



A. The purpose of this amendment is to answer questions from potential offerors as follows:

1. "Are there any maximum or minimum size/weight requirements for the system?"

ANSWER: System must be deployable from UNOLS class IV or larger vessels. Class V preferable. Ship specifications may be found at [www.unols.org](http://www.unols.org).

2. "Is the sensitivity figure for the hydrophones the array sensitivity or the free field sensitivity of the individual hydrophone elements?"

ANSWER: See Amendment 0001, answer 20.

3. "Would the NRL object to a pre-amp that is not current mode?"

ANSWER: The hydrophone's performance specification is given in Section 4.4.4. Alternative technical approaches meeting or exceeding this specification may be proposed.

4. "I read the specification for hydrophone as one with a sensitivity (measured at the pre-amplifier input) of  $-178$  dB. The amplifier has a gain of 40dB and the combination provides a total sensitivity figure of  $-138$ dB re  $1\text{V}/\mu\text{Pa}$ . Is this the requirement? Is a combination of hydrophone + pre-amplifier to a sensitivity of  $-138$ dB acceptable even if the individual and pre-amplifier do not meet the stated requirements?"

ANSWER: Yes, as long as the noise specification is met. See Amendment 0001, answer 20.

5. "How frequently must the engineering sensor data (Section 4.3.5.4.2) be sampled/logged?"

ANSWER: Per section 4.7.8.b, programmable from 5 minutes to 60 minutes or by manual request from the operator.

6. "Other than the anti-aliasing filter, would it be acceptable to forgo some of the discussed hydrophone filtering in favor of DSP later in the chain?"

ANSWER: No.

7. "Do you really anticipate a 30% duty cycle in actual operation, or is that figure just conservatively set for energy calculations?"

ANSWER: Yes, 30% duty cycle is the minimum performance specification.

8. Antenna cable length for the MCS is stated as 50 meters minimum, 100 meters desirable. Several knowledgeable engineers have told me that 100' (feet, not meters) is the maximum advisable length for low-loss antenna cable to be used with 802.11B. In industrial installations where greater length is required the network and power cables are typically extended rather than the antenna cable, and the access point placed in environmental housing. Is this an acceptable solution?"

ANSWER: Yes.

9. "Do you have any specific concerns or requirements regarding the shipboard 802.11B installation other than distance from the MCS to the antenna?"

ANSWER: No.

10. "Is it your intention to perform beam-forming with the vertical hydrophone array either now or in the future?"

ANSWER: Beamforming processing may take place in the Modem PC. Beamforming processing will not take place in the ACDC PC.

11. "Is there any existing equipment with which the ACDS is intended to communicate?"

ANSWER: No.

12. "What is the estimated maximum wave height and current to which the system will be subjected?"

ANSWER: Sea State – operation in sea state 3 or less is highly desirable. Current – operation in steady current 1 knot or less is highly desirable. Operation in peak current 2 knots or less is desirable.

13. "The surface pressure case is to be rated to 500m depth. (Section 4.1.1a) If the surface spar is separable from the surface pressure case, does the surface spar need also be rated to 500m?"

ANSWER: Yes.

14. "Is a wing-style fairing an acceptable substitute for the haired fairing?"

ANSWER: As stated previously, alternative approaches will be considered if the offeror can demonstrate the approach meets or exceeds the performance requirements. It is the Government's opinion that a wing-style fairing would not be acceptable due to issues of durability in deployment, recovery, and storage.

15. "What is the estimated maximum current velocity?"

ANSWER: See answer to question 12, above.

16. "What kind of vessel will the system be launched/recovered from? What is the lifting capacity and height above deck of the gantry or boom? Capacity of the winch?"

ANSWER: See the answer to question 1 above.