Clarification to WNaN Adaptive Network Development (WAND) BAA 07-07

(NOTE: BAA 07-07 and PIP have precedence over any statement in this clarification document)

1. The three WANN vendors failed to mention what user application software and mass storage capabilities they have (e.g., room to host network adaptation algorithms).

   ANSWER: The WANN vendors will provide this information at the Network API TIM.

2. What are the constraints on where the WAND software stack operates? Does this need to be worked out with each WANN supplier separately to ensure the processing resources fit within the $500 budget?

   ANSWER: The stack can operate wherever provided by the WANN suppliers. [Per Question #1, the WANN suppliers will provide additional detail on design characteristics.] It is likely to expect that reasonable processor needs may evolve during execution and should not deter from "best" answer.

3. Are WANN awardees advantaged / disadvantaged / ineligible for awards under WAND?

   ANSWER: No advantage or disadvantage. WANN awardees are eligible for a WAND award.

4. What is the desired Technology Readiness Level (TRL) at the end of each phase and at program conclusion?

   ANSWER: At program conclusion the hardware will be production ready but will not have a full test and evaluation pedigree. Overall, no specific maturity level is being specified but the ability to transition robustly is an evaluation consideration.

5. If the TIM slips significantly will the BAA submission date slip as well per the "45 day goal"?

   ANSWER: We are not anticipating any slips at this time. If that occurs we will decide at that time.

6. Will there be any mechanism to ensure the WANN APIs are complete? That is, no insider advantage by exploiting hidden features (e.g., Microsoft's application advantage)?

   ANSWER: The Government team will review the deliverables and proposals to make sure that they are consistent with the published API. Hidden API features will likely place the HW vendor at a disadvantage because WAND proposers will be reviewing, evaluating, and commenting on all proposed APIs in their

proposals.

7. Will demonstrations only include line-of-sight links or will they incorporate beyond-line-of-sight similar to the FCS-C demonstration?

   ANSWER: The demonstrations will include beyond-line-of-sight links. WNaN nodes must be able to talk to other WNaN nodes that are beyond their line-of-sight via both relay through WNaN devices and relay through non-WNaN infrastructure (e.g., satellite).

8. While we are allowed to talk freely with the radio vendors, what is the restriction of the information sharing within the WAND team? The WAND team may consist of contractors that are part of a different WANN team?

   ANSWER: The Government will not involve itself with distribution of information within teams.

9. Security architecture for WAND: The network security is currently not listed in section 2.2 of the PIP. Since security may have significant impact on network protocol design, what is the guideline on security? Will WAND network be treated as red network or will it be required to support multi-level security enclaves? Will the DTN security architecture presented in Industry day be served as the baseline?

   ANSWER: WNaN is supplying a black network. The WNaN node could be responsible for Type II security. Type I security will be external to the radio with input via the RJ-45. Proposers can dicuss how they would implement Type II security within the WNaN device.

10. Would you please clarify the first bullet in Table 2 for phase 1 of the PIP page 13? Is each node required to connect to a 100BaseT network? What is the purpose of this requirement? Is it for controlled demo or for demonstrating solutions to the issue described in theses #3?

    ANSWER: The current vision is that each node will have the ability to connect to a 100BaseT network. As discussed in thesis #3, the WNaN network should be able to interconnect with non-WNaN IP infrastructures. This connection can be either for external routing or for attachment of local IP-based devices.

11. In table 2, only phase 3 is specified that 1000 node WNaN network where all nodes are within interference range. How about 40 nodes in Phase 1 and 100 nodes in phase 2? Are they required to be within interference range or it is up to proposer to define the scenario.

    ANSWER: It is up to the proposer to define the scenario. Proposers should propose as appropriate to their development schedule. It is preferred that early

demos be as robust as possible.

12. The PIP specified the network size scalability requirement (i.e., two to tens of thousands). How about traffic load for this scalability requirement; are there any constraints for traffic load? Will the traffic load and link dynamics be given for the required demos? Should proposer take the traffic load in FCS-C demos as baseline?

    ANSWER: Scalability is mostly concerned with network overhead and not traffic. The traffic load should be whatever is necessary to support intended use. The criterion is effective use of resources, not a service agreement.

13. In the proposal evaluation criteria, there is no requirement for technical transition. Does DARPA vision that this WNaN radio network will be deployed overnight to services? Or should it have a deployment plan for interoperability between WNaN and legacy radios, or should this program to be targeted to some DoD transformation programs?

    ANSWER: DARPA does not prescribe Service transition approaches, plans, or schedules.

14. We received a message from your briefing at the Proposers' Day that you emphasized much more on new technology development, i.e., new networking architecture framework and design that proves DARPA's WNaN vision rather than actual implementation and technology transition. Can we interpret your message that the technology transition may not be a prime concern in this program? Rather, the program focus is more on research and the proof of the concept demonstration of a WNaN Adaptive Networking than Technology transition? Is this correct?

    ANSWER: While new network technology is an important part of the WAND effort, it must be implemented and demonstrated in a system and that system must be transitionable to Services. The end objective is to have a demonstrated technology and implementation that can be directly transitioned to and acquired by the Services.

15. We were informed by DARPA that the XG program information would be available to everyone. I assume DARPA and SSC will define the baseline (a common set) of XG information that SSC should release to all bidders. Does this mean that SSC can not support us beyond the define baseline? In other words, if SSC is willing to support us in additional tasks beyond the common baseline information release, can DARPA allow for it? Can we make an "exclusive teaming" on the additional tasks beyond the baseline XG information release?

    ANSWER: SSC can support individual teams in work beyond the baseline XG information. The Government does not govern the nature of the teaming

arrangements, but access to the baseline information will be available to all teams.

16. We have been on a similar question with Silvus, Does DARPA have any restriction in general on this similar arrangement with other cases for MnM program (e.g., Silvus) and DTN program information (e.g., JPL/Sparta)?

    ANSWER: No.

17. DARPA WAND link does not show some of the interesting presentations from the Proposer's Day. Can you post the following:
    9 GD WANN Overview (William Clark)
    10 Honeywell WANN Overview (Chuck Laberge)
    11 M/A-COM WANN Overview (Ron Cavalieri)
    12 DTN Program Overview (Jim Snyder)
    13 DTN Security Initiative (Jim Snyder)
    14 Unified Policy Language (Mitch Kokar/Donald Hillman)

    ANSWER: These briefings are going through the public release approval process. All referenced briefings will be posted to the website as they are approved.