Amendment Number 0002

Questions and Answers

Received in Response to

Broad Agency Announcement (BAA) 09-020

"Electronics Technology"

In response to questions and answers received under BAA 09-020 the following is provided:

Question #1: Are you interested in developing a system solution including active aperture development?

Answer #1: Only enabling component technologies are sought under this BAA. Components must be suitable for enabling a reasonable architecture for a receiver array.

Question #2: Is scan rate referenced in Table 1 the beam steering rate?

Answer #2: Yes

Question #3: Relative to the SFDR what do you consider state-of-the-art? 30 dB improvement over what?

Answer #3: An improvement of 30dB is being sought over current state of the art receiver technology. State any assumptions.

Question #4: Do you have a size constraint?

Answer #4: Only that any component developed would be compatible with a receiver that will cover an instantaneous bandwidth of 6 - 24 GHz.

Question #5: Do you want to have the LNA behind every array element?

Answer #5: Offerors may specify the candidate architecture in which their technology will fit.

Question #6: You stated that you want 6 - 24 GHz instantaneous bandwidth, but are you willing to trade instantaneous bandwidth for LNA noise figure performance?

Answer #6: Offerors must address parameters stated in Table 1 of the BAA.

Question #7: Does the response need to address all aspects of the technology needs or can it focus on a few of the key objectives?

Answer #7: Response can focus on a few key objectives.

Question #8: Is the radiator or receiver of more interest?

Answer #8: If the component falls within the BAA scope, it is of interest and is evaluated against the published criteria.

Question #9: Can you clarify on the "RF Supporting Technologies" paragraph as to which areas are of most interest.

Answer #9: All the areas published are of interest.

Question #10: Would an innovative agile ultra-high spur-free dynamic range receiver including digital IQ output be of interest under this BAA?

Answer #10: Yes, provided development falls within funding and performance constraints.

Question #11: Could multiple sub-band receivers be used in a multirate system?

Answer #11: This BAA is not specifying overall system level architectures.

Question #12: Would an innovative agile matching network to selectively optimize NF over a sub-band be of interest or must the entire instantaneous bandwidth be handled simultaneously?

Answer #12: Approaches must address simultaneity requirements of the BAA.

Question #13: Would an innovative Class-D PA leveraging a noise shaped Power-DAC with active linearization be of interest and what is the target?

Answer #13: Yes - refer to BAA for targets.

Question #14: There is no mention of cost in the white paper content instructions. Should we ignore it at this time or what cost detail is desired by ONR in the white paper.

Answer #14: The cost section must include the following: summary of costs segregated by each task with a statement made under each task in which the use of government facilities is proposed; summary of costs segregated by cost category and should include a table with all costs summarized in thousands of dollars (by government fiscal year) as shown in the following example:

FY10	FY11	FY12	FY13	Total
$xxxK	$xxxK	$xxxK	$xxxK	$yyyK

Question #15: One of the objectives is a "2+ octave instantaneous bandwidth", while another objective is "fast scanning and/or agility". These two objectives seem to be in somewhat of a conflict because the need for scanning might imply that the true instantaneous bandwidth is less than the full bandwidth. Can you please comment on the scanning aspect and on the definition of instantaneous bandwidth?

Answer #15: ONR has not specified a detailed architecture, however, the offeror should state any assumptions or limitations of their proposed development effort. One possible approach might include the use of an array and receiver front end capable of the entire instantaneous bandwidth, however subsequent receiver stages would handle channels of lesser bandwidth. Other approaches may be considered as well.

Question #16: One objective is "< 1 dB overall noise figure", while another objective is "10 simultaneous beams". Does the overall noise figure apply to a single branch of the total receiver or is the overall noise figure defined using the effects of multiple independent receive channels?

Answer #16: ONR has not specified a detailed architecture however the offeror should state any assumptions or limitations of their proposed effort. When placed in a relevant architecture, any channel or beam must meet the overall noise figure objective.

Question #17: One method of obtaining "ultra-high instantaneous spur-free dynamic range" is to avoid high power interferers with one of several techniques. Does your requirement for "2+ octave instantaneous bandwidth" preclude the use of spurious avoidance techniques?

Answer #17: No.

Question #18: What is the relative importance of size, weight, power, and cost in this endeavor?

Answer #18: Size, weight and power consumption (SWaP) are not specified in the announcement, however, are important considerations. In general, DoD seeks solutions that will ultimately reduce SWaP and life cycle cost of systems.

Question #19: What are the primary frequencies of interest for the multi/wide-band SSPAs?

Answer #19: Primary frequencies of interest are provided in the BAA.

Question #20: Can you elaborate on the vision, "The vision for the Navy is to develop broadband...that can operate in a multifunctional capacity"? We would like to address integration of our LNA technology at the system level.

Answer #20: Please refer to the response to Question #1 above.