

BAA 04-018 QUESTIONS AND ANSWERS
21 May 2004 Offeror's Meeting

A. For “hold threat subs at risk” task what is the volume area that the system needs to cover at a given target?

Answer: Depending on the geographic location, the area of interest could range to many thousand square nautical miles. Funding at the 6.2 level will not likely be sufficient for a full system ready to take to a fleet experiment in free play exercises. You should at least have a concept for a surveillance system that is potentially capable of covering a large area. A viable proposal can demonstrate performance in a limited area and provide strong evidence that the system is scaleable to a larger area.

B. The BAA expresses interest from shallow to deep water, yes, suggesting roles in “hold at risk” and “protected passage.” Will preference in consideration be given to one over the other?

Answer: Emphasis here is on a surveillance system, more hold at risk than protected passage. Protected passage implies moving with a carrier strike group, moving ahead, clearing lanes. This is not what this system is expected to be able to do primarily, but it is conceivable that the system may also be able to protect a sea base. We expect a fielded surveillance system in distributed sensor mode, netted, and connected to a larger FORCENet structure.

C. What are the most important theaters of operation for ASW topology, geography? What U.S. locations best match the theater?

Answer: WESTPAC is the target area for the ASW that we are thinking about at this time. We've been working with 7th Fleet for a number of years, from the northern part of the Sea of Japan down to the South China Sea. ASW will be conducted in both shallow and deep water typical of this region. Is there a U.S. location that mimics this? Perhaps . We're not going to take PLUS spiral development immediately to WESTPAC, but we have to be cognizant of the specific oceanography that's out there.

D. Will the Navy provide and operate target subs for demos or do we budget for this? I have another question that's almost like it. What type of boat will be a test platform?

Answer: We are particularly interested in diesel submarines. Threat signatures will be provided to funded teams. For intermediate stages of development, target vessels are not likely to be available and are not expected to be included in proposals. At more advanced stages, ONR will arrange for target submarines during fleet experiments.

E. At the end of the 3 year term, of what range of technology readiness levels do we expect?

Answer: Reference is to the NASA terminology on technology readiness levels that range from 1 to 10. We anticipate that a technology readiness level of 6 or so should be achieved for this limited scope 6.2 effort.

F. Does the BAA look for acoustic or non-acoustic systems, i.e. magnetic or electric sensors? Second part of the question is, is the BAA willing to support development of an emergent magnetic sensor technology that will be much better than the current technology?

Answer: Sensors are clearly a very key part of this. We encourage new sensor concepts. The range, sensitivity and false alarm rate are related not only to single sensors but to sensor suites. Independent, complementary sensors are one way to drive false alarm rates down. We are interested in new sensors whether they are magnetic, electric or something else. Sensors and platforms are the basic building blocks of the system.

G. Does six month lifetime mean six months of continuous at sea operation or would it include dormant periods? Please define the term persistent within the framework of each of the 3 ASW missions. How long? How often

Answer: Persistent implies months. Six months is something to shoot for. Continuous operation means maintaining the probability of detection and probability of false alarm always above a defined threshold over the area of interest. Given that constraint, the duty cycle is a control variable that may include shutting down for awhile or intelligently adapting operations to the observed environment. Energy management and covertness are underlying drivers and challenges.

H. A sensor is a sensor. Can systems proposed be used for missions other than ASW? What is the method of employment of these systems? In denied areas? SOF?

Answer: Yes. We're not primarily addressing other missions here, but using the system for many purposes clearly would be in everybody's best interest. Deployment considerations are extremely important. Any system, regardless of its technical superiority, that cannot or will not be deployed is useless for Naval operations. The logistics of deployment is an integral part of a complete system. We do not expect production packaging, miniaturization and deployment engineering to be addressed in the development of a 6.2 prototype. However, there should be clear evidence of future compatibility with operational infrastructure including SOF.

I. Systems performance depends on threat signatures and capabilities with current systems, most are classified. How do we work around this?

Answer: We intend to provide classified threat signatures and we expect performers to have the proper facilities. We will work with proposers to determine the best way to satisfy their needs for specific tasks.

J. Now there are three here that are related to each other. To what extent do you expect teaming arrangements to be completed prior to the white paper submission? Is ONR interested in receiving white paper on component or sub system technologies or do component vendors need to team with systems providers prior to the white paper submission or white paper proposals that contain concepts for sub systems but not the complete under sea surveillance system accepted?

Answer: The purpose of the white paper stage is to provide an opportunity for feedback. Some of that feedback may include suggestions on potential teaming. We will very likely fund some subsystem developments on their own if they are really good. There are a lot of different paths from a white paper to a proposal, but we are certainly open to creative subsystems, individual components, or any kind of innovative enabler to the complete system.

K. I will start with a couple questions in relation to other programs. One is what is the relationship of PLUS to the ongoing ADS program?

Answer: ADS is an Acquisition Program and PLUS is S&T funding. So there is not a direct programmatic relationship. We are aware of what they are doing and we will try to keep them aware of what we are doing.

L. What's the relationship of this BAA to the 04 BAA from PEO integrated warfare systems for innovative theater ASW initiatives? Is it the same funding line/program element?

Answer: No, it is not the same funding line nor program element. We are coordinating with those folks. We are helping to review some of their proposals and we hope to get them on our team to look at some of the white papers.

M. We have a bunch of questions on covertness versus clandestine and what do I mean and I went back while I was sitting over there and actually looked at the BAA. It actually says clandestine and not covert.

Answer: A working S&T definition of covert is as that the target doesn't know it's being surveilled. There is a stricter definition used in the intelligence communities where covert includes deniability if discovered. The source of a system cannot be identified. Clandestine typically means that intent cannot be determined from activities observed. In the early stages of hold at risk where overt forces are not in theater and we are in the far forward areas trying to figure out what the submarines are doing, you don't want to be detected. Clandestine includes this degree of stealth. It does not exclude active acoustics if you are not detectable but there is reluctance to using active especially in early stages. The objective of the hold at risk mission is to move the timeline forward in detecting hostile intent so forces can move in faster.

N. You stated in the BAA introduction that the sensor grid should be survivable to counter measures. What specifically do you mean?

Answer: Distributed sensors as well as cabled systems can be damaged by fishing boats and merchant ships. That is one type of countermeasure. Spoofing is another type of countermeasure. System performance should be immune to sparse outages and gracefully degrade in proportion to damage extent. Survivable implies the absence of a catastrophic failure mode.

O. Are we only considering complete end to end system proposals?

Answer: No, see the answer to **J.** above.

P. Question on CONOPS for hold at risk. Can we assume that LCS is forward deployed to host unmanned vehicles?

Answer: LCS CONOPS are not fully developed. LCS will not likely be extremely far forward. However, it will be out in front of the battle group and will deploy unmanned vehicles. We can assume that they will stay there to monitor sensors and unmanned vehicles. We defer to the LCS developers for further information.

Q. Are “large N” concepts no longer an emphasis of the LASW FNC? Are “large N” concepts more inline with PLUS?

Answer: “Large N” is a phrase that means different things to different people. At one extreme, “large N” means thousands of sensors that detect by random interaction (typically collision) with the target. This approach appears attractive until false alarm rate and long term persistence in the coastal ocean are considered. In the LASW FNC we are looking at what is an optimal number and mix of distributed fixed sensors for a given situation. Most appropriate for PLUS is “smart N”. What is the best mix and number of mobile and fixed sensors that we need for persistent surveillance?

R. Does ONR have some guidelines on typical fees? 6-8% nominally for assumed for CFFF contracts.

Answer: Fee is always based on risk. This includes technical risk: if we asked you to get this done in 12 months as opposed to 36 months, for example. It may also include the level of coordination required: the fee could be higher for an overall systems development versus a component effort because you have to deal with more people, increasing risk. When we sit down and analyze fee and come up with a government objective we use the weighted guidelines. You can look it up in DFARS and plug in numbers yourself to give you a range. We will not likely be giving you the most stringent requirements, so I wouldn't suggest maximizing every value in that form to come up with what to expect to hear back from the government, but weighted guidelines filled out on your own should give you a reasonable target to stick in your proposal.

S. Will ONR use the section 845 agreement to fund these efforts?

Answer: Most likely not. For awhile other transactions and other transactions for prototypes were popular. As a lot of you may know, a lot of those projects went very sour and they're not as common as they once were, plus the rules for using an 845 are a lot more stringent. They have to

be non-traditional, and when they started redefining what non-traditional is they were pretty strict. Basically if you've ever done work for the government you're probably not going to get one and looking at the list of attendees today that's probably going to be most of you.

T. Certain capabilities are being developed under an SBIR Phase II which may be slow developmentally given the limited funding. Can these programs be transferred to a BAA with increased funding or can SBIR program be “plussed up?”

Answer: SBIR contracts have been solicited under their own BAA, which is not a transferable process. If there is a good reason to accelerate or expand the effort and appropriate funds are available, an SBIR contract can be so amended. Alternatively, such an effort can be proposed as a separate contract under the PLUS BAA.

U. Should our cost proposal list specific personnel and their rates or can it list labor rate categories alone?

Answer: That will depend on your estimating system. It should make sense. Say you have Dr. Smith and he's a senior scientist, but the guy is also a wiz with a blow torch and you want to propose him as a welder. Obviously a welder is going to cost differently than a doctor. If you use some sort of weighting system, maybe he does five hours a week as a welder and you weight it out, but don't expect to stick a Ph.D. down in an inappropriate category. So basically it's whatever works for your estimating system.

V. What's the contractual method for teams and this is sort of been a common question. As a contracting officer when we start talking about teaming particularly with federal entities the hair on my neck stands up a little bit because it is not always the most graceful of contracting and it's not always the clearest. But what's a contractual method for teams that ONR will execute i.e. will ONR subcontract directly to team members or would they rather the teams handle the subcontracting to its' members?

Answer: Most likely we will look for a lead performer and any federal entities teamed with them. The proposal should include separate statements of work for each particular entity. What we'd most likely do is include in the contract that the government will furnish whatever those people are proposing to do and we would either MIPER them the money or use an economy act order if it's not a military entity.

W. Is the BAA willing to support collaboration with foreign defense establishments or foreign research laboratories?

Answer: It depends on what you mean by foreign research lab. Complications arise when dealing with labs that are funded or controlled by other governments because bilateral agreements and technology export restrictions must be checked through the Department of State. It's not saying that it can't be done but when we sit down and look at your proposal that certainly could become what is seen as a higher risk approach. Does it mean it can't be done? No. Does the government see it as a potentially higher risk? Possibly yes.

Audience Comment: ONR has foreign visitors representing foreign entities here today. We've prepared, been given very superior proposals from these folks. We didn't think about those exchange agreements, bi-laterals which are particularly amenable to working with PLUS. I wouldn't rule out the possibility that a foreign entity might have a significant role with the proposal.

Speaker Comment: Anytime we start dealing with another entity controlled by a foreign government, then the Department of State must be consulted to insure that we are complying with international agreements and that sort of thing.

Audience Comment: Well again it starts out with a superior proposal.

Speaker Comment: Exactly.

Audience Comment: And at that point as PLUS starts to develop we expect that with, if the technology is out there, that we think is out there. That in fact we are going to be seeing aggregation of effort because if we're able to move this fast, make progress as we think we might be able to I think other folks, other entities, other U.S. and maybe foreign governmental groups sponsors we'd like to join. Please so we're trying to think about that in the future and all of that's on the table.

X. Will any consideration of small business set asides for any parts of this program?

Answer: Typically we don't set aside portions of our broad agency announcements for small business and that is the case with this specific announcement

Y. How should Navy labs participate in white paper technical volume, costs volume?

Answer: White papers should be comprehensive, including the identification of the complete team proposed to meet the objectives. If a lab is part of the team, clearly state what the lab contribution will be in terms of the technical objectives and approach translated into specific tasks. Most likely we would fund them separately from that main contract and it would appear in your contract as government furnished. See answer **W.** above.

Z. And the last question is sort of in the same vein. How will the government labs be allowed to participate teaming or evaluation only?

Answer: Both are possible with careful attention to conflict of interest.

AA. Deadline is stated as 1600 eastern standard time. Should it be eastern daylight time?

Answer: Washington D.C. local time.

AB. Do we need to include all sea test costs in the proposal?

Answer: Yes.

AC. What's the expected stand off distance of processing platform to the sensor field?

Answer: I don't know. It's going to have to be over the horizon but in a FORCEnet environment. I have no idea how far or how near the tactical support center would be to the field. In the full-up FORCEnet concept, it could be anywhere. Your proposal should identify what is required by your system.

AD. And then the issue is what's the degree of covertness expected of the platform?

Answer: Again we're not talking about platforms engaged in the same way as traditional ASW. Think FORCEnet.

AE. What can we assume in terms of satellite coms availability in the future? Will ONR provide Iridium capability? In cost of future system, can we assume commercial GPS or is military GPS required?

Answer: The whole issue of FORCEnet SAT comms is under intense development at this time. We don't know the answer to this. A surrogate like Iridium can be used to demonstrate automated processing and data transfer to the larger network for secondary processing and/or direction to the field. The important thing here is that we know how to do the sensing, we know that what we're doing is scalable, and that it will answer the mail as defined within the BAA. For future systems, commercial GPS can be assumed.

AF. Should the offer include development of novel deployment systems or demonstrate sensor deployability using current technology?

Answer: Deployment is important, and novel deployment systems can be included.

AG. Is covertness important for all scenario constructs?

Answer: No, but being clandestine is. A working S&T definition of covert is as that the target doesn't know it's being surveilled. There is a stricter definition used in the intelligence communities where covert includes deniability if discovered. The source of a system cannot be identified. Clandestine typically means that intent cannot be determined from activities observed. In the early stages of hold at risk where overt forces are not in theater and we are in the far forward areas trying to figure out what the submarines are doing, you don't want to be detected. Clandestine includes this degree of stealth. The objective of the hold at risk mission is to move the timeline forward in detecting hostile intent so forces can move in faster.

AH. Dr. Herr mentioned one to four team awards. Mr. Glance mentioned two concept development awards. There is some difference. Please explain.

Answer: Given the funding available, we are going to end up funding a small number (1-4) of team awards. It is unlikely that we could fund more than 4. It is unlikely that we would fund 4 at

the same level. We expect that there will be enough variability in what is proposed that a number of possible award structures will have to be considered.

AI. Page 3 of the BAA states “individual efforts may also be awarded which address critical S&T issues in the field of under sea surveillance”. Please provide examples of S&T issues that ONR considers critical.

Answer: The BAA frames the problem and we are looking for your ideas. Issues that are critical depend on the approach taken. The approach will be a system, and criticality must be defined in the context of system engineering. Individual efforts may be awarded to mitigate risk for critical components of a system being developed by a team.

AJ. Dr. Herr mentioned in his talk that there will be independent analysis teams to check the development of PLUS. Can we bid to be one of those independent teams?

Answer: No, not at this time. The analysis teams that will begin to think about the T&E phase of this will be considered later.

AK. (two questions)

a. Could the technology provider participate at the white paper stage with more than one team?

Answer: Yes.

b. The next part of that question was to be directed to participate on more than one team?

Answer: We can't direct you to participate on any team. We may make suggestions for you to explore and exploit. Such suggestions should be considered value-added, not direction given.

AL. Can a white paper be classified?

Answer: Yes. However, we prefer white papers to be unclassified, if possible. Keep in mind the function of a white paper, which is not a full proposal. Subsequent full proposals can be classified.

AM. Industry is genuinely reluctant to ask questions that may compromise proprietary approaches. Would ONR offer the opportunity for face to face meetings between the white paper submission and the proposal submission?

Answer: No. White papers and their associated feedback are designed to provide a thorough interaction process that is fair and equal for all proposers. Given the tight schedule, additional meetings for all are not feasible.

AN. Who will be the ONR program manager for PLUS?

Answer: Dr. Tom Curtin is going to be the program manager for PLUS. Many of you know Tom. Tom has been particularly active in the area of distributed system development and ocean sampling systems. A year ago as he went to MIT and got a Masters degree on a Sloan fellowship. He's now back at ONR and he's been working with Dr. Lubard on corporate issues and I'm very pleased that he's going to come back to Code 32 and work with us on this exciting program. As we go forward with the white papers, Tom will organize that and then the proposals will be developed as a response to the white papers and then we will have a senior management team that will make the decisions on the program. Tom is going to be the executive arm for this management selection team but he will not be the sole selecting official.

Questions submitted in writing but NOT addressed during meeting:

AO: Are you interested in; magnetic, acoustic, optical, any of the above, systems?

Answer: Yes. Sensor diversity can reduce false alarm rate and possibly increase range. The case must be made in a system context.

AP. You've emphasized persistence; how important is rapid deployment?

Answer: Rapid deployment (1-2 days) is important in some scenarios. In some ways, persistence decreases this importance by providing a larger operating window to forward deploy with some advanced notice.

AQ. (multiple questions)

a. How will follow on development programs be coordinated with PLUS?

Answer: Coordination will be a continuous process.

b. Does PLUS have to mandate Power requirements or Swap requirements to be used by other developments.

Answer: The question is not clear.

c. Is there an interest in a number of vehicles/nodes to be used in various applications/environments?

Answer: Yes.

AR. Explain or publish terminology of ASW.

Answer: Try searching for "ASW" in Google or another search engine, and refer to the briefing slides.

AS. Do you have quantitative values for the current performance metrics (Pd; Pfa; Latency, Area Search rate, etc.), and where do you wish to be?

Answer: Performance metrics for Navy ASW operational systems are classified. The primary emphasis of PLUS is persistence in Navy operating areas. Metrics such as Pd, Pfa, latency, area search rate, should be defined by the proposed system concept. Proposals should clearly show an understanding of the scope of the false alarm problem in ASW operating areas of interest to the US Navy, including environmental factors that contribute, and provide a clear description of the proposed approach to mitigate false alarms. A “false alarm” is measured at the system level and results in expenditure of resources to prosecute a false target (currently this is accomplished by launching a helicopter, P-3, or other platform to investigate.). The false alarm rate must therefore be extremely low. The goal of this research is to limit false alarms to make the PLUS surveillance system tactically and operationally useful. For example, in far-forward operating areas where prosecution assets are limited, this could be on the order of one per week, while in other operating constructs such as Sea Base protection, a false alarm rate on the order of one per day could be acceptable.

AT. Please ask representatives of potential prime contractors to stand-up and identify themselves, to facilitate teaming (*not done*).

AU. Please clarify the distinction between concept development efforts *underlying technology* awards, mentioned in Mr. Glance’s presentation.

Answer: Concept development efforts are system level activities. Underlying technology awards are component or subsystem development efforts.

AV: Do you envision PLUS to be a FORCE net component, and therefore these developmental efforts must be demonstrated within a FORCE net as well as Sea Shield context?

Answer: We envision PLUS to be a FORCENet component.

AW. (*multiple questions*)

a. Will Navy really supply a target submarine for the demo?

Answer: That is our intention at this time.

b. Certain capabilities are being developed under SBIR Phase 2, which may be rather a slow development given limited funding. Can these programs be transformed to BAA w/increased funding, or can SBIR programs be phased up?

Answer: See T. above.

AX. (*multiple questions*)

a. Can military (esp. Navy) labs be part of an industry team?

Answer: See Y. and Z. above.

b. Can any of the university labs not participate?

Answer: No, all university labs can participate.

AY. (multiple questions)

a. Does “covert” mean low probability of detection of our own sensors/surveillance system in all modes of operation (i.e. active emissions of detectable energy of different types (acoustic etc.)?)

Answer: See M. above.

b. Are active sources ruled out, more or less, at the sensor? Standing off from the sensor (Bistatic)?

Answer: Active sources are not ruled out.

AZ. (The) BAA indicated a clandestine system is desired and briefly indicated that a covert system is desired. Clandestines may allow a multi static approach and a more timely data exchange. Covert implies neither may be desirable. Which is expected/desired?

Answer: Clandestine is expected/desired. See above answers M. and AY. for more detail.

BA. By clandestine undersea surveillance, do you mean only passive?

Answer: No. See above answers M., AY., and AZ. for more detail.

BB. Please discuss what clandestine surveillance that provides weapons launch guide track means over three to four months. Specifically: Only passive systems (no overt sensing). Does the level of stealth change (i.e. right before you deliver the weapon, do we still need to be covert)?

Answer: Still need to be clandestine.

BC. Does this imply covert/ clandestine system installation?

Answer: Yes.

BD. (multiple questions)

a. How important is Sea Base Perimeter Defense?

Answer: Important, but secondary as PLUS has been defined.

b. How big are the Perimeters? 3D-depth profile.

Answer: Sea Base protection will occur within the ASW construct of Maritime Shield. As defined in the Naval Transformation Roadmap, the area dimensions for Maritime Shield can vary from 40 x 40 nm² to 200 x 200 nm². Depth of coverage is limited by threat submarines' operating depth in deep water, and the entire water column in shallow water (i.e. on the continental shelf).

BE. Are White Papers and/or proposals that contain concepts for subsystems but not the computer undersea surveillance system accepted?

Answer: Yes. See above answers, including **J.**, for more detail.