

## Broad Agency Announcement (BAA) N00014-16-S-BA16

### Amendment 0001

The purpose of this amendment is to respond to questions, to change and clarify the language found in part I, General Information, section F, under paragraph one (1), *Program Objectives* on page five (5), and to correct the table in part II, Award Information, section A, table entitled: Amount and Period of Performance on page 11 received in response to BAA N00014-16-BA16, entitled, “Quality Metal Additive Manufacturing (Quality Made): Integrated Computational Materials Engineering Models and In-situ Process Monitoring Sensors & Control.”

Q1: As for applications at a specific Navy depot should we get depots named as team members on the white paper?

A1: It is not a requirement to have a depot as a team member.

Q2: We were thinking of having applications and depots covering air, ship, and submarine. Is it a good thing in your opinion?

A2: Targeted platform applications are identified in Section I.F Contract Option.

Q3: Would property modeling specific to corrosion or SCC be of greater importance in addition to yield and tensile, creep and fatigue for ICME based modeling?

A3: The metrics of importance to the Navy are listed in Section 1.F.

Q4: Would a binder jet AM technology, as defined within ISO/ASTM 52900:2015 Additive manufacturing -- General principles – Terminology, currently be used for 316L stainless steel and Inconel 625 parts manufacturing be eligible for consideration under the BAA?

A4: The processes of interest to the Navy are identified in Section I.F.

Q5: Is this BAA the FNC that is planned for additive manufacturing or is it an additional program?

A5: See Section I.C. This is the program discussed at Office of Naval Research Quality Metal Additive Manufacturing (QUALITY MADE) Industry Day held on July 15, 2015, Special Notice N00014-15-SS-0022.

Q6: We see DED and powder bed fusion called out. Is there room in this BAA for solid state additive approaches, e.g. additive friction stir, or is it fusion-based only?

A6: The processes of interest to the Navy are identified in Section I.F.

Q7: The BAA states that the Navy's objective is to develop and validate these technologies in existing AM systems(s) by...." Is the Navy referring to existing powderedbed systems? If correct, does this BAA eliminate the next-generation of 3D metal printing systems?

A7: The processes of interest to the Navy are identified in Section I.F. The Navy will consider next generation printing systems of these processes for this effort as well. Amendment 1 removes the word "existing" from the BAA.

Q8: Is the deliverable for the second option (Phase 2) a whole machine or an upgrade to an existing Navy machine (pg. 8)?

A8: The deliverable is not a modification to an existing Navy machine, but one used by the performer for this effort.

Q9: What AM machines do the Navy have?

A9: The processes of interest to the Navy are identified in Section I.F.

Q10: Can FFRDCs be a subcontractor? Is that what teaming is? (Eligibility Information-section B, pg. 12)

A10: Yes. An FFRDC can be a subcontractor. See section III.B for specific eligibility requirements.

Q11: Do we include Navy labor and materials in our proposal?

A11: Yes, See Section III.C. Include Navy Lab/Depot and Material estimates in a separate section. The Navy will fund any lab and depot work directly and not pass through the contract.

Q12: It shows FY17 funding but the program award date is Oct 17 (FY18). This would imply both the FY 17 & 18 funding would need to be used during FY18. Is that correct?

A12: No. The program is starting in FY18. Please see amendment 1 below for corrected table.

Q13: With a FY18 start, a 4 year program (Phases I & II) would run through FY 21 but the BAA only shows through FY20.

A13: The BAA will run through FY21. Please see amendment 1 for corrected table.

Q14: Should we be limiting the potential AM systems to those <\$1M? The \$2M cap on annual expenditures per award would be problematic if we want to pursue a higher cost machine?

A14: The processes of interest are identified in Section 1.F. Section II.A notes that "awards outside this range are also possible."

Q15: Under the BAA, the Navy's objective is at least two alloys and two Navy relevant processes. Is there a penalty for not addressing all materials of interest to the Navy?

A15: No, it is not a requirement; please see amendment 1 below for clarification.

Revised language found in part I, General Information, section F, under paragraph one (1), Program Objectives:

The Navy's overall objective is to develop and validate these technologies in a production capable AM system(s) by producing parts using Navy-relevant alloys and AM processes. The Navy will consider technologies that address either a specific alloy and process or multiple alloys and 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].

Table revised in part II, Award Information, section A, table entitled: Amount and Period of Performance:

<b>FY2018</b>	<b>FY2019</b>	<b>FY2020</b>	<b>FY2021</b>	<b>Total</b>
\$3,000	\$6,000	\$7,000	\$5,500	\$21,500