



## **BROAD AGENCY ANNOUNCEMENT (BAA)**

### **Research Tools Design Consortia**

#### **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.

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

#### **I. GENERAL INFORMATION**

##### **1. Agency Name**

Office of Naval Research  
Contract and Grants Awards Division  
Ballston Centre, Tower One  
800 N. Quincy Street  
Arlington, VA 22217-5660

**2. Research Opportunity Title**

Research Tools Design Consortia

**3. Program Name**

N/A

**4. Research Opportunity Number**

BAA 04-024

**5. Response Date**

White Papers: 22 SEP 2004 4:00 PM EST  
Full Proposals: 18 NOV 2004 4:00 PM EST

**6. Research Opportunity Description**

**Synopsis.** The Office of Naval Research (ONR 331) seeks white papers describing the development of innovative research tools to address future Naval/DoD capabilities and needs. A research tool is broadly defined as a methodology, model, instrument or fundamentally new concept that will shape how the scientific community approaches future research problems, develops experimental approaches and/or implements new ideas into practical systems. The design aspect of the research tool will focus on identification of the critical elements of the research tool that will allow for its broad implementation. The consortium will consist of a group of researchers who provide complementary skills for identification and advancement of the research tool. Collectively, the synergy among members of this consortium will yield an enhanced scientific capability in an accelerated time frame.

In the first phase of this program, emphasis will be placed on modeling and simulation tools, development of system analysis tools that combine tradeoffs between hardware and software, interfacial probes and processes, analytical methodologies and controllers, and engineered materials methods (see detailed description below). Cross-disciplinary efforts are encouraged. Proposals from teams of investigators are expected because the necessary expertise in addressing the multiple facets of the topics may reside in different institutions or in different departments in the same institution. Relevant single investigator proposals will also be accepted, but these efforts will be required to integrate with other teams and researchers to maintain the spirit and goals of the consortia. ONR encourages teaming of academia, industry, and government laboratories with a view toward speeding the transition of new science and technology into fielded systems.

The following topic areas will be emphasized during the first phase of this program. Additional areas may be added in future years.

**Modeling and Simulation Tools.** This topic area focuses on the development of advanced computational methods for studies of chemical reactions and charge transfer processes to realize materials with tailored chemical composition. In addition, tools to describe and predict the evolution

and distribution of critical structural features, enabling the design of functional and structural materials systems optimized for specific applications, operational environments, and anticipated degradation and failure modes are envisioned. Ultimately it is desirable to combine both the equilibrium and non-equilibrium methods to allow for design of materials and systems for anticipated applications and environments.

*Chemical Dynamics.* Over the past 30 years, the availability of reliable computational power to analyze and predict molecular and thermodynamic properties of arbitrary molecules using time-independent quantum chemistry has grown explosively. It is now possible to calculate accurate thermodynamic quantities and predict spectra. On the other hand, the much more difficult problem of reliably computing reaction rate and transport properties has not reached the same level of general applicability for arbitrary molecular systems. The implications for all aspects of chemical and materials research are enormous; catalysis, the tailoring of chemical reactions at will, is the key to control of a vast number of syntheses and systems. Chemical dynamics also serves as the interpretive tool for ultrafast spectroscopies. There is therefore a need to advance and mature theory and computational capability for chemical reaction rates and ultrafast spectroscopy at the quantum mechanical level. The particular areas most directly impacted by the anticipated advances will be in the understanding and design of energetic materials, designer enzymes, catalysis for advanced materials synthesis and optimization.

*Dynamic Three-Dimensional Command of Materials Structure.* Structure controls the properties of materials and devices. Depending on the material properties or behavioral responses of interest, the critical physical parameter might be best described at the molecular, nano-, micro- or meso-scale. Recent efforts to capture these relationships in predictive models that link structure, properties and behavior through various length and time scales are changing the way we consider anticipate and exploit materials capabilities. These successes are also illustrating the fundamental need to describe and predict not only the static, thermodynamically favored structures but also the metastable structures that define realistic materials as they are processed and used in service. As an example for metallic systems, such a tool would capture the time-dependent evolution of phases and extrinsic effects; interfaces between phases (grain boundaries, coherent and incoherent interfaces with precipitates, etc.) and within phases (stacking faults, dislocations, local influences of impurities or non-stoichiometric composition, etc.); and the dynamic interactions between features in complex, multi-scale systems. This "digital microstructure" would capture the statistical nature of feature evolution, and therefore provide the probabilistic distribution of characteristics that quantitatively describe microstructure, that could in turn be engaged by predictive models that anticipate design limits and failure mechanisms. It is anticipated that the development of a realistic, PC-executable tool would require the concerted efforts in several disciplines: materials science, solid state physics, chemistry, mathematics, and computer science.

**Systems Engineering Optimization Tool.** The design and engineering of complex systems based on rapidly changing technologies continues to be a challenge. Design of future Naval platforms is ultimately the complex integration of a variety of heterogeneous systems (i.e. electrical systems, mechanical systems, weapons systems, human interfaces, etc.). The availability of tools to optimize the "system of systems" is viewed as a key enabler to achieve new capability, reduced cost and reduced design times. The capability to simultaneously consider optimization tradeoffs of both hardware and software technologies will be a key element of design of this "system of systems". This effort seeks to bring together an interdisciplinary team of systems engineers, software designers, and hardware developers to develop a new tool to design and optimize a complex system based on integration of both engineering and software systems. This effort seeks the development of system analysis tools that combine tradeoffs between hardware- and software- based technologies. Ultimately we envision a tool that is flexible in use for design of a variety of platforms and engineered system.

**Interfacial Probes and Processes.** This topic area focuses on the development of new techniques for obtaining high quality three-dimensional images of chemical and electrochemical processes at nanostructured interfaces and high temperature, as well as tools to understand and optimize the communication across inorganic-organic/polymer interfaces at different length scales.

*High Temperature Probes.* The ability to image interfaces at high temperature is viewed as a fundamental roadblock to understand and ultimately control reactions in these structures for future materials investigations. For example, development of high temperature (>500 deg. C) solid oxide fuel cells is hampered by a lack of understanding of the complex interplay between gas-phase processes and reactions at the triple-phase boundary (between the gas phase, the anode material, and electrolyte). As the fuel moves down the fuel cell channel, its composition changes dramatically as reactions occur, some of which are beneficial to the fuel cell (hydrogen formation and oxidation to provide electrons/output energy) and some of which are detrimental (coke formation, catalyst poisoning by undesired gas-phase species). Methods for in situ 3-D imaging throughout the fuel cell stack would enable better mechanistic understanding of local effects that are beneficial or detrimental and how they propagate through the system and provide insight into how to design and control macroscopic devices that operate at high temperature and are based on nanoscopic phenomena.

*Interfacial Communications.* Composite materials where both components, organic/polymer and inorganic, are functionally active, and communication (electronic, photonic, phononic, or chemical) across the interface is an essential constituent of the value added of the composite. Advanced inorganic-organic/polymer composite materials are being developed whose intrinsic mechanical, electronic, photonic, or chemical performance is enabled or enhanced by the incorporation of nanoscale features. These materials share a common attribute, namely a high surface-to-volume ratio, and may take the form of bulk or thin film. Examples include, but are not limited to, conducting semiconductor-organic/polymer composites for thermoelectrics, templated nanowire arrays for thermoelectrics and sensors, optically active composites, et al. The development of innovative methodologies for multi-functional composites and modeling and characterization tools is encouraged.

**Analytical Methodologies and Controllers.** This area seeks to provide broad impact on both new analytical techniques and sampling methods as well as addressing Navy/DoD interest in new approaches to chemical and biological sensing. The former will focus on coupling new separation and sampling methods with ultrasensitive detection, while the latter will provide alternative means to deliver detectors to the field in the form of UAV's controlled by non-linear methods.

*Sampling Methodologies.* Many ultrasensitive chemical detection methodologies currently being developed have sensitivities approaching the single molecule level. However, sampling technologies are required to apply these detection capabilities in real-world environments. Improved methods for extracting and concentrating trace amounts of chemical species from complex environmental samples will provide an enabling tool for both evaluation and implementation of existing and future detection technologies. The marriage and success of next generation sampling/separation methods with ultrasensitive detection will provide obvious benefits and applications in remote sensing, early detection and force protection. It is also envisioned that these technologies, such as next generation chromatographic techniques, will become part of standard analytical methods for widespread use in laboratories for both chemical and biological research.

*Non-linear Control.* New concepts are required to provide dynamic control of the next generation controllers for autonomous vehicles on land, sea, and air. Such systems provide a unique opportunity to deliver the detector to sampling areas of interest. Developing a non-linear dynamics tool set to control these systems would greatly enhance our ability to provide stand-off detection. However, understanding the spatio-temporal dynamics of an array of coupled nonlinear oscillators, where each individual oscillator can exhibit a wide range of dynamical behaviors, including chaotic oscillations, remains a scientific challenge. This dynamics can include emergent global pattern formation, including varieties of synchronization. One approach to circuit design can involve the mapping of neural circuits in the brain and their fabrication as electronic chips. In these arrays, a possible approach, for decision-making in response to stimuli, is to explore novel computing employing dynamical logic gates. The circuits will possess a variety of nonlinear dynamical behaviors in response to sensor inputs. They can be all electronic or a combination of living neurons with electronics. A goal is the design of intelligent controllers for actuators governing the movements of UAV's, UUV's, and for land-based robots which employ nonlinear dynamical responses to stimuli to "recognize" patterns in the input and respond accordingly.

**Engineered Materials Methods.** This topic area focuses on the development of advanced tools for the design, assembly, and analysis of materials engineered to have electromagnetic or acoustic bandgaps.

*Electromagnetic and Acoustic Bandgap Materials.* Photonic crystals and related materials, such as negative refractive index materials, have emerged as important new materials for controlling electromagnetic wave propagation. Novel applications involving bending, splitting, and even stopping light inside a photonic crystal are being investigated for future radars, sensors, and communication devices. Control of electromagnetic properties at infrared wavelengths will enable enhanced infrared sensors and thermal management systems using surfaces with tunable infrared emissions. Similar phenomena have been demonstrated for sound waves. The ability to control phonon propagation would have a profound impact on future acoustically absorbing coatings and thermal transport. Most of these devices make use of two-dimensional bandgap crystal fabricated using traditional lithographic techniques. On the other hand, three-dimensional materials require laborious layer-by-layer techniques making the fabrication of bulk materials expensive. Minimizing loss and increasing operating frequency range will require new techniques to fabricate bulk materials with nanometer spatial control in all three dimensions. Since bandwidth is limited by resonant conditions in these crystals, novel approaches are needed to realize bandgap materials with large bandwidths. Associated modeling and analysis tools are also needed to develop the next generation of optical devices. This announcement is not a solicitation for technical, engineering, or other types of support services nor for the development of a specific system or hardware procurement.

## **6. Points of Contact**

Questions of a technical nature shall be directed to the cognizant Science and Technical Point of Contact, as specified below:

Dr. Mark S. Spector  
Physical Sciences S&T Division  
ONR 331  
Office of Naval Research  
Ballston Centre Tower One  
800 North Quincy Street  
Arlington, VA 22217-5600  
Telephone: (703) 696-4449  
Fax: (703) 696-6887  
Email: spectom@onr.navy.mil

Questions of a business nature shall be directed to the cognizant Contract Specialist, as specified below:

Ms. Susan Parrott  
Contract Specialist  
Contract and Grant Awards Management  
ONR 254  
Office of Naval Research  
Ballston Centre Tower One, Room 720  
800 North Quincy Street  
Arlington, VA 22217-5660  
Telephone: (703) 696-1356  
Fax: (703) 696-0993  
Email: susan\_parrott@onr.navy.mil

*Important Note: The Technical and Business Points of Contact ARE NOT the delivery point for white papers or proposals. For information regarding the submission of White Papers and Full Proposals, please refer to page 7.*

## **7. Instrument Type(s)**

It is anticipated that awards will be in the form of grants, contracts, cooperative agreements, or other transaction agreements, as appropriate.

## **8. Catalog of Federal Domestic Assistance (CFDA) Number**

CFDA No.: 12.300

## **9. Catalog of Federal Domestic Assistance (CFDA) Title**

CFDA Title: Basic and Applied Scientific Research

## **10. Additional Information**

N/A

## **II. AWARD INFORMATION**

The Office of Naval Research (ONR) plans multiple awards to those proposers whose proposals represent the best value to the Government in accordance with the evaluation criteria. Each individual award will be for a base period of three years, to be funded incrementally or as options. Two additional years of funding as an option are possible, to bring the total maximum term of the award to five years.

ONR anticipates a budget of \$54,000,000 for this program spread over five years, pending out-year appropriations. It is anticipated that the award sizes will range from \$300,000 to \$1.5M per year, with the funding level commensurate with the proposed research and in response to agency missions. The estimated start date is during the 2<sup>nd</sup> Quarter of Fiscal Year 2005 (January – March 2005), subject to date of final award and availability of new fiscal year funds. Depending on the results of the proposal evaluation, there is no guarantee that any of the proposals submitted in response to this announcement or any of the topical areas will be recommended for funding. On the other hand, more than one proposal may be recommended for funding for any given emphasis area.

ONR has funded related technology development under numerous programs. Proposals that build on current or previous DoD work are encouraged. If proposers are enhancing work performed under other ONR or DoD projects, they 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 may submit a proposal, which shall be considered by the Government. Historically Black Colleges and Universities (HBCUs) and Minority Institutions (MIs) are encouraged to submit proposals and join others in submitting proposals.

Independent organizations and teams are encouraged to submit proposals in any or all areas. However, proposers 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.

## **IV. APPLICATION AND SUBMISSION INFORMATION**

### **1. Application and Submission Process**

**(A) White Papers:** White papers are initially sought to preclude unwarranted effort on the part of the proposer in preparing full technical and cost proposals without an initial assessment of the operational, technical and logistical feasibility of the concept. The deadline for white papers submission is 4:00 PM (EDT) on 22 September 2004. Initial Navy evaluations of the white papers will be issued via email from the responsible program manager on or about 5 October 2004. Detailed technical and cost proposals will be subsequently encouraged from those proposers whose proposed technologies have been identified through the above-referenced e-mail as being of "particular value" to the Navy. However, any such encouragement does not assure a subsequent award.

Any proposer may submit a full proposal even if its white paper was not identified as being of "particular value". However, the Navy's initial evaluation of the white papers should give proposers some indication of whether a later full proposal would likely result in an award.

**(B) Full Proposals:** The deadline for proposal submission is 4:00 PM (EST) on 18 November 2004. It is anticipated that final selections will be made by 17 December 2004. As soon as the final proposal evaluation process is completed, the proposer will be notified via email of the recommendation of the scientific review panel. These recommendations will then be forwarded to the ONR Acquisition Placement Office for award. Proposals exceeding the page limits stated below may not be evaluated.

### **2. Content and Format of White Papers and Full Proposals**

The white papers and full proposals submitted under this BAA are expected to address unclassified basic research. The full proposal submissions will be protected from unauthorized disclosure in accordance with FAR 15.207, applicable law, and DoD regulations. Proposers are expected to appropriately mark each page of their submission that contains any proprietary information. White papers and full proposals should be stapled in the upper left hand corner; plastic covers or binders should not be used. Separate attachments, such as individual brochures or reprints, will not be accepted.

#### **(A) WHITE PAPERS**

White papers are limited to six pages and should include the following items:

- 1) Cover page, clearly labeled "White Paper", including BAA title and date, title of white paper, administrative and technical points of contact along with telephone, fax numbers, and email address.
- 2) Technical Description, to consist of clear discussions of the concept and associated research for the tool being proposed, development objectives of the proposed effort, major scientific issues to be resolved to accomplish objectives, approaches to resolving these issues, and potential impact on DoD relevant research capabilities.
- 3) Potential team and management plan (if applicable).
- 4) Cost Description, to be a one page cost estimate on a yearly basis.
- 5) One-page curriculum vitae for the principal investigator and other key personnel should be submitted. The vitae will not count toward the six-page limit.

The white paper should provide sufficient information on the research being proposed (e.g. hypothesis, theories, concepts, approaches, data measurements and analysis, etc.) to allow for an assessment by a technical expert. A short cover letter (one page) may be included and is excluded from the page limitation. It is not necessary for white papers to carry official institutional signatures.

Six copies of the white papers are due at the submittal address listed below. Proposers are encouraged to submit an electronic copy as well.

### **Address for the Submission of White Papers and Full Proposals**

Ms. Jennifer Snaith  
Physical Sciences S&T Division  
Code ONR 331  
Office of Naval Research  
800 North Quincy Street  
Arlington, VA 22217-5600  
Telephone: (703) 696-0687  
Email: snaithj@onr.navy.mil

### **(B) FULL PROPOSALS**

#### **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 20 pages and subject to the limitations described below. Volume 2 has no page limit. The cover page, table of contents, and resumes are excluded from the page limitations. Full Proposals exceeding the page limit may not be evaluated.
- Copies – one (1) original, 5 copies and one electronic copy on CD-ROM (in Microsoft® Word or Excel or .PDF format).

#### **Content of Volumes 1 and 2**

##### **Volume 1: Technical Proposal**

Volume 1 of the Full Proposal shall include the following sections, each starting on a new page.

- 1) Title Page: (Not included in page limitation) This should include the words "Technical Proposal" and the following:
  - (a) BAA number;
  - (b) Title of Proposal;
  - (c) Identity of prime proposer and complete list of subcontractors, if applicable;
  - (d) Principal Investigator (PI) contact (name, address, phone/fax, electronic mail address);
  - (e) Business contact (name, address, phone/fax, electronic mail address); and
  - (f) Duration of effort.
- 2) Table of Contents: (Not included in page limitation)

- 3) Executive Summary: (2 pages max) Summarize the research tool that you are proposing, technical approaches, anticipated outcome of the research if successful, and impact on Navy/DoD research community.
- 4) Statement of Work: A Statement of Work (SOW) clearly detailing the scope and objectives of the effort and the specific research to be performed if the proposal is selected for funding. 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 attached to the contract or agreement award. Include a detailed listing of the technical tasks/subtasks organized by year.
- 5) Technical Approach: Describe in detail the basic scientific research to be undertaken. State the objective and approach, including how data will be analyzed and interpreted. Discuss the relationship of the proposed research to the state-of-the art knowledge in the field and to related efforts in progress elsewhere. Include appropriate literature citations and references. Discuss the nature of expected results. Discuss potential applications to defense missions and requirements. Describe plans for the research training of students. Include the number of full time equivalent graduate students, and undergraduates if any, to be supported each year.
- 6) Project Schedule and Milestones: This program is designed for a 3 year base period plus a potential 2 year option. The proposal should clearly identify specific scientific and technical goals to be achieved for the life of the program. If an option is requested, specific scientific and technical achievements, milestones or demonstrations should be clearly documented within the proposal at the 30 month interval. These 30 month milestones will be one aspect of determining if continuation in any option period is warranted.
- 7) Assertion of Data Rights: Include here a summary of any proprietary rights to pre-existing results, prototypes, or systems supporting and/or necessary for the use of the research, results, and/or prototype. Any data rights assertions made in other parts of the proposal that would impact the rights in this section must be cross-referenced. If there are proprietary rights, the proposer must explain how these affect its ability to deliver subsystems and toolkits for integration. Additionally, proposers must explain how the program goals are achievable in light of these proprietary and/or restrictive limitations. If there are no claims of proprietary rights in pre-existing data, this section shall consist of a statement to that effect.
- 8) Deliverables: A detailed description of the results and products to be delivered.
- 9) Qualifications: A discussion of previous accomplishments and work in this, or closely related, areas and the qualifications of the investigators. Include curriculum vitae (CV) of the Principal Investigator and any key personnel. The CVs shall not count toward the page limitation.
- 10) Management Approach: A discussion of the overall approach to the management of this effort, including brief discussions of: required facilities; relationships with any subawardees and with other organizations; availability of personnel; and planning, scheduling and control procedures.
  - (a) Describe the facilities available for the accomplishment of the proposed research and related education objectives. Describe any capital equipment planned for acquisition under this program and its application to the proposed research. If possible (when a grant award is sought), any budget for capital equipment should be allocated to the first budget period of the grant. Include a description of any Government Furnished Equipment/Hardware/Software/Information, by version and/or configuration, that is required for the proposed effort.
  - (b) Describe in detail proposed subawards to other eligible universities or relevant collaborations (planned or in place) with government organizations, industry, or other

appropriate institutions. Particularly describe how collaborations are expected to facilitate the transition of research results to applications. Descriptions of industrial collaborations should explain how the proposed research will impact the company's research and/or product development activities. If subawards to other universities are proposed, make clear the division of research activities and provide detailed budgets for the proposed subawards.

(c) List the amount of funding and describe the research activities of the Principal Investigator and co-investigators in on-going and pending research projects, whether or not acting as Principal Investigator in these other projects, the time charged to each of these projects, and their relationship to the proposed effort.

(d) Describe plans to manage the interactions among members of the proposed research team.

(e) Identify other parties to whom the proposal has been or will be sent, including agency contact information.

## Volume II: Cost Proposal

The Cost Proposal shall consist of a cover page and two parts, Part 1 and Part 2. Part 1 will provide a detailed cost breakdown of all costs by cost category by calendar/fiscal year and Part 2 will provide a cost breakdown by task/sub-task using the same task numbers in the Statement of Work. Options must be separately priced. There is no page limitation on the cost proposal.

- Cover Page: The use of the SF 1411 is optional. This proposal should include the words "Cost Proposal" and the following:
  - 1) BAA number;
  - 2) Title of Proposal;
  - 3) Identity of prime proposer and complete list of subcontractors, if applicable;
  - 4) Principal Investigator (name, address, phone/fax, electronic mail address);
  - 5) Administrative/business contact (name, address, phone/fax, electronic mail address);
  - 6) Duration of effort; and
  - 7) Summary statement of proposed costs.
  
- Part 1: Detailed breakdown of all costs by cost category. The budget should reflect a base of three years plus an option period of two years if an option period is desired. For budget purposes, use an award start date reflecting the 2<sup>nd</sup> Quarter of Fiscal Year 2005 (January – March 2005). For the three-year base grant, the cost should be broken down to reflect funding increment periods based on the fiscal year ending 30 September. Any option period should have a proposed start date during the 2<sup>nd</sup> Quarter of Fiscal Year 2008.

The annual budget should be relatively flat, i.e. about the same amount per year. (The nine-month budget and the three-month budget should add up to an amount about equal to the twelve-month budget.). Elements of the budget should include:

- 1) Direct Labor - Individual labor category or person, with associated labor hours and unburdened direct labor rates;
- 2) Indirect Costs - Fringe Benefits, Overhead, G&A, COM, etc. (Must show base amount and rate);
- 3) Travel - Number of trips, number of days per trip, departure and arrival destinations, number of people, etc;
- 4) Subcontract - A cost proposal as detailed as the proposer'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 proposer's cost proposal or will be requested from the subcontractor at a later date;

- 5) Consultant - Provide consultant agreement or other document which verifies the proposed loaded daily/hourly rate;
- 6) Materials - Materials should be specifically itemized with costs or estimated costs. An explanation of any estimating factors, including their derivation and application, shall be provided. Please include a brief description of the proposer's procurement method to be used;
- 7) Other Directs Costs - Other Direct Costs should be itemized with costs or estimated costs. Backup documentation should be submitted to support proposed costs; and
- 8) For proposed procurement contracts, the proposer's proposed Fee/Profit, including fee percentage.

- Part 2: Cost breakdown by task/sub-task using the same task numbers as in the Statement of Work.

### 3. Significant Dates and Times

Schedule of Events    Event Date Time (Local Time)

White Papers: Due Date 22 September 2004 4:00 PM EST

Notification of Initial DoD Evaluations of White Papers: 5 October 2004\*

Full Proposals: Due Date 18 November 2004 4:00 PM EST

Notification of Selection for Award: 17 December 2004\*

Start Date of project: 2<sup>nd</sup> Quarter of Fiscal Year 2005 (January – March 2005)

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

### 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

- (a) The proposal was sent, to the address specified for the designated agency, by U.S. Postal Service Express Mail three or more business days prior to the date specified for the receipt of proposals (the term "business days" excludes weekends and U.S. federal holidays); or
- (b) 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
- (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 proposer if its proposal, modifications, or revision was received late and must inform the proposer whether its proposal will be considered.

## **V. EVALUATION INFORMATION**

### **1. Evaluation Criteria -**

The following evaluation criteria apply to both the White Papers and the Full Proposals.

These submissions will be selected through a technical/scientific/cost decision process with technical and scientific considerations being more important than cost. Even though cost is of less importance than all 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. Criteria A-D are listed in descending order of priority. Any subcriteria listed under a particular criterion are of equal importance to each other.

- A. Overall scientific and technical merits of the proposal
  - 1. The degree of innovation
  - 2. The soundness of technical concept
  - 3. The proposer's awareness of the state-of-the-art and understanding of the scope of the problem and the technical effort needed to address it
  
- B. Naval relevance
  - 1. Transition potential and anticipated contributions of the proposed technology to Naval operations.
  
  - 2. Potential of research tool to broadly impact the Naval research community.
  
- C. Proposer's capabilities, related experience, and past performance, including the qualifications, capabilities and experience of the proposed team (including principal personnel)
  - 1. The quality of technical personnel proposed
  - 2. The proposer's experience in relevant efforts with similar resources and teaming relationships
  - 3. The ability to manage the proposed effort
  
- D. The realism of the proposed cost
  - 1. Total cost relative to benefit
  - 2. Realism of cost levels for facilities and staffing

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

Academia – Industry Partnering – ONR highly encourages partnering among academia and industry with a view toward speeding the incorporation of new science and technology into fielded systems. Proposals that utilize industry-academic partnering which enhances the development of novel S&T advances will be given favorable consideration.

Industry-Government Partnering – ONR highly encourages partnering among industry and Government with a view toward speeding the incorporation of new science and technology into fielded systems. Proposals that utilize industry-Government partnering which enhances the development of novel S&T advances will be given favorable consideration.

## **2. Evaluation Panel**

Potential proposers should understand that government technical experts drawn from the Office of Naval Research and other naval and defense activities/agencies will participate in the evaluation of the White Papers and Full Proposals. All government personnel participating in evaluation will be bound by appropriate non-disclosure agreements to protect proprietary and source-selection information.

The Government may use selected support personnel to assist in providing both technical expertise and administrative support regarding any white papers and full proposals ensuing from this announcement. These support contractors will be bound by appropriate non-disclosure agreements to protect proprietary and source-selection information.

## **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 solicitation is 541710 with a small business size standard of 500 employees.
- CCR - Successful proposers 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 agreement. Information on CCR registration is available at <http://www.onr.navy.mil/02/ccr.htm>
- Certifications - Proposals should be accompanied by a completed certification package which can be accessed on the ONR Home Page at Contracts and Grants. For grant proposals and proposals for cooperative agreements or other transaction agreements (other than for prototypes), the certification package is entitled "Certifications for Grants and Agreements". For contract proposals, the certification package is entitled "Representations and Certifications for Contracts".
- Subcontracting Plans - Successful contract proposals that exceed \$500,000, submitted by all but small business concerns, must be supplemented with a Small Business Subcontracting Plan in accordance with FAR 52.219-9, prior to award. This requirement also applies to non-profit proposers, including educational institutions.

### **2. Reporting**

The following is a sample of deliverables that could be required under a research effort. However, specific deliverables should be proposed by each proposer and finalized with the contracting agent:

- Detailed Technical Data
- Technical and Financial Progress Reports

- Demonstration results
- Presentation Material(s)
- Other Documentation or Reports as required
- Final Report

## **VII. OTHER INFORMATION**

### **1. Government Furnished Property (GFP)/Government Furnished Equipment (GFE)/Contractor Acquired Property/ and Facilities**

The Government does not anticipate providing any Government furnished facilities under this announcement. Under contracts, it is Federal policy that contractors shall furnish all facilities (as defined in FAR 45.301) required for performing Government contracts except as provided under FAR 45.302-1. Any request for facilities, as defined in FAR 45.301, will be screened in accordance with FAR 45.302-1.

Any proposal requesting property should be accompanied by a very specific description of the item that the proposer needs to perform the work. This description should identify the component, nomenclature, and configuration of the equipment/hardware proposed. If the item is proposed as contractor acquired government furnished property, the description should further include an explanation of any estimating factors used to price the item, the extent to which private financing is sought, and a brief description of the proposer's anticipated procurement method. No profit or fee shall be allowed on the cost of facilities, as defined in FAR 45.301, purchased for the account of the Government.

Requests to use Government integration, test, and experiment facilities will be considered on a case by case basis based on availability and justification of need.

### **2. Security Classification**

All proposals are expected to be unclassified.

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.

If awardees use unclassified data in their deliveries and demonstrations 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 & Reviews**

Individual program reviews between the ONR sponsor and the performer may be held as necessary.

Quarterly technology and program status reviews may 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, proposers should assume that 60% of these meetings will be at or near ONR, Arlington VA and 40% at contractor or other government facilities. Interim meetings are likely, but these will be accomplished via video telephone conferences, telephone conferences, or web-based collaboration tools.