



Information Integration and Automated Image Understanding Applied Research Programs

INTRODUCTION:

This publication constitutes a Broad Agency Announcement (BAA) as contemplated in Federal Acquisition Regulation (FAR) 6.102(d)(2), the Department of Defense Grants and Agreements Regulations (DoDGARS) 22.315(a), and DoD's Other Transaction Guide for Prototypes Projects, USD(AT&L), OT Guide, Jan 2001. A formal Request for Proposals (RFP), other solicitation, or additional information regarding this announcement will not be issued.

The Office of Naval Research (ONR) will not issue paper copies of this announcement. The ONR reserves the right to fund all, some or none of the proposals received under this BAA. ONR provides no funding for direct reimbursement of proposal development costs. Technical and cost proposals (or any other material) submitted in response to this BAA will not be returned. It is the policy of ONR to treat all proposals as sensitive competitive information and to disclose their contents only for the purposes of evaluation.

THIS ANNOUNCEMENT IS NOT FOR THE ACQUISITION OF TECHNICAL, ENGINEERING AND OTHER TYPES OF SUPPORT SERVICES.

I GENERAL INFORMATION:

SPECIAL NOTICE 1: All Grant Applications submitted under this BAA shall be submitted via the Grants.Gov "APPLY" function. No other form of paper or electronic submission will be accepted unless the prospective grantee organization applies for and receives a waiver in accordance with Section IV, Application and Submission Information, Paragraph 5 entitled 'Submission of Grant Proposals to Grants.gov' below.

SPECIAL NOTICE 2: All attachments to grant applications submitted through Grants.Gov must be in Adobe Portable Document Format. Proposals with attachments submitted in word processing, spreadsheet, or any format other than Adobe Portable Document Format will not be considered for award.

1. Agency Name - Office of Naval Research

2. Research Opportunity Title - Information Integration and Automated Image Understanding Applied Research Programs

3. Program Name - Information Integration and Automated Image Understanding Applied Research Programs

4. Research Opportunity Number - BAA 09-019

5. Response Date -

White Papers: 3/31/2009

Full Proposals: 5/21/2009

6. Research Opportunity Description -

The Office of Naval Research (ONR) is interested in receiving proposals for applied research that lead to the development of efficient, theoretically sound, and consistent algorithms for organization and fusion of high-dimensional data sources as well as automated methods for image understanding.

The future naval battlespace requires an integrated sea-land-air capability in support of joint military operations potentially conducted with other services and allies. In this complex tactical picture, information gathering, processing, analysis, and understanding to enhance battlespace awareness is at the heart of the concept of joint operation. With emerging advanced technologies, information is collected in bulk from multiple data sources, either sensor-based or human-based, at a rate that exceeds the rate that humans can analyze, understand, and respond. To support highly complex and integrated naval operations with the deluge of data in a timely manner, it is imperative that certain data processing leading to situational awareness and analysis are automated to alleviate the workload for human operators and present them with only pertinent information.

Within the battlespace a Naval focus is the development of the underlying computational tools to support adaptive, persistent surveillance capabilities for situational awareness, for mission planning, for force protection, etc., in the maritime domain. The maritime domain extends from 250 miles offshore to 200 miles inland, and covers a variety of environments including ocean, littoral zones, riverine environments, deserts, urban areas, etc. In adaptive persistent surveillance scenarios data is obtained from all sources, individual and networked sensors, as well as from non-sensor sources. The data may also be current or from archived databases. The network of sensor assets should be able to perform surveillance autonomously with only minimal, high-level human supervision. Therefore, the surveillance system must be able to self-coordinate and navigate autonomously, recognize and track interesting objects and agents, dwell on relevant scenes, discard irrelevant data, index and store data of interest for forensic investigations and after action analysis, and provide timely alerts with pertinent information to warfighters.

6.1 Information Integration:

The objective of the Information Integration thrust is to develop efficient, theoretically sound, and consistent algorithms for organization and fusion of high-dimensional data sources.

ONR is seeking new methods grounded in basic research that will enable organization and fusion of Navy-related datasets that naturally lie in high-dimensional spaces. Application of the methods to be developed to collections of image, video, structured database, social or complex networks, text, hyperspectral, multispectral, acoustic, and sensor array data are examples of data sets that are of interest. Prior basic research results have demonstrated that structured databases and networks can initially be depicted as graphs that, in turn, can be regarded as high-dimensional datasets. Traditional data mining techniques often treat a corpus of text documents as a document-word matrix whose rows are points in some high-dimensional vector space. As a result of these efforts, it has become clear that disparate data sets can be represented and organized in high dimensional data spaces.

Although the number of parameters required to describe these datasets is large and potentially prohibitive, only a handful of them actually determine the datasets, at least locally, due to a high degree of correlation between these parameters. This small number of "free" parameters can vary throughout a dataset. Fundamental research efforts have shown that one can retain semantic information, to a certain extent, by mapping a dataset into a vector space of lower dimension with minimal distortion, measured with respect to some metrics. The minimal distortion or near-isometry guarantees the preservation of information content. Two advantages are apparent in this approach. In the vector space of reduced dimension, many features pertained to the inherent characteristics of the original dataset manifest in a computable or quantitative form. Hence, the dataset can be analyzed more readily through the use of sophisticated computational tools. Moreover, the computational complexity can substantially be reduced when data is analyzed in a smaller vector space. In this space, the data points tend to be separated into different geometric strata of various dimensions which reflect different syntactic/semantic attributes of the original dataset. These dimensions are the minimal numbers of parameters required to determine the dataset locally. The success of these tasks, however, rely on the

identification of accurate similarity measures that are naturally attached to the data types as well as the correct choices for various parameters involved in the computations, e.g., the determination of the reduced dimension.

6.1.1 Data Representations

In this thrust on data representation, we seek to organize high-dimensional datasets, particularly, real-world Navy datasets. Of particular interest are image, video, structured database, social or complex networks, text, hyper-spectral, multispectral, acoustic, sensor array, and text datasets obtained from and relevant to Naval and Marine Corps operations. Methods that lead to structuring datasets in an organized and meaningful way should facilitate more efficient and accurate data processing tasks: data matching or alignment, data merging, data search, outlier detection, learning and classification, query response, reasoning and decision making. It is expected that by converting the raw dataset into an organized structure, one can encapsulate the intrinsic information that often propagates in a multi-scale manner throughout the datasets, in a way similar to an ontology or a database schemata. For instance, a dataset can be decomposed into smaller components or clusters whose data points in each cluster share strong similarity and belong to a piece of a manifold or a variety reflecting semantic content. Structuring datasets via sparse representation should also improve the results obtained from fusion and classification functions. Sparsity not only encodes intrinsic local/global information of a dataset but also leads to efficacy of processing tasks. Indeed, recent research on high-dimensional data that is determined by only a few parameters has provided concrete evidence that sparse representation, in conjunction with randomization and techniques from Information Theory can be an effective tool for recognition, classification, and reconstruction with a small number of data points.

6.1.2 Information and Data Fusion

In the second thrust, ONR seeks methods for the fusion of high-dimensional datasets for the purpose of recognizing and classifying patterns of interest, and to construct a fused dataset in the same way that 1-D signals are detected, classified, and reconstructed. The last process is often called fusion for reconstruction which can aid accurate high-level decision making. The fused dataset can be thought of as a minimal one among the super-datasets subsuming the individual data sources. In essence, the fusion process often starts with the identification of similar or compatible features shared by multiple datasets. Then the fused dataset is obtained by "gluing" or merging these multiple datasets along the set of common features. Data fusion can be conceptualized under a unified framework but specific tasks of fusion - feature detection, feature extraction, feature matching, feature merging, etc. - vary with data types. The primary importance of data fusion is to help users find relevant information by merging data from multiple correlated sources. Its secondary importance is uncertainty reduction in the presence of multiple modalities that can identify missing or enhance weak features from individual sources. Although ONR is open to the data types mentioned earlier (image, video, database, text, social or complex networks, hyper-spectral, multispectral, acoustic, sensor array), multimodal and multi-temporal fusion of such data types are of primary importance with respect to this announcement.

All proposed tasks in response to 6.1.1 or 6.1.2 must address some of the following technical issues regarded as performance requirements:

- Fusion for recognition or classification must increase the detection rate compared to the detection performance achieved by using only individual datasets. All such proposed fusion tasks must include a performance metric for measuring the effectiveness of recognition or classification. In addition, it is useful to provide an identification mechanism that provides a test that determines if multiple datasets can be fused. Fusion for reconstruction must preserve all features and enhance the common ones shared by different datasets. That is, fusion should reduce uncertainty and potentially reveals missing information.
- Automatic selection and extraction of essential features from datasets: tuning or threshold parameters, reduced dimension, local dimensions, multiscale clusters of data points, design and construction of similarity measures, etc.
- Automatic update of data representation and fusion without having to recalculate all necessary

variables when new measurements are made or new data streams become available. This requirement is essential in a dynamic environment wherein data from various sources can emerge or lose relevance

- Stability or robustness against small perturbations, outliers, and missing information. Unlike the detection and classification tasks, reconstruction would likely require completion of missing data.
- Sufficiently fast algorithms, for instance, linear scalability with respect to the number of data points, for various data processing tasks: denoising, compression, dimensionality reduction, etc.
- Automatic reconstruction of data from its low-dimensional representation. This procedure would yield an approximate inverse to dimensionality reduction and, hence, could play an important role in fusion for reconstruction after similar features have been extracted and combined in a low-dimensional space. In certain applications, it is also necessary to transform/map data points in the space of reduced dimension back to their corresponding points in the original dataset or the original space.
- Consistency or coherence of fusion process. When datasets are mapped to a low-dimensional space for analysis (e.g., feature extraction and comparison) and subsequently transformed back to a high-dimensional space for reconstruction or synthesis as discussed in the above paragraph, the similarity measures between data points should be closely preserved. If multiple datasets are fused sequentially, for instance, one pair at a time, the final result should be independent of the order in which these datasets are assimilated.

6.2 Automated Image Understanding:

This objective of the Automated Image Understanding thrust is to develop efficient computational methods based on principled approaches to develop a understanding of fundamental issues in automated image understanding sufficient to support system engineering for advanced concepts.

These issues include providing and understanding the performance of methods for object recognition, classification, activity recognition, context understanding, background modeling, and scene analysis. We want to focus on further development of recent advances and promising approaches in image processing, computer vision, computational intelligence, mathematics and optimization, and applying them to image understanding problems of interest to Naval missions.

The following includes broad applied research areas of interest we want to address; (a) developing principled methods for fusion of multiple imaging modalities based on the physics of image formation, leading to image enhancement and improved recognition capabilities;. (b) methods for integrating images from multiple platforms for improved object recognition, scene modeling, and meaningful change detection; (c) developing methods for indexing images based on content for storage and retrieval; (d) detection and tracking of objects on water or in urban areas and inferring the threat level they may pose; including real-time detection of partially occluded objects in urban clutter; (e) developing robust recognition methods that integrate low-level image processing with high-level knowledge. This includes investigating best representations, or hybrids of representations, for description and recognition of objects and activities. Furthermore, we want to extend recent advances in reasoning with image/video that make recognition of objects and activities more robust. Reasoning, of course, requires domain knowledge; hence an area of research would be methods for building visual knowledge bases, through generative and/or discriminative techniques. This also involves investigation of suitable representations for high-level knowledge, which may come in various forms including contextual information, background models, shape and appearance and behavior information, relationship to other objects and other forms.

Objects on water and in urban areas are the primary objects of interest to this thrust. Proposed solutions should address aggregated problems of detection, recognition and classification of objects with the goal of recognition of their activities. Proposals must clearly articulate the merits of proposed approaches. The approaches should be general and be able to handle variations in pose, illumination, and robust to occlusion. In particular, we would like to emphasize development of novel, robust, and efficient methods for the following:

- Integration of low-level processing and high-level knowledge for simultaneous segmentation, grouping,

and recognition. This includes recognition of specific objects and object categories, and recognition of human and vehicle movements and actions. Components of this research focus include efficient ways of building visual knowledge bases that are portable and extensible, attributes of objects and activities that should be included in knowledge bases, representations of high level knowledge as well as representations of objects and activities, stages in which low-level and high-level information interact and the nature of interaction, methods for visual reasoning with images using contextual information and background models.

-Methods for adaptive and collaborative tracking and recognition of object and activities using a network of imaging sensors (including EO/IR video and other modalities), where the sensors may be mounted on mobile and/or stationary platforms. We want to develop techniques where the network can reason if additional information is needed for accurate recognition, and if so what the best ways of acquiring the needed information are. In cases where multiple objects of interest are present in the scene, the network should optimally allocate the imaging assets to track and recognize the most interesting objects/activities.

Scenarios of interest include: detecting, tracking and recognizing small boats and their activities in crowded ports and waterways; recognizing objects/activities in urban clutter such as surveillance of large areas near buildings and installations; ground-level and aerial imaging platforms accompanying convoys. With regard to the scenario, the performance of the state-of-the-art methods in terms of recognition rates and false alarm rates, and the levels of improvement expected to be achieved by the conclusion of the research effort should be described. Even though such performance metrics are important, we emphasize that we seek solutions that are principled and apply to a wide class of problems. We encourage systematic investigation of various factors affecting the performance of vision algorithms; how the overall performance of vision algorithms may be improved; and what approaches appear to be fruitful for further development.

Work funded under a BAA may include basic research, applied research and some advanced technology development (ATD). With regard to any restrictions on the conduct or outcome of work funded under this BAA, ONR will follow the guidance on and definition of "contracted fundamental research" as provided in the Under Secretary of Defense (Acquisition, Technology and Logistics) Memorandum of 26 June 2008. As defined therein, the definition of "contracted fundamental research", in a DoD contractual context, includes [research performed under] grants and contracts that are (a) funded by Research, Development, Test, and Evaluation Budget Activity 1 (Basic Research), whether performed by universities or industry or (b) funded by Budget Activity 2 (Applied Research) and performed on campus at a university or by industry. ATD is funded through Budget Activity 3. In conformance with the USD(AT&L) guidance and National Security Decision Directive 189, ONR will place no restriction on the conduct or reporting of unclassified fundamental research, except as otherwise required by statute, regulation or Executive Order. Normally, fundamental research is awarded under grants with universities and under contracts with industry. ATD is normally awarded under contracts and may require restrictions during the conduct of the research and DoD pre-publication review of research results due to subject matter sensitivity.

7. Point(s) of Contact -

Questions of a technical nature should be submitted to:

Primary Contact for Topic Information Integration and for Topic Information and Data Fusion

Dr. Tristan Nguyen
Program Officer
Mathematics, Computers and Information Research Division
Code 311
Office of Naval Research
875 North Randolph Street, Suite 1175
Arlington, VA 22203-1995
E-mail address: Tristan.nguyen@navy.mil

Primary Contact for Topic Automated Image Understanding

Dr. Behzad Kamgar-Parsi
Program Officer
Mathematics, Computers and Information Research Division
Code 311
Office of Naval Research
875 North Randolph Street - Suite 1102B
Arlington, VA 22203-1995
E-mail address: behzad.kamgarparsi@navy.mil:

Secondary Contact

Ms Kim McCormick
Office of Naval Research
Code 311, Program Analyst
875 North Randolph Street - Suite 1105C
Arlington, VA 22203-1995
E-mail address: kim.mccormick@navy.mil

Questions of a business nature should be submitted to:

Amarilis Cartagena
Contract Specialist
Code BD 0251
Office of Naval Research
875 North Randolph Street, Suite 1425
Arlington, VA 22203-1995
E-Mail: amarilis.cartagena@navy.mil

Secondary Contact:

Ms. Vera M. Carroll
Acquisition Branch Head
Contract and Grants Awards Management, Code 0251
Office of Naval Research
875 North Randolph Street, Suite 1425
Arlington VA, 22203-1995
E-mail: vera.carroll@navy.mil

Questions of a security nature should be submitted to:

Derrick Shack
Information Security Specialist
Office of Naval Research
Security Department, Code 43
One Liberty Center
875 N. Randolph Street
Arlington, VA 22203-1995
Email Address: derrick.shack@navy.mil

Note: All UNCLASSIFIED communications shall be submitted via e-mail. All questions of an UNCLASSIFIED nature to the Technical Point of Contract (POC) or Security POC shall be sent via e-mail with a copy to the designated Business POC. Questions submitted within 2 weeks prior to a deadline may or may not receive a response.

Any CLASSIFIED questions shall be handled through the ONR Security POC. Specifically, any entity wanting to ask a CLASSIFIED question shall send an email to the ONR Security POC with copy to both

the Technical POC and the Business POC stating that the entity would like to ask a CLASSIFIED question. DO NOT EMAIL ANY CLASSIFIED QUESTIONS. The Security POC will contact the entity and arrange for the CLASSIFIED question to be asked through a secure method of communication.

8. Instrument Type(s) - Contracts and Grants

Awards may take the form of Contracts and Grants as appropriate.

9. Catalog of Federal Domestic Assistance (CFDA) Numbers -

12.300

10. Catalog of Federal Domestic Assistance (CFDA) Titles -

Basic & Applied Scientific Research

11. Other Information -

This announcement is restricted to basic and applied research and that portion of advanced technology development not related to the development of a specific system or hardware procurement. Contracts and grants made under this BAA are for scientific study and experimentation directed towards advancing the state of the art and increasing knowledge or understanding.

II. AWARD INFORMATION

The amount and period of performance of each selected proposal will vary depending on the research area and the technical approach to be pursued by the selected offeror.

*Anticipated Number of Awards:

Six (6) to ten (10) awards per Topic/Thrust Area, as described in the Research Opportunity Description. An Offeror may propose on more than one Topic/Thrust Area.

*Anticipated Range of Individual Award Amounts:

As required to complete each selected project. There may be multiple awardees per Topic.

*Anticipated Period of Performance:

Up to three (3) years. All of the awards will be made for the full performance period requested. None of the awards will have option provisions.

*Estimated Total Amount of Funding Available (\$K):

FY2010	FY2011	FY2012	FY	FY	Total
\$6200	\$6200	\$6200	\$0	\$0	\$18600

III. ELIGIBILITY INFORMATION

All responsible sources from academia and industry may submit proposals under this BAA. Historically Black Colleges and Universities (HBCUs) and Minority Institutions (MIs) are encouraged to submit proposals and join others in submitting proposals. However, no portion of this BAA will be set aside for HBCU and MI participation.

Federally Funded Research & Development Centers (FFRDCs), including Department of Energy National Laboratories, are not eligible to receive awards under this BAA. However, teaming arrangements between FFRDCs and eligible principal bidders are allowed so long as they are permitted under the sponsoring agreement between the Government and the specific FFRDC.

Navy laboratories and warfare centers as well as other Department of Defense and civilian agency laboratories are also not eligible to receive awards under this BAA and should not directly submit either white papers or full proposals in response to this BAA. If any such organization is interested in one or more of the programs described herein, the organization should contact an appropriate ONR POC to discuss its area of interest. The various scientific divisions of ONR are identified at <http://www.onr.navy.mil/>. As with FFRDCs, these types of federal organizations may team with other responsible sources from academia and industry that are submitting proposals under this BAA.

Teams are also encouraged and may submit proposals in any and all areas. However, Offerors must be willing to cooperate and exchange software, data and other information in an integrated program with other contractors, as well as with system integrators, selected by ONR.

Some topics cover export controlled technologies. Research in these areas is limited to "U.S. persons" as defined in the International Traffic in Arms Regulations (ITAR) - 22 CFR § 1201.1 et seq.

IV. APPLICATION AND SUBMISSION INFORMATION

1. Application and Submission Process - White Paper, Oral Presentation, Full Proposals

(A) White Papers: The due date for white papers is no later than 2:00 PM Eastern Time on Tuesday, 31 March 2009. White papers received after the published due date will not be considered for funding under this BAA. Each white paper should state that it is submitted in response to this BAA.

The only acceptable methods for submission of white papers are via email (the preferred method) to the appropriate technical point of contact, the United States Postal Service (USPS) with delivery confirmation, or via a commercial carrier (FedEx, DHL, and UPS). NOTE: White Papers sent by fax will not be considered. Also, delivery of materials by USPS, even when sent as Express Mail, may take up to a week or more due to current security procedures in place to ensure the safety of U.S. mail to DoD activities.

Evaluation/Notification: Initial Navy evaluations of the white papers will be issued via e-mail notification on or about 13 April 2009. An expanded oral presentation will be subsequently requested from those Offerors whose proposed technologies have been identified as being of "particular value" to the Navy. However, any such request does not assure a subsequent award.

Submission of Full Proposal: An Offeror may submit a full proposal only if its white paper was identified during the White Paper review as being of "particular value" to the Navy. A full proposal will not be considered under this BAA unless a white paper was received from the proposer before the white paper due date specified above.

(B) Oral Presentations: ONR will request that Principal Investigators (PIs) whose white papers appear to be of "particular value" provide expanded presentations of their selected white papers. The purpose of the oral presentation is to provide additional information and address how the proposed technology will affect military applications. The requested oral presentations will coincide with the annual ONR Information Integration and Automated Image Understanding Applied Research Program Reviews, currently scheduled for 27 April - 1 May 2009. The time, location, and briefing format of the oral presentations, if requested, will be provided at a later date via e-mail notification.

Evaluation/Notification: Initial Navy evaluations of the oral presentations will be issued via e-mail notification on or about 06 May 2009. A full proposal will be subsequently encouraged from those Offerors whose proposed technologies have been identified through the solicitation process as being of particular value to the Navy.

(C) Full Proposals: Submission: Full proposals will not be considered under this BAA except from offerors whose white paper concepts were determined to be of particular value as specified above.

The due date for receipt of Full Proposals is 2:00 PM Eastern Time on Thursday, 21 May 2009. The only acceptable method for submission of Full Proposals for contract awards is via the United States

Postal Service (USPS) with delivery confirmation or via a commercial carrier (FedEx, DHL, and UPS). Note the problem described above regarding use of USPS delivery. The ONR will select the efforts to be funded for FY10 start-up based upon the quality and completeness of the full proposal and the level of available funding. It is anticipated that final selections will be made within 4 weeks after full proposal submission. As soon as the final full proposal evaluation process is completed, PIs will be notified via e-mail of their project's selection or non-selection for FY10 funding. Full proposals received after the published due date will not be considered. Full proposals exceeding the page limit may not be evaluated.

The only acceptable method for submission of Full Proposals for grant awards is via Grants.gov located at <http://www.grants.gov/>.

2. Content and Format of White Papers/Full Proposals -

IMPORTANT NOTE: Titles given to the White Papers/Full Proposals should be descriptive of the work they cover and not be merely a copy of the title of this solicitation.

The proposal format and content identified below are applicable to the submission of proposals for contracts. As noted in Paragraph 5 below, proposals selecting grant awards are to be formatted as required by Standard Form 424 (R&R), which is available via the internet at <http://www.grants.gov/>.

White Papers and Full Proposals submitted under the BAA are expected to be unclassified; however, confidential/classified responses are permitted. If a classified response is submitted, the resultant contract will be unclassified.

Unclassified Proposal Instructions:

Unclassified White Papers and Full Proposals shall be submitted directly to the appropriate Technical Point of Contract (TPOC).

Classified Proposal Instructions:

Classified White Papers and Full Proposals shall be submitted directly to the attention of ONR's Document Control Unit at the following address:

OUTSIDE ENVELOPE (no classification marking):

Office of Naval Research
Document Control Unit
ONR Code 43
875 North Randolph Street
Arlington, VA 22203-1995

The inner wrapper of the classified proposal should be addressed to the attention of Dr. Behzad Kamgar-Parsi or Dr. Tristan Nguyen (), ONR Code 311 and marked in the following manner:

INNER ENVELOPE (stamped with the overall classification of the material)
Program: Information Integration and Automated Image Understanding Applied Research Programs
Office of Naval Research
Attn: Dr. Behzad Kamgar-Parsi or Dr. Tristan Nguyen
ONR Code: 311
875 North Randolph Street
Arlington, VA 22203-1995

An 'unclassified' Statement of Work (SOW) must accompany any classified proposal.

Proposal submissions will be protected from unauthorized disclosure in accordance with FAR Subpart

15.207, applicable law, and DoD/DoN regulations. Offerors are expected to appropriately mark each page of their submission that contains proprietary information. The full proposal shall include a severable, self-standing Statement of Work, which contains only unclassified information and does not include any proprietary restrictions.

IMPORTANT NOTE: Titles given to the White Papers/Full Proposals should be descriptive of the work they cover and not be merely a copy of the title of this solicitation.

The formats and content identified below are applicable to submissions for contracts. As noted in Paragraph 5 below, submissions for grant awards are to be formatted as required by Standard Form 424 (R&R), which is available via the internet at <http://www.grants.gov/>.

WHITE PAPERS

White Paper Format

- Paper Size - 8.5 x 11 inch paper
- Margins - 1 inch
- Spacing - single or double-spaced
- Font - Times New Roman, 12 point
- Max. Number of Pages permitted: 6 pages (excluding cover page, resumes, bibliographies, and table of contents)
- Copies - one (1) original, five (5) copies, and one (1) electronic copy on CD-Rom (in Microsoft® Word or .PDF format).

White Paper Content

- **Cover Page:** The Cover Page shall be labeled "WHITE PAPER" and shall include the BAA number, proposed title, technical points of contact, telephone number, facsimile number, and e-mail address.
- **Technical Concept:** A description of the technology innovation and technical risk areas.
 - Technical Concept: A description of the technology innovation and technical risk areas including the results of basic research that justify the approach.
 - Metrics: Proposed metrics for the research program should be provided that describe the performance of the state-of-the-art methods and the levels of improvement expected to be achieved by the conclusion of the research effort.
 - Datasets: A description of the datasets that will be used for algorithm development and evaluation, whether these datasets already exist or they need to be collected, as well as the level of effort involved if the data need to be collected.
- **Operational Naval Concept:** A description of the project objectives, the concept of operation for the new capabilities to be delivered, and the expected operational performance improvements.
- **Operational Utility Assessment Plan:** A plan for demonstrating and evaluating the operational effectiveness of the Offeror's proposed products or processes in field experiments and/or tests in a simulated environment.

FULL PROPOSALS

Full Proposal Format - Volume 1 - Technical and Volume 2 - Cost Proposal

- Paper Size - 8.5 x 11 inch paper
- Margins - 1 inch
- Spacing - single or double-spaced

- Font - Times New Roman, 12 point
- Number of Pages - Volume 1 is limited to no more than 25 pages. Volume 2 has no page limit. The cover page, table of contents, resumes, and bibliographies are excluded from the page limitations. Full Proposals exceeding the page limit may not be evaluated.
- Copies - one (1) original, five (5) copies, and one (1) electronic copy on CD-Rom (in Microsoft® Word or .PDF format). If a grant is sought, the full proposal shall be submitted electronically at <http://www.grants.gov/> as delineated below.

Full Proposal Content

Volume 1: Technical Proposal

- **Cover Page:** This should include the words "Technical Proposal" and the following:
 1. BAA number;
 2. Title of Proposal;
 3. Identity of prime Offeror and complete list of subcontractors, if applicable;
 4. Technical contact (name, address, phone/fax, electronic mail address)
 5. Administrative/business contact (name, address, phone/fax, electronic mail address) and;
 6. Duration of effort
- **Table of Contents:** An alphabetical/numerical listing of the sections within the proposal, including corresponding page numbers.
- **Statement of Work:** A Statement of Work (SOW) clearly detailing the scope and objectives of the effort and the technical approach. It is anticipated that the proposed SOW will be incorporated as an attachment to the resultant award instrument. To this end, the proposals must include a severable, self-standing SOW, without any proprietary restrictions, which can be attached to the contract or agreement award. Include a detailed listing of the technical tasks/subtasks organized by year.
- **Technical Approach and Justification:** The major portion of the proposal should consist of a clear description of the technical approach being proposed. This discussion should provide the technical foundation / justification for pursuing this particular approach / direction and why one could expect it to enable the objectives of the proposal to be met.
 - **Operational Naval Concept:** A description of the project objectives, the concept of operation for the new capabilities to be delivered, and the expected operational performance improvements.
 - **Operational Utility Assessment Plan:** A plan for demonstrating and evaluating the operational effectiveness of the Offeror's proposed products or processes in field experiments and/or tests in a simulated environment.
- **Project Schedule and Milestones:** A summary of the schedule of events and milestones.
- **Assertion of Data Rights and/or Rights in Computer Software:** For a contract award an Offeror may provide with its proposal assertions to restrict use, release or disclosure of data and/or computer software that will be provided in the course of contract performance. The rules governing these assertions are prescribed in Defense Federal Acquisition Regulation Supplement (DFARS) clauses 252.227-7013, -7014 and - 7017. These clauses may be accessed at the following web address:

<http://farsite.hill.af.mil/VFDFARA.HTM>

The Government may challenge assertions that are provided in improper format or that do not properly acknowledge earlier federal funding of related research by the Offeror.

- **Deliverables:** A detailed description of the results and products to be delivered inclusive of the timeframe in which they will be delivered.

- **Qualifications:** A discussion of the Offeror's previous accomplishments and work in this, or closely related, areas and the qualifications of the investigators. Key personnel resumes shall be attached to the proposal and will not count toward the page limitations. .
- **Other Requirements:**
 - Metrics: Proposed metrics for the research program should be provided that describe the performance of the state-of-the-art methods and the levels of improvement expected to be achieved by the conclusion of the research effort.
 - Datasets: A description of the datasets that will be used for algorithm development and evaluation, whether these datasets already exist or they need to be collected, as well as the level of effort involved if the data needs to be collected.
- **Other Agencies:** Include the name(s) of any other agencies to which the proposal has also been submitted.

VOLUME 2: Cost Proposal

INSTRUCTIONS FOR CONTRACTS

Although not required and provided for informational purposes only, adhering to the instructions delineated below may expedite contract or assistance award placement. Detailed instructions, entitled "Instructions for Preparing Cost Proposals for Contracts and Agreements", including a sample template for preparing costs proposals for contracts and agreements, may be found at ONR's website listed under the 'Acquisition Department - Contracts & Grants Submitting a Proposal' link at: http://www.onr.navy.mil/02/how_to.asp

The Cost Proposal shall consist of a cover page and two parts, Part 1 will provide a detailed cost breakdown of all costs by cost category by calendar or Government fiscal year, and Part 2 will provide a cost breakdown by task/sub-task corresponding to the task numbers in the proposed Statement of Work. Options must be separately priced.

Cover Page: The use of the SF 1411 is optional. The words "Cost Proposal" should appear on the cover page in addition to the following information:

- BAA number
- Title of Proposal
- Identity of prime Offeror and complete list of subcontractors, if applicable
- Technical contact (name, address, phone/fax, electronic mail address)
- Administrative/business contact (name, address, phone/fax, electronic mail address) and

Part 1 - Detailed breakdown of all costs by cost category by calendar or Government fiscal year:

- **Direct Labor** - Individual labor categories or persons, with associated labor hours and unburdened direct labor rates. Provide escalation rates for out years;
- **Indirect Costs** - Fringe Benefits, Overhead, G&A, COM, etc. and their applicable allocation bases. If composite rates are used, provide the calculations used in deriving the composite rates.
- **Travel** - The proposed travel cost should include the following for each trip: the purpose of the trip, origin and destination if known, approximate duration, the number of travelers, and the estimated cost per trip must be justified based on the organizations historical average cost per trip or other reasonable basis for estimation. Such estimates and the resultant costs claimed must conform to the applicable Federal cost principles.
- **Subcontracts** - A cost proposal as detailed as the Offeror's cost proposal will be required to be submitted by the subcontractor. The subcontractor's cost proposal can be provided in a sealed envelope with the Offeror's cost proposal or may be sent directly to the Government. Subcontractor proposals must be received and reviewed prior to contract award. The prime contractor should perform and provide a cost/price analysis of each subcontractor's cost

proposal.*

*Note: DoD Federal Acquisition Regulation provision 252.215-7003 (48 CFR §252.215-7003) is incorporated into this solicitation by reference. The offeror is to exclude excessive pass-through charges from subcontractors. The offeror must identify in its proposal the percentage of effort it intends to perform and the percentage to be performed by each of its proposed subcontractors. If more than 70 percent of the total effort will be formed through subcontractors, the offeror must include the additional information required by the above-cited clause.

- Consultant - Provide a breakdown of the consultant's hours, the hourly rate proposed, any other proposed consultant costs, a copy of the signed Consulting Agreement or other documentation supporting the proposed consultant cost, and a copy of the consultant's proposed statement of work if it is not already separately identified in the prime contractor's proposal.
- Materials & Supplies - Provide an itemized list of all proposed materials and supplies including quantities, unit prices, proposed vendors (if known), and the basis for the estimate (e.g., quotes, prior purchases, catalog price lists).
- Contractor Acquired Equipment or Facilities - Equipment and/or facilities are normally furnished by the Contractor. If acquisition of equipment and/or facilities is proposed, a justification for the purchase of the items must be provided. Provide an itemized list of all equipment and/or facilities costs and the basis for the estimate (e.g., quotes, prior purchases, catalog price lists).
- Other Directs Costs - Provide an itemized list of all other proposed other direct costs and the basis for the estimate (e.g., quotes, prior purchases, catalog price lists).
- Options - The Base Period of Performance and Option Periods must be priced at the submission of the proposal. Unpriced options will not be included in any resulting contract or agreement.
- Fee/profit ("CONTRACT PROPOSALS ONLY") - Profit or fee is not allowed on direct costs for facilities or in cost-sharing contracts.

Note: Indicate if you have an approved Purchasing/Estimating System and/or describe the process used to determine the basis of reasonableness (e.g., competition, market research, best value analysis) for subcontractors, consultants, materials, supplies, equipment/facilities, and other direct costs.

* **Note:** DoD Federal Acquisition Regulation provision 252.215-7003 (48 CFR § 252.215-7003) is incorporated into this solicitation by reference. The offeror is to exclude excessive pass-through charges from subcontractors. The offeror must identify in its proposal the percentage of effort it intends to perform and the percentage to be performed by each of its proposed subcontractors. If more than 70 percent of the total effort will be performed through subcontracts, the offeror must include the additional information required by the above-cited clause.

Part 2 Cost breakdown by task/sub-task corresponding to the same task breakdown in the proposed Statement of Work. When options are contemplated, options must be separately identified and priced by task/subtask.

INSTRUCTIONS FOR GRANTS

The offeror must use the Grants.Gov forms from the application package template associated with the BAA on the Grants.Gov web site located at <http://www.grants.gov/> . Elements of the budget should include:

- Direct Labor - Individual labor categories or persons, with associated labor hours and unburdened direct labor rates or percentage of effort or total man-years. Provide escalation rates for out years. Justify in Field K
- Indirect Costs - Fringe Benefits, Overhead, F&A, G&A etc. and their applicable allocation bases. If composite rates are used, provide the calculations used in deriving the composite rates. Justify in Field K
- Travel - The proposed travel cost should include the following for each trip: the purpose of the trip, origin and destination if known, approximate duration, the number of travelers, and the estimated cost per trip must be justified based on the organizations historical average cost per trip or other reasonable basis for estimation. Such estimates and the resultant costs claimed must conform to the applicable Federal cost principles.

- Subawards - Cost proposal as detailed as the recipient's cost proposal will be required to be submitted by the subrecipient. The subawardee's or sub recipient's cost proposal can be provided in a sealed envelope with the recipient's cost proposal or may be sent directly to the Government. Subawardee's proposals must be received and reviewed prior to award.
- Consultants - Provide a breakdown of the consultant's hours, the hourly rate proposed, any other proposed consultant costs and a copy of the consultant's proposed statement of work if it is not already separately identified in the prime recipient's proposal. Strong justification must be provided, and consultants are to be used only under exceptional circumstances where no equivalent expertise can be found at a participating university. Justify in Field K.
- Materials & Supplies - Provide an itemized list of all proposed materials and supplies including quantities, unit prices, proposed vendors (if known), and the basis for the estimate (e.g., quotes, prior purchases, catalog price lists). Justify in Field K.
- Recipient Acquired Equipment or Facilities - Equipment and/or facilities are normally furnished by the Recipient. If acquisition of equipment and/or facilities is proposed, a justification for the purchase of the items must be provided. Provide an itemized list of all equipment and/or facilities costs and the basis for the estimate (e.g., quotes, prior purchases, catalog price lists). For computer/laptop purchases include a statement indicating the computer/laptop will be integrated into the program or used as an integral part of the research effort. Justify in Field K.
- Other Direct Costs - Provide an itemized list of all other proposed other direct costs such as Graduate Assistant tuition, laboratory fees, report and publication costs, and the basis for the estimates (e.g., quotes, prior purchases, catalog price lists). Justify in Field K.
NOTE: If the grant proposal is for a conference, workshop, or symposium, the proposal should include the following statement: "The funds provided by ONR will not be used for food or beverages."
- Options - The Base Period of Performance and Option Periods must be priced at the submission of the proposal. Unpriced options will not be included in any resulting award or agreement.
- Fee/Profit - Fee/profit is unallowable.

3. Significant Dates and Times -

Event	Date	Time
White Paper Due Date	3/31/2009	2:00 PM Eastern Daylight Time
Notification of White Paper Evaluation*	4/13/2009	
Oral Presentations*	4/27/2009	
Notification of Oral Presentation Evaluation*	5/6/2009	
Full Proposal Due Date	5/21/2009	2:00 PM Eastern Daylight Time
Notification of Selection: Full Proposals*	8/3/2009	
Awards*	10/1/2009	

**These dates are estimates as of the date of this announcement.*

NOTE: Note: Due to changes in security procedures since September 11, 2001, the time required for hard-copy written materials to be received at the Office of Naval Research has increased. Materials submitted through the U.S. Postal Service, for example, may take seven days or more to be received, even when sent by Express Mail. Thus any hard-copy proposal should be submitted long enough before the deadline established in the solicitation so that it will not be received late and thus be ineligible for award consideration.

4. Submission of Late Proposals -

Any proposal, modification, or revision that is received at the designated Government office after the exact time specified for receipt of proposals is "late" and will not be considered unless it is received before award is made, the contracting officer determines that accepting the late proposal would not

unduly delay the acquisition and:

- If it was transmitted through an electronic commerce method authorized by the announcement, it was received at the initial point of entry to the Government infrastructure not later than 5:00 P.M. one working day prior to the date specified for receipt of proposals; or
- There is acceptable evidence to establish that it was received at the Government installation designated for receipt of proposals and was under the Government's control prior to the time set for receipt of proposals; or
- It was the only proposal received.

However, a late modification of an otherwise timely and successful proposal that makes its terms more favorable to the Government will be considered at any time it is received and may be accepted.

Acceptable evidence to establish the time or receipt at the Government installation includes the time/date stamp of that installation on the proposal wrapper, other documentary evidence of receipt maintained by the installation, or oral testimony or statements of Government personnel.

If an emergency or unanticipated event interrupts normal Government processes so that proposals cannot be received at the Government office designated for receipt of proposals by the exact time specified in the announcement, and urgent Government requirements preclude amendment of the announcement closing date, the time specified for receipt of proposals will be deemed to be extended to the same time of day specified in the announcement on the first work day on which normal Government processes resume.

The contracting officer must promptly notify any offeror if its proposal, modifications, or revision was received late and must inform the offeror whether its proposal will be considered.

5. Submission of Grant Proposals through Grants.gov

(NOT APPLICABLE TO PROPOSALS FOR CONTRACTS)

Detailed instructions entitled "Grants.Gov Electronic Application and Submission Information" on how to submit a grant proposal through Grants.gov may be found at the ONR website listed under the 'Acquisition Department - Contracts & Grants Submitting a Proposal' link at:
http://www.onr.navy.mil/02/how_to.asp

Grant proposals shall be submitted through Grants.Gov using the Grants.gov forms from the application package template associated with the BAA on the Grants.Gov website. To be considered for award, applicants must include the ONR Department Code 311 in Block 4 entitled 'Federal Identifier' of the Standard Form (SF) 424 R&R.

White Papers should not be submitted through the Grants.gov Apply process but rather should be sent directly to ONR. White Papers should be submitted in accordance with section IV. APPLICATION AND SUBMISSION INFORMATION.

By completing Blocks 18 and 19 the Grant Applicant is providing the certification on lobbying required by 32 CFR Part 28. Refer to Section VI, 'Award Administration Information' entitled "Certifications" for further information.

For electronic submission of grant full proposals, several one-time actions must be completed in order to submit an application through Grants.gov. These include obtaining a Dun and Bradstreet Data Universal Numbering System (DUNS) number, registering with the Central Contract Registration (CCR), registering with the credential provider, and registering with Grants.gov. See www.grants.gov, specifically www.grants.gov/GetStarted.

Use the Grants.gov Organization Registration Checklist at
http://www.grants.gov/applicants/register_your_organization.jsp which will provide guidance through

the process. Designating an E-Business Point of Contact (EBiz POC) and obtaining a special password called 'MPIN' are important steps in the CCR registration process. Applicants who are not registered with CCR and Grants.gov should allow at least 21 days to complete these requirements. The process should be started as soon as possible. Any questions relating to the registration process, system requirements, how an application form works, or the submittal process must be directed to Grants.gov at 1-800-518-4726 or support@grants.gov.

Special Notices Relative to Grant Applications to be submitted through Grants.Gov:

All attachments to grant applications submitted through Grants.Gov must be in Adobe Portable Document Format (i.e., .PDF files). Proposals with attachments submitted in word processing, spreadsheet, or any format other than Adobe Portable Document Format will not be considered for award.

Process to Obtain a Waiver from the Use of Grants.Gov for Submission of Full Grant Proposals: If a prospective grantee is unable to comply with the requirement to use Grants.Gov "APPLY" for submission of a grant application under this BAA or finds it would be an excessive burden to comply with this requirement, a waiver request may be submitted not less than 30 calendar days prior to the closing date for receipt of Full Proposals. Such request should be submitted by the Electronic Business Point of Contact listed in the CCR for the organization and should contain the Organization/Individual's name, address, telephone number, and email address. The request should state the reason for the request in sufficient detail so a decision can be made. The Waiver Request should be submitted to the ONR Acquisition Department point of contact or Grants Officer listed in the BAA. Such request can be sent by registered mail or email. The "postmark" stamp on the envelope or the time annotated on the email will be used to determine timeliness of the request. A decision and response will be issued within 14 calendar days of receipt of the request by ONR. Foreign Grantees who are not registered in CCR may request a waiver on that basis since CCR registration is integral to the Grants.Gov application process.

6. Address for the Submission of White Papers and Full Proposals.

Full Proposals for Contracts should be sent to the Office of Naval Research at the following address:

White Paper Submission Format	Full Proposal Submission Format
Hard Copy & Electronic	Hard Copy & Electronic
See the instructions provided earlier in this BAA regarding acceptable delivery methods for white papers and full proposals. The instructions differ depending upon whether the proposer is seeking a contract or a grant award.	

Hard copies of white papers and full proposals for Contracts should be sent to the Office of Naval Research at the following address:

Primary Contact	Secondary Contact
Office of Naval Research Attn*: Dr. Behzad Kamgar-Parsi ONR Department Code: 311 875 North Randolph Street Arlington, VA 22203-1995	Office of Naval Research Attn*: Dr. Tristan Nguyen ONR Department Code: 311 875 North Randolph Street Arlington, VA 22203-1995

V. EVALUATION INFORMATION

1. Evaluation Criteria -

Award decisions will be based on a competitive selection of proposals resulting from a scientific and cost review. Evaluations will be conducted using the following evaluation criteria:

1. Overall scientific and technical merits of the proposal;
2. The qualifications, capabilities and experience of the proposed Principal Investigator (PI), team leader and key personnel who are critical in achieving the proposal objectives;
3. The offeror's capabilities, related experience, facilities, techniques or unique combinations of these which are integral factors for achieving the proposal objectives;
4. Potential Naval relevance and contributions of the effort to the agency's specific mission and
5. The realism of the proposed costs and availability of funds.

Overall, the technical factors 1 - 4 above are more important than the cost factor, with the technical factors listed in descending order of importance. The degree of importance of cost will increase with the degree of equality of the proposals in relation to the other factors on which selection is to be based, or when the cost is so significantly high as to diminish the value of the proposal's technical superiority to the Government.

For proposed awards to be made as contracts to other than small businesses, the socio-economic merits of each proposal will be evaluated based on the extent of the Offeror's commitment in providing meaningful subcontracting opportunities for small businesses, small disadvantaged businesses, woman-owned small businesses, HUBZone small businesses, veteran-owned small businesses, service disabled veteran-owned small businesses, historically black colleges and universities, and minority institutions.

The Government will evaluate options for award purposes by adding the total cost for all options to the total cost for the basic requirement. Evaluation of options will not obligate the Government to exercise the options during contract performance.

2. Evaluation Panel -

Technical and cost proposals submitted under this BAA will be protected from unauthorized disclosure in accordance with FAR 3.104-4 and 15.207. The cognizant Program Officer and other Government scientific experts will perform the evaluation of technical proposals. Cost proposals will be evaluated by Government business professionals. Restrictive notices notwithstanding, one or more support contractors may be utilized as subject-matter-expert technical consultants. Similarly, support contractors may be utilized to evaluate cost proposals. However, proposal selection and award decisions are solely the responsibility of Government personnel. Each support contractor's employee having access to technical and cost proposals submitted in response to this BAA will be required to sign a non-disclosure statement prior to receipt of any proposal submissions.

VI. AWARD ADMINISTRATION INFORMATION

1. Administrative Requirements -

- The North American Industry Classification System (NAICS) code - The North American Industry Classification System (NAICS) code for this announcement is "541712" with a small business size standard of "500 employees".
- Central Contractor Registry (CCR) - Successful Offerors not already registered in the CCR will be required to register in CCR prior to award of any grant, contract, cooperative agreement, or other transaction agreement. Information on CCR registration is available at <http://www.onr.navy.mil/02/ccr.htm>.
- Subcontracting Plans - Successful contract proposals that exceed \$550,000, submitted by all but small business concerns, will be required to submit prior to award a Small Business Subcontracting Plan in accordance with FAR 52.219-9.
- Certifications - Proposals for contracts and assistance agreements should be accompanied by a

completed certification package.

Contracts and Other Transaction Agreements

For contracts, in accordance with FAR 4.1201, prospective contractors shall complete and submit electronic annual representations and certifications at <http://orca.bpn.gov>. In addition to completing the Online Representations and Certifications Application (ORCA), proposals must be accompanied with a completed DFARS and contract specific representations and certifications. These "DFARS and Contract Specific Representations and Certifications", i.e., Section K, may be accessed under the Contracts and Grants Section of the ONR Home Page at http://www.onr.navy.mil/02/rep_cert.asp.

Grants

Grant and Cooperative Agreement awards greater than \$100,000 require a certification of compliance with a national policy mandate concerning lobbying. Grant applicants shall provide this certification by electronic submission of SF424 (R&R) as a part of the electronic proposal submitted via Grants.gov (complete Blocks 18 and 19); The following certification applies to each applicant seeking federal assistance funds exceeding \$100,000:

CERTIFICATION REGARDING LOBBYING ACTIVITIES

(1) No Federal appropriated funds have been paid or will be paid by or on behalf of the applicant, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the Federal contract, grant, loan, or cooperative agreement, the applicant shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The applicant shall require that the language of this certification be included in the award documents for all sub awards at all tiers (including sub contracts, sub grants, and contracts under grants, loans, and cooperative agreements) and that all sub recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, title 31, U.S.C. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Grants and Cooperative Agreements not through Grants.gov:

Proposers seeking grants or cooperative agreements who have received Grants.gov waiver approval for awards greater than \$100,000 shall complete and submit electronic representations and certifications at the Contracts and Grants Section of the ONR Home Page at http://www.onr.navy.mil/02/rep_cert.asp.

2. Reporting -

The following are sample data deliverables that are typically required under a research effort:

- Technical and Financial Progress Reports
- Presentation Materials
- Demonstrations of the capabilities developed under the research effort
- Final Report

Additional data deliverables may be proposed and finalized during negotiations. Research performed under contracts may also include the delivery of software, prototypes, and other hardware deliverables.

VII. OTHER INFORMATION

1. Government Property/Government Furnished Equipment (GFE) and Facilities

Each proposer must provide a very specific description of any equipment/hardware that it needs to acquire to perform the work. This description should indicate whether or not each particular piece of equipment/hardware will be included as part of a deliverable item under the resulting award. Also, this description should identify the component, nomenclature, and configuration of the equipment/hardware that it proposes to purchase for this effort. The purchase on a direct reimbursement basis of special test equipment or other equipment that is not included in a deliverable item will be evaluated for allowability on a case-by-case basis. Maximum use of Government integration, test, and experiment facilities is encouraged in each of the Offeror's proposals.

Offerors are expected to provide all facilities (equipment and/or real property) necessary for the performance of the proposed effort. Any direct charge of facilities, not including deliverable items, must be specifically identified in the Offeror's proposal and approved by the Government prior to purchase. In addition, any request to use Government owned facilities must be included in the Offeror's proposal and approved in advance by the cognizant Government official. (Note: proposals that are contingent upon ONR providing government furnished equipment, instrumentation, test facilities, or threat hardware and information for exploitation are NOT acceptable.)

2. Security Classification

In order to facilitate intra-program collaboration and technology transfer, the Government will attempt to enable technology developers to work at the unclassified level to the maximum extent possible. If access to classified material will be required at any point during performance, the Offeror must clearly identify such need prominently in its proposal.

3. Use of Animals and Human Subjects in Research

Reserved

4. Recombinant DNA

Reserved

5. Department of Defense High Performance Computing Program

The DoD High Performance Computing Program (HPCMP) furnishes the DoD S&T and RDT&E communities with use-access to very powerful high performance computing systems. Awardees of ONR contracts, grants, and assistance instruments may be eligible to use HPCMP assets in support of their funded activities if ONR Program Officer approval is obtained and if security/screening requirements are favorably completed. Additional information and an application may be found at <http://www.hpcmo.hpc.mil/>.

6. Protection of Proprietary and Sensitive Information

The parties acknowledge that, during performance of the contract, grant, or other assistance agreement resulting from this BAA, the recipient may require access to certain proprietary and confidential information (whether in its original or derived form) submitted to or produced by the Government. Such information includes, but is not limited to, business practices, proposals, designs, mission or operation concepts, sketches, management policies, cost and operating expense, technical data and trade secrets, proposed Navy budgetary information, and acquisition planning or acquisition

actions, obtained either directly or indirectly as a result of the effort performed on behalf of ONR. The recipient shall take appropriate steps not only to safeguard such information, but also to prevent disclosure of such information to any party other than the Government. The recipient agrees to indoctrinate company personnel who will have access to or custody of the information concerning the nature of the confidential terms under which the Government received such information and shall stress that the information shall not be disclosed to any other party or to recipient personnel who do not need to know the contents thereof for the performance of the contract/agreement. Recipient personnel shall also be informed that they shall not engage in any other action, venture, or employment wherein this information will be used for any purpose by any other party.

7. Project Meetings and Reviews

Individual program reviews between the ONR sponsor and the performer may be held as necessary. Program status reviews may also be held to provide a forum for reviews of the latest results from experiments and any other incremental progress towards the major demonstrations. These meetings will be held at various sites throughout the country. For costing purposes, offerors should assume that 40% of these meetings will be at or near ONR, Arlington VA and 60% at other contractor or government facilities. Interim meetings are likely, but these will be accomplished via video telephone conferences, telephone conferences, or via web-based collaboration tools.

8. Submission of Questions

Any questions regarding this solicitation must be provided to the Science and Technology Point of Contact and/or Business Point of Contact listed in this solicitation. All questions shall be submitted in writing by electronic mail.

Questions regarding **white papers** must be submitted by **2:00 PM Eastern Time on 12 March 2009**. Questions after this date and time may not be answered, and the due date for submission of the white papers will not be extended.

Questions regarding **full proposals** must be submitted by **2:00 PM Eastern Time on 14 May 2009**. Questions after this date and time may not be answered, and the due date for submission of the proposals will not be extended.

9. Other Guidance, Instructions, and Information

None