ONR BAA Announcement # ONR 08-009

BROAD AGENCY ANNOUNCEMENT (BAA)

Automated Image Understanding and Information Integration Applied Research

INTRODUCTION

This publication constitutes a Broad Agency Announcement (BAA) as contemplated in Federal Acquisition Regulation (FAR) 6.102(d)(2). A formal Request for Proposals (RFP), solicitation, and/or additional information regarding this announcement will not be issued. Request for same will be disregarded.

The Office of Naval Research (ONR) will not issue paper copies of this announcement. The ONR reserves the right to select and fund for award all, some or none of the proposals in response to this announcement. 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.

Awards will take the form of contracts. Therefore, proposals submitted as a result of this announcement will fall under the purview of the Federal Acquisition Regulations (FAR).

Potential offerors may obtain information on ONR programs and opportunities by checking the ONR website at http://www.onr.navy.mil. Specific information about BAAs along with amendments and updates to this BAA will be found at that site under the heading “BAAs”.

I. GENERAL INFORMATION

1. Agency Name -

Office of Naval Research

2. Research Opportunity Title

Automated Image Understanding and Information Integration Applied Research

3. Program Name

Computational Framework and Methods for Rapid Accurate Decision-Making

4. Research Opportunity Number

BAA 08-009

5. Response Date

White Papers: 17 April 2008

Oral Presentations: 12 May 2008

Full Proposals: 16 June 2008

6. Research Opportunity Description

Synopsis:

This program addresses current shortfalls in automated mechanisms for information integration resulting from limitations in technology and uncertainty/imprecision of data and information. The Program seeks to develop hardware and software technologies that (1) provide automated approaches for real-time image processing and analysis; (2) identify and integrate informational content from multiple information sources; (3) offer persistent surveillance of the network and its information space; and (4) provide automatic correlation, fusion, and insight to support decision making with large data sets. This year, a particular emphasis will be placed on the Automated Image Understanding thrust and the Automated SIGINT (Signal Intelligence) Understanding sub-area.

6.1 Operational Requirements

In current and future operational environments, such as Global War on Terrorism (GWOT) and Maritime Domain Awareness (MDA), warfighters require technologies evolved to support information needs regardless of location and consistent with the user's level of command or responsibility and operational situation. To support this need, the Navy has envisioned the concept of FORCEnet, an operational construct that integrates sensors, networks, decision aids, weapons and supporting systems into a highly adaptive human-centric comprehensive maritime system that operates from the sea bed to space and from sea to lands. FORCEnet is the Navy's vision and implementation of the DOD's concept of Network Centric Warfare (NCW), defined as "military operations that exploit state-of-the-art information and networking technology to integrate widely dispersed human decision makers, situational and targeting sensors, forces, and weapons into a highly adaptive, comprehensive system to achieve unprecedented mission effectiveness." FORCEnet will achieve this in part by relying on pillar Enabling Capabilities (ECs) products and longer-term Discovery and Invention (D&I) projects.

Under FORCEnet, net-centric operations include communications and information assurance capabilities to enable all-source data access, multi-source processing, and tailored dissemination to Command and Control (C2) and Intelligence, Surveillance, and Reconnaissance (ISR) users across the network. The operational benefits sought are an increased speed, accuracy and precision of command; distributed self-synchronization; flexibility and adaptability to an operational situation; and decision superiority.

In emerging operational environments, the promise of net-centricity and the potential for persistent and pervasive sensing will create greater demand for (1) techniques to coordinate deployment of multiple diverse sensors; (2) automated processing of large volumes of high-dimensional multi-sensor and multi-source data; (3) tailored dissemination of information to support decision making to users across the network; and (4) the requirement to securely handle information without exposing intelligence information about the networks or systems to adversaries.

It is important to note that efforts developed under this BAA provide an important focus for the Navy. These efforts are viewed in terms of their potential to provide critical technologies that fill necessary operational gaps that may currently exist or could exist as the Navy adopts new ways of operation (e.g., moving to a network centric environment). As such, ONR looks at these efforts as sources for transition into (1) the development of new emerging technology programs; (2) filling critical technology gaps that may have been discovered or exist within current ECs; or (3) direct adaptation into current Naval programs and systems.

6.2 Technical Background

Current shortfalls in warfighting functionality result from limitations in technology, including:

- The ability to produce a dynamic, comprehensive, and accurate battlespace picture that integrates tactical intelligence data gathered from multiple sources is not available.
- Automated techniques to integrate data, information, and decisions (geolocation, detection, and identification) from multiple intelligence sources, in a consistent and timely manner, are not available.
- Automated techniques to support planners in maximizing the information value achievable from multiple deployed sources/sensors are not available.
- Warfighter and intelligence views are not consistent with or tailored to mission goals. Presently, warfighter and intelligence views do not support multiple-mission operations.
- Accurate and timely information about battlespace objects and events is not available to support warfighter decision making (includes reliable location, tracking, combat identification, and targeting information).

Because massive amounts of data will be generated by persistent sensors, warfighters will require technologies that not only integrate information from diverse sources, but also provide indications of information significance in ways that support the user's decision needs regardless of location and operational situation. Assuming that object track and identity information is available, automated decision tools that transform this information into actionable knowledge for the decision maker are required. The tools and technologies to resolve these shortfalls must address data fusion, particularly at the Levels 2/3/4. The various levels of data fusion are further defined below.

- Level 1 (Representation of objects) - Level 1 data fusion combines data from single or multiple sensors and sources to provide the best estimate of objects and events in the battlespace in terms of their position, kinematics (e.g., tracks), identity, or identification features.

- Level 2 (Representation of relationships between objects) - Level 2 data fusion focuses on situation assessment that aggregates objects or events to perform relational analysis and estimation of their relationships in the context of the environment.

- Level 3 (Representation of effects of relationships among objects) - Level 3 data fusion, threat or impact assessment, refers to a projection of the current situation to perform event prediction, threat estimation, estimated force vulnerabilities, and consequence analysis.

- Level 4 (Representation of processing and event estimation refinements)– Level 4 data fusion relies on an evaluation of the on-going fusion processing to provide users (human or machine) with additional information to advise courses of action, adapt fusion to changing conditions, or seek additional sensor or source data to improve on current estimates of objects, events, and conditions.

The following are some examples of data fusion situations of interest. One area is the fusion of images with other kinds of information to extract objects or features of interest. Another example is the fusion of multidimensional signals with meta-data that is pertinent to the signals.

6.3 Program Goals

The goal of the Computational Framework and Methods for Rapid Accurate Decision-Making program is to support the FORCEnet vision by developing measurable advances in technology that can directly enable and support ongoing Naval Enterprise capability enhancements. This will be accomplished by supporting science and technology enablers for decision making and mission execution to achieve battlespace superiority. In future operational environments, warfighters will require technologies evolved to support information needs regardless of location and consistent with the user's level of command or responsibility and operational situation. The program focuses on the development of hardware and software technologies that identify and integrate informational content from multiple sources, leading to decision aids that support user-cognitive processes. The program is especially interested in applying innovative concepts, technologies, and techniques towards solving operational problems in the areas of asymmetric warfare, urban warfare, guerrilla warfare, and port/base security.

6.4 Program Thrusts

The Computational Framework and Methods for Rapid Accurate Decision-Making program is focused on efforts that automate the association of objects and events in the battlespace and automatically transform this information into actionable knowledge (e.g., indications and warnings of intent). Thus, the program is supported by two thrusts:

- Automated Image Understanding
- Automated Information Integration

6.5 Detailed Thrust Descriptions

6.5.1 Automated Image Understanding

This thrust aims to develop efficient computational methods based on rigorous mathematical approaches to address a number of fundamental issues in automated image understanding. Those issues include object recognition, classification, activity recognition, context understanding, background modeling, and scene analysis. We 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.

A Naval focus is the development of 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 persistent surveillance scenarios a network of mobile and stationary imaging sensors are deployed to observe large areas over long periods of time. The network of imaging 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 images, index and store images of interest for forensic investigations and after action analysis, and provide timely alerts to warfighetrs. These capabilities must be developed for individual sensors and networks of sensors, as well as for different imaging modalities including EO/IR, hyperspectral, ladar, radar, etc.

The following includes broad research areas of interest we want to address. (a) Developing principled methods for fusion of multiple imaging modalities based on 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 objects and activities. 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, or 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:

- Simultaneous exploitation of cross-modal imagery for various applications including image enhancement, segmentation, and recognition
- Integration of low-level processing and high-level knowledge for simultaneous segmentation, grouping, and recognition. Including recognition of object categories, and human and vehicle movements and actions, using contextual information and background models.
- Methods for adaptive and collaborative object recognition using multiple platforms and/or imaging modalities
- Image-based navigation for autonomous vehicles in the absence of GPS data, and detection, tracking and classification of moving objects on water or in urban areas with non-overlapping sensors and gaps in the image data
- Learning representations of objects and activities from a few examples using domain knowledge
- Creation and exploitation of 3D data for geo-registration, navigation, recognition
- Fast processing algorithms and advanced optimization techniques tailored to image recognition

6.5.2 Automated Information Integration

Automated Information Integration involves the development of algorithms, techniques, and tools to fuse heterogeneous data from diverse and disparate sources with the goal of producing actionable knowledge for the decision maker. The concepts of network-centric operations and the shift to asymmetric warfare have added an additional level of complexity to the realization of automated information integration within the framework of Maritime Domain Awareness and the vagaries of the Global War on Terror.

Understanding the global battlespace is now dependent on a complex and ever-changing information grid that could involve knowledge developed between local traditional participants within the grid (sensors, platforms, etc.) and non-traditional information sources that create conditional dependencies, forming unforeseen links (*a hidden network*) between sources (e.g., news articles that inadvertently inform the enemy of advanced actions and policies). Traditional uncertainty management techniques need to take a more predictive flavor and actively

(automated) search for optimal new sources of data that provide key “pieces” of information in order to minimize error uncertainty, expose corrupted data sources, and improve conceptual awareness. Thus, data refinement becomes a critical component to reduce uncertainty.

Additionally, the design and integration of ontologies that represent concepts and knowledge needs to be adaptive to different conditions and environments. Techniques must be developed to discover methods and categorize “situation models” in order to “predict” the usefulness of relevant ontologies to new conditions. This can provide a measure of how the ontology fits within evolving conditions. Thus, approaches need to be developed to expand the concepts of the current level 2 fusion to level 3 approaches that project situation assessments to function within other conditions or environments. Extending the concepts of situation inference methods to do predictive impact assessment pushes the concepts of behavior categorization into new directions, allowing algorithms to project the next steps in developing dynamic relational behaviors. Thus level 4 (process or event refinements) will also play a key role.

6.5.2.1 Sub-area: Uncertainty Management (Objects, Situations, or Events) and Data Refinement

This sub-area aims to develop innovative methods for combining traditional and non-traditional data from sensors and sources to provide the best estimate of objects, events, and conditions in the battlespace, in terms of their identity, associated error or uncertainty, context, impact, etc. It is expected that a key technology thrust will involve level 4 methods as a means of managing uncertainty, searching for new sources of data to provide key “pieces” of information in order to minimize error uncertainty, expose corrupted data sources, and improve conceptual awareness. Thus, uncertainty management will take an expanded role as a key enabler for Level 2/3/4 fusion. Some areas of interest include, but are not limited to, the following:

- Algorithms and methods for processing and exploiting massive high-dimensional data sets that may arise from a multitude of disparate sensors and are also comprised of disparate and/or non-traditional data types (e.g., image-based data, text, network-based data, open source)
- Robust mathematical and statistical techniques for propagating uncertainty through the integration process
- Methods for representing and exploiting context, metadata, network characteristics of the data, and different ‘views’ of the same information.
- Methods to predict appropriate sources of information necessary to reduce uncertainty. This involves predicting the types, quality, and availability of sources and estimating the potential impact of that source to manage and reduce uncertainty.
- Methods to estimate expected reductions in data uncertainty through the use of constrained sources (traditional sources within a network such as sensors and platforms) and unconstrained sources (uncertainty management from non-traditional sources that operate outside the network). An example would be a newspaper source based on a political environment that the newspaper is researching, and assessing the impact on force planning and action.

6.5.2.2 Sub-area: Inference Engines and Knowledge Bases

The goal of this sub-area is to develop mathematically rigorous and computationally efficient approaches to Level 2/3 fusion for recognizing activities of agents (objects and people), inferring their relationships, inferring their intentions, and assessing potential threats posed by them. Inferencing methods should be able to utilize disparate information that may include data from networks of imaging and non-imaging sensors, human reports, private databases, and open, unstructured sources that may be available on the Web. Inferencing methods should also be able to take into account contextual information such as terrain, roads, weather, communications, doctrine, culture, and politics. These include, but are not limited to, the following:

- Extend recent advances in integrating logic and probability for building robust knowledge bases from diverse, uncertain information sources

- Develop reasoning and plan recognition methods that can work robustly in time-critical situations with uncertain and probabilistic information, contradictory data or absence of full information
- Develop methods for exploiting context and approaches to using context to improve recognition and inferencing through constraining plausible hypotheses.
- Develop methods to properly correlate (assign) data within an ever-changing network between traditional and nontraditional data sources to assess the degree of data coupling between sources inside and outside the network. These techniques could address the problem of multiple assignments (across fusion levels) based on multiple levels of situation processing.
- Develop techniques to monitor data or an event within the network and within nontraditional sources. This involves following an event based on the importance of the behavior and its impact through a number of sources, assessing the temporal decay of importance of the data, and projecting its usefulness to a number of sources.

6.5.2.3 Sub-area: Predictive Situation Assessment to Provide Impact Assessment

The goal of this sub-area is to develop mathematically rigorous and computationally efficient approaches to characterize and distinguish situational conditions under a variety of behaviors and environments. The goal is to develop a means to model situation types and to develop predictive techniques that assess the impact of these situations—taking situation assessment to the next level of predicting related situations under different conditions and extending to new situations. The technical emphasis of this research is to develop rigorous and efficient methods for building sophisticated situational models, developing automated reasoning techniques to categorize and recognize situations under a variety of conditions leading to methods that predict situations under different settings. Some areas of interest include, but are not limited to, the following:

- Develop methods of grouping situations to categorize algorithms for reuse under a variety of conditions. Methods might involve:
    - Situation recognition and categorization (used to group similar situational types)
    - Situation characterization to define threshold qualifications to “bin” situations within categories – abductive development as a threshold process
    - Situation projection to develop techniques to characterize features necessary to classify a situation – counterfactuals and inductive development
- Develop methods to recognize patterns of situations, predicting situations to define best courses of action, and developing inference metrics to quantify reaction consequences to measure impact
- Develop methods to generalize the characterization of ontologies and to integrate them. Methods would involve but not be limited to:
    - Machine processing compatibility to effectively link methods for visualization and human processing (currently UML methods) with machine and information exchange and processing (currently XML methods)
    - Ontology development to assess threats and impacts. Measurement and assessment mechanisms could involve ways to measure quality of continuants (for spatial items that exist through time) and determinants (finite temporal utility or existence such as thoughts or actions)
    - Consequence assessment to estimate and predict event outcome states, and measure cost of outcomes to affected parties
- Develop threat and impact models for prediction of intent – capability as hypothesis generation, opportunity as prediction constraints, and intent as goal decomposition.

6.5.2.4 Sub-area: Information Integration Optimization

Information-integration techniques must take into account both the characteristics of the information sources and the requirements of the users, especially when extremely large data sets are involved in the process. The characteristics of the information sources include such things as quality, reliability, completeness, latency, uncertainty, error, etc. Users may also have requirements such as retrieval time, quality of the integration, reliability in the prediction, etc. However, the requirements of the user and the characteristics of the sources or integration

process may be in conflict (high-quality information may take longer to retrieve), and they might change with the mission or operation.

Additionally, the optimization of corroborating pedigree information (hypotheses, history, sources, sensor datasets, background conditions, etc.) to the needs of the users impacts the quality of the integration, since improper storage, inappropriate correlation and inefficient retrieval methods for maintaining pedigree would impact information integration techniques. Furthermore, multiple users may require a different focus (real-time tracking, behavioral evaluations, forensic analysis, and so forth) of the data that could lead to potentially conflicting results if they are developed from independent integration requests.

The goal of this sub-area is the development of optimization-based methods for selecting information from multiple and disparate sources, the integration of which best meets the user's requirements. We seek solutions based on mathematically rigorous techniques (e.g., mathematical optimization) that provide optimal or provably near-optimal solutions. Some areas of interest include, but are not limited to,the following:

- Methods that optimize the selection from disparate and multiple information sources as well as the characterization of related pedigree over multiple user processing requests within extremely large data sets, including checks and balances between assignment, storage, search, quality, reliability, completeness, latency, etc.
- Optimization and mathematical programming techniques that find the best representation of relationships between objects in Level 2 and Level 3 data fusion are desired. These methods include all facets of optimization - continuous, discrete, mixed type – that search for local or global solutions.

6.5.2.5 Sub-area: Automated SIGINT Understanding

This sub-area aims to develop innovative methodologies in mathematics, statistics, and computer science to enable automated SIGINT understanding as a goal toward persistent and adaptive surveillance. Signal Intelligence (SIGINT) consists primarily of Communication Intelligence (COMINT) and Electronic Intelligence (ELINT). COMINT refers to information derived from the interception of foreign communications. ELINT is the counterpart of COMINT which deals with exploitation of non-communications aspects of SIGINT.

Automated SIGINT understanding encompasses the early phase of representation, automatic detection, classification of signals and communications sources of interest to the final phase of understanding and extracting information from these sources for inference or assessment of intelligence values. Furthermore, we seek advanced and automated techniques to implement data fusion from SIGINT sources to derive or extract pertinent information from gathered data. These efforts ensure conformity with our vision in Automated Information Integration that, in turn, constitutes an integral part of FORCEnet. Areas of interest include, but are not limited to:

- Data mining techniques to uncover trends in activity, links, and hidden models of behavior/activity to identify relationships and support intent analyses and course-of-action (COA) alternatives.
- Methods available for processing and filtering SIGINT that will provide a better understanding of the battlespace and enable automated information integration.
- Integrating SIGINT with other types of information in ways that account for the uncertainty in a mathematically principled manner.

7. Points of Contact

- All Questions of a general programmatic, thrust specific or business nature shall be submitted in writing by electronic mail.
- Questions presented by telephone call, fax message, or other means will not be responded to.
- There will be no meetings between potential offerors and ONR personnel.
- It is understood that responses are not binding unless the specific Q&A is posted on the Computational Framework and Methods for Rapid Accurate Decision-Making program website.
- Questions regarding **white papers** must be submitted by 2:00 p.m. Eastern Time on Thursday, 17 APRIL 2008. Questions after this date and time may not be answered and the due date for submission of the white papers may not be extended.
- If invited to present an oral presentation, questions regarding **oral presentations** must be submitted by 2:00 p.m. Eastern Time one week prior to the scheduled presentation. Questions after this date and time may not be answered and the scheduled date and/or time of the oral presentation may not be changed.
- Questions regarding **full proposals** must be submitted by 2:00 p.m. Eastern Time on Monday, 16 JUN 2008. Questions after this date and time may not be answered and the due date for submission of the proposals may not be extended

Questions of a ***general programmatic nature*** should be directed to the Program Officer at the email addresses stated below.

Dr. Gary Toth
Program Manager
E-Mail: gary.toth@navy.mil

With a copy of the email sent to:

Dr. Wendy L. Martinez
Program Officer
E-Mail: wendy.martinez@navy.mil

Questions of a **scientific or technical nature should be directed to Drs. Toth and Martinez at** gary.toth@navy.mil; wendy.martinez@navy.mil or as specified in the chart.

Thrust Description	Sub-area	BAA Paragraph Reference	Thrust Manager	Email
Automated Image Understanding	N/A	6.5.1	Dr. Behzad Kamgar-Parsi	behzad.kamgarparsi@navy.mil
Automated Image Understanding	N/A	6.5.1	Dr. Tristan Nguyen	tristan.nguyen@navy.mil

Thrust Description	Sub-area	BAA Paragraph Reference	Thrust Manager	Email
Automated Information Integration	N/A	6.5.2	Dr. Gary Toth	gary.toth@navy.mil
Automated Information Integration	Uncertainty Management and Data Refinement	6.5.2.1	Dr. Wendy Martinez	wendy.martinez@navy.mil
Automated Information Integration	Inference Engines and Knowledge Bases	6.5.2.2	Dr. Tristan Nguyen	tristan.nguyen@navy.mil
Automated Information Integration	Predictive Situation Assessment to Provide Impact Assessment	6.5.2.3	Dr. Wendy Martinez	wendy.martinez@navy.mil
Automated Information Integration	Information Integration Optimization	6.5.2.4	Dr. Donald Wagner	don.wagner@navy.mil
Automated Information Integration	Automated SIGINT Understanding	6.5.2.5	Dr. Tristan Nguyen	tristan.nguyen@navy.mil

Questions of a ***business nature*** shall be directed by email to the primary and secondary points of contact as specified below:

Primary Point of Contact

Ms. Kenesha Y. Hargrave
Contract Specialist
Contracts and Grant Awards Management, Code 0251
kenesha.y.hargrave@navy.mil

Secondary Point of Contact

Ms. Vera M. Carroll
Contracting Officer/Branch Head
Contract and Grants Awards Management, Code 0251
vera.carroll@navy.mil

8. Instrument Type

Awards resulting from this announcement will be in the form of contracts.

9. Catalog of Federal Domestic Assistance (CDFA) Number

12.630

10. Catalog of Federal Domestic Assistance (CDFA) Title

Basic, Applied, and Advanced Research in Science and Engineering

11. Other Information

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

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

II. AWARD INFORMATION

The Office of Naval Research (ONR) plans to award multiple technology development contracts (particularly cost plus fixed fee (CPFF) type contracts) to those proposals that represent the best value to the Government in accordance with the evaluation criteria. The Office of Naval Research is seeking participants for this program that are capable of supporting the goals described in this announcement. Offerors have the opportunity to be creative in the selection of the technical and management processes and approaches to address the thrust areas.

This Program is expected to last for three (3) years. The Office of Naval Research plans to fund development contracts with a combination of Basic, Applied Research and Advanced Technology Development funds (Budget Categories 6.2 & 6.3). It is anticipated that there will be funding available in the amount of $2 million per year. It is anticipated that the average award will be in the range of $150,000-$300,000 per year, although lower and higher proposals will be considered. ONR expects to make multiple awards based on its available budget and the responsiveness of the efforts to the program goals. Proposed work should be structured for a one (1) to three (3) year period that shall include a base performance period of twelve months. The proposal may also include one or two 12-month options. The estimated date for contract award is on or about 31 October 2008.

ONR has funded related information technology development under numerous programs. Proposals that build on current or previous DoD work are encouraged. If an offeror is enhancing work performed under other ONR or DoD projects, it must clearly identify the point of departure and what existing work will be brought forward and what new work will be performed under this BAA.

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 encouraged to 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

The Application and Submission Process consists of white papers, oral presentations and full proposals. If an Offeror does not submit a white paper before the due date and time, it is not eligible to participate in the rest of the process.

a. Website for the Computational Framework and Methods for Rapid Accurate Decision-Making Program:

The Computational Framework and Methods for Rapid Accurate Decision-Making website http://www.onr.navy.mil/decision-making-09/is dedicated to this BAA and will be the primary means of publicizing all relevant information that is specific to this BAA. All interested parties are encouraged to visit this website regularly.

b. Industry Day Briefing:

ONR will conduct an Industry Day Briefing for potential offerors. It is tentatively scheduled for Monday, 17 March 2008. The purpose of the briefing is to provide potential offerors with a better

understanding of the program. For the location and time, refer to the Framework and Methods for Rapid Accurate Decision-Making website. http://www.onr.navy.mil/decision-making-09/

Registration: Interested offerors MUST register for the Industry Day Briefing at the website http://www.onr.navy.mil/decision-making-09/. No substitutions in the attendee list are allowed after the registration deadline. If requested attendance exceeds capacity, it may be necessary to limit attendance of personnel from each organization, and organizations will be so notified.

If Not Able to Attend: Those not able to attend this briefing should consult the Computational Framework and Methods for Rapid Accurate Decision-Making website to see briefing slides and answers to written questions submitted during the event. Please continuously view the Framework and Methods for Rapid Accurate Decision-Making website http://www.onr.navy.mil/decision-making-09/ for updated information.

c. White Papers:

Submission: The due date for white papers is no later than 2:00 p.m. Eastern Time (ET) Thursday, 17 April 2008. Each unclassified white paper should state that it is submitted in response to this announcement and: (1) identify the thrust(s) and sub-area(s) to which the response is applicable; and (2) provide the offeror's phone number and e-mail.

Evaluation/Notification: White papers will be evaluated to determine whether an offeror is selected to make an oral presentation of its white paper to a panel of government evaluators. The process for oral presentations is described below. Oral presentations will be scheduled for those offerors who have been notified by e-mail that their proposed technologies appear to be of "particular value" to the Navy. Selection of white papers considered as being of "particular value" will be announced on or about Monday, 28 April 2008. However, any such encouragement does not assure a subsequent award. Those white papers not selected for oral presentations will not be considered further under this announcement.

Notes:

- White papers exceeding the page limitation may not be evaluated.
- Should an offeror's email change after submission, it is the responsibility of the offeror to notify the program manager of the change to ensure receipt of critical process e-mails.

d. Oral Presentations

The purpose of the oral presentation is to better acquaint the Government with the Offeror's proposal, especially its understanding of how the proposed technology will affect military applications.

Invitation Process: Offerors whose white papers are selected for oral presentations will be invited by e-mail not less than five (5) working days prior to the commencement of the unclassified oral presentation event. This event is tentatively planned for the week of 12 May 2008.

Process: A detailed format for the presentation will be provided in the e-mail invitation. Each presentation will be no longer than twenty (20) minutes in duration. An additional ten (10) minutes will be allowed for questions (if any) from the panel of government reviewers. Offerors will be required to submit their oral presentation materials to the government PRIOR to the presentation as specified in the invitation email.

Notification/Evaluation: Those offerors whose technology is still considered as having "particular value" to the Navy will be encouraged to submit detailed technical and cost proposals. Notice of encouragement to submit full proposals will be issued on or about Monday, 2 JUNE 2008. However, such encouragement after oral presentations does not assure a subsequent award. If the Offeror receives notification that its technology was not considered as having "particular value" to the Navy, it cannot submit a full proposal. Full proposals will not be considered under this BAA unless both a

white paper was received by the due date specified above and a presentation was made during the Oral Presentation event.

Policy Towards Reimbursement of Oral Presentation Costs: The Office of Naval Research will not reimburse preparation costs, travel costs and time for potential bidders to brief their proposals.

Notes:

- Offerors may not be allowed to participate in the oral presentations if materials are received late (as described in the invitation email), and the project will not be considered further.
- Should an offeror's email change after submission, it is the responsibility of the offeror to notify the program manager of the change to ensure receipt of critical process emails.

d. Full Proposals

Submission: The due date for receipt of Full Proposals is 2:00 p.m. Eastern Time (ET) Monday, 16 JUNE 2008.

Notification: It is anticipated that final selections will be made on or about Friday, 18 July 2008. As soon as the final proposal evaluation process is completed, each offeror will be notified via email of its selection or nonselection for an award.

2. Content and Format of White Papers/Full Proposals

White Papers, Oral Presentation Materials, and Full Proposals submitted in response to this BAA must be unclassified. However, performance under the awarded contracts may require access to classified data.

White Paper, Oral Presentation, and Full Proposal submissions will be protected from unauthorized disclosure in accordance with FAR 15.207, applicable law, and DoD/DoN regulations. Offerors are expected to appropriately mark each page of their submission that contains proprietary information.

White Papers and Full Proposals exceeding any of the page restrictions may not be reviewed. White Papers and Full Proposals sent by fax or e-mail will not be considered. White papers and Full Proposals that are hand carried will not be considered. Oral Presentation materials not conforming to the specifications within the Email notification may not be accepted.

Important Note about Project Titles: 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.

a. 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
- *Number of pages* – not to exceed ten (10) pages, as described in the "White Paper Content" section below
- *Copies* – one (1) original, three (3) hard copies, and one electronic copy on CD-ROM (in Microsoft® Office Word, Excel or Adobe Acrobat .pdf format)

White Paper Content

- **Cover Page**: The Cover Page shall be labeled "PROPOSAL WHITE PAPER"; and shall include the BAA number, proposed title, Offeror's administrative and technical points of contact, with telephone numbers, facsimile numbers, and Internet addresses; and shall be signed by an authorized officer. This shall only be one (1) page.

- **Abstract**: A very brief description of the technology including goals and objectives and technology/thrust areas to be addressed. This section shall be no more than one (1) page.

- **Technical Concept**: A description of the technology innovation, the Program thrust(s) addressed (described in Section I paragraphs 6.4 and 6.5), and technical risk areas. This section shall not exceed six (6) pages. Include a detailed listing of the technical tasks/subtasks organized by year. Relate the product that results from the task/subtask, and briefly state metrics that will be met as a result of the task/subtask. In presenting the technical concept, the offeror should explain how the technology proposed is relevant to the operational context.

- **Deliverables:** Deliverables to be available for experimentation and final project deliverables shall be specifically described, including a description of proprietary components and an assertion of any data rights applicable to the deliverables. This section shall be no more than one (1) page in length.

- **Costs:** A one (1) page summary of costs segregated by both task and year.

b. Full Proposals

Full Proposal Format – Volume 1: Technical Proposal 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 twenty five (25) pages. Limitations within the Technical Proposal are indicated in the individual descriptions as described in the "Full Proposal Content" section below. The cover page, table of contents, abstract, executive summary, and resumes are excluded from the page limitations. Full proposals exceeding the page limitation may not be evaluated.
  - Volume 2 has no page limitations.

- *Copies* – one (1) original, three (3) hard copies, and one electronic copy on CD-ROM (in Microsoft® Office or Excel or Adobe Acrobat .pdf format).

Full Proposal Content

VOLUME 1: Technical Proposal

Volume 1 of the full proposal shall include the following sections, each starting on a new page. Sections not included in the page limitation are annotated below. Please pay attention to the page limitations for each section as described below.

- **Cover Page**: *(Not included in page limitations)* This should include the words "TECHNICAL PROPOSAL" and the following:

(a) BAA Number
(b) Title of Proposal
(c) Technology/thrust area to which the proposal is applicable and component of the technology/thrust interest area if the proposal is limited to a component.
(d) Identity of Prime Contractor and Complete List of Subcontractors, if applicable
(e) Technical Point of Contact (name, address, phone/fax, & e-mail address)
(f) Administrative/Business Point of Contact (name, address, phone/fax, & e-mail address)
(g) Duration of Effort and gross proposed cost by government fiscal year (differentiate basic effort and any options)

- **Table of Contents** *(Not included in page limitations)* This should address the contents of the proposal only, generally by section.
- **Abstract:** *(Not included in page limitation)* A brief description of the proposal including goals and objectives, and technology/thrust areas to be addressed.
- **Executive Summary:** *(Three (3) page maximum)* A brief summarization of the proposal including the primary areas described below. Emphasis is on the technology in support of FORCEnet, Spiral Development, integration, transition, and relation to other current programs. Finally, a brief statement why your organization would provide the best value to the government for the particular project.
- **Statement of Work**: *(Three (3) pages maximum)* 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, such proposals must include a severable self-standing SOW without any proprietary restrictions, which can be included as an attachment to any resultant contract. When Options are contemplated, the SOW must clearly identify the tasks by separate optional task areas. Similarly, the SOW must include a section listing all the deliverables such as hardware, software, source code, executable code, pseudo code, etc, along with the reporting requirements.
- **Project Schedule and Milestones:** *(One (1) page maximum)* A summary of the schedule of events and milestones, with experimentation milestones clearly indicated.
- **Assertion of Data Rights and/or Rights in Computer Software:** *(One (1) page maximum)* 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**: *(Two (2) pages maximum)* A detailed description of the results and items to be delivered, including experimentation articles inclusive of the timeframe in which they are to be delivered. Reports and technical items resulting from meetings shall be listed as deliverables (see Section VI, paragraph 2 for required reports and meetings).
- **Management Approach:** (*Three (3) pages maximum)* A discussion of the overall approach to the management of this effort, including brief discussions of the total organization, use of personnel; project/function/subcontractor relationships; government research interfaces; and planning, scheduling and control practice. Identify which personnel and subcontractors (if any) will be involved. Include a description of the facilities that are required for the proposed effort with a description of any Government Furnished Equipment/Hardware/Software/Information required. The management plan

should show the significant milestones of the technology development process. It should include obligation to provide reporting (Section VI, paragraph 2) and support meetings (Section VII, paragraph 3).

- **Technical Approach:** *(Ten (10) pages maximum)* The offeror shall provide a detailed plan that coherently describes the technical approach proposed for contract performance which demonstrates a technical understanding of the proposed Statement of Work (SOW). The technical approach should address each of the numbered task areas delineated in the SOW providing specific or unique techniques to be employed and anything else the offeror considers relevant in performing the SOW. The technical approach should indicate how the work will be performed, including the capabilities and resources which will be applied, what problem areas exist, the proposed solutions and a full explanation of the proposed disciplines, procedures and techniques to be followed. Emphasis should be placed upon the extent that the offeror's technical approach ensures timely delivery, and successful completion of the tasks outlined by the SOW submission.
- **Personnel:** The offeror shall provide resumes of proposed key personnel to be utilized by the contractor/subcontractor in the performance of this contract. The offeror shall ensure that the proposed personnel are fully capable of performing in an efficient, reliable and professional manner. Upon review of the resumes, if the Government questions the qualifications or competence of any person performing under this contract, the burden of proof to sustain that person's qualifications shall be upon the offeror.
- **Past Performance:** *(Two (2) pages maximum)* Past performance will consist of a description of the offeror's Government contracts (both prime and major subcontracts (those involving 25% or more of the effort)) received during the past three (3) years), which are similar to the effort being proposed. The offeror may describe any quality awards or certificates that indicate the offeror possesses a high quality process for providing desired research and development outcomes.
- **Other Agencies:** *(Not included in page limitation)* Include the name(s) of any other agencies to which the proposal has also been submitted.

VOLUME 2: Cost Proposal

The cost proposal shall consist of a cover page and two parts, Parts 1 and 2. Part 1 will provide a detailed cost breakdown of all costs by cost category and by government fiscal year for the base and each proposed option (if applicable), and Part 2 will provide a cost breakdown by task/sub-task using the same task numbers in the Statement of Work for the base and each proposed option (if applicable). All Options must be separately priced. There is no page limitation on the cost proposal.

Although not required and provided for informational purposes only, detailed instructions, entitled "Instructions for Preparing Cost Proposals for Contracts and Agreements", including a sample template for preparing costs proposals for contracts 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

Cover Page: The words "COVER PAGE" should appear on the cover page in addition to the following information (the use of SF 1411 is optional):

- BAA Number
- Title of Proposal
- Identity of Prime Offeror and Complete List of Subcontractors/Sub-Recipients (if applicable)
- Technical Point of Contact (name, address, phone/fax, E-mail address) and Business Point of Contact (name, address, phone/fax, E-Mail address)
- Duration of Effort (differentiate basic and options)
- Summary Statement of Proposed Costs; and
- Cognizant DCAA and DCMA Points of Contact, Address, Phone/Fax, E-mail address (if readily available)

Part 1: Detailed breakdown of costs by cost category by offeror's calendar/fiscal year (when options are contemplated, options must be separately identified and priced by calendar/fiscal year)

- *Direct Labor* – Individual labor categories or person with associated labor hours and unburdened direct labor rates;
- *Indirect Costs* – Fringe Benefits, Overhead, G&A, COM, etc. (must show base amount and rate);
- *Proposed government-furnished equipment or facilities* such as satellite transmission time, use of ships, aircraft, or submarines in demonstration or other appropriate experimentation, or use of Naval laboratory or test facilities. Equipment and facilities generally must be furnished by the contractor/recipient. Justifications must be provided when Government funding for such items is sought.
- *Travel* – Number of trips, destinations, durations, etc
- *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 envelop with the Offeror's cost proposal or will be obtained from the subcontractor prior to award;
- *Consultant* – Provide consultant agreement or other documentation which verifies the proposed loaded daily/hourly rate;
- *Materials* – Specifically itemized with costs or estimated costs. An explanation of any estimating factors, including their derivation and application, shall be provided. Include a brief description of the Offeror's procurement method to be used (competition, engineering estimate, market survey, etc.)
- *Other Direct Costs* – particularly any proposed items of equipment or facilities. Equipment and facilities generally must be furnished by the contractor/recipient. (Justifications must be provided when Government funding for such items is sought). Include a brief description of the Offeror's procurement method to be used (competition, engineering estimate, market survey, etc,)
- Proposed Fee/Profit, including fee percentage.

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

3. Significant Dates and Times

ANTICIPATED SCHEDULE OF EVENTS		
Event	**Date**	**Time**
Pre-Proposal Conference/Industry Day	17 March 2008	12:00 PM ET
White Paper Due Date	17 April 2008	2:00 PM ET
Notification of Initial Navy Evaluations of White Papers	28 April 2008 *	N/A
Oral Presentation of White Papers	Week of 12 May 2008, exact date TBD	TBD
Notifications of Navy Evaluations of Oral Presentations	2 June 2008 *	N/A
Full Proposal Due Date	16 June 2008	2:00 PM ET
Notification of Selection for Award	18 July 2008 *	N/A
Contract Awards	31 Oct 2008 *	N/A

** These dates and times are estimates as of the date of this announcement. For the date and times, please refer to the Computational Framework and Methods for Rapid Accurate Decision-Making website.*

ET = Eastern Time
TBD = To Be Determined
N/A = Not Applicable

NOTE: Due to the changes in security procedures since September 11, 2001, the time required for hand-copy written materials to be received at the Office of Naval Research has increased. Thus it is recommended that any hard-copy proposal be mailed several days 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

In accordance with FAR 15.208, 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

(a) 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

(b) There is acceptable evidence to establish that it was received at the Government installation designed for receipt of proposals and was under the Government's control prior to the time set for receipt of proposals; or

(c) 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 extend 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. Address for the Submission of Hard CopyWhite Papers, Oral Presentation Materials, and Full Proposals:

Offerors shall submit the white papers, oral presentation materials and full proposals in hard copy to the specified primary address below. If timely delivery to the primary address proves difficult, delivery can be made to the secondary address.

Primary	Secondary
Office of Naval Research One Liberty Center 875 North Randolph Street, Suite 1181 Arlington, VA 22203-1995 Attn: Code 311: Dr. Gary Toth Telephone Number (if required for Deliveries) 703-696-4961	Office of Naval Research One Liberty Center 875 North Randolph Street, Suite 1177 Arlington, VA 22203-1995 Attn: Code 311: Dr. Wendy Martinez Telephone Number (if required for Deliveries) 703-696-4320

NOTE: SUBMISSIONS SENT BY FAX OR E-MAIL WILL NOT BE CONSIDERED.

V. EVALUATION CRITERIA

The Office of Naval Research plans to make multiple awards depending on their value to the Government in accordance with the evaluation criteria listed below. The following evaluation criteria apply to the White Papers, Oral Presentations and the Full Proposals.

Proposals will be selected through a technical/scientific/business decision process with technical and scientific considerations being more important. Even though cost is of less importance than the technical factors combined, it will not be ignored. The degree of its importance 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 technical superiority to the Government. The technical factors A through D are listed in descending order of importance. The sub-criteria, i.e., the "numbered" items within each of the lettered paragraphs, are of equal importance.

A. *Overall scientific and technical merits of the proposal*

1. The degree of innovation and ability to deliver technology that will improve warfighting capabilities.
2. The soundness of technical concept.
3. The offeror's awareness of the state of the art and understanding of the scope of the problem and the technical effort needed to address it.
4. The extent to which the government will have full intellectual property rights, or at least unlimited government purpose intellectual property rights, to the deliverables received. If the proposal includes proprietary restrictions on government use of intellectual property, the proposal shall show how components with restricted intellectual property rights maybe integrated into a Service Oriented Architecture.

B. *Naval relevance, anticipated contributions of the proposed technology to FORCEnet and network centric warfare operations, and transition potential (to the extent possible)*.

The proposal will also be evaluated on the degree to which it shows the connection between the proposed technology development and the operational context document.

C. *Offeror's capabilities, related experience, and past performance, including the qualifications, capabilities and experience of the proposed principal personnel*.

1. The quality of technical personnel proposed is to perform the work proposed.
2. The offeror's experience in relevant efforts with similar resources.
3. The ability to manage the proposed effort.

D. *Management Plan.*

The Management Plan is not required in the white paper or for the oral presentations. However, the Management Plan is required for the Full Proposal and will be evaluated in accordance with the following criteria:

1. Plan is in milestone format with succinct factual description of how achievement of milestones will be managed.
2. Relationship between cost and milestone achievement is defined.
3. Estimate of technical, schedule and cost risk is stated with risk management plan provided.

E. *The Realism of the Proposed Cost.*

1. Total cost relative to benefit.
2. Realism of cost levels for facilities and staffing.

For proposed awards to be made as contracts to large 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.

Evaluation of Options: The Government will evaluate options for award purposes by adding the total cost for all options to the total cost for the basic requirement. The evaluation of options will not obligate the Government to exercise the option(s).

2. Evaluation Panel

White papers, oral presentation materials, and full proposals submitted under this BAA will be protected from unauthorized disclosure in accordance with FAR 3.104-5 and 15.207. Potential Offerors should understand that government technical experts drawn from the Office of Naval Research, the Naval systems commands, Navy warfare centers, the Naval Research Laboratory (NRL), and other Naval and Defense activities/agencies will evaluate the white papers, oral presentations, and full proposals.

The Government may use selected support personnel as subject matter expert technical consultants to assist in providing both technical expertise and administrative support regarding white papers, oral presentation materials, and full proposals resulting from this announcement. Similarly, support contractors may be utilized as subject matter experts in the evaluation of cost proposals. However, proposal selection and award decisions are solely the responsibility of Government personnel. Each

support contractor's employee having access to the submissions in response to this BAA will be required to sign a non-disclosure agreement prior to receipt in order to protect proprietary and source-selection information.

VI. AWARD ADMINISTRATION INFORMATION

1. Additional Requirements

- *North American Industry Classification System (NAICS) Code* – The North American Industry Classification System (NAICS) Code for this solicitation is 541710 with a small business size standard of 500 employees.

- *CCR* - Successful Offerors not already registered in the Central Contractor Registry (CCR) will be required to register in CCR prior to award of any grant, contract, cooperative agreement, or other transaction. Information on CCR registration is available at http://www.onr.navy.mil/02/ccr.htm.

- *Certifications* - In accordance with FAR 4.1201, prospective contractors shall complete and submit electronic annual representations and certifications at http://orca.bpn.gov. The Online Representations and Certifications Application (ORCA) must be supplemented by the DFARS and contract specific representations and certifications found at http://www.onr.navy.mil/02/rep_cert.asp.

- *Subcontracting Plans* – Successful contract proposals that exceed $550,000, submitted by all but small business concerns, will be required to submit a Small Business Subcontracting Plan in accordance with FAR 52.219-9.

2. Deliverables/Reports

The following is a sample of deliverables that could be required under a research effort. The following deliverables, primarily in contractor format, are anticipated as necessary.

- Software
- Software source codes
- Software executable codes
- Application Programming Interface (API)
- User manuals
- Software functional description document
- Software configuration description
- Software installation manuals
- Executable or binaries complete with software libraries
- Execution plan
- Technical Progress reports at regular time intervals (monthly or quarterly, but not both) as specified in the award document, including detailed technical data, algorithms, software (source code, executable code, pseudo code, etc. cross referenced to the applicable deliverable.)
- Financial progress reports at regular time intervals as specified in the award document.
- Presentation Material(s)
- Other Documentation or Reports
- Final Technical Report

However please note that specific deliverables (that may include software and hardware deliverables) should be proposed by each Offeror and finalized during negotiations.

VII. OTHER INFORMATION

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

Each Offeror 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 proposed to be purchased for this effort. It is the Government's desire to have the contractors purchase the equipment/hardware for deliverable items under their contract. 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 included in the offeror's proposal and approved in advance by the cognizant Government official. After contract award, requests to use integration, test, and experiment facilities will be considered on a case by case basis based on availability and justification of need.

2. Security Classification

ONR will accept only unclassified proposals. The proposal shall include a severable, self-standing Statement of Work, which contains only unclassified information and does not include any propriety restrictions as described in Section IV, paragraph 2.

In order to facilitate intra-program collaboration and technology transfer, the Government will attempt to enable awardees to work at the unclassified level to the maximum extent possible. However, access to and storage of some classified information may be required under this program. Awardees must be specific as to max level of classification and location of work.

If awardees use unclassified data in their deliveries and experimentation regarding a potential classified project, they should use methods and conventions consistent with those used in classified environments. Such conventions will permit the various subsystems and the final system to be more adaptable in accommodating classified data in the transition system.

3. Project Meetings and Reviews

Individual reviews between the ONR sponsor and the performer may be held as necessary. Status reviews may also be held to provide a forum for reviews of the latest results from experiments and any other incremental progress. These meetings will be held at various sites throughout the country. For costing purposes, Offerors should assume that 20% of these meetings will be at or near ONR, Arlington VA and 80% 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.

4. DFARS 252.204-7000 Disclosure of Information and Information Releaseability

DFARS Clause 252.204-7000 entitled "Disclosure of Information" will be incorporated into all resulting contracts under this BAA. Due to the potential sensitivity of the release of unclassified information regardless of the medium used, all information/data must be approved by the Program Officer PRIOR the public release of any and all information generated under resulting contracts and/or related to this program.

5. Department of Defense High Performance Computing Program

The DoD High Performance Computing Program (HPCMP) furnishes the DoD S&T and DT & 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. Use of Animals and Human Subjects in Research

If animals are to be utilized in the research effort proposed, the Offeror must complete a DOD Animal Use Protocol with supporting documentation (copies of AALAC accreditation and/or NIH assurance, IACUC approval, research literature database searches, and the two most recent USDA inspection reports) prior to award. For assistance with submission of animal research related documentation, contact the ONR Animal/Human Use Administrator at (703) 696-4046.

Similarly, for any proposal for research involving human subjects the Offeror must submit prior to award: documentation of approval from an Institutional Review Board (IRB); IRB-approved research protocol; IRB-approved informed consent form; proof of completed human research training (e.g., training certificate or institutional verification of training); an application for a DoD Navy Addendum to the Offeror's DHHS-issued Federalwide Assurance (FWA) or the Offeror's DoD Navy Addendum number. In the event that an exemption criterion under 32 CFR.219.101(b) is claimed, provide documentation of the determination by the Institutional Review Board (IRB) Chair, IRB Vice Chair, designated IRB administrator or official of the human research protection program. Information about assurance applications and forms can be obtained by contacting ONR_343_contact@navy.mil . If the research is determined by the IRB to be greater than minimal risk, the Offeror also must provide the name and contact information for the independent medical monitor. [Note: for research involving human subjects that is greater than minimal risk, administrative procedures to protect human subjects from medical expenses (not otherwise provided or reimbursed) that are the direct result of participation in a research project must be addressed. Additional supporting documentation may be requested. For additional information on this topic, email ONR_343_contact@navy.mil.] For assistance with submission of human subject research related documentation, contact the ONR Animal/Human Use Administrator at (703) 696-4046.

7. Organizational Conflict of Interest

The parties acknowledge that, during performance of the contract resulting from this BAA, the Contractor 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 Contractor 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 Contractor 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 Contractor personnel who do not need to know the contents thereof for the performance of the contract. Contractor 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.

8. Computational Framework and Methods for Rapid Accurate Decision-Making Website

The Computational Framework and Methods for Rapid Accurate Decision-Making website http://www.onr.navy.mil/decision-making-09/ and the ONR website (http://www.onr.navy.mil) provide additional information related to this BAA and will be the primary means of publicizing all relevant information concerning this BAA. All interested parties are encouraged to visit both websites regularly.