is highly likely to have a conflict of interest with respect to proposals utilizing these institutions as a performer. Proposers should carefully consider the composition of their performer team before submitting a proposal to this RA.

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/or do not have plans to mitigate this conflict will be rejected without technical evaluation and withdrawn from further consideration for award.

DARPA plans for one or more of its proposal evaluators or subject matter experts to come from other Federal agencies (primarily from the Department of Defense (DoD). In order to avoid potential conflicts of interest, proposers should, as indicated below, contact DARPA prior to submission of their proposal if use of a Federal agency (i.e., NIST, NRL, AFRL, ARL, etc.) as a team member is anticipated. Such notification may be provided in the proposal abstract, if applicable.

The offeror's attention is directed to the fact that non-Government advisors to the Government may also review and provide support in proposal evaluations during source selection. Non-government advisors may have access to the offerors' proposals, may be utilized to review proposals, and may provide comments and recommendations to the Government's decision makers. These advisors will not establish final assessments of risk and will not rate or rank offerors' proposals. They are also expressly prohibited from competing for awards under the DARPA solicitations they review and/or provide comments on to the Government. All advisors are required to comply with procurement integrity laws and are required to sign Non-Disclosure and Rules of Conduct/Conflict of Interest statements. Non-Government technical consultants/experts will not have access to proposals that are labeled by their proposers as "Government Only."

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's contact information and a summary of the potential

conflict by email to the mailbox address for this RA at RA09-35@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 rejected without technical evaluation and withdrawn from further consideration for award under this RA.

B. Cost Sharing/Matching

DARPA intends to fund highly innovative research efforts for periods of up to four years in the form of scientific focus centers involving multiple and highly interactive university, nonprofit, industry, and government laboratory teams. A one-year base program with three subsequent one-year options is envisioned. Awards will be made only to teams with a university or non-profit lead. A significant level of cost-sharing by industry and university partners will be required. Years 1-2 will be funded with the following cost share requirements: DARPA 75% and Center partners 25%. Years 3-4 will be funded with the following cost share requirements: DARPA 50% and Center partners 50%. In-kind cost sharing may be included in the proposed efforts, but will be counted toward the cost share only to the extent that there is an explicit and accountable monetary value to the proposed university/industrial collaborative effort. All center partner share contributions must also conform to the associated requirements stipulated in the Department of Defense Grant and Agreement Regulations (DoDGARs)

C. Other Eligibility Criteria

1. Collaborative Efforts

Collaborative efforts/teaming are encouraged. A website (_http://www.davincinetbook.com/teams) has been established to facilitate formation of teaming arrangements between interested parties. Specific content, communications, networking, and team formation are the sole responsibility of the participants. Neither DARPA nor the Department of Defense (DoD) endorses the destination web site 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 RA.

Collaborative efforts/teaming are encouraged.

IV. APPLICATION AND SUBMISSION INFORMATION

A. Address to Request Application Package

This solicitation contains all information required to submit a proposal. No additional forms, kits, or other materials are needed. This notice constitutes the total RA. 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.

B. Content and Form of Application Submission

1. Proprietary Issues

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 Proposer's responsibility to clearly define to the Government what is considered proprietary data.

Security classification guidance via 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.

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 the formal request is received at this office within 5 days after unsuccessful notification.

2. Abstract and Proposal Information

Proposers who choose to use abstracts are <u>strongly encouraged</u> 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 statement as to whether DARPA is interested in the idea. DARPA will attempt to reply to proposal abstracts via letter within thirty (30) calendar days of receipt. Should a proposer be discouraged from submitting a full proposal, the letter will contain feedback for the proposer regarding the rationale for the decision not to recommend a full proposal be submitted. Proposal abstracts will be reviewed in the order they are received. Early submissions of proposal abstracts and full proposals are strongly encouraged because selections may be made at any time during the period of solicitation. Regardless of DARPA's response to a proposal abstract, proposers may submit a full proposal. DARPA will review all full proposals submitted using the published evaluation criteria and without regard to any comments resulting from the review of a proposal abstract.

Proposers are required to submit full proposals by the time and date specified in the RA in order to be considered during the initial round of selections. DARPA may evaluate proposals received after this date for a period up to one year from date of posting on FedBizOpps and Grants.gov. Ability to review late submissions remains contingent on 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 RA may not be reviewed.

For Proposers Posting to Grants.Gov:

Proposals in response to this RA may only be submitted to DARPA through Grants.gov. Proposals in response to this RA may not be submitted through any other means (including T-FIMS, and other comparable systems, or in hard-copy). Proposers must submit their entire proposal through Grants.gov; proposals cannot be submitted in part to Grants.gov and in part as a hard-copy. The APPLY function replaces the proposal submission process that other proposers follow. The APPLY function does not affect the proposal content or format. The APPLY function is electronic; proposers do not submit paper proposals in addition to the Grants.gov APPLY electronic submission.

Proposers must complete the following steps before submitting proposals on Grants.gov (these steps are also detailed at www.grants.gov/applicants/get_registered.jsp):

- Proposers must obtain a DUNS number
- Proposers must register their organization in the Central Contractor Registration (CCR) (https://www.bpn.gov/CCRSearch/Search.aspx)
- Proposers must obtain a user name and password with an E-Authentication provider
- Proposers must register the Authorized Organization Representative (AOR) in Grants.gov
- Proposers must have the organization's E-BIZ point of contact authorize the AOR to submit applications.

All administrative correspondence and questions on this solicitation, including requests for information on how to submit a proposal abstract or full proposal to this RA, should be directed to one of the administrative addresses below; DARPA-RA-09-35@darpa.mil or www.darpa.mil/mto/ to retrieve the RA. DARPA intends to use electronic mail and fax for correspondence regarding DARPA-RA-09-35. 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 RA and any other related information that may subsequently be provided.

2. Proposal Abstract Format

Proposal abstracts are encouraged in advance of full proposals in order to provide potential proposers 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, II and III-J. The cover sheet should be clearly marked "PROPOSAL ABSTRACT" and the total length should not exceed {22} number of pages, excluding cover page and official transmittal letter. All pages shall be printed on 8-1/2 by 11 inch paper with type not smaller than 12 point. Smaller font may be used for figures, tables and charts. 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.

3. 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 printed on 8-1/2 by 11 inch paper with type not smaller than 12 point. Smaller font may be used for figures, tables and charts. 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. Except for the attached bibliography, Section I, and Section III-H, Volume I shall not exceed {60} number pages. Maximum page lengths for each section are shown in braces { } below. All full proposals must be written in English.

4. Volume I, Technical and Management Proposal

<u>Section I. Administrative</u>

A. Cover sheet to include:

(1) RA 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

A. {3} 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. {3} 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. For forms to be completed regarding intellectual property, see Section VIII. There will be no page limit for the listed forms.
C. {2} Summary of 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: Measurable milestones should occur every 12 months after start of effort.** These payable milestones should enable and support a go/no go decision for the next part of the effort. Do not include proprietary information with the milestones. Additional interim non-critical management milestones are also highly encouraged at a regular interval.
D. {5} 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. {2} 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

A. {10} Technical Rationale and Approach. Detailed technical rationale and approach enhancing that of Section II. A concise section outlining the scientific and technical challenges, unique approaches, and potential anticipated technical solutions to the challenges that will be addressed. This section should demonstrate that the proposer has a clear understanding of the state-of-the-art; and should provide sufficient technical details so as to permit complete evaluation of the feasibility of the idea. Additionally, comparison with other ongoing research shall be provided indicating advantages and disadvantages of the proposed effort. See also Part II, Section 1 – text highlighted in orange.

B. {5} Program Plan & Risk Assessment. Detailed program plan and risk assessment enhancing that of Section II. A narrative explaining the explicit timelines, milestone achievements, and quantitative program goals (to include proposer defined goals, if applicable) by which progress toward the goals can be evaluated. The proposed period of performance of the overall program, and each program phase, should be clearly stated. The narrative plan should include a specific test plan detailing how all program goals will be accurately measured. All program goals must be associated with demonstrable, quantitative measures of performance, and should be summarized in a single table. Proposals should clearly explain the technical approach(es) that will be employed to meet or exceed each program metric and provide ample justification as to why the approach(es) is/are feasible. This section should also identify major technical risk elements specific to the proposed approach, estimate the risk magnitude for each such element, and describe specific plans to mitigate risk. **All program goals should be described/discussed in detail so reviewers can assess risks associated with meeting them. Measurable <u>critical</u> milestones should occur at the end of every phase.** These critical technical milestones should enable and support a go/no go decision for the next part of the effort. <u>Additional interim, non-critical technical milestones are also highly encouraged at regular intervals.</u> <u>See also Part II, Section 1 – text highlighted in orange.</u>

C. {4} Statement of Work (SOW) - In plain English, clearly define the technical tasks/subtasks to be performed, their durations, and dependencies amongst them. The SOW **<u>must not</u>** include proprietary information. The SOW **<u>must</u>** be developed so that each phase of the program is separately defined. The SOW **<u>must</u>** include, for each phase, a table defining the program goals to be achieved. 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, hardware, software, etc.) to be provided to the Government.

D. {5} Teaming and Management Plan. A clearly defined organization chart for the program team which includes the programmatic relationship and a summary of each members roles and responsibilities. Additionally, a narrative discussing (1) the proposers teaming strategy/rationale; (2) the specific roles and responsibilities of the team members; (3) the unique capabilities of the team members; and (4) the proposers team management approach, to include, as applicable, how FFRDC's and/or Government Organizations will be managed by the proposer if such organizations are not proposed with a traditional prime/subcontractor contractual relationship (for example, if it is proposed that DARPA funding such organizations directly via MIPR).

E. {5} Capabilities. A section describing relevant prior work, the background, qualifications and relevant experience of team member organizations (prime and sub) and key individuals to be assigned to the program, and the facilities and equipment to be utilized. Please do not attach supporting material (CDs, movies, etc.) to the proposal, except as noted in Section IV below.

F. {5} Technology Transition & Business Plan. A description of the results, products, transferable technology, and expected technology transfer path (i.e., open publication, through relationships with industry sponsors and/or DoD organizations, etc.) enhancing that of Section II. B. See also Section VIII "Intellectual Property."

G. {4 } Cost schedules and Milestones for the proposed research including estimates of cost for each task in each phase and year of the effort delineated by the primes and major subcontractors, total cost, and any company cost share. Payable milestones (descriptions, exit criteria, etc.), if proposed, must not include proprietary information. 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.

H. {no page limit} Separate letters from each participating team member detailing specific collaboration and cost share commitments for the CIPhER program.

J. {5} Summary Slide(s): PowerPoint-type slide (s) (i.e., landscape formatted for presentation) that succinctly highlights the major aspects of the proposal, including all program goals (including proposer defined goals, if applicable), in a manner suitable for presentation to DARPA management. Please submit this portion of the proposal separately as a Microsoft PowerPoint file type in addition to including it as a section of the proposal.

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 five (5) relevant papers can be included in the submission.

5. Volume II, Cost Proposal – {No Page Limit}

Cover sheet to include:

(1) RA 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 proposer's cognizant Defense Contract Management Agency (DCMA) administration office (*if known)*;

(14) Name, address, and telephone number of the proposer'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.

The proposers cost volume shall provide detailed budget (cost) information in sufficient detail to substantiate the program price proposed (e.g., realism and reasonableness). In doing so, the proposer shall provide a detailed cost breakdown by phase, task and month. The breakdown shall include, at a minimum, the following major cost items: direct labor (labor categories and labor hours per category); subcontracts (by subcontractor); material/equipment; other direct costs (travel, computer usage fee's, etc.), and indirect charges (rates and factors such as Overhead, G&A, Fringe Benefits, F&A, etc.). Proposers are encouraged to provide the aforementioned cost breakdown as an editable MS Excel spreadsheet with tabs (material, travel, ODC's) provided as necessary. Additionally, the proposer shall provide (1) a summary of total program costs by phase and task, (2) an itemization of major subcontracts, (3) a priced Bill-of-Materials (BOM) clearly identifying, for each item proposed, the source of the unit price (i.e., vendor quote, engineering estimate, etc.) and the type of property (i.e., material, equipment,

special test equipment, plant equipment, information technology (IT)[1], etc.); (4) the source, nature, and amount of any industry cost-sharing; and (5) identification of pricing assumptions of which may require incorporation into the resulting award instrument (e.g., use of Government Furnished Property/Facilities/Information, access to Government Subject Matter Expert/s, etc.). 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.

The proposer shall provide a detailed description of the methods used to estimate costs, to include, at a minimum: 1) substantiation of all rates and factors, and 2) labor and material estimates supported by a narrative basis-of-estimate (BOE) providing sufficient detail to substantiate cost estimates. The prime contractor is responsible for compiling and providing, as part of its proposal submission to the Government, subcontractor proposals prepared at the same level of detail as that required of the prime. Subcontractor proposals include Interdivisional Work Transfer Agreements (ITWA) or similar arrangements.

Those proposing a grant or cooperative agreement may follow/use the application instructions/form templates (i.e., DARPA BAA/RA Form Package) provided as part of the RA posting to grants.gov; however, the costing details requested above should be provided to the maximum extent possible, especially for any non-university research team members (e.g., those incurring costs), in order to adequately substantiate all costs proposed.

The Defense Appropriations Act caps indirect cost rates for any procurement contract, grant or agreement using 6.1 Basic Research Funding at 35% of the total cost of the award. Total costs include all bottom line costs. For grants/agreement awardees subjection to cost principles in 2 CFR part 220 (Educational Institutions), indirect costs are all costs of a prime award that are Facilities and Administration costs. For grant/agreement awardees subject to the cost principles in 2 CFR part 225 (State, Local, and Indian Tribal Governments), 2 CFR par 230 (Non-profit Organizations) or 48 CFR part 23 (Federal Acquisition Regulation), indirect costs refer to any cost not directly

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- [1] IT is defined as "any equipment, or interconnected system(s) or subsystem(s) of equipment that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information by the agency. (a) For purposes of this definition, equipment is used by an agency if the equipment is used by the agency directly or is used by a contractor under a contract with the agency which – (1) Requires the use of such equipment; or (2) Requires the use, to a significant extent, or such equipment in the performance of a service or the furnishing of a product. (b) The term "information technology" includes computers, ancillary, software, firmware and similar procedures, services (including support services), and related resources. (c) The term "information technology" does not include – (1) Any equipment that is acquired by a contractor incidental to a contract; or (2) Any equipment that contains imbedded information technology that is used as an integral part of the product, but the principal function of which is not the acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information. For example, HVAC (heating, ventilation, and air conditioning) equipment such as thermostats or temperature control devices, and medical equipment where information technology is integral to its operation, is not information technology."

identified with a single final cost objective, but identified with two or more final cost objectives or with at least one intermediate cost objective. The cost limitations do not flow down to subcontractors.

C. Submission Dates and Times

1. Proposal Abstract Date

The proposal abstract (one electronic copy on CD and 1 original hard copy) must be submitted to DARPA/(MTO), 3701 Fairfax Drive, Arlington, VA 22203-1714 (Attn.: DARPA-RA-09-35) on or before 4:00 p.m., local time, June 25, 2009. Proposal abstracts received after this time and date will not be reviewed as part of the initial proposal round.

2. Full Proposal Date

The full proposal must be submitted via grants.gov on or before 4:00 p.m., local time, August 25, 2009 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 grants.gov. Full proposals submitted after the due date specified in the RA may be selected contingent upon the availability of funds. Proposers are warned that the likelihood of funding is greatly reduced for proposals submitted after the initial round deadline.

DARPA will post a consolidated Question and Answer (Q&A/FAQ) document to the MTO solicitations webpage (http://www.darpa.mil/MTO/solicitations/ra09-35/index.html) through August 17, 2009 before final full proposals are due. In order to receive a response to your question/s they must be submitted to DARPA-RA-09-35 by no later than August 10, 2009.

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.

D. Intergovernmental Review (if applicable)

Not Applicable.

E. Funding Restrictions

Not Applicable.

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: (a) Overall Scientific and Technical Merit; (b) Potential Contribution and Relevance to the DARPA Mission; (c) Plans and Capability to Accomplish Technology Transition; (d) Proposer's Capabilities and/or Related Experience; and (e) Cost Realism. Proposals will not be evaluated against each other since they are not submitted in accordance with a common work statement. Criteria a, and b are of equal importance and are more important than Criteria c; Criteria c is more important than Criteria d; Criteria d and e are of equal importance.

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

(d) Proposer's Capabilities and/or 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) 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 Recommendation 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. After proposals have been evaluated and selections made, 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 proposer 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 letter to the Technical POC identified on the proposal coversheet.

B. Administrative and National Policy Requirements

1. Meeting and Travel Requirements

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

2. Human Use

All research involving human subjects, to include use of human biological specimens and human data, selected for funding must comply with the federal regulations for human subject protection. Further, research involving human subjects that is conducted or supported by the DoD must comply with 32 CFR 219, *Protection of Human Subjects* (http://www.dtic.mil/biosys/downloads/32cfr219.pdf), and DoD Directive 3216.02, *Protection of Human Subjects and Adherence to Ethical Standards in DoD-Supported Research* (http://www.dtic.mil/whs/directives/corres/html2/d32162x.htm).

Institutions awarded funding for research involving human subjects must provide documentation of a current Assurance of Compliance with Federal regulations for human subject protection, for example a Department of Health and Human Services, Office of Human Research Protection Federal Wide Assurance (http://www.hhs.gov/ohrp). All institutions engaged in human subject research, to include subcontractors, must also have a valid Assurance. In addition, personnel involved in human subjects research must provide documentation of completing appropriate training for the protection of human subjects.

For all proposed research that will involve human subjects in the first year or phase of the project, the institution must provide evidence of or a plan for review by an Institutional Review Board (IRB) upon final proposal submission to DARPA. The IRB conducting the review must be the IRB identified on the institution's Assurance. The protocol, separate from the proposal, must include a detailed description of the research plan, study population, risks and benefits of study participation, recruitment and consent process, data collection, and data analysis. Consult the designated IRB for guidance on writing the protocol. The informed consent document must comply with federal regulations (32 CFR 219.116). A valid Assurance along with evidence of appropriate training all investigators should all accompany the protocol for review by the IRB.

In addition to a local IRB approval, a headquarters-level human subjects regulatory review and approval is required for all research conducted or supported by the DoD. The Army, Navy, or Air Force office responsible for managing the award can provide guidance and information about their component's headquarters-level review process. Note that confirmation of a current Assurance and appropriate human subjects protection training is required before headquarters-level approval can be issued.

The amount of time required to complete the IRB review/approval process may vary depending on the complexity of the research and/or the level of risk to study participants. Ample time should be allotted to complete the approval process. The IRB approval process can last between one to three months, followed by a DoD review that could last between three to six months. No DoD/DARPA funding can be used towards human subjects research until ALL approvals are granted.

3. 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); (ii) the guidelines described in National Institutes of Health Publication No. 86-23, "Guide for the Care and Use of Laboratory Animals"; (iii) DoD Directive 3216.01, "Use of Laboratory Animals in DoD Program."

For submissions containing animal use, proposals should briefly describe plans for Institutional Animal Care and Use Committee (IACUC) review and approval. Animal studies in the program will be expected to comply with the PHS Policy on Humane Care and Use of Laboratory Animals, available at http://grants.nih.gov/grants/olaw/olaw.htm.

All Recipients must receive approval by a DoD certified veterinarian, in addition to an IACUC approval. No animal studies may be conducted using DoD/DARPA funding until the USAMRMC Animal Care and Use Review Office (ACURO) or other appropriate DoD veterinary office(s) grant approval. As a part of this secondary review process, the Recipient will be required to complete and submit an ACURO Animal Use Appendix, which may be found at https://mrmc.amedd.army.mil/AnimalAppendix.asp

4. Publication Approval

It is the policy of the Department of Defense for products of fundamental research to remain unrestricted to the maximum extent possible. Contracted fundamental research:

> Includes research performed under grants and contracts that are (a) Basic Research"), whether performed by universities or industry or (b) applies research and performed on-campus at a university. The research shall not be considered fundamental in those rare and exception circumstances where the applied research effort presents a high likelihood of disclosing performance characteristics of military systems or manufacturing technologies that are unique and critical to defense, and where agreement on restrictions have been recorded in the contract or grant.

It is anticipated that the performance of research resulting from the RA is expected to be fundamental research.

Proposers 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 award resulting from such a determination 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 non-fundamental research procurement contract or other transaction:

> There shall be no dissemination or publication, except within and between the Contractor and any subcontractors, of information developed under this contract or contained in the reports to be furnished pursuant to this contract without prior written approval of the DARPA Technical Information Officer (DARPA/TIO). All technical reports will be given proper review by appropriate authority to determine which Distribution Statement is to be applied prior to the initial distribution of these reports by the Contractor. Papers resulting from unclassified contracted fundamental research are exempt from prepublication controls and this review requirement, pursuant to DoD Instruction 5230.27 dated October 6, 1987.
>
> When submitting material for written approval for open publication, 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.

5. Export Control

Should the proposed project include scope that extends beyond fundamental research (basic and applied research ordinarily published and shared broadly within the scientific community) with military or dual-use applications the following will 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, 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 technologies, including 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**.**

6. 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

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 goals. 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.

D. Electronic Systems

1. Central Contractor Registration (CCR)

Selected proposers not already registered in the Central Contractor Registry (CCR) will be required to register in CCR prior to any award under this RA. 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 Work Flow (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 RA.

4. i-Edison

The award document for each proposal selected and funding will contain a mandatory requirement for patent reports and notifications to be submitted electronically through i-Edison (http://s-edison.info.nih.gov/iEdison) .

VII. AGENCY CONTACTS

Administrative, technical or contractual questions should be sent via e-mail to DARPA-RA-09-35@darpa.mil. If e-mail is not available, fax questions to 703-696-2206, Attention: DARPA-RA-09-35. All requests must include the name, email address, and phone number of a point of contact.

Points of Contact
The technical POC for this effort is Michael Haney
DARPA/MTO
ATTN: DARPA-RA-09-35
3701 North Fairfax Drive
Arlington, VA 22203-1714
FAX: 703-696-2206
EMAIL: DARPA-RA-09-35@darpa.mil

VIII. OTHER INFORMATION

A. Intellectual Property

DARPA strongly encourages and will require the sharing of the results of research conducted by the focus centers in the contemplated CIPhER program among all program participants. To ensure that this sharing takes place, annual Principal Investigator meetings will be held, with attendance restricted to program participants and government personnel. It is DARPA's intention that this approach will help to develop and maintain a highly interactive environment for the effective sharing of emerging basic science and technology information.

DARPA recognizes the need for intellectual property (IP) protection, however, particularly in protecting U.S. commercialization interests. DARPA also recognizes that the intended highly interactive and cooperative basic research to be carried out among university, industry, and possibly government organizations will likely necessitate implementation of IP agreement among the participants in each focus center. Although DARPA anticipates the need for custom tailoring of IP agreements based on individual focus center operations, the participants in each selected focus center should agree to the following:

(1) Any IP derived in this program through the collaborative efforts of university and industry partners shall be jointly owned by the respective participants. It is expected that the sponsoring industry have first rights and take the lead role in commercialization activities. (This is expected to be the most common situation).

(2) IP derived solely by a university site and its personnel belongs to the university. (IP developed in this manner is to be considered unusual due to the intended highly interactive nature of the university-industry collaboration).

(3) IP derived entirely at an industry site and industry personnel belongs to the industry partner.

(4) The direct sponsoring industry has first rights to any university IP as described in the unusual situation in Item #2 above on a one-year evaluation basis and according to commonly accepted institutional policies.

(5) University IP as described in the unusual situation in Item #2 above not pursued by the primary sponsoring industry will become available to other CIPhER program participants on a non-exclusive royalty-bearing basis.

(6) The U.S. government will assert its standard government purpose rights as defined at Attachment 2 "DARPA Grant General Terms and Conditions For Educational Institutions and Nonprofit Organizations," Article 33 "Rights in Technical Data, Computer Software ,and Copyright."

Universities shall have freedom to publish all scientific results of work conducted under sponsorship of the program. Sponsoring industry will have at least 120 days advance notice of publication plans to evaluate any intended publication for the purpose of IP protection.

B. RA Attachments

Attachment 1: "Grants/Cooperative Agreement Certifications"
(Shall be completed by proposer and included as part of proposal Volume II)

Attachment 2: "Grant/Cooperative Agreement Terms and Conditions"
(Will be made a part of all grant/cooperative agreement awards)