Special Notice # N00014-19-R-S002 - Frequently Asked Questions #1

General and Contracting Questions

1. Q: Would you please describe CONOPS more?
   A: The CONOPS described in the Special Notice and at the Industry Day was notional only to inform the theme of the call. There are no specific CONOPS targeted with this technology development effort.

2. Q: What is the estimated TRL at the beginning and at the end of the effort?
   A: Anticipated TRL would be 2-3 in the beginning and TRL 3-4 at the end. However, these TRL numbers are estimates meant to indicate research activity should be beyond basic research but not yet to full system implementation.

3. Q: If we propose technology based on some of the DARPA ongoing programs, can we assume ONR can facilitate time access to those technologies?
   A: No, ONR will not be facilitating access. ONR encourages proposers to seek access to the best available technologies.

4. Q: Is ONR interested in proposals based on restricted IP Data Rights?
   A: ONR is interested in developing technological advantage; proposals having restricted IP Data Rights will not be disqualified.

5. Q: What is ONRs expectation of IP ownership for any IP developed under this effort?
   A: Government Rights are expected for technology developed under government funding. Government rights do not impact commercial rights generally.

6. Q: Who built the conventional SRAM ASIC described on Industry Day? Are more details available?
   A: Please see the Industry Day slides for the reference to source material.

7. Q: Does the Special Notice have target category, 6.1, 6.2 or higher? Are there export control requirements? Since we are from a university, is fundamental research activities encouraged to respond this BAA?
   A: Yes, the funding has a category of 6.2 so it is focused on applied research, not basic research. Export control requirements would be dependent on the effort proposed. It is up to the proposer to make sure proposals are consistent with any export or security regulations.

8. Question: Can Government lead topics responding to the technical areas?
   Answer: Research topics may be led by industry/academia via BAA or Government via Research Call.

9. Question: Is the EW Industry Day on 13 Nov only for this program or for all EW related programs? Also, when will presentation slides, materials, and Q&A information be available publicly?

   Answer: The EW Industry Day is related strictly to the Special Notice call. The slides are posted publicly.

10. Q: Are there any specific opportunities for small businesses at the Industry Day meeting?
    A: There are no opportunities specific to small businesses related to this Special Notice.

Funding and Timeline

11. Q: How many awards are expected? What is typical size of award?
    A: The number of awards will depend on the quality and quantity of proposals received. Historically, awards have ranged from $0.5M - $4M total award value over 3 years of performance. For exceptional proposals, ONR has exceeded these numbers on occasion (<10% of awards).

12. Q: $8-10M per year, is that total or per TA? How are the funds divided between the TAs?
    A: The $8-10M per year funding is across all TA's. The funds do not have a defined split between TA's. The distribution will be dependent on the quantity and quality of proposals received.

13. Q: Will there be any gap between Base/Option 1 or Option 1/Option 2 to allow for possible down select? If so, should any accommodation be made in the tech or cost proposal?
    A: ONR will seek to minimize any execution gaps related to contractual options. To that end, technology milestones are recommended to precede the end of a period of performance by approximately 1 month.

14. Q: Will ONR be willing to work with other government organizations with respect to matching funds?
    A: Yes, ONR is willing to accept funds from other government agencies as long as it is the correct funding: RDT&E 6.2-6.3 funding. Additionally, ONR can coordinate internally if other ONR activities are supportive of proposed efforts.

15. Q: For the parallel government research laboratory call, is the budget and timeline the same? (i.e: 12-36-month performance, 8-10M a year, and 25/30 over 3 years?)
    A: The notional timeline and available funding is the same. Efforts should be structured based on the proposed effort.

16. Q: Can the program accommodate 4 years of performance under the current RFP (request for proposal)?
    A: A 1-3 year PoP is requested but there is flexibility with timing if a program is structured with well-defined milestones along the way that represent proposal options (i.e. different schedules are possible but there should be well defined experiments to understand progress).

17. Q: Some potential vendors may be eligible for SBIR reach back which is structured on a 12, 12, 12 schedule. Should those vendors mention if they are eligible and what the alternative schedule would be if they did it on a 12,12,12 schedule?
    A: Yes, ONR is open to leveraging other funding sources. The 6,12,18 schedule is notional and will be most relevant to those who will be considered for funding decisions at ONR.

Teaming

18. Q: How would a government agency partnering with an industrial and academic institution apply for this special notice?
    A: The team should submit one paper naming all people. Arranging for funding of successful proposals can be handled at the conclusion of the process.

19. Q: Is there a preferred method for industry to collaborate with a DoD lab or FFRDC to jointly pursue research on this Special Notice?
    A: No, there is not a preferred approach for teaming.

20. Q: If a University is partnering with a Navy Warfare Center or Lab, do we need to submit separate white papers?
    A: No, if you are teaming, submit one white paper and list all team members.

21. Q: Is teaming with industry a must or strongly recommended?
    A: No, teaming should be consistent with the technical effort.

22. Q: Will the names of the industry day participants be made available? If so, how?
    A: We will be sending an email out to all those who registered for Industry Day with the exception of those who have opted out of this teaming list.

23. Q: Is there any plan or initiative for ONR to facilitate two or more companies to work together?
    A: ONR will not be formally facilitating joint activities. Industry Day was provided as a forum for proposers to interact and proposers are encouraged to build teams on their own.

24. Q: Based on ONR's contracting capability and your experience, what guidance can you provide on how to setup a team that includes Government, industry, and/or academia?
    A: For a team that includes mixed performers, there are multiple possible solutions and I would just recommend providing a clear management plan. From a practical perspective, we would anticipate directly funding a government lab separately from a contractor unless there's a management reason to follow a different path. However, those details can be resolved in contracting.

Technical Clarification

25. Q: Regarding TA2: there is a paragraph in the BAA about partial demonstration that was not covered [at Industry Day], can you elaborate?
    A: The description of a partial demonstration is intended to reinforce the notion that the Notice is seeking scalable demonstrations, not complete system instantiations.

26. Q: With regards to the 10 dB improvement quoted in the BAA for TA-2A and TA-2B, what is understood to be the reference state-of-the-art design over which 10 dB improvement is desired? Specifically, what is the assumed RF power source (total power, efficiency, bandwidth, etc.) and the antenna architecture (active vs. passive phased array, mechanically-steered dish, etc.) for this baseline reference?
    A: We are not defining a specific EIRP or a reference baseline architecture for this topic. It is up to the proposers to make the case for where current technology is and how their proposed concept approaches 10 dB of improvement relative to their defined state of the art baseline.

27. Q: For TA 2A and 2B, what do you consider the current SOA in peak and average power for devices that fit in the specified volumes?
    A: Proposer are requested to define state of the art for their proposed solution space.

28. Q: TA 2 - Is it acceptable for proposals to target a portion of an overall system solution that improves power handling by 10DB?
    A: Yes.

29. Q: TA 2 – Will you consider applications for other small form factor or SWAP limited platforms apart from arrays?
    A: Yes.

30. Q: On TA 2, can solutions be proposed that apply below L or above X-Bond?
    A: The Special Notice is targeting L-X bands, other bands may be addressed in combination with these frequencies.

31. Q: For TA2, is there clarifying detail for the inclusion of magnetrons in TA2 as a specific technology of interest?
    A: The reference to the magnetron was intended to motivate rethinking the delivery of pulsed, high peak powers or CW powers from small form factors and allow for consideration of “out of the box” solutions, rather than just limiting the solution space to making better phased arrays. Magnetrons were used as an example of a potential solution but not a recommended or prescriptive solution.

32. Q: For TA2, for a tunable (as opposed to instantaneous) bandwidth solution, is there a requirement on tuning speed?
    A: No specification defined.

33. Q: For TA2, are there noise are linearity specifications?
    A: No specification defined.

34. Q: For the platforms of TA 2A and 2B, what are the respective prime powers available?

A: This Special Notice is not targeting development for a specific system; it is seeking technology innovation broadly applicable to distributed RF sources. Hence there is no prime power specification.

35. Q: For TA 2A and 2B, do the target volumes apply only to the transmitter (amplifier + power supply) or do they include the receiver, techniques generator, etc.?
    A: The Special Notice has focused TA2 on the complete signal emission challenges only in the targeted size. Proposed efforts do not have to encompass the complete solution but should provide a description of how a complete solution would be realized.

36. Q: For TA2, are the proposed concepts for a disposable system or for a fixed or recoverable system?
    A: This Special Notice is not targeting development for a specific system, it is seeking technology innovation broadly applicable to distributed RF sources.

37. Q: For TA3, are there any requirements about polarization (e.g., linear, circular, dual-linear, etc.), and scanning speed of the radiated beams? Are there any requirements about the number of scanned beams (e.g., one beam or multiple beams)? If an emitter with multiple scanned beams is desired, will both beams radiate the same waveform or is it desired that each beam support a different waveform?
    A: There are no specific requirements on polarization, scanning, number of beams, or concurrent waveforms, but proposers should address how their concept is relevant to general EW system capabilities.

38. Q: For TA3.A, what wall plug efficiency are you seeking?
    A: Wall plug efficiency should be comparable to, or better than, State of the Art.

39. Q: Is beam steering a necessary part of a response to TA 3A?
    A: No, complete solutions including beam steering are not required for TA3. A. However, a description of the expected pathway to realize the complete system is recommended.

40. Q: How is TA3 different from last year's call?
    A: TA3 is focused on novel solutions for high-power/high-efficiency multi-spectral sources that can enable extremely low-SWaP systems. TA3.A is specifically focused on the multi-spectral laser source, power and cooling requirements and it can be assumed that steering is performed by another subsystem. Last year's call had a section that was specifically focused on multi-spectral optical non-mechanical beam steering (NMBS). NMBS is still an area of interest, but is not the focus of TA3.

41. Q: Is semiconductor technology the only laser technology derived for TA3 A/B or are others possible (e.g. diode lasers and specialty fiber amplifiers?)
    A: No, other laser technologies are equally possible subject to the metrics of the Special Notice.

42. Q: Are there specific wavelength intervals, within the UVA bond (315-400mm), which are of special interest? (in case the whole bond can't be covered?) How far apart shall the emission wavelengths be?

A: The Special Notice is not targeting specific wavelengths or separations, but it is seeking to enable multiple wavelength sources distributed across as much of the UVA band as possible.

43. Q: For TA 3B, if a single device cannot deliver output power greater than 10 Watts and beam combining is needed is incoherent beam combining sufficient or coherent combining necessary?
    A: Either beam combining approach is acceptable subject to the metrics of the BAA.

44. Q: TA 3 – Once we meet all of the BAA specs, will frequency agile sources (tunable or optical frequency comb) be considered within the scope of TA3?
    A: Yes.

45. Q: Is frequency doubling a viable approach for TA3?
    A: Any technical approach to achieve the desired optical output is permissible, however approaches involving frequency doubling, and the inclusion of free space of optics in general, may need to address the effects of a military relevant environment (e.g., shock, vibration and extreme temperature variations) on the proposed system's performance and reliability

46. Q: For TA3.B is there a beam quality spec (M^2=?) targeted?
    A: The stated desire of TA3.B is to couple the laser output into a 100 micron core fiber, which provides an extremely lenient M^2 requirement. However, solutions that provide the potential for a high brightness output (i.e. low M^2) would be preferred due to their usefulness to multiple applications.

47. Q: For TA4, are millimeter-wave proposals of interest?
    A: There are no particular areas of technology interest for area 4 (those are defined in technical areas 1-3). Technical Area 4 is reserved for opportunities with quantitatively ground breaking impact.

48. Q: For the Technical Area 4, are the topics about very high speed wireless communications at THz carrier frequency or phase synchronization technique with high accuracy for very large arrays within the scope?
    A: There are no particular areas of technology interest for area 4 (those are defined in technical areas 1-3). However, it is required to document how proposed technologies provides a 1000X improvement over state of the art in a figure of merit of the proposer’s choosing.