

N00014-16-R-BA04  
Amendment 0002  
Real-Time Full Spectrum Cyber Science & Technology  
Questions and Answers from Industry Day

The purpose of Amendment 0002 is to respond to questions submitted during Industry Day (Thursday, December 17, 2015).

Questions and Answers are provided as follows:

**1. For TA3, what does “novel protocols, security mechanisms, and secure platforms” mean?**

To clarify, it simply means to not limit your approach to solutions currently available in industry.

**2. What would the DFARS information security requirements entail? Can we anticipate relief on this?**

A new interim rule for NETWORK PENETRATION REPORTING AND CONTRACTING FOR CLOUD SERVICES (DFARS CASE 2013-D018), effective 30 December 2015, has been released and can be found here: <https://www.gpo.gov/fdsys/search/pagedetails.action?granuleId=2015-32869&packageId=FR-2015-12-30&acCode=FR>.

**3. Are you interested in cooperative intrusion detection? What about in regards to sensors and radios?**

Yes to all of the above.

**4. For agility, does this exclude infrastructure like SDN instead of backplane?**

If the intent is to apply SDN-like concepts to ICCS backplane then yes, but a high-level network focused solution would be out of scope.

**5. Would a tool evaluating, comparing, and recommending applications and approaches be in scope for TA3?**

No, a tool that only makes recommendations based on studies/analysis of current solutions is discouraged.

**6. Could you expand on what is meant by electromagnetic maneuver?**

Electromagnetic maneuver warfare (EMW) is a relatively new warfighting concept that incorporates electronic warfare across the entire force, changing how the Navy operates with respect to electromagnetic emissions and enables new collective effects instead of the more traditional individual RF actions.

**7. Does the title page count against the white paper page count?**

No.

**8. This BAA has 12-36 months as project lengths but has funding through FY20 and the slides mentioned 4 years. What are the right program lengths?**

12-36 months. Not all awards are expected to begin in FY17.

**9. The TA3 presentation mentioned required collaboration after the first year. Could you clarify this?**

All technical areas will require collaboration after the first year. The purpose is to better integrate the research within the naval environment and to facilitate transition. ONR will coordinate such collaborations.

**10. Often, theoretical and generic academic research results are not easily implemented on real systems. Are you interested in funding proposals that are focused on the application of a generic solution to an existing platform?**

ONR encourages any suitable and effective solutions that can be applied to existing platforms and the class of systems described in the Industry Day slides.

**11. Are both air and surface platforms of interest? Or are weapons systems of primary interest?**

Yes to all of the above.

**12. What progression of TRL is desired?**

At the start of the project, ONR anticipates typical TRLs of 2-3. At final deliverable, ONR expects at least TRL 6. (See answers to questions #32 & #33)

**13. What is the expected start date?**

The BAA describes the anticipated schedule of events. Please reference Section 4 Part C of the BAA.

**14. Will you accept revised white papers if we send one in early and send in an amended version before the due date?**

Yes, as long as the amended version is received by the due date. Please make it clear that this is an amendment to a previously received white paper (making sure to cite the previous submission title and date), and replaces all previous submissions.

**15. Are hyperlinks in PDFs allowed?**

No, proposals should be as self-contained as possible. If other work must be referenced, it should appear in the citations.

**16. Must the cyber-security solutions proposed for this topic be specific to PLC-based controllers or can they be proposed for general controllers?**

Yes, they can be proposed for general controllers.

**17. In addition to eliminating common mode failures and enhancing resilience of controllers, are approaches that attempt to diagnose and learn failure modalities and dynamically repair controllers in scope? Perhaps by deploying additional resources?**

Yes, but ONR strongly encourages proposers to be cognizant of the effect on real-time system latency and timing.

**18. Are there specific protocols (bus protocols) that are of interest?**

While ONR does not want to restrict the proposed solutions, commonly used commercially-available industrial control system backplanes should be considered.

**19. Are autonomous systems in scope?**

Yes, as long as the focus of the effort aligns with one or more of the three technical areas outlined in the BAA and the Industry Day slides.

**20. Would the controls for a shipboard micro-grid (power generation, power quality management based on real-time sensing and control) qualify for this BAA? The architecture could be generalized to other systems.**

Yes, as long as the solution is focused on securing platform control systems and not the higher-level propagation problem commonly considered in smart-grid security efforts.

**21. Are you interested in Low Probability of Intercept/Low Probability of Detection (LPI/LPD) technologies or are you interested in ship-to-ship secure communications?**

For TA1 and TA2, ONR is not interested in communications outside the platform. TA3 is more open, however, and the above technologies may be proposed.

**22. Are you interested in just retrofit kits or all new controllers?**

ONR is primarily interested in technology that can be applied to controllers, their architectures, or their communications channels. This may require integration and retrofitting, which is acceptable. Clean slate design of entirely new controllers is discouraged for this BAA.

**23. Please comment on process and success rate of ONR to move from RDT&E to Navy programs of record. Does ONR agree with the findings of GAO 15-749?**

This is outside of the scope of this BAA and, therefore, ONR has no comment.

**24. Is there a set of embedded processors that is being targeted?**

ONR is open to all architectures commonly found across ICCS in general.

**25. What backplanes and protocol channels are you most interested in protecting? Examples might include MODBUS, PROFIBUS, MILSTD 1553, PCI, etc.**

ONR does not want to restrict the proposed solutions. It is recommended that solutions focus on commonly used, commercially-available, industrial control system backplanes.

**26. How can an FFRDC participate in this BAA? The BAA clearly indicates that they cannot be awarded but can they obtain funds from this project as a subcontractor? Or can they participate as a teaming partner without funding from this project?**

As per section III(B) of the BAA, Federally Funded Research & Development Centers (FFRDC's) are eligible to participate in teaming arrangements, as long as the FFRDC's current sponsoring agreement permits (FAR 35.017-1). Typically, these are handled through a prime/subcontractor relationship.

**27. Do we need integration with naval systems for all proposed projects? What about basic research projects?**

Yes, efforts will be expected to integrate the technology with a naval system after the first year of research. ONR will coordinate collaborations with naval environments to facilitate transition.

**28. Is this call supposed to be for more industry-academia collaboration or can we submit proposal ideas from a university alone?**

ONR highly encourages partnering among industry and academia with a view toward speeding the incorporation of new science and technology into fielded systems. Proposals that utilize industry-academic partnering which enhances the development of novel S&T advances will be given favorable consideration.

**29. Will ONR try to match up potential groups with similar ideas or ones that are working on similar areas?**

ONR will make this determination if in the government's best interest, but such interactions will take place after proposals are submitted.

**30. How do we specify ideas that span multiple TAs in this call?**

Submit a separate proposal for each technical area and each proposal will then be evaluated based on its individual technical merit and value to the objectives of each TA.

**31. How detailed must the budget be?**

White paper budget submissions shall be a Rough Order of Magnitude (page 14 of the BAA). Proposal submissions shall follow the instructions for contracts, which include cost proposal spreadsheets with instructions embedded in the template located at:

<http://www.onr.navy.mil/Contracts-Grants/submit-proposal/contracts-proposal/cost-proposal.aspx>

**32. Are there specific evaluation criteria or goals for the transition/integration mentioned for years 2 and 3? Should proposers find their own transition partners, or does the Navy have specific systems in mind for transition demonstration?**

By end of year 1, ONR anticipates typical TRLs of 3-4. At final deliverable, ONR expects at least TRL 6. During the effort, ONR will coordinate collaborations with naval environments to facilitate transition. (See answers to questions #12 & #33)

**33. What are the requirements on TRL? In terms of TRL numbers, from 1 to 6, which maturity is ONR interested in? Any commercialization requirement?**

(See answers to questions #12 & #32) There is no commercialization requirement.

**34. Shall we include a Return-on-Investment (ROI) analysis in the white paper? If so, is there a standard ONR analysis framework?**

This is not a requirement nor is there a standard ONR analysis framework. If included, please use an analysis framework that you are familiar with.

**35. Can you share the contacts of all attendees?**

No. The list of attendees was provided at the industry day event and name tags were provided in addition to two networking events. No further lists have been collected or retained.