

Amendment 0006
Broad Agency Announcement 12-008
“Electronics Warfare Technology”

The purpose of Amendment 006 is to answer questions received at Industry Day held in Arlington, VA on Friday, 10 February 2012.

Q1. Referencing Research Opportunity “C” in the BAA entitled, “Non-Mechanical Beam Steering”, it appears that The ONR’s primary interest for this BAA is in Short Wave Infrared (SWIR), Mid Wave Infrared (MWIR), and Long Wave Infrared (LWIR). Should we only focus in these three band regimes?

A1. Concepts that span all wavelength bands (ultraviolet (UV), visible (VIS), Near Infrared (NIR), SWIR, MWIR and LWIR) are of interest to the Office of Naval Research (ONR) under this BAA. However, proposed solutions that cover UV, MWIR, and LWIR are of particular interest due to their technical difficulty, and will be weighted accordingly by the subject matter expert (SME) review panel. Conversely, proposed solutions that cover only VIS, NIR, and SWIR will not be weighed as highly because current state-of-the-art solutions already exist for these bands.

Q2. Referencing Research Opportunity “C” in the BAA entitled, “Non-Mechanical Beam Steering” because of the limitations on funding for efforts listed in the BAA (\$500,000 to \$1,500,000 each per year for three (3) years) is it permissible to submit a technical concept for three wavelength bands, and then demonstrate that the solution can be applied to other wavelength bands as well?

A2. Yes, however, you will need to provide a compelling argument in the white paper that extending the technical concept to other wavelength domains is possible without requiring a major breakthrough to achieve the extended capability. For instance, the proposed solution will need to demonstrate that there are no potential “show stoppers,” e.g. material limitations, an absorption band, new materials needing to be invented, etc., that would prevent extending a solution from one set of wavelength bands to the others.

Q3. Referencing Research Opportunity “C” in the BAA entitled, “Non-Mechanical Beam Steering” , is ONR interested in white papers that focus only on receiving in the designated spectrum domain (UV, VIS, NIR, SWIR, MWIR, and LWIR)?

A3. ONR is not interested in white papers that focus only on receiving in the designated spectrum domain. Receiving in the referenced wavelength bands is of secondary interest. The primary interest is

in transmission of laser energy. However, technical concepts that allow transmit and receive capability in the desired wavelength bands are of interest to ONR.

Q4. Referencing Research Opportunities “A” entitled, “Multispectral Semiconductor Lasers” and Research Opportunity “B” entitled, “Continuously Tunable Multispectral Fiber/Waveguide Lasers” in the BAA, if we have concepts that expand beyond the wavelength bands listed (UV, VIS, NIR, SWIR, MWIR, and LWIR), is that of interest to ONR?

A4. Concepts that expand beyond the wavelength bands listed is of interest to ONR. For example, if you have potential solutions that cover between 110 gigahertz (GHz) and LWIR, then those proposed white papers can be submitted under Research Opportunity “D” entitled, “Innovative Electronics Warfare Concepts”. However, proposed solutions will need to demonstrate their importance to the Navy, and how it supports naval applications and electronic warfare (EW) functions.

Q5. Offerors are required to describe how their technical concept compares to the current state-of-the-art in their white paper submissions. What section in the white paper should we use to describe the comparison, and do you require full references within the four (4) page limitation?

A5. Under paragraph number 2 entitled, “Content and Format of White Papers/Full Proposals” subparagraph (a) entitled, “White Papers”, “White Paper Content”, “Technical Content”, describes how the technical concept compares to the current state-of-the-art would fall under number 6 entitled, “Recent Technical Breakthroughs that Reduce Risk”. Full references can be cited in a bibliography that does not count against the four (4) page limitation.

Q6. How detailed does the cost estimate need to be in the white paper, and how should it be listed for teams?

A6. A rough-order-magnitude (ROM) estimate is sufficient for the white paper. It is understood that the cost estimate will be refined during oral presentations and final proposal submission. However, the cost estimate provided in the white paper should be “within the ballpark” of the final price submission during the proposal phase. Offerors whose final price submission during the proposal phase differs significantly from the white paper ROM estimate run the risk of having their concepts not funded by ONR. For concepts that include teaming arrangements, the white paper should indicate the funding amount / percentage that will be allocated to each team member.

Q7. The BAA emphasizes solutions focusing on semiconductor and fiber laser technologies (BAA Research Opportunities “A” entitled, “Multispectral Semiconductor Lasers” and “B” entitled,

“Continuously Tunable Multispectral Fiber/Waveguide Lasers”. Would ONR consider innovative solid-state laser solutions as being responsive?

A7. Not particularly as the desire is to develop semiconductor and fiber laser technologies. Past ONR-funded programs focused on solid-state laser technologies and this area is generally more mature than semiconductor and fiber lasers, but suffers from complicated optical architectures and relatively low wall-plug efficiencies. However, if you propose a solid-state solution that addresses these shortfalls, for instance utilizing no free-space optics and significantly improving efficiency, then ONR might be interested in the approach.

Q8. The BAA includes a statement that all awards will contain Defense Acquisition Regulation Supplement (DFARS) Clause 252.204-7000 entitled, “Disclosure of Information,” does this restriction also apply to grants?

A8. This statement does not apply to grants. Defense Acquisition Regulation Supplement (DFARS) Clause 252.204-7000 entitled, “Disclosure of Information,” is not incorporated in ONR grant awards. It is not ONR’s intention to stifle academic publication in peer reviewed journals. However, it is possible to award a contract to an academic institution and the contract award would include DFARS clause, 252.204-7000.

Q9. For technical concepts that rely on a collaborative venture between Industry and Government laboratories, does ONR only want a single white paper submission for the entire team?

A9. Yes, only one white paper needs to be submitted for the entire team. Additionally, the white paper should explain the teaming arrangement, whether agreements are already in place, the roles of the respective team organization, and the portion of funding that would be allocated to each team organization.

Q10. Research Opportunities “A” entitled, “Multispectral Semiconductor Lasers”, “B” entitled, “Continuously Tunable Multispectral Fiber/Waveguide Lasers” and “C” entitled, “Non-Mechanical Beam Steering” of the BAA are focused primarily on developing hardware. Is ONR interested in white papers that focus on software/techniques development to support these Research Opportunities?

A10. Not for the technologies covered in Research Opportunities “A”, entitled, “Multispectral Semiconductor Lasers”, “B” entitled, “Continuously Tunable Multispectral Fiber/Waveguide Lasers” and “C” entitled, “Non-Mechanical Beam Steering”. However, if white papers covering software/techniques development are submitted under Research Opportunities “A” entitled, “Multispectral Semiconductor Lasers”, “B” entitled, “Continuously Tunable Multispectral Fiber/Waveguide Lasers” and “C” entitled,

“Non-Mechanical Beam Steering” , then you would have to explain how the approach would work with the hardware being developed, and what is particularly innovative about it. We recognize that software and techniques have an important role to play in innovative Electronic Warfare concepts, but in general they would be submitted in response to Research Opportunity “D” entitled, “Innovative EW Concepts”.

Q11. If an Offeror summarized the contents of their four (4) page white paper into a quad chart, would ONR be interested in having that when the white paper is submitted?

A11. No. Quad charts are not required / needed until the oral presentation phase.

Q12. Does the aversion to free-space optics extend to the output stage, i.e. sending light from the semiconductor or fiber laser out into the environment?

A12. Yes. The intent of Research Opportunity “C”, entitled, “Non-Mechanical Beam Steering”, is to eliminate mechanical components / free-space optics as much as possible.

Q13. For Research Opportunities “A” entitled, “Multispectral Semiconductor Lasers”, and “B” entitled, “Continuously Tunable Multispectral Fiber/Waveguide Lasers” , should technical concepts also include window solutions or just focus on developing the laser technology?

A13. Primary focus is on laser (hardware) technology development. We recognize the technical challenge of windows that allow broadband transmission from UV through LWIR, can tolerate the energy levels described in the BAA, and can survive real-world environments. However, such concepts should be submitted under Research Opportunity “D” entitled, “Innovative EW Concepts”, rather than Research Opportunities “A” entitled, “ Multispectral Semiconductor Lasers”, and “B” entitled, “Continuously Tunable Multispectral Fiber/Waveguide Lasers”.

Q14. How will ONR assess risk under the BAA for competing concepts/ideas?

A14. There is no straightforward analysis / formula at the Budget Activity 2 (exploratory research) level that allows ONR to accurately predict the degree of innovation and benefit to the warfighter, weighed against large-scale manufacturing / implementation costs for competing ideas. It is the judgment call of the EW Program Manager with consultation from the review panel of subject matter experts to assess risk vs. reward for competing concepts/ideas.

Q15. Would ONR consider concepts in Research Opportunities “A “ entitled, “ Multispectral Semiconductor Lasers”, and “B” entitled, “Continuously Tunable Multispectral Fiber/Waveguide Lasers” that utilize multiple apertures for different wavelength bands, or is the desire for concepts with a single aperture?

A15. The ultimate goal is to achieve a single aperture capability over the entire wavelength range desired (UV, VIS, NIR, SWIR, MWIR, and LWIR). However, ONR understands the difficulty in achieving this capability, so minimizing the number of apertures required is an acceptable approach.

Q16. Is there a particular weighting function for making awards under the four Research Opportunities in the BAA, i.e. is the goal to have equal awards/funding amounts in each (Research Opportunity “A” entitled, “Multispectral Semiconductor Lasers”, “ B” entitled, “Continuously Tunable Multispectral Fiber/Waveguide Lasers”, “C” entitled, “Non-Mechanical Beam Steering” and “D” entitled, “Innovative EW Concepts”), or some other mixture?

A16. Preference is to have funding allocated equally between Research Opportunities “A” entitled, “Multispectral Semiconductor Lasers”, “ B” entitled, “Continuously Tunable Multispectral Fiber/Waveguide Lasers”, “C” entitled, “Non-Mechanical Beam Steering” with minimal, if any, in Research Opportunity “D” entitled, “Innovative EW Concepts”. However, if a proposed concept in Research Opportunity “D” entitled, “Innovative EW Concepts” is sufficiently compelling, in the opinion of the EW Program Manager and the panel of subject matter experts, it would be funded, despite the fact that this may reduce the number of awards in one or more of the other Research Opportunities.

Q17. Is collaboration between industry and academia permitted?

A17. Yes, but the teaming arrangement needs to be stated in the white paper.

Q18. What is the total amount of funding available and how will it be allocated between industry, academia, and Government?

A18. There is a single pot of funding available for industry, academia, and Government, i.e. everyone is competing over the same funding resources. Although ONR prefers not to indicate the total funding available, ONR anticipates funding four (4) to six (6) awards at \$500,000 to \$1,500,000 each per year for three (3) years.

Q19. In the Industry Day briefing regarding Research Opportunity “C” entitled, “Non-Mechanical Beam Steering” one of the slides mentions micro-electro-mechanical systems (MEMS) as being one possible technical approach. Doesn’t this violate the requirement for “non-mechanical” concepts?

A19. In a sense it does and the preference is for concepts that address Research Opportunity “C” entitled, “Non-Mechanical Beam Steering” to contain no moving parts. However, ONR recognizes that this is very technically challenging and that fully non-mechanical solutions may not be achievable. Concepts with no moving parts are preferred, but concepts with only one or few moving parts will not be rejected outright. The goal is to eliminate large, heavy, and power hungry gimbals and motor-positioners along with rotating seals that often result in beam directors with reduced service lifetimes and low mean-time-between-failure (MTBF). In the case of concepts involving any mechanical parts, including MEMS components, a discussion of expected MTBF and energy efficiency should be included that addresses these concerns and is sufficiently compelling to outweigh the desire for no moving parts.

Q#20: My company will be submitting a joint whitepaper to ONR BAA 12-008. We would like to know, if we win an award, if ONR can disburse the award in a contract to the prime and a separate grant to the subcontractor?

A#20: While it is possible to award a separate contract to the prime and grant to the subcontractor, the applicability to this particular effort needs to be carefully considered. For instance under a grant the only deliverables are data – no hardware deliverables are permitted. Also under a grant ONR cannot place any restrictions on publication of data or results. Both of these limitations should be carefully considered before planning for a linked contract and grant as you describe it.
