



Quality Metal Additive Manufacturing (Quality Made): Integrated Computational Materials Engineering Models and In-situ Process Monitoring Sensors & Control

INTRODUCTION:

This publication constitutes a Broad Agency Announcement (BAA) as contemplated in Federal Acquisition Regulation (FAR) 6.102(d)(2) and 35.016, the Department of Defense Grants and Agreements regulations (DoDGARS) 22.315(a) and DoD's Other Transaction Guide for Prototypes Projects, USD(AT&L), OT Guide, Jan 2001. A formal Request for Proposals (RFP), 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.

Hyperlinks have been embedded within this document and appear as underlined, blue-colored words in the midst of paragraphs. The reader may "jump" to the linked section within this document by "clicking" (CTRL + CLICK, or CLICK).

Table of Contents

I. GENERAL INFORMATION	3
A. Agency Name –	3
B. Research Opportunity Title –	3
C. Program Name –	3
D. Research Opportunity Number –	3
E. Response Date –	3
F. Research Opportunity Description –	3
G. Point(s) of Contact (POC) –.....	9
H. Instrument Type(s) –.....	10
I. Catalog of Federal Domestic Assistance (CFDA) Numbers – (RESERVED)	
J. Catalog of Federal Domestic Assistance (CFDA) Titles – (RESERVED)	
K. Other Information –	10
II. AWARD INFORMATION	11
A. Amount and Period of Performance-	11
B. Peer Reviews-	12
C. Production and Testing of Prototypes-	12
III. ELIGIBILITY INFORMATION	12
IV. APPLICATION AND SUBMISSION INFORMATION	13
A. Application and Submission Process -.....	13
B. Content and Format of White Papers/Full Proposals -	14
a. White Papers	15
b. Full Proposals	16
C. Significant Dates and Times –	18
D. Submission of Late Proposals –	19
E. Submission of Grant Proposals through Grants.gov – (RESERVED)	
F. Submission of Full Proposals for Contract.....	20
V. EVALUATION INFORMATION	20
A. Evaluation Criteria –	20
B. Commitment to Small Business- (For Contract Awards Only).....	21
C. Options-	23
D. Evaluation Panel -	23
E. General Information Regarding the Review and Selection Process for Grants – (RESERVED)	
VI. AWARD ADMINISTRATION INFORMATION	23
VII. OTHER INFORMATION	25
A. Applies to Contracts only:	25
B. Applies to Contracts, Grants, Cooperative Agreements and Other Transaction Agreements:	29

I. GENERAL INFORMATION

A. Agency Name -

Office of Naval Research,
One Liberty Center
875 N. Randolph Street
Arlington, VA 22203-1995

B. Research Opportunity Title - Quality Metal Additive Manufacturing (Quality Made):
Integrated Computational Materials Engineering Models and In-situ Process Monitoring Sensors &
Control

C. Program Name - Office of Naval Research (ONR) Future Naval Capabilities (FNC) Program
Enterprise Platform Enablers (EPE) Quality Metal Additive Manufacturing (Quality Made), EPE-
FY17-03.

D. Research Opportunity Number - N00014-16-S-BA16

E. Response Date -

White Papers: 1 November 2016

Full Proposals: 27 January 2017

F. Research Opportunity Description –

Background:

Additive Manufacturing (AM) is a disruptive manufacturing process that will enable reliable & cost effective low volume manufacturing to increase Fleet readiness [Frazier, William E. 2014 "Metal Additive Manufacturing: A Review" Journal of Materials Engineering and Performance, 23 (6): 1917-1928]. While AM is currently being used or explored across the Naval Enterprise, technology development is still necessary to accelerate the use of additively manufactured metallic components. In particular, technology development is required to reduce the time and cost associated with deploying qualified/certified AM metallic components for use in Naval Air, Sea, & Ground platforms.

Aging Naval platforms are being challenged by dwindling traditional sources of supply, which reduces readiness and cause unacceptable logistical delays. Increasingly, maintenance depots are making limited production parts to meet operational demands. In response to this need, the Naval Warfare Centers, maintenance depots, and Fleet Readiness Centers plan to use additive manufacturing to produce small quantities of out-of-production or long lead-time metallic components. To achieve this objective, technology solutions are needed to ensure the manufacturability of quality metallic parts from a variety of AM machines and at different geographic locations.

The need to qualify and certify metal AM parts, including structural components, is a fundamental barrier to more extensive use of AM across platforms. It should be noted that certified structural components are made from well understood and characterized materials produced by fully standardized manufacturing processes where part design is based upon rigorously established and statistically substantiated design allowables. In these traditional qualified manufacturing lines, it is costly and time-consuming to modify and develop new parts. Because of this, procurement lead times for out-of-production structural components are generally long, often have a small pool of qualified suppliers, and are expensive. In comparison, AM is well suited for low volume production. If certified structural components for aircraft, ships, and ground vehicles could be fabricated with AM, it would benefit maintenance activities and the Naval supply chain.

Recent advances in modeling and simulation (M&S) tools based on an Integrated Computational Materials Engineering (ICME) approach have provided a new opportunity to relate process parameters to microstructure to properties to performance. Additionally, advanced sensor technology for use in process monitoring and control systems will be required to ensure the quality of AM fabricated parts.

Improved M&S tools for AM can enable microstructure and performance prediction based on part design. Process monitoring sensors and controls can enable real-time monitoring of the build, identify material variability and potential anomalies and capture a build process history. Coupled M&S tools with process monitoring and controls will ensure the quality of the AM process and help to reduce process variability to optimize overall part quality. These technologies will be demonstrated by using AM to directly make metallic parts. Candidate high value targets for AM parts, such as cast parts, focus on part complexity in conventional fabrication, high initial manufacturing investment cost, and their wide spread use across Naval platforms. These technological advancements will enable direct AM fabrication of parts to increase operational availability, support maintenance efficiency, and decrease total ownership cost of applicable parts/systems.

Scope:

The goal of this effort is to develop and demonstrate a suite/combination of AM software and hardware technologies required to support the rapid qualification of critical metallic components at a reduced cost. The Quality Made program is closely aligned with Naval AM strategies. This program will develop, test, and deliver validated M&S tools and in-situ process monitoring sensors and control for utilizing AM from initial design to finished product phases; and will support qualification of materials and processes. The desire is to transition these technologies directly into Naval Warfare Centers and Naval maintenance activities.

Overview:

Technical Description:

The technologies necessary to achieve the above goal must enable the production of parts with predictable and consistently reproducible mechanical properties, microstructural characteristics, and geometric tolerances. The envisioned system as delivered would include (i) ICME based M&S design tools, (ii) in situ process/inspection sensors and (iii) AM process control system improvements. The intent of the Quality Made program is to advance the technological maturity of

the system components from a Technology Readiness Level (TRL) 3/4 to TRL 6, with the latter including the installation of the system at a Navy Depot and a part production demonstration of the technologies in the Depot Maintenance environment.

Program Objectives:

The Navy's objective is to develop and validate these technologies in existing AM system(s) by producing parts using at least two alloys and two Navy-relevant AM processes. One class of alloys of high Navy interest is the AM analogs of Ti-6Al-4V. The Navy is also interested in AM analogs of 316L stainless steel or Inconel 625. Other alloys used in Naval systems are also of interest. The processes of interest to the Navy include (i) directed energy deposition and (ii) powder bed fusion [ISO/ASTM 52900:2015 Additive manufacturing -- General principles -- Terminology].

M&S Tools: ICME provides the physics-based computational tools to link interdependent AM Processing-Structure-Property-Performance relationships with respect to component design. ICME will be used to guide the design and build strategy, process development, and part quality and performance. The ICME tools developed may be divided into four basic areas: Processing, Microstructure, Property, and Performance.

Processing: The microstructure and mechanical performance of a material are directly related to the material's thermal & mechanical processing history. The development of ICME process models provides the basis to understand and control the complex AM processing environment and consequently may be used to establish the processing plan required to obtain desired microstructures and properties. The increased understanding of AM from ICME process models will facilitate the establishment of suitable AM build parameters that include build metrics and development of a build plan to support specific parts designs. This involves the development and application of ICME tools to relate process parameters (e.g. power, build path, raster rate, input material characteristics, and material feed rate) to the microstructural evolution of the part during its fabrication. ICME should include pre-processing operations (i.e. at the powder/wire level, build chamber conditioning, orientation, support structure), processing (i.e. while part is being built) and post-processing (e.g. machining, heat treatment, Hot Isostatic Pressing (HIP)) holistically. Ultimately, the goal is to establish optimal processing parameters to reduce the need for post processing tasks.

Microstructure: The use of ICME tools to predict anomalies (e.g. size, %, & distribution) and microstructural evolution of the part based upon the predicted thermal history and process parameters employed during part fabrication and post-processing.

Properties: The use of ICME tools to predict mechanical & physical properties of the AM material elements of interest based upon the predicted microstructure and anomaly structure.

Performance: The use of ICME tools to predict part performance based upon the materials properties, structure, part geometry, and post processing operations.

M&S tools should be developed and validated to:

- Predict production reliability
- Accurately model AM processes and part fabrication
- Quantify dimensional, microstructural, and mechanical property uncertainty
- Accurately predict residual stress and distortion
- Accurately predict the type and distribution of anomalies (e.g., porosity, cracks, inclusions)
- Choose the optimal build strategy with respect to part geometry and microstructure (e.g. energy, feed rate, path planning) and consistent with sensors and controls parameter space
- Design support structures that enable an optimal build strategy
- Predict resultant microstructure and material properties as they relate to part geometry
- Provide a probabilistic framework to support rapid qualification of processes and parts
- Establish tolerances, at a point-by-point level, for key process parameters to ensure quality in process controls during later fabrication
- Assist Sensors and Controls pillar with the development of efficient surrogate process models and strategies for alleviation of anomalies or large feature irregularities that are consistent with the overall build strategy and the process parameters tolerances.

Process/Inspection Sensors and Control Technology: Tightly controlled processes are required in order to maintain property variations within acceptable statistical confidence bounds. In contrast to traditional manufacturing processes, AM process variables are constantly adjusting to accommodate for part geometry, thermal compensation, and support structure. The goal of this effort is twofold: (i) to control the process within the parameters defined by the ICME models; and (ii) to detect, locate, size, and classify the occurrence of process anomalies in situ and, if possible, mitigate their effects via feed forward control.

This effort seeks to develop and validate sensing and control systems with the ability to adjust process parameters in situ and in real-time to produce quality AM parts to prevent anomalies, with a goal of a quality AM part that is anomaly free and have a well-defined microstructure. Advanced in-situ process monitoring sensors shall be capable of monitoring the key characteristics of the AM process (both global and local) that ultimately correlate directly to part quality and performance (e.g. surface topography, substrate temperature, melt pool temperature, melt pool size, melt pool cooling rates, anomaly formation, part geometry). Measurements of key characteristics must be made at appropriate time scales to be useful for real-time and feed forward process controls in order to minimize error propagation between layers, alleviate anomalies and their effects in subsequent layers of the build, and to maintain acceptable part quality. It is anticipated that orthogonal sensing technologies may need to be employed; for example, thermal sensors may need to be augmented with other sensors to monitor part geometry or anomaly formation.

The ICME pillar of Quality Made will establish, on a point by point basis, key process parameters, values, and tolerances for a quality AM build. The control system will link sensor data to material models developed with the assistance of the ICME team in order to predict, anticipate, and adjust process controls to stay within tolerances in order to ensure part quality. Every effort should be made to minimize the extent of hardware (sensors and controls) developed to accomplish the program objectives. In this regard, the system processing energy source, the actuators and the

process control sensors could be multitasked as anomaly detection tools if they provide sufficient resolution and sensitivity for the task. The Sensors and Process Control System should be developed and validated to:

- Maintain key process parameters within established manufacturing limits (from modeling and simulation tools)
- Exercise predictive control of process variables to minimize variability (e.g. noise) and enhance layer quality
- Directly monitor and record machine process parameters (e.g. thermal history, dimensional accuracy) layer-by-layer for quality assurance
- Record a nondestructive inspection record of key performance parameters layer-by-layer
- Enable an alert protocol (e.g. pausing the process) if manufacturing tolerances have been exceeded
- Develop a protocol to calibrate the system and to obtain system parameters prior to each build
- Re-calibrate the system periodically (especially during long builds) to identify, eliminate or compensate for hardware drift

Metrics: (T = Threshold and O = Objective requirements)

The technical metrics for this effort based on the selected metal alloys and AM processes are:

- Property prediction capability as a function of process and part geometry: Measured value shall be within $\pm 10\%$ (T) or $\pm 5\%$ (O) of predicted ICME value with the confidence level specified
- Accuracy of the process and sensor control values defined by ICME are maintained within 90% (T) and 95% (O) with the confidence level specified
- Accuracy of as-fabricated microstructure and anomalies (e.g. porosity) across varying geometries: 90% (T) and 95% (O) of predicted with the confidence level specified
- The mechanical properties (static and dynamic) of the as-fabricated part: meet or exceed those of castings (T), and match wrought with the confidence level specified (O)

Notional Technical Development Strategy:

The program will consist of two phases, the Contract Base (Phase 1) and Option (Phase 2).

Contract Base:

The Base Period (Phase 1) is anticipated to be 24 months. The Contractor shall develop M&S and process monitoring and control technologies. At approximately the 18th month after contract award, each Contractor shall provide a complete technical data package to the Navy that demonstrates and validates the M&S tools and process monitoring sensors and control to values consistent with program threshold metrics. This includes technical data showing the ICME model predictions of residual stress, resultant localized microstructure, anomaly distribution, and the process monitoring sensors and control targets during all stages of the build process as compared to the actual build.

During the Base performance period, the Contractor shall provide the following deliverables.

- Monthly Technical and Financial Reports
- Quarterly Program Reviews
- Technical Data Package (See Note (1))
- Semiannual Verification & Validation Plan Document
- Preliminary ICME M&S Tools and Software Architecture
- Preliminary Sensors and Controls System Definition and Integration Plan
- Preliminary Interface Control Document
- Preliminary System Calibration Plan
- Final Report (See Note (1))

Contract Option:

The Option (Phase 2), if exercised, is anticipated to be 24 months. The Contractor shall continue with model maturation and to continue with process monitoring sensors and control development. For the Option, the Government will provide drawings for a final demonstration part to validate the M&S technologies and process monitoring and control technologies. The selected part/class of parts will come from current Naval Air, Sea, and Ground Vehicle platforms. The part selected for the final demonstration will be based on the performer's selected material and process build volume limitations.

At approximately the 12th month after exercise of the option, the Contractor shall provide a technical data package to the Navy that demonstrates and validates the M&S tools and process sensing and control robustness based on demonstration part geometries and the part itself to validate the robustness of each model and the capabilities of the process monitoring and control. For the remainder of the Option period, the Contractor shall fabricate the final demonstration part for evaluation.

The Prototype AM machine with sensor and control technologies shall be a deliverable (not separately priced Contract Line Item) under Option 1 of the contract, if exercised. No later than the 18th month of the Option period, the Contractor shall transfer and install the equipment at a Navy facility and provide operator training in the use of the equipment.

During the performance period of the Option, the Contractor shall provide the following deliverables:

- Monthly Technical and Financial Reports
- Quarterly Program Reviews
- Technical Data Package (See Note (1))
- Air/Sea/Ground Part
- Semiannual V&V Plan Document
- ICME M&S Tools and Software Manual
- Sensors and Controls System Specifications
- Interface Control Document
- Site Installation Plan and Training

- System Calibration Protocol
- Validation Tests Results
- A Prototype AM Machine with installed Sensors and Control
- Final Report (See Note (1))

Note (1): Any AM/fabrication Technical Data Packages will be defined by the Navy. Any and all thermo-mechanical, thermo-metallurgical material data and prototype fabricated source data generated by the contractor or collected from literature shall be reported as part of the Technical Data Package and Final Report in Base and Option sections of the program.

G. Point(s) of Contact -

Comments or questions submitted should be concise and to the point, eliminating any unnecessary verbiage. In addition, the relevant part and paragraph of the Broad Agency Announcement (BAA) should be referenced.

Questions of a **business** nature, and suggestions for improvement, should be submitted to:

AnShawn Lewis
Contract Specialist
C4ISR AND SEA WARFARE CONTRACT BRANCH
ONR Code 252
Office of Naval Research
875 North Randolph Street
Arlington VA 22203-1995
anshawn.lewis@navy.mil

Susan Paolini
Contracting Officer
ONR Code 252
C4ISR AND SEA WARFARE CONTRACT BRANCH
One Liberty Center
875 N. Randolph Street
Arlington, VA 22203-1995
susan.paolini@navy.mil

Questions of a **technical** nature should be submitted to the Program Officer/technical point of contact, with a copy to the business points of contact shown above:

Dr. Jennifer Wolk
ONR Code 332
Office of Naval Research
875 North Randolph Street
Suite OLC/645
Arlington VA 22203-1995
jennifer.wolk@navy.mil

Questions of a Security nature should be submitted to:

Torri Powell
Industrial Security Specialist
Office of Naval Research
Security Department, Code 43
One Liberty Center
875 North Randolph St.
Arlington, VA 22203-1995
Email Address: torri.powell@navy.mil

Note: All communications shall be UNCLASSIFIED and submitted via e-mail to the Technical Point of Contract (POC) with a copy to the designated Business POC(s).

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

Amendments to this BAA will be posted to the following web pages:

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

H. Instrument Type(s) -

The award(s) will take the form of a contract(s).

Any contract award resulting from this BAA will incorporate the most current FAR, DFARS, NMCARS and ONR clauses.

Examples of model contracts can be found on the ONR website at the following link: <http://www.onr.navy.mil/Contracts-Grants/submit-proposal/contracts-proposal/contract-model-awards.aspx>. ONR Contract specific representations and certifications can be accessed on the following page of the ONR website: <http://www.onr.navy.mil/en/Contracts-Grants/submit-proposal/contracts-proposal.aspx>.

I. Catalog of Federal Domestic Assistance (CFDA) Numbers - RESERVED

J. Catalog of Federal Domestic Assistance (CFDA) Titles - RESERVED

K. Other Information -

Work funded under a BAA may include basic research, applied research and some advanced technology development research. 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 Activity 2 (Applied Research) and NOT performed on-campus at a university or b) funded by Budget Activity 3 (Advanced Technology Development) does not meet the definition of “contracted fundamental research.” In conformance with the USD (AT&L) guidance and National Security Decision Directive 189, ONR will place no restriction on the conduct or reporting of unclassified “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. Non-fundamental research is normally awarded under contracts and may require restrictions during the conduct of the research and DoD pre-publication review of such research results due to subject matter sensitivity. Potential Offerors should consult with the appropriate ONR Technical POCs to determine whether the proposed effort would constitute basic research, applied research or advanced research.

FAR Part 35 restricts the use of BAAs such as this, to the acquisition of basic and applied research and that portion of advanced technology development not related to the development of a specific system or hardware procurement. Contracts and grants and other assistance agreements made under BAAs are for scientific study and experimentation directed towards advancing the state of the art and increasing knowledge or understanding.

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

II. AWARD INFORMATION

The Government anticipates either a single award, or multiple awards based on this announcement.

A. Amount and Period of Performance- Estimated Total Amount of Funding Available (\$K):

FY2017	FY2018	FY2019	FY2020	Total
\$3,000	\$6,000	\$7,000	\$5,500	\$21,500

Anticipated Number of Awards: ONR anticipates that multiple awards will result from this BAA.

Anticipated Range of Individual Award Amounts: The typical award will likely be in the range of \$500K to \$2,000K per year, but awards outside this range are also possible.

Anticipated Period of Performance: The period of performance for each proposal will vary depending on the proposed objectives and key performance parameters, but may not exceed forty-eight (48) months. The program will consist of two Phases: Base Period (Phase 1) with an estimated period of performance of twenty-four (24) months and Option I (Phase 2) with an estimated period of performance of twenty-four (24) months. Both Phases are covered by this BAA and Full Proposals must address the Base and Option Period.

B. Peer Reviews- N/A

C. Production and Testing of Prototypes-

In the case of funded proposals for the production and testing of prototypes, ONR may modify the contract to add a contract line item or contract option for the provision of advanced component development or for the delivery of additional prototype units. However, such a contract addition shall be subject to the limitations contained in Section 819 of the National Defense Authorization Act (NDAA) for Fiscal Year 2010, as modified in Section 811 of the NDAA for Fiscal Year 2015.

III. ELIGIBILITY INFORMATION

- A.** All responsible sources from academia and industry may submit proposals under this BAA. Small Business Concerns, Other Socio-Economic Categories, 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 Small Business or other socio-economic categories participation, however, all businesses both small and large are encouraged to submit proposals and compete for funding consideration.
- B.** 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 Offerors are allowed so long as such arrangements are permitted under the sponsoring agreement between the Government and the specific FFRDC.
- C.** 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 Technical [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.

- D. University Affiliated Research Centers (UARCs) are eligible to submit proposals under this BAA unless precluded from doing so by their Department of Defense UARC contract.
- E. 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.
- F. Offerors should be aware of recent changes in export control laws. Offerors are responsible for ensuring compliance with all International Traffic in Arms Regulation (ITAR)(22 CFR §120 *et. seq.*) requirements, as applicable. In some cases, developmental items funded by the Department of Defense are now included on the United States Munition List (USML) and are therefore subject to ITAR jurisdiction. Offerors should address in their proposals whether ITAR restrictions apply or do not apply, such as in the case when research products would have both civil and military application, to the work they are proposing to perform for ONR. The USML is available online at <http://www.ecfr.gov/cgi-bin/text-idx?node=pt22.1.121>. Additional information regarding the President's Export Control Reform Initiative can be found at <http://export.gov/ecr/index.asp>.
- G. The Government may consider voluntary cost sharing if proposed. However, cost sharing is not expected and will not be used as a factor during the merit review of any proposal hereunder.

IV. APPLICATION AND SUBMISSION INFORMATION

Section IV: Table of Contents

- A. [Application and Submission Process](#)
- B. [Content and Format of White Papers/Full Proposals](#)
 - a. [White Papers](#)
 - b. [Full Proposals](#)
- C. [Significant Dates and Times](#)
- D. [Submission of Late Proposals](#)
- E. [Submission of Grant Proposals through Grants.gov](#)
- F. [Submission of White Papers and Full Proposals for Contracts, Cooperative Agreements, and Other Transaction Agreements](#)

* Click on the above hyperlinks to navigate directly to your desired section

A. Application and Submission Process -

White Papers: The Navy will consider white papers that address either a specific alloy and process or multiple alloys and processes. White Papers are required prior to a Full Proposal submission.

The due date for white papers is no later than 2:00 PM (Local Time, Washington, D.C.) on Tuesday, 1 November 2016. White papers are to be submitted as a pdf file via electronic mail (email) only to Dr. Jennifer Wolk at jennifer.wolk@navy.mil. The subject line must read “White Paper Submission in Response to N00014-16-S-BA16.” Each white paper will be evaluated by the Government to determine whether the technology advancement proposed appears to be of particular value to the Department of the Navy. Initial Government evaluations and feedback will be issued via e-mail notification from the Technical Point of Contact on or about Friday, 9 December 2016. Detailed Full Proposals will be subsequently encouraged from those whose proposed technologies have been identified through the above referenced e-mail as being of “particular value” to the Government. However, any such encouragement does not assure a subsequent award. Full Proposals may also be submitted by any entity whose white paper was not identified as being of particular value to the Government or any entity who did not submit a white paper.

Full Proposals: The due date for receipt of Full Proposals is 2:00 PM (Local Time, Washington, D.C.) on Friday, 27 January 2017. It is anticipated that final selections will be made within five (5) weeks after full proposal submission. As soon as the final full proposal evaluation process is completed, PI’s will be notified via email of their project’s selection or non-selection for FY17 funding. Full proposals received after the published due date and time will not be considered for funding in FY17.

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

In the event Technical Proposals for White Papers and Full Proposals exceed page limitations, the Government intends to evaluate only those pages falling within the page limitations. Full proposals must be mailed in accordance with the instructions stated under paragraph E. entitled “Address for the Submission of White Papers and Full Proposals for Contracts” of Section IV. White Papers and Full proposals received after the published due date and time will not be considered for funding.

White Papers and Full Proposals submitted under this BAA shall be unclassified. A non-proprietary version of the Statement of Work must also be submitted. Do not put proprietary data or markings in or on the Statement of Work. For proposals containing data that the offeror does not want disclosed to the public for any purpose, or used by the Government except for evaluation purposes, the contractor shall mark the title page with the following legend:

“This proposal includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed--in whole or in part--for any purpose other than to evaluate the proposal. If, however, a contract is awarded to this offeror as a result of--or in connection with-- the submission of this data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting contract. This restriction does not limit the Government’s right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained in (insert numbers or other identification of sheets).”

Also, mark each sheet of data that the offeror wishes to restrict with the following legend:

“Use or disclosure of data contained on this sheet is subject to the restriction on the title page of

this proposal.

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

STATEMENT OF WORK (SOW): A non-proprietary version of the SOW must also be submitted.

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

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
- Page limit: 6 pages. (excluding cover page and resumes)

White Paper Submission

Electronic (email) submissions should be sent to the attention of the TPOC at:

jennifer.wolk@navy.mil. The subject line of the email shall read

“N00014-16-S-BA16” White Paper Submission”. The white paper must be a Microsoft Word 2007 compatible, or PDF format attachment to the email. There is an email size limit of 5MB per email.

NOTE: Do not send:

- 1) Hardcopies of White Papers (including Facsimiles) as only electronic submissions will be accepted and reviewed;**
- 2) ZIP files; and**
- 3) Password protected files.**

In order to provide traceability and evidence of submission, Offerors may wish to use the "Delivery Receipt" option available from Microsoft Outlook and other email programs that will automatically generate a response when the subject email is delivered to the recipient's email system. Consult the User's Manual for your email software for further details on this feature.

White Paper Content

- **Cover Page**: The Cover Page shall be labeled “WHITE PAPER” and shall include the BAA Number N00014-16-S-BA16, proposed title, technical points of contact, telephone number, facsimile number, and e-mail address.

- **Technical Concept:** Technical Concept: There is considerable freedom to formulate the main body of the white paper (not to exceed five (5) pages) as the Offeror sees fit. The bulk of the main body of white paper should be devoted to the technical discussion and innovation. Here is some general guidance on what may be included in the technical concept: a description of the project objectives, technical approach, what's new, related experience, facilities, techniques or unique combinations of these which are integral factors for achieving the objectives, a plan for demonstrating and evaluating the operational effectiveness of the Offeror's product in laboratory or simulated environment including evaluation metrics, proprietary aspects of the project and any assertions of data rights applicable to the results of this effort.
- **Future Naval Relevance:** Although relevance to Navy and the Marine Corps is one of three equally important criteria in evaluation of the white paper, not more than half a page should be devoted to these discussions.
- **Rough Order of Magnitude (ROM) Cost:** Offerors shall provide cost information as needed, although not at the level of detail as required with the full proposal. White paper submissions shall include a cost summary showing requested funding per the Government's fiscal year (October through September). The cost summary (not to exceed half a page) shall be segregated by both task and year over the period of performance (e.g., Year 1, Year 2, Year 3)."

b. FULL PROPOSALS

i. INSTRUCTIONS FOR CONTRACT

Proposal Package:

The following six documents with attachments comprise a complete proposal package:

- (1) Proposal Checklist (pdf)
- (2) Technical Proposal Template (Word)
- (3) Cost Proposal Spreadsheet (Excel)
- (4) Adequacy Checklist for Pre Award Audit (SF 1408) (as applicable)
- (5) Stand-alone non-proprietary Statement of Work (SOW) in Word Format
- (6) ONR Representation and Certifications

NOTE: The electronic file name for all documents submitted under this BAA must not exceed 68 characters in length, including the file name extension.

Items 1 – 6 above are located at: <http://www.onr.navy.mil/Contracts-Grants/submit-proposal/contracts-proposal/>. All have instructions imbedded into them that will assist in completing the documents. Also, both the Proposal Checklist and the Cost Proposal Spreadsheet require completion of cost-related information. Please note that attachments can be incorporated into the Proposal Checklist.

Offerors responding to this BAA must submit a separate list of all technical data or computer software that will be furnished to the Government with other than unlimited rights. The Government will assume unlimited rights if offerors fail to identify any intellectual property restrictions in their proposals. Include in this section all proprietary claims to results, prototypes, and deliverables. If no restrictions are intended, then the offeror should state “NONE.”

For proposals below the simplified acquisition threshold (less than or equal to \$150K), the Technical Proposal Template and Proposal Checklist documents, and the Cost Proposal Spreadsheet are required. In addition, if a purchase order will be awarded, the effort will be fixed price. Purchase orders can also contain options, as long as the total amount of the base and all options does not exceed \$150K.

The format requirements for attachments are as follows:

- Paper Size- 8.5 x 11 inch paper
- Margins – 1 inch
- Spacing- single or double spaced
- Font- Times New Roman, 12 point
- Page Limitation of Technical Proposal Template – ten (10) pages

For proposed subcontracts or interorganizational transfers over \$150,000, Offerors must provide a separate fully completed Cost Proposal Spreadsheet in support of the proposed costs. This spreadsheet, along with supporting documentation, must be provided either in a sealed envelope with the prime’s 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, and should include a description of the effort to be performed by the subcontractor.

Offerors shall submit one (1) original hard copy and one (1) electronic copy on a CD-ROM. The electronic copy shall be submitted in a secure, pdf-compatible format, except for the electronic file of the Cost Proposal Spreadsheet which must be submitted in a Microsoft Excel 2007 compatible format and the Statement of Work Template which must be submitted in Microsoft Word format. All attachments shall be submitted in a secure, pdf-compatible format.

The secure pdf-compatible format is intended to prevent unauthorized editing of the proposal prior to any award. A password shall not be required for opening the proposal document, but the Government must have the ability to print and copy text, images, and other content. Should an Offeror amend its proposal, the amended proposal shall be submitted following the same hard and electronic copy guidance applicable to the original proposal.

Any proposed options that are identified in the Technical Proposal Template or Proposal Checklist documents, but are not fully priced out in the Cost Proposal Spreadsheet, will not be included in any resulting contract, cooperative agreement, or other transaction. If proposing options, they **must** be separately priced and separate spreadsheets shall be provided for the base period and each option. In addition to providing summary by period of performance (base and any options), the Contractor is also responsible for providing a breakdown of cost for each task identified in the Statement of Work. The sum of all costs by task worksheets **MUST** equal the

total cost summary.

The electronic submission of the Excel spreadsheet should be in a “useable condition” to aid the Government with its evaluation. The term “useable condition” indicates that the spreadsheet should visibly include and separately identify within each appropriate cell any and all inputs, formulas, calculations, etc. The Offeror should not provide “value only spreadsheets” similar to a hard copy.

Fixed Fees on ONR Contracts: The Government Objective is set in accordance with the DFARS 215.404-71. See the below table for range and normal values:

Contract Risk Factor	Contract Type	Assigned Value (Normal range)	Normal Value
Technical (1)		3% - 7% (2)	5%
Management/Cost Control (1)		3% - 7% (2)	5%
Contract Type Risk	Firm Fixed Price	2% - 6% (3)	3% - 5% (4)
Contract Type Risk	Cost Plus Fixed Fee	0% - 1% (2)	0.5%

- (1) Assign a weight (percentage) to each element according to its input to the total performance risk. The total of the two weights equal 100%
- (2) Assign a weighting score relative to the Risk Factor.
- (3) Depends on the specific Contract Type (With/without financing, performance-based payments, and/or progress payments).
- (4) Depends on the specific Contract Type.

Technology Incentive (TI) is rarely utilized at ONR, because the contracts issued by ONR typically are not eligible for TI (See DFARS 215.404-71-2(c) (2)). Any consideration of TI requires strong and convincing justification in the proposal, which are then subject to negotiation and determination of a fair and reasonable fee, within the context of the specific award.

Typically the range of fee is 5% to 7.5% on an ONR awarded contract.

For submission instructions, see Part IV, Section F. [Submission of White Papers and Full Proposals for Contracts](#)

C. Significant Dates and Times -

This announcement will remain open until the full proposal due date noted below. Proposals may be submitted any time during this period.

Anticipated Schedule of Events *		
Event	Date (MM/DD/YEAR)	Time (Local Time, Washington, D.C.)
White Papers Due Date	11/1/2016	2:00 PM
Notification of Initial Navy Evaluations of White Papers*	12/09/2016	
Full Proposals Due Date	1/27/2017	2:00 PM
Notification of Selection for Award *	2/23/2017	
Contract Awards*	10/06/2017	
Kickoff Meeting*	10/23/2017	

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

D. 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.

E. Submission of Grant Proposals through Grants.gov: RESERVED

F. Submission of Full Proposals for Contracts:

Full Proposals must be emailed to Dr. Jennifer Wolk at jennifer.wolk@navy.mil. The DVD or CD-ROM of the Full Proposals shall be sent to the Office of Naval Research at the following address:

Office of Naval Research
Attn: Dr. Jennifer Wolk
ONR Department Code: 332
875 North Randolph Street
Arlington, VA 22203-1995

V. EVALUATION INFORMATION

A. Evaluation Criteria –

Awards under this BAA will be made to Offerors on the basis of the evaluation criteria listed below, and program balance to provide overall value to the Government. The Government reserves the right to remove Offerors from award consideration should the parties fail to reach agreement on award terms, conditions, and cost/price within a reasonable time, or the Offeror fails to timely provide requested additional information.

In accordance with FAR 35.016(e), the primary basis for selecting proposals for acceptance will be technical, importance to agency programs and fund availability. Cost realism and reasonableness will also be considered. The following criteria, all being of equal value, will be used for the technical evaluation:

- 1) Overall scientific and technical merits of the proposal and responsiveness to the topic with a credible approach to deliver an integrated overall technical solution.
- 2) Potential Naval relevance and contributions of the effort to the agency's specific mission.
- 3) The offeror's capabilities, related experience, facilities, techniques or unique combinations of these which are integral factors for achieving the proposal objectives.
- 4) The qualifications, capabilities and experience of the proposed Principal Investigator (PI), team leader and key personnel who are critical in achieving the proposal objects.

The ultimate recommendation for award of proposals is made by ONR's scientific/technical community. Recommended proposals will be forwarded to the ONR Contracts and Grant Awards Management office. Any notification received from ONR that indicates that the Offeror's full proposal has been recommended does not ultimately guarantee an award will be made. This notice indicates that the proposal has been selected in accordance with the evaluation criteria above and has been sent to the contracting department to conduct cost analysis, determine the offeror's responsibility, and to take other relevant steps necessary prior to

commencing negotiations with the offeror.

B. Commitment to Small Business

The Office of Naval Research is strongly committed to providing both meaningful prime contracting and subcontracting opportunities for small businesses, small disadvantaged businesses (SDBs), woman-owned small businesses (WOSBs), historically underutilized business zone (HUBZone) small businesses, veteran-owned small business (VOSBs), service disabled veteran-owned small businesses (SDVOSBs), historically black colleges and universities, and minority institutions, and other concerns subject to socioeconomic considerations through its awards.

Businesses unfamiliar with doing business with the government and that require assistance may contact the state-specific Department of Defense (DoD) Procurement Technical Assistance Center (PTAC). DoD PTACs serve as a resource for businesses pursuing and performing under contracts with DoD, other federal agencies, state and local governments and with government prime contractors. Assistance provided by the PTACs is usually free of charge. PTAC support includes registration in systems such as SAM, identification of contract opportunities, understanding requirements and preparing and submitting proposals. The PTACs have a presence in each state, Puerto Rico and Guam. To locate a local PTAC visit: <http://www.dla.mil/SmallBusiness/Pages/ProcurementTechnicalAssistanceCenters.aspx> or <http://www.aptac-us.org/new/>.

1) Subcontracting Plan - For proposed contract awards exceeding \$700,000, large businesses and non-profits (including educational institutions) shall provide a Subcontracting Plan (hereafter known as 'the Plan') that contains all elements required by FAR Subpart 19.704, FAR 52.219-9 and as supplemented by DFARS 252.219-7003.

NOTE: Small businesses are exempt from this requirement.

The Plan must be submitted as an attachment to the "Proposal Checklist" and will not be included in the page count. If a company has a Master Subcontracting Plan, as described in FAR 19.701 or a Comprehensive Subcontracting Plan, as described in DFARS 219.702, a copy of the Plan shall also be submitted as an attachment to the "Proposal Checklist".

Plans will be reviewed for adequacy, ensuring that the required information, goals, and assurances are included. FAR 19.702 requires the apparent successful offeror to submit an acceptable Plan. If the apparent successful offeror fails to negotiate a Plan acceptable to the contracting officer within the time limit prescribed by the contracting officer, the offeror will be ineligible for award.

Offerors shall propose a plan that ensures small businesses (inclusive of SDBs, WOSBs, HUBZone, VOSBs and SDVOSBs) will have the maximum practicable opportunity to participate in contract performance consistent with efficient performance.

As a baseline, Offerors shall, to the best extent possible, propose realistic goals to ensure small business participation in accordance with the current or most recent fiscal year subcontracting goals found on the DoD Office of Small Business Program website at: <http://www.acq.osd.mil/osbp/>. If proposed goals are below the statutory requirements, then the

offeror shall include in the Plan a viable written explanation as to why small businesses are unable to be utilized and what attempts were taken to ensure that small business were given the opportunity to participate in the effort to the maximum extent practicable.

2) Small Business Participation Statement –

If subcontracting opportunities exist, all prime Offerors shall submit a Small Business Participation Statement regardless of size in accordance with DFARS 215.304 when receiving a contract for more than the simplified acquisition threshold (i.e., \$150,000). All offerors shall provide a statement of the extent of the offeror’s commitment in providing meaningful subcontracting opportunities for small businesses and other concerns subject to socioeconomic considerations through its awards and must agree that small businesses, VOSBs, SDVOSBs, HUBZones, SDBs, and WOSBs concerns will have the maximum practicable opportunity to participate in contract performance consistent with efficient performance.

This assertion will be reviewed to ensure that it supports this policy by providing meaningful subcontracting opportunities. The statement should be submitted as an attachment to the “Proposal Checklist” and will not be included in the page count.

3) Subcontracting Resources -

Subcontracting to a prime contractor can be a good way to participate in the contracting process. The following is a list of potential resources that may assist in locating potential subcontracting partners/opportunities/resources:

- *Companies Participating in DoD Subcontracting Program Report
- *DAU Small Business Community of Practice (SB COP)
- *DefenseLink \geq \$7.0 M Award Notices
- *DoD OSBP Prime Contractors and Subcontractors with Subcontracting Plans
- *Dynamic Small Business Search
- *Electronic Subcontracting Reporting System (eSRS)
- *Federal Business Opportunities (FEDBIZOPPS)
- *Navy SBIR/STTR Search – Website or Brochure
- *DoD Procurement Technical Assistance Centers (PTAC)
- *Small Business Administration (SBA) Subcontracting Opportunities Directory
- *SBA Subnet

For a description and associated websites visit the ONR Office of Small Business webpage at:
<http://www.onr.navy.mil/Contracts-Grants/small-business.aspx>.

In accordance with FAR Subpart 5.206, the following entities may transmit a notice to a Government Point of Entry (GPE) to seek competition for subcontracts, to increase participation by qualified small businesses, VOSBs, SDVOSBs, HUBZones, SDBs, and WOSBs, and to meet established subcontracting plan goal as follows:

- (a) A contractor awarded a contract exceeding \$150,000 that is likely to result in the award of any subcontracts;
- (b) A subcontractor or supplier, at any tier, under a contract exceeding \$150,000 that has a subcontracting opportunity exceeding \$15,000.

The notices must describe—

- (a) The business opportunity;
- (b) Any prequalification requirements; and
- (c) Where to obtain technical data needed to respond to the requirement.

An example of a GPE is the SBA SUB-Net which is a place in which prime contractors may post solicitations or sources sought notices for small business. The SUB-Net database provides a listing of subcontracting solicitations and opportunities posted by large prime contractors and other non-federal agencies.

C. Options -

- (a) Award Evaluation. The Government will evaluate options for award purposes by adding the total cost for all options to the total cost for the basic requirement. Evaluation of options will not obligate the Government to exercise the options during contract or grant performance.
- (b) Post-Award Evaluation.

ONR reserves the right to exercise the option under all, some or none of the awarded contracts. The decision to exercise the option will be based on the Government's assessment of the degree to which the Performers meet or exceed the Program Threshold Metrics (Threshold and Objective requirements) specified in Section I.F, subject to funding available to the Government.

D. Evaluation Panel -

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

VI. AWARD ADMINISTRATION INFORMATION

1. Administrative Requirements –

- A. North American Industry Classification System (NAICS) code – The NAICS code for this announcement is 541712 with a small business size standard of “1000 employees”.
(*Applies to contracts only.*)

- B. System for Award Management (SAM): All Offerors submitting proposals or applications must:
- 1) Be registered in the SAM prior to submission;
 - 2) Maintain an active SAM registration with current information at all times during which it has an active Federal award or an application under consideration by any agency; and
 - 3) Provide its DUNS number in each application or proposal it submits to the agency.

The System for Award Management (SAM) is a FREE WEBSITE that consolidates the capabilities you used to find in CCR/FedReg, ORCA, and EPLS. Future phases of SAM will add the capabilities of other systems used in Federal procurement and awards processes.

SAM may be accessed at <https://www.sam.gov/portal/public/SAM/>

NOTE TO FORMER CCR REGISTRANTS: If you had an active record in CCR, you have an active record in SAM. You do not need to do anything in SAM at this time, unless a change in your business circumstances requires a change in SAM in order for you to be paid or to receive an award. SAM will send notifications to the registered user via email 60, 30, and 15 days prior to expiration of the record. You can search for registered entities in SAM by typing the DUNS number or business name into the search box.

C. Access to your Contract Award

Office of Naval Research (ONR) award/modification documents are only available via the Department of Defense (DoD) Electronic Document Access System (EDA) within the WideArea WorkFlow e-Business Suite (<https://wawf.eb.mil/>).

Unless otherwise specified by the Offeror, notifications for the posting of award and modification documents to EDA will be directed to both the Technical Point of Contact and the Business Point of Contact identified in the Offeror's proposal.

EDA is a Web-based system that provides secure online access, storage and retrieval of awards and modifications to DoD employees and vendors.

If you do not currently have access to EDA, you may complete a self-registration request as a "Vendor" via <https://wawf.eb.mil/> following the steps below:

1. Click "Accept"
2. Click "Register" (top right)
3. Click "Agree"
4. In the "What type of user are you?" drop down, select "Vendor"
5. Select the systems you would like to access (iRAPT at a minimum)
6. Complete the User Profile and follow the site instructions

Allow five business days for your registration to be processed. EDA will notify you by email when your account is approved.

To access awards after your registration has been approved, log into <https://wawf.eb.mil/>, select "EDA", select either EDA location, Select "Contracts", select your search preference,

enter the Contract Number (or, if applicable, enter the Grant Number in the Contract Number field), and select "View".

Registration questions may be directed to the EDA help desk toll free at 866-618-5988, commercial at 801-605-7095, or via email at disa.ogden.esd.mbx.cscassig@mail.mil

VII. OTHER INFORMATION

Section VII: Table of Contents

A. [Applies to Contracts only](#)

- i. Government Property/Government Furnished Equipment (GFE) and Facilities
- ii. Use of Arms, Ammunition and Explosives
- iii. System for Award Management (SAM)
- iv. Employment Eligibility Verification (E-verify)
- v. Conflicts of Interest
- vi. FAR / DFARS Clauses
- vii. Combating Trafficking in Person
- viii. Certification Regarding Trafficking in Persons Compliance Plan
- ix. Updates of Information regarding Responsibility Matters

B. [Applies to Contracts, Grants, Cooperative Agreements and Other Transaction Agreements](#)

- i. Security Classification
- ii. Use of Animals and Human Subjects in Research
- iii. Recombinant DNA
- iv. Institutional Dual Use Research of Concern
- v. Department of Defense High Performance Computing Program
- vi. Project Meetings and Reviews
- vii. Reporting Executive Compensation and First-Tier Subcontract Awards

* Click on the above hyperlinks to navigate directly to your desired section

A. Applies to Contracts only:

- i. 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 should indicate in the Proposal Checklist, Section II, Blocks 8 and 9, which of these facilities are critical for the project's success.

- ii. Use of Arms, Ammunition and Explosives:

Safety

The Offeror is required to be in compliance with DoD manual 4145.26-M, *DoD Contractor's Safety Manual for Ammunition and Explosives* if ammunitions and/or explosives are to be utilized under the proposed research effort. (See DFARS 223.370-5 and DFARS 252.223-7002)

If ammunitions and/or explosives (A&E) are to be utilized under the proposed research effort, the Government requires a preaward safety survey in accordance with DFARS PGI 223.370-4(C)(iv) entitled *Preaward survey*. The Offeror is solely responsible for contacting the cognizant Defense Contract Management Agency (DCMA) office and obtaining a required preaward safety survey before proposal submission. The Offeror should include required preaward safety surveys with proposal submissions.

If the Offeror proposes that the Government provide Government-furnished A&E containing any nitrocellulose-based propellants and/or nitrate ester-based materials (such as nitroglycerin) or other similar A&E with a tendency to become chemically unstable over time, then NMCARS 5252.223-9000 will also apply to a resulting contract award. (See NMCARS 5223.370-5)

Security

If arms, ammunition or explosives (AA&E) are to be utilized under the proposed research effort, the Government requires a preaward security survey. The Offeror is solely responsible for contacting the cognizant DCMA office and obtaining a required preaward security survey before proposal submission. The Offeror should include a required preaward security survey with proposal submission. (See DoD manual 5100.76-M, *Physical Security of Sensitive Conventional Arms, Ammunition and Explosives*, paragraph C1.3.1.4)

If AA&E are to be utilized under the proposed research effort, the Government may require the Contractor to have perimeter fencing around the place of performance in accordance with DoD 5100.76-M, Appendix 2.

If AA&E are to be utilized under the proposed research effort, the Offeror is required to provide a written copy of the Offeror's AA&E accountability procedures in accordance with DoD 5100.76-M. If the Offeror is required to provide written AA&E accountability procedures, the Offeror should provide the respective procedures with its proposal submission. See DoD 5100.76-M Appendix 2.12.

iii. System for Award Management (SAM):

FAR 52.204-7 System for Award Management and FAR 52.204-13 System for Award Management Maintenance are incorporated into this BAA, and FAR 52.204-13 will be incorporated in all awards.

iv. Employment Eligibility Verification (E-verify):

As per FAR 22.1802, recipients of FAR-based procurement contracts must enroll as Federal Contractors in E-verify and use E-verify to verify employment eligibility of all

employees assigned to the award. All resultant contracts from this solicitation will include FAR 52.222-54, "Employment Eligibility Verification."

v. Conflicts of Interest:

(1) Organizational Conflicts of Interest. All Offerors and proposed subcontractors must affirm whether they are, or are not, providing scientific, engineering, and technical assistance (SETA) or similar support to any ONR technical office(s) through an active contract or subcontract. (For the purposes of this BAA, SETA is defined as work that provides analysis and engineering services in a consulting capacity as opposed to performing research and development.) 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. Offerors and proposed subcontractors must disclose all facts relevant to the existence or potential existence of organizational conflicts of interest (FAR 9.5). The disclosure shall include a description of the action the offeror has taken or proposes to take to avoid, neutralize, or mitigate such conflict. Unless a waiver is granted under FAR 9.503, a contractor cannot simultaneously be a SETA and a research and development performer. Proposals that fail to fully disclose potential conflicts of interests will be rejected without technical evaluation and withdrawn from further consideration for award. Additional ONR OCI guidance can be found at <http://www.onr.navy.mil/About-ONR/compliance-protections/Organizational-Conflicts-Interest.aspx>.

(2) Personal Conflicts of Interest. All Offerors and proposed subcontractors must report whether any covered employees are performing acquisition functions closely associated with inherently governmental functions for ONR, as defined in FAR 3.11. Offerors must include which ONR office(s) those covered employees support and identify the prime contract numbers. This information must be furnished at the time of proposal submission. Offerors and proposed subcontractors must disclose all facts relevant to the existence or potential existence of any personal conflicts of interest involving covered employees and describe any actions taken to avoid, neutralize, or mitigate any such conflicts. Proposals that fail to fully disclose potential personal conflicts of interests will be rejected and withdrawn from further consideration for award.

(3) 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, the proposal may be rejected without technical evaluation and withdrawn from further consideration for award under this BAA.

vi. FAR / DFARS Provisions:

For purposes of illustration and not of limitation, the following provisions may be applicable to ONR contracts:

#	Provision
52.204-7	System for Award Management
52-204-16	Commercial and Government Entity Code Reporting
52.215-16	Facilities Capital Cost of Money
52.215-22	Limitations on Pass Through Charges - Identification of Subcontract Effort
52.216-1	Type of Contract
52.216-27	Single or Multiple Awards
52.217-4	Evaluation of Options Exercised at time of Contract Award
52.217-5	Evaluation of Options
52.222-24	Preaward On-Site Equal Opportunity Compliance Evaluation (Applies if exceeds \$10M)
52.226-2	Historically Black College or University and Minority Institution Representation
52.230-7	Proposal Disclosure - Cost Accounting Practice Changes
52.232-15	Progress Payments not included
52.233-2	Service of Protest
52.252-1	Solicitation Provisions Incorporated by Reference
52.252-3	Alterations in Solicitation
52.252-5	Authorized Deviations in Provisions
252.203-7005	Representation Relating to Compensation of Former DoD Officials
252.204-7004	Alternate A, System for Award Management
252.204-7008	Compliance with Safeguarding Covered Defense Information Controls (DEC 2015)
252.204-7012	Safeguarding Covered Defense Information and Cyber Incident Reporting (DEC 2015)
252.215-7003	Requirements for Submission of Data Other than Certified Cost or Pricing Data - Canadian Commercial Corporation
252.219-7000	Advancing Small Business Growth

vii. Combating Trafficking in Persons:

Appropriate language from FAR Clause 52.222-50 will be incorporated in all awards.

viii. Certification Regarding Trafficking in Persons Compliance Plan:

Prior to award of a contract, for the portion of the contract that is for supplies, other than commercially available off-the-shelf items, to be acquired outside the United States, or services to be performed outside the United States, and which has an estimated value that exceeds \$500,000, the contractor shall submit the certificate as specified in paragraph (c) of 52.222-56, Certification Regarding Trafficking in Persons Compliance Plan.

- ix. Updates of Information regarding Responsibility Matters:

FAR clause 52.209-9, Updates of Publicly Available Information Regarding Responsibility Matter, will be included in all contracts valued at \$500,000 where the contractor has current active Federal contracts and grants with total value greater than \$10,000,000.

B. Applies to Contracts, Grants, Cooperative Agreements and Other Transaction Agreements:

- i. Security Classification:

In order to facilitate intra-program collaboration and technology transfer, the Government will attempt to enable technology developers to work at the unclassified level to the maximum extent possible. If access to classified material will be required at any point during performance, the Offeror must clearly identify such need in Section II, Block 11 of the Proposal Checklist.

If it is determined that access to classified information will be required during the performance of an award, a Department of Defense (DD) Form 254 will be attached to the contract, and FAR 52.204-2 - Security Requirements will be incorporated into the contract.

ONR does not provide access to classified material under grants.

- ii. Use of Animals and Human Subjects in Research:

If animals are to be utilized in the research effort proposed, the Offeror must submit prior to award a Full Appendix or Abbreviated Appendix with supporting documentation (copies of IACUC Approval, IACUC Approved Protocol, and most recent USDA Inspection Report) prior to award. For assistance with submission of animal research related documentation, contact the ONR Animal Use Administrator at (703) 696-4046. Guidance: <http://www.onr.navy.mil/en/About-ONR/compliance-protections/Research-Protections/Animal-Recombinant-DNA.aspx>

Use of Human Subjects in Research:

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 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.

Determinations that the activity is not research involving human subjects must also be provided. 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 will include a statement indicating successful completion of HRPO's review 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. Guidance: <http://www.onr.navy.mil/About-ONR/compliance-protections/Research-Protections/Human-Subject-Research.aspx>

iii. Recombinant DNA:

Proposals which call for experiments using recombinant DNA must include documentation of compliance with Department of Health and Human Services (DHHS) recombinant DNA regulations, approval of the Institutional Biosafety Committee (IBC), and copies of the DHHS Approval of the IBC letter.

iv. Institutional Dual Use Research of Concern:

As of September 24, 2015, all institutions and USG funding agencies subject to the [United States Government Policy for Institutional Oversight of Life Sciences Dual Use Research of Concern](#) must comply with all the requirements listed therein. If your research proposal directly involves certain biological agents or toxins, contact the cognizant Technical Point of Contact.. U.S. Government Science, Safety, Security (S3) guidance may be found at <http://www.phe.gov/s3/dualuse>.

v. Department of Defense High Performance Computing Program:

The DoD High Performance Computing Program (HPCMP) furnishes the DoD S&T and RDT&E communities with use-access to very powerful high performance computing systems. Awardees of ONR contracts, grants, and other 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/>.

vi. 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. (This statement does not apply to international offerors submitting proposals to ONRG. International offerors should contact the cognizant ONRG Administrative Director (AD) for guidance prior to submitting a proposal.) Interim meetings are likely, but these will be accomplished via video telephone conferences, telephone conferences, or via web-based collaboration tools.

vii. Reporting Executive Compensation and First-Tier Subcontract Awards:

The FAR clause 52.204-10, "Reporting Executive Compensation and First-Tier Subcontract Awards," will be used in all procurement contracts valued at \$25,000 or more.