

Amendment 0006  
Solicitation Number ONRBAA 12-019  
“Research and Development/Technology Maturation of Solid State High Power Laser Weapon Systems,  
Subsystems, and/or Components for Surface Navy, USN”  
Date 25 September 2012

The purpose of Amendment 0006 is to respond to questions submitted from 09/01/2012 through 09/24/2012.

1. Industry Questions and Answers are provided as follows:

Q75) Regarding section 6.3.11.2 of the BAA concerning support pods and corresponding scenarios in the Addendum: Does the system proposal need to include a bid to provide the actual pods or is it sufficient for this proposal to demonstrate an understanding of requirements for various types of pods and an understanding of the system interfaces required to support their later inclusion as modular items?

A75) The Offeror’s proposal shall include modular subsystems ( or “pods” in the case of removable units from the beam director shown in figure 2, page 29) which show a fully functional system that can achieve all the requirements in the Classified Weapons Specification, or provide added value which exceed performance or metrics provided in the weapons specification. The ICD developed for these modular subsystem must also be developed as part of the phase I and II efforts, to enable the acceptance of other modular subsystems which could potentially be installed. Only those “modular subsystems” which are required to show a specific operational capability and which supporting weapons specification metrics shall need be manufactured and tested in Phase III. For example, a “modular subsystem” for targeting, tracking and target acquisition shall be expected to be designed, built, tested and required for all complete systems bid.

Q76) Section 2.0 of the BAA Addendum allows for a classified annex separate from the unclassified response and further states that the classified annex can be up to 50 pages in length. Is this classified 50-page allocation in addition to the page limit of the unclassified sections discussed in the main body of the BAA(30 pages, plus a 70 page attachment)?

A76) Yes, the allocation for 50 pages of classified material is in addition to the unclassified response. Only classified information should be included in any classified annex provided. Unclassified information shall not be included in the classified annex in order to gain additional submission length.

Q77) Section 2.1 asks for the offeror to provide “average irradiance (within a X cm<sup>2</sup> bucket at 1/e<sup>2</sup> beam normal)”; also in several of the scenarios in section 2.2, lethality criteria are stated as target-normal fluence or minimum irradiance “averaged over a 1/e<sup>2</sup> X cm<sup>2</sup>”. In all these cases, the meaning of the qualifier “1/e<sup>2</sup>” for a lethality bucket is not clear. Is the correct interpretation here to compute a simple average of far-field irradiance pattern (either beam normal or projected onto the target surface, as appropriate) over a circular bucket of area X cm<sup>2</sup>? (To clarify, in the specification document, the use of the “1/e<sup>2</sup>” in requirement for the minimum size of the far-field irradiance pattern was clear.)

A77) In all cases in the document, the use of the “1/e<sup>2</sup>” term shall be used to determine the size of the far-field irradiance pattern as normal (perpendicular) to the beam travel direction. Projections of “beam normal” to “target normal” reference planes are not required for computation of far field irradiance

pattern. Irradiance on the "target normal" circular area of  $X \text{ cm}^2$  must be computed based upon the angle between "beam normal" and "target normal".

Q78) Amendment 0003 states that Phase III will have a Period of Performance of 27 months and be exercised after a successful PDR. This is inconsistent with Table A on page 31 of the BAA, which indicates a period of performance for Phase III of 33 months, based on a start date 6 months into Phase II (PDR) and including the 3 month reporting period.

A78) Amendment 0003 states correctly that, "If PDR is successfully completed, the Cost Plus Fixed Fee option for Phase III will be exercised and have a period of performance of twenty seven (27) months." This assumes a path of Phase I of six months, another six months to a successful PDR, and then completing "at sea" tests as quickly as possible. Table A of the BAA shows contractual performance requirements which must be met, and more importantly that "at sea" performance testing shall occur at a date NTE 36 months after the award of the Phase II.

Part of this discussion includes that the government sees the completion of a successful testing at sea occurring before the end of GFY2016 (30SEP2016) as "highly desirable" in the performance of this program. If this were to occur, the period of performance in Phase III could indeed be limited to 27 months – but this timeline then ends abruptly with little to no additional testing (land or "at sea") possible, should the government mandate a strict schedule timeline at the beginning of the program. The government does not wish to mandate such a strict schedule timeline, since few technology maturation programs have the insight or ability to meet such a timeline, once established. The government is attempting with this approach to accept that some schedule flexibility may be necessary in order to achieve actual performance based metrics shown in the weapon specification. Further, this was a timeline that supports completing a successful test at sea before the end of GFY2016, which was also stated at Industry Day, and in other venues. So the government is reflecting in Table A on Page 31 of the BAA that it may be forced to accept that a PDR could potentially be completed earlier (giving the vendor more build time), or if unsuccessful in an initial attempt may require additional design re-work before being seen as completed successfully (before builds began) by a vendor. However, unsuccessful completion of the PDR would cause it also to be likely that it could not meet the "highly desired" goal of the program to complete "at sea" testing before the end of GFY2016 (30SEP2016.) However, the government still recognizes that some documentation and possibly other testing efforts (post "at sea" tests) could be proposed to continue after the initial "at sea" tests of the prototype were completed - some possibly as long as six months afterward. The government sees that extended performance testing period (and possibly aboard ship) as having tangible value, in having a prototype be able to show functionality on the ship for extended periods of installation beyond an initial "at sea" demonstration period, and providing additional engineering or scientific data. Therefore, Phase III could be a minimum as short as 27 months (with completion prior to NTE timelines in table A) after the Phase II award, or possibly as long as 39 months after the Phase II award - based on their proposed testing schedule and final delivery of required documentation. However, until additional insight into vendor approaches can be obtained by the government, through Phase I efforts and the completion of the Concept Design Review (CoDR), the determination of Phase III duration is offered as a variable for the vendor to carefully consider in the development of their proposals – within the parameters shown in Table A on Page 31.

Q79) ... seeks to clarify your BAA intent regarding the nature & extent of the deliverable at end of Phase I CoDR. ...there (appears to be) a significant differential between:

Page 8 (and other such references): "In Phase I, awardees will develop..... conceptual design technical data package which meets the CoDR guidance outline in "General Guidance for Technical Reviews including Concept Design Reviews,....." AND.....Page 20: "Phase I awards.... Offeror will complete a Detailed Design Package.....One key element (of which) will be a Level III Technical Data Package, which is a complete, detailed design of a SSL Weapon System, including block diagrams; schematics; mechanical drawings; parts list and descriptions; software flow charts, identification of dimensions, materials, and vendors; explanations of how the system will work; etc..."

... B may not be realistically achievable during Phase 1, and assumes the language in A above will be the Phase 1 Evaluation Criterion?

A79) Both are correct as stated and are expected as deliverable products that shall be reviewed at the end of Phase I, at the Concept Design Review (CoDR) for a prototypical system. Page 8 provides specifics on the conduct of the CoDR, including the reference document which will be used, and page 20 provides amplification of the level of details expected necessary to successfully complete the review at the CoDR. It is unclear to the government how any one could accomplish successfully the objectives of a prototypical level CoDR as stated in the reference document "General Guidance for Technical Reviews including Concept Design Reviews (CoDR), Preliminary Design Reviews (PDR) and Critical Design Reviews (CDR) for first article Naval S&T Prototypes" without completing the actions required on page 20 and elsewhere referenced in the BAA.

Q80) On Page 13 of the BAA it mentions that the proposals should be developed down to a WBS sublevel detail of 4. What level of the WBS needs to be included in the task tabs of the Cost Proposal spreadsheet? We are asking for clarification because each task will be a separate tab and if we go to a level 4 WBS the result will be a very large number of tabs.

A80) Please refer to Section V of the BAA, Evaluation Factors. As stated, award decisions will be based on a competitive selection of proposals resulting from a scientific and cost review. This includes both ability to meet technical requirements and extent to which the proposal provides a detailed cost proposal with basis of estimates explained showing adequate levels of effort for the offeror's proposed approach.

As stated, Level 4 is required to understand the technical efforts being proposed. Similarly, a cost breakdown should be easily understandable to the same level of detail, but can be alternately be provided in tabular form for ease and simplicity, as a summary at level 3, rather than individual tabs. There should be a one-to-one correlation of technical effort proposed to cost values reported in the cost section. Of importance is the ability to determine such issues as the type of technical efforts proposed, the technical skill sets being proposed for the tasking (e.g. System Engineer Level II), the number of man hours required (x hrs) , and how any hardware or subcontracting elements will accomplish tasks in order to "roll up" the technical effort and justify the proposed technical approach and costs.

Q81) In the Subcontractor tab of the Cost Proposal spreadsheet it mentions cost/price analysis of our subcontractor's proposals. Are the cost/ price analyses required to be submitted with the proposal? We do not believe they are required to be submitted but since it is mentioned we would like clarification.

A81) A cost/price analysis of each subcontractor proposal is NOT required to be submitted with the proposal. However, those contractors selected for award will eventually be required to submit cost/price analysis of each of their proposed subcontractors' proposals. It's important to remember that as stated in the spreadsheet under the Subcontractor tab a fully disclosed cost proposal as detailed as the Offeror's cost proposal will be required to be submitted by all proposed subcontractors and for all interorganizational transfers over \$150,000.

Q82) What is the basis for the XXXX weight requirement (pounds)?

A82) Any and all weight requirements for systems and subsystems shall be re-examined in detail in Phase I and at Concept Design Review (CoDR) on the basis of ship stability margins. In Phase I, the government shall provide vendors with additional information on both test platform and ship systems.

Q83) Can we assume that we have standard 440 Volt ship power available?

A83) The use of 440 Volt ship power is one potential voltage for a concept design. Again, any and all power requirements for systems and subsystems shall be re-examined in detail in Phase I and at Concept Design Review (CoDR) on the basis of ship selection and ship's power safety margins. In Phase I, the government shall provide vendors with additional information on both test platform and ship systems.

Q84) What support equipment (e.g. cranes, fork lifts, etc) will be available at field test sites, OR should these be provided by Contractor?

A84) Vendors shall be expected to utilize standardized government lifting equipment (standard lifting cranes or fork lifts,) at test sites or at Navy Piers; however, any specialized support equipment necessary to support the proposal's meeting test objectives shall be considered the responsibility of the Vendor and appropriate costs should be included in their proposals.

Q85) Is the 140 Volt DC ship power actually a power storage (battery) bank? If so, can other DC voltages be provided?

A85) No, in general, the 140 Volt DC power coming from ship power systems should not be used in the development of any proposal. Again, any and all power requirements for systems and subsystems shall be re-examined in detail in Phase I and at CoDR on the basis of ship selection and ship's power safety margins. In Phase I, the government shall provide vendors with additional information on both test platform and ship systems.

Q86) Is the Contractor responsible for providing targets for field tests?

A86) The government shall not offer any targets for any in-house performance, factory acceptance or laboratory tests. The government shall provide for all targets used in meeting metrics as stated in the

weapons specification for both the land and sea based testing. The government shall make a determination on the ability to offer additional targets after the proposals have been reviewed and during the concept development or Phase I. The contractor may also offer additional or alternate targets, if they so choose, to include them in their proposal as a method of risk reduction.

Q87) Is there a lb/sq.ft requirement for equipment mounted below deck?

A87) Any and all weight requirements for systems and subsystems shall be re-examined in detail in Phase I and at Concept Design Review (CoDR) on the basis of ship structural margins. In Phase I, the government shall provide vendors with additional information on both test platform and ship systems.

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