



**BROAD AGENCY ANNOUNCEMENT (BAA)
Cyber-enabled Manufacturing Systems (CeMS)**

INTRODUCTION:

This publication constitutes a Broad Agency Announcement (BAA) as contemplated in the Department of Defense Grants and Agreements regulations (DoDGARS) 22.315(a). 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,
One Liberty Center
875 N. Randolph Street
Arlington, VA 22203-1995

2. Research Opportunity Title -

Cyber-enabled Manufacturing Systems (CeMS).

3. Program Name -

Manufacturing Science Program.

4. Research Opportunity Number -

11-003

5. Response Date -

White Papers: 4 February 2011

Full Proposals: 25 February 2011

6. Research Opportunity Description -

The Office of Naval Research (ONR) is interested in receiving proposals for Cyber-enabled Manufacturing Systems (CeMS).

The objective of this research opportunity is to develop the principles for cyber-enabled manufacturing systems (CeMS) with the goal of tightly combining and coordinating computational (model-based) processes with physical (materials) processes. CeMS seeks to incorporate real-time feedback controls relating sensing and actuation with computational models of materials processing at all length scales. This program takes a multi-disciplinary approach that seeks to integrate computational processes in cyber-physical systems with novel manufacturing processes that will enable entirely new production capabilities. Hence, the approach has joint manufacturing and cyber components.

Direct Digital Manufacturing: Of particular interest is direct digital additive manufacturing with processes that span across dimensional scales (nano- micro-, meso- and macro-), that utilize multiple materials, that allow local control of composition, macrostructure, texture and properties, that eliminate post-processing and assembly, and that produce unique multi-functional components. Such a capability will allow the fabrication of heterogeneous structures with complex geometries that can be integrated into useful engineered systems of interest to Navy/DoD. In addition to the important considerations of quality, reliability, durability, and performance, there are increasingly important considerations of *in situ* process monitoring and control, energy-efficiency, environmental sustainability, production flexibility, re-configurability and modularity.

Cyber-physical Systems: Of particular interest is the interface between the computational (software) and the physical (manufacturing) worlds. This includes the computational models that enable prediction and control over manufacturing processes, which mitigate or detect defect formation and initiate repairs *in situ* during manufacture in real-time. These models will involve explicit representations for sensing and actuating,

concurrency, synchronization, process planning and distributed control.

Manufacturing Domain: Of particular interest are multi-material, multi-component, multi-functional integrated systems that would have relevance to important application areas, for example, but not limited to, components and systems for structural and mechanical, power and energy, and electronic and optoelectronics applications.

In summary, the proposed research for CeMS seeks to

- Understand physical processes at different length and time scales,
- Explore and leverage the relationships among models of physical processes from a dynamic real-time computational perspective,
- Enable new manufacturing technology linking network and information technology with materials processing, and
- Address design and development of multi-material components and multi-functional integrated systems using direct manufacturing technologies.

Work funded under Broad Agency Announcement (BAA) may include basic research, applied research and some advanced technology development (ATD). With regard to any restrictions on the conduct or outcome of work funded under this BAA, ONR will follow the guidance on and definition of "contracted fundamental research" as provided in the Under Secretary of Defense (Acquisition, Technology and Logistics) Memorandum of 24 May 2010. As defined therein the definition of "contracted fundamental research", in a DoD contractual context, includes [research performed under] grants and contracts that are (a) funded by Research, Development, Test, and Evaluation Budget Activity 1 (Basic Research), whether performed by universities or industry or (b) funded by Budget Activity 2 (Applied Research) and performed on campus at a university. The research shall not be considered fundamental in those rare and exceptional circumstances where the applied research effort presents a high likelihood of disclosing performance characteristics of military systems or manufacturing technologies that are unique and critical to defense, and where agreement on restrictions have been recorded in the contract or grant.

Pursuant to DoD policy, research performed under grants and contracts that are a) funded by Budget Category 6.2 (Applied Research) and NOT performed on-campus at a university or b) funded by Budget Category 6.3 (Advanced Research) does not meet the definition of "contracted fundamental research." In conformance with the USD(AT&L) guidance and National Security Decision Direction 189, ONR will place no restriction on the conduct or reporting of unclassified "contracted fundamental research," except as otherwise required by statute, regulation or Executive Order. For certain research projects, it may be possible that although the research being performed by the prime contractor is restricted research, a subcontractor may be conducting "contracted fundamental research." In those cases, it is the *prime contractor's responsibility* in the proposal to identify and describe the subcontracted unclassified research and include a statement confirming that the work has been scoped, negotiated, and determined to be fundamental research according to the prime contractor and research performer.

Normally, fundamental research is awarded under grants with universities and under contracts with industry. ATD is normally awarded under contracts and may require restrictions during the conduct of the research and DoD pre-publication review of research results due to subject matter sensitivity. As regards to the present BAA, the Research and Development efforts to be funded will consist of basic research. The funds available to support awards are Budget Activity 6.1.

7. Point(s) of Contact -

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

Science and Technology Point of Contact:

Point of Contact Name: Dr. Khershed Cooper
Point of Contact Occupation Title: Program Officer
Division Title: Manufacturing Technology
Division Code: 03TMT
Address: 875 North Randolph Street, Arlington, VA 22203
Email Address: khershed.cooper@navy.mil

Alternate Point of Contact Name: Dr. Ralph Wachter
Point of Contact Occupation Title: Program Officer
Division Title: Computer Science
Division Code: 311
Address: 875 North Randolph Street, Arlington, VA 22203
Email Address: ralph.wachter@navy.mil

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

Business Point of Contact:

Point of Contact Name: Mr. Patrick Sisk
Point of Contact Occupation Title: Contract Specialist
Division Title: Contracts and Grants
Division Code: 254
Address: 875 North Randolph Street, Arlington, VA 22203
Email Address: patrick.sisk@navy.mil

Questions submitted within 2 weeks prior to a deadline may not be answered, and the due date for submission of the white paper and/or full proposal will not be extended.

Amendments will be posted to one or more of the following web pages:

- Grants.gov Webpage – <http://www.grants.gov/>

- ONR Broad Agency Announcement (BAA) Webpage – <http://www.onr.navy.mil/en/Contracts-Grants/Funding-Opportunities/Broad-Agency-Announcements.aspx>

8. Instrument Type(s) -

Awards will take the form of grants only.

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

12.300

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

DOD Basic Research

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

II. AWARD INFORMATION

The Government anticipates making several awards as a result of this announcement. The anticipated awards will take the form of grants with a period of performance of up to thirty-six (36) months from the date of award.

*Anticipated Number of Awards: 3-5 awards

*Anticipated Range of Individual Award Amounts: \$100,000-150,000 per year

*Previous Year(s) Average Individual Award Amounts: N/A

*Anticipated Period of Performance: 3 years

*For the past three years Congress has placed limits on the percentage of indirect costs that can be paid by the government using basic research (6.1) funds. Currently indirect costs paid under contracts and grants for the performance of basic research may not exceed 35 percent. It is unknown at present whether a similar indirect cost restriction will apply to 6.1 funds in FY 2011 or thereafter.

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 one of the technical ONR POCs listed in this section to discuss its area of interest. As with FFRDCs, these types of federal organizations may team with other responsible sources from academia and industry that are submitting proposals under this BAA.

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

Some topics cover export controlled technologies. Research in these areas is limited to “U.S. persons” as defined in the International Traffic in Arms Regulation (ITAR) – 22 CFR § 1201.1 et seq. (See Section VII, Other Information)

For Grant applications:

The Federal Funding Accountability and Transparency Act of 2006 (Public Law 109-282), as amended by Section 6202 of Public Law 110-252, requires that all agencies establish requirements for recipients reporting information on subawards and executive total compensation as codified in 2 CFR 170.110. Any company, non-profit agency or university that applies for financial assistance (either grants, cooperative agreements or other transaction agreements) as either a prime or sub-recipient under this BAA must provide information in their proposal that describes the necessary processes and systems in place to comply with the reporting requirements identified in 2 CFR 170.220 and Appendix A. Entities are **exempt** from this requirement **UNLESS** in the preceding fiscal year, it received: a) 80 percent or more of its annual gross revenue in Federal contracts (and subcontracts), loans, grants (and subgrants), and cooperative agreements; b) \$25 million or more in annual gross revenue from Federal contracts (and subcontracts), loans, grants (and subgrants), and cooperative agreements; and c) the public does not have access to information about the compensation of the senior executives through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 or section 6104 of the Internal Revenue Code of 1986.

IV. APPLICATION AND SUBMISSION INFORMATION

1. Application and Submission Process -

White Papers:

The due date for white papers is provided in the Significant Dates and Times chart in Section IV. 3. of this BAA. Each white paper should state that it is submitted in response to this BAA. White papers shall be submitted by email to the main Technical Points of Contact listed in Section I, paragraph number 7 of this BAA. The white paper must be submitted in a Microsoft Word or .PDF format. White papers submitted as hard copy and sent by FAX, regular U.S. mail, commercial carrier, or hand delivery will NOT be accepted.

Navy evaluations of the white papers will be issued via e-mail notification on or about the date provided in the Significant Dates and Times chart in Section IV. 3.

Full Proposals:

Full proposals will not be considered under this BAA unless a white paper was received before the white paper due date specified above.

Any offeror may submit a full proposal even if its white paper was not identified as being of “particular value” by the Navy reviewers. 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. The due date and time for receipt of Full Proposals are provided in the Significant Dates and Times chart in Section IV. 3. The only acceptable method for submission of full proposals is via www.grants.gov, as outlined below. Full proposals sent by FAX, e-mail, commercial carrier, regular U.S. mail, or hand carried will NOT be accepted.

It is anticipated that final selections will be made within twenty (20) days after proposal submission. As soon as the final proposal evaluation process is completed, each offeror will be notified via email from the Program Officer of its selection or nonselection for an award. Proposals exceeding the proposed page limit may not be evaluated.

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

The Proposals submitted under this BAA are expected to be unclassified.

a. WHITE PAPERS

White Paper Format

- Paper Size – 8.5 x 11 inch paper
- Margins – 1 inch
- Spacing – single-spaced
- Font – Times New Roman, 12 point
- Copies – Electronic (email) submissions should be sent to the attention of the TPOC at: (khershed.cooper@navy.mil). The subject line of the email shall read

“ONR BAA 11-003 White Paper Submission.” The white paper must be a Microsoft Word 2007 or .PDF format attachment to the email.

NOTE: 1) Do not send hardcopies of White Papers (including facsimiles) as only electronic submissions will be accepted and reviewed; 2) Do not send .ZIP files; 3) Do not send password protected files.

White Paper Content

- Cover Page – The Cover Page shall be labeled “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.
- Technical Concept – A description of the technology innovation and technical risk areas.
- Future Naval Relevance– A description of potential Naval relevance and contributions of the effort to the agency’s specific mission.

b. FULL PROPOSALS

INSTRUCTIONS FOR GRANTS

The following information must be completed as follows in the SF 424 to ensure that the application is directed to the correct individual for review: Block 4a, Federal Identifier: enter N00014; Block 4b, Agency Routing Number: Enter the Program Office Code (i.e., 03TMT) and the Program Officer’s name, last name first, in brackets (i.e., [Cooper, Khershed]). Applicants who fail to provide a Department code identifier may receive a notice that their proposal will be rejected.

Please note that Volume I, Technical Proposal should be submitted as an attachment to the SF 424 rather than being inserted into Block 7, Project Narrative. Block 7 should be completed with a statement that Volume 1 is attached. To attach the Technical Proposal, open the Attachment Form in the Optional Documents box of the application package, scroll down to the Attachment page, and follow the instructions. The file should be titled “Volume I – Technical Proposal.”

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

- Paper Size – 8.5 x 11 inch paper
- Margins – 1 inch
- Spacing – single-spaced
- Font – Times New Roman, 12 point
- Number of Pages – Volume 1 is limited to no more than 20 pages. Limitations within sections of the proposal, if any, are indicated in the individual descriptions shown below. The cover page, table of contents, resumes and current and

pending project and proposal submissions information are excluded from the page limitations. Full Proposals exceeding the page limit may not be evaluated. There are no page limitations to Volume 2.

- Copies – the full proposal should be submitted electronically at <http://www.grants.gov/> as delineated in paragraph 5 below.

Volume 1: Technical Proposal

- **Cover Page:** This should include the words “Technical Proposal” and the following:

- 1) BAA number 11-003;
- 2) Title of Proposal;
- 3) Identity of prime Offeror and complete list of subawards, if applicable;
- 4) Technical contact (name, address, phone/fax, electronic mail address)
- 5) Administrative/business contact (name, address, phone/fax, electronic mail address) and;
- 6) Proposed period of performance (identify both the base period and any options, if included).

- **Table of Contents:** An alphabetical/numerical listing of the sections within the proposal, including corresponding page numbers.

Technical Approach and Justification: The major portion of the proposal should consist of a clear description of the technical approach being proposed. This discussion should provide the technical foundation/justification for pursuing this particular approach/direction and why one could expect it to enable the objectives of the proposal to be met. Offerors should limit the number of pages for this section to 15 pages.

- **Future Naval Relevance (where applicable):** A description of potential Naval relevance and contributions of the effort to the agency’s specific mission.

- **Project Schedule and Milestones:** A summary of the schedule of events and milestones:

- **Reports:**

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

Technical and Financial Progress Reports
Final Report

Grants and other agreements do not include the delivery of software, prototypes, and other hardware deliverables.

• **Management Approach:** Identify which personnel and subcontractors/subrecipients (if any) will be involved. Include a description of the facilities that are required for the proposed effort, along with a description of any Government Furnished Equipment/Hardware/ Software/Information required, by version and/or configuration.

• **Current and Pending Project and Proposal Submissions:** Offerors are required to provide information on all current and pending support for ongoing projects and proposals, including subsequent funding in the case of continuing contracts, grants, and other assistance agreements. Offerors shall provide the following information of any related or complementary proposal submissions from whatever sources (e.g., ONR, Federal, State, local or foreign government agencies, public or private foundations, industrial or other commercial organizations).

The information must be provided for all proposals already submitted or submitted concurrently to other possible sponsors, including ONR. Concurrent submission of a proposal to other organizations will not prejudice its review by ONR:

- 1) Title of Proposal and Summary;
- 2) Source and amount of funding (annual direct costs; provide contract and/or grant numbers for current contracts/grants);
- 3) Percentage effort devoted to each project;
- 4) Identity of prime Offeror and complete list of subcontractors, if applicable;
- 5) Technical contact (name, address, phone/fax, electronic mail address)
- 6) Administrative/business contact (name, address, phone/fax, electronic mail address);
- 7) Period of performance (differentiate basic effort);
- 8) The proposed project and all other projects or activities requiring a portion of time of the Principal Investigator and other senior personnel must be included, even if they receive no salary support from the project(s);
- 9) The total award amount for the entire award period covered (including indirect costs) must be shown as well as the number of person-months or labor hours per year to be devoted to the project, regardless of source of support; and
- 10) State how projects are related to the proposed effort and indicate degree of overlap.

• **Qualifications:** A discussion of the qualifications of the proposed Principal Investigator and any other key personnel. Include resumes or curricula vitae for the Principal Investigator, other key personnel and consultants. The resumes/curricula vitae shall be attached to the proposal.

Volume 2: Cost Proposal

The offeror must use the Grants.gov forms from the application package template associated with the BAA on the Grants.gov web site located at

<http://www.grants.gov/>. If options are proposed, the cost proposal must provide the pricing information for the option periods; failure to include the proposed costs for the option periods will result in the options not being included in the award. Assume that performance will start no earlier than three (3) months after the date the cost proposal is submitted. A separate Adobe .pdf document should be included in the application that provides appropriate justification and/or supporting documentation for each element of cost proposed.

Part 1: The itemized budget must include the following

- Direct Labor – Individual labor categories or persons, with associated labor hours and unburdened direct labor rates. Provide escalation rates for out years.

Administrative and clerical labor – Salaries of administrative and clerical staff are normally indirect costs (and included in an indirect cost rate). Direct charging of these costs may be appropriate when a major project requires an extensive amount of administrative or clerical support significantly greater than normal and routine levels of support. Budgets proposing direct charging of administrative or clerical salaries must be supported with a budget justification which adequately describes the major project and the administrative and/or clerical work to be performed.

- Fringe Benefits and Indirect Costs (i.e., F&A, Overhead, G&A, etc) – The proposal should show the rates and calculation of the costs for each rate category. If the rates have been approved/negotiated by a Government agency, provide a copy of the memorandum/agreement. If the rates have not been approved/negotiated, provide sufficient detail to enable a determination of allowability, allocability and reasonableness of the allocation bases, and how the rates are calculated. Additional information may be requested, if needed. If composite rates are used, provide the calculations used in deriving the composite rates.
- Travel – The proposed travel cost should include the following for each trip: the purpose of the trip, origin and destination if known, approximate duration, the number of travelers, and the estimated cost per trip must be justified based on the organization's historical average cost per trip or other reasonable basis for estimation. Such estimates and the resultant costs claimed must conform to the applicable Federal cost principals.
- Subawards – Provide a description of the work to be performed by the subrecipients. For each subaward, a detailed cost proposal is required to be submitted by the subrecipient(s). The subawardee's or subrecipient's cost proposal can be provided in a sealed envelope with the recipient's cost proposal or via e-mail directly to both the Program Officer and the business point of contact at the same time the prime proposal is submitted. The e-mail should identify the proposal title, the prime Offeror and that the attached proposal is a subcontract. A proposal and supporting

documentation must be received and reviewed before the Government can complete its cost analysis of the proposal and enter negotiations.

Fee/profit is not allowable on any subawards made through assistance agreements. Fee is allowable on subcontract awards.

- Consultants – Provide a breakdown of the consultant’s hours, the hourly rate proposed, any other proposed consultant costs, a copy of the signed Consulting Agreement or other documentation supporting the proposed consultant rate/cost, and a copy of the consultant’s proposed statement of work if it is not already separately identified in the prime contractor’s proposal.
- Materials & Supplies – Provide an itemized list of all proposed materials and supplies including quantities, unit prices, proposed vendors (if known), and the basis for the estimate (e.g., quotes, prior purchases, catalog price lists).
- Recipient Acquired Equipment or Facilities – Equipment and/or facilities are normally furnished by the Recipient. If acquisition of equipment and/or facilities is proposed, a justification for the purchase of the items must be provided. Provide an itemized list of all equipment and/or facilities costs and the basis for the estimate (e.g., quotes, prior purchases, catalog price lists). Allowable items normally would be limited to research equipment not already available for the project. General purpose equipment (i.e., equipment not used exclusively for research, scientific or other technical activities, such as personal computers, office equipment and furnishings, etc.) should not be requested unless they will be used primarily or exclusively for the project. For computer/laptop purchases and other general purpose equipment, if proposed, include a statement indicating how each item of equipment will be integrated into the program or used as an integral part of the research effort.
- Other Direct Costs – Provide an itemized list of all other proposed other direct costs such as Graduate Assistant tuition, laboratory fees, report and publication costs, and the basis for the estimate (e.g., quotes, prior purchases, catalog price lists).
NOTE: If the grant proposal is for a conference, workshop, or symposium, the proposal should include the following statement: “The funds provided by ONR will not be used for food or beverages.”
- Fee/Profit – Fee/profit is unallowable under assistance agreements at either the prime or subaward level but may be permitted on any subcontracts issued by the prime awardee.

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

3. Significant Dates and Times -

Anticipated Schedule of Events		
Event	Date	Time
White Paper Due Date	02/04/2011	2:00 PM Eastern Local Time
Notification of White Paper Evaluation*	02/11/2011	
Full Proposals Due Date	02/25/2011	2:00 PM Eastern Local Time
Notification of Selection for Award*	03/11/2011	
Awards*	06/11/2011	

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

4. Submission of Late Proposals (Applicable to White Papers and Full 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) 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 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 offeror if its proposal, modifications, or revision was received late and must inform the offeror whether its proposal will be considered.

4. Submission of Grant Proposals through Grants.gov

Detailed instructions entitled “Grants.gov Electronic Application and Submission Information” on how to submit a grant proposal through Grants.gov may be found at the ONR website listed under the ‘Acquisition Department – Contracts & Grants Submitting a Proposal’ link at:

<http://www.onr.navy.mil/Contracts-Grants/submit-proposal/grants-proposal/grants-gov.aspx>.

As stated in Section IV.2, White Papers should not be submitted through the Grants.gov Apply process, but rather should be sent directly to ONR. White Papers should be e-mailed directly to the Technical Point of Contact. White Paper format requirements are found in Section IV, item 2a above.

By completing Block 17, the Grant Applicant is providing the certification on lobbying required by 32 CFR Part 28. Refer to Section VI, “Award Administration Information” entitled “Certifications” for further information.

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

Use the Grants.gov organization Registration Checklist at http://www.grants.gov/applicants/register_your_organization.jsp which will provide guidance through the process. Designating an E-Business Point of Contact (EBiz POC) and obtaining a special password called “MPIN” are important steps in the CCR registration process. Applicants who are not registered with CCR and Grant.gov should allow at least 21 days to complete these requirements. The process should be started as soon as possible. Any questions relating to the registration process, system requirement, how an application form works, or the submittal process **must** be directed to Grants.gov at 1-800-518-4726 or support@grants.gov.

Special Notices Relative to Grant Applications to be Submitted Through Grants.gov

All attachments to grant applications submitted through [Grants.gov](http://www.grants.gov) must be in Adobe Portable Document Format (i.e., .pdf files). Proposals with attachments submitted in word processing, spreadsheet, or any format other than Adobe Portable Document Format will not be considered for award.

Applicants who have registered with Grants.gov are urged to submit their proposals electronically *at least* three days before the date and time that proposals are due so that it will not be received late and be ineligible for award consideration.

Proposal Receipt Notices:

After a full proposal is submitted through Grants.gov, the Authorized Organization Representative (AOR) will receive a series of three e-mails. You will know that your proposal has reached ONR when the AOR receives e-mail Number 3. You will need the Submission Receipt Number (e-mail Number 1) to track a submission. The three e-mails are:

Number 1 – The applicant will receive a confirmation page upon completing the submission to Grants.gov.

Number 2 – The applicant will receive an e-mail indicating that the proposal has been validated by Grants.gov within two days of submission (this means that all of the required fields have been completed).

Number 3 – The third notice is an acknowledgement of receipt in e-mail form from ONR within ten days from the proposal due date, if applicable. The e-mail is sent to the authorized representative for the institution. The e-mail for proposals notes that the proposal has been received and provides the assigned tracking number.

V. EVALUATION INFORMATION

1. Evaluation Criteria –

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

- (a) General knowledge of direct digital additive manufacturing and cyber physical systems;
- (b) The Offeror's capabilities, related experience, facilities, techniques or unique combinations of these, which are integral factors for achieving the proposal objectives;
- (c) The qualifications, capabilities and experience of the proposed Principal Investigator, team leader, and key personnel who are critical in achieving the proposed objectives;
- (d) Potential Naval relevance and contributions of the effort to the agency's specific mission.
- (e) The realism of the proposed cost and availability of funds.

Overall, the technical factors (a) – (d) above are significantly more important than the cost factor, with the technical factors all being of equal value. The degree of importance of cost will increase with the degree of equality of the proposals in relation to the other factors on which selection is to be based, or when the cost is so significantly high as to diminish the value of the proposal's technical superiority to the Government.

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. Evaluation of options will not obligate the Government to exercise the options during grant performance.

2. Evaluation Panel -

All proposals will be evaluated by Government personnel. All government personnel participating in the evaluation will 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 proposals ensuing from this announcement. These support contractors are bound by appropriate non-disclosure agreements to protect proprietary and source-selection information.

VI. AWARD ADMINISTRATION INFORMATION

1. Administrative Requirements –

- North American Industry Classification System (NAICS) code – The NAICS code for this announcement is 541712 with a small business size standard of 500 employees.
- Central Contractor Registration: All Offerors submitting proposals or applications must:
 - (a) be registered in the Central Contractor Registration (CCR) prior to submission;
 - (b) maintain an active CCR registration with current information at all times during which it has an active Federal award or an application under consideration by any agency; and
 - (c) provide its DUNS number in each application or proposal it submits to the agency.

Grant awards greater than \$100,000 require a certification of compliance with a national policy mandate concerning lobbying. Grant applicants shall provide this certification by electronic submission of SF424 (R&R) as a part of the electronic proposal submitted via [Grants.gov](https://www.grants.gov) (complete Block 17). The following certification applies to each applicant seeking federal assistance funds exceeding \$100,000:

CERTIFICATION REGARDING LOBBYING ACTIVITIES

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

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

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

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

VII. OTHER INFORMATION

The proposed research must be unclassified

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

Government research facilities and operational military units are available and should be considered as potential government-furnished equipment/facilities. These facilities and resources are of high value and some are in constant demand by multiple programs. It is unlikely that all facilities would be used for any one specific program. The use of these facilities and resources will be negotiated as the program unfolds. Offerors submitting proposals for grants should address the need for government-furnished facilities in their technical proposal.

2. Security Classification

Reserved.

3. 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 AAALAC 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 documents, contact the ONR Animal Use Administrator at (703) 696-4046.

Similarly, for any proposal for research involving human subjects, the Offeror must submit or indicate an intention to 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 Federal wide Assurance (FWA) or the Offeror's DoD-Navy Addendum. 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 including the category of exemption and short rationale statement. This documentation must be submitted to the ONR Human Research Protection Official (HRPO), by way of the ONR Program Officer. 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. For assistance with submission of human subject research related documentation, contact the ONR Human Research Protection Official at (703) 696-4046.

For contracts and orders, the award and execution of the contract, order, or modification to an existing contract or order serves as notification from the Contracting Officer to the Contractor that the HRPO has approved the assurance as appropriate for the research under the Statement of Work and also that the HRPO has reviewed the protocol and accepted the IRB approval or exemption determination for compliance with the DoD Component policies. See, DFARS 252.235-7004.

4. Recombinant DNA

Reserved.

5. Department of Defense High Performance Computing Program

The DoD High Performance Computing Program (HPCMP) furnishes the DoD S & T and 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. Organizational Conflicts of Interest

All Offerors and proposed subcontractors must affirm whether they are providing scientific, engineering, and technical assistance (SETA) or similar support to any ONR technical office(s) through an active contract or subcontract. All affirmations must state which office(s) the offeror supports and identify the prime contract numbers. Affirmations shall be furnished at the time of proposal submission. All facts relevant to the existence or potential existence of organizational conflicts of interest (FAR 9.5) must be disclosed. The disclosure shall include a description of the action the offeror has taken or proposes to take to avoid, neutralize, or mitigate such conflict. In accordance with

FAR 9.503 and without prior approval, a contractor cannot simultaneously be a SETA and a research and development performer. Proposals that fail to fully disclose potential conflicts of interests or do not have acceptable plans to mitigate identified conflicts will be rejected without technical evaluation and withdrawn from further consideration for award. If a prospective offeror believes that any conflict of interest exists or may exist (whether organizational or otherwise), the offeror should promptly raise the issue with ONR by sending his/her contact information and a summary of the potential conflict by e-mail to the Business Point of Contact in Section I, item 7 above, before time and effort are expended in preparing a proposal and mitigation plan. If, in the sole opinion of the Contracting Officer after full consideration of the circumstances, any conflict situation cannot be effectively avoided or mitigated, the proposal may be rejected without technical evaluation and withdrawn from further consideration for award under this BAA.

7. Project Meetings and Reviews

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