

## CDR Questions

### Project Implementation Activities

10. Project organizational structure. Are the management capabilities and qualifications of senior personnel supervising OOI planning, including an evaluation of whether the Program Office team is sufficient to direct the project? Is the Program Office organizational structure, as well as current and future plans for staffing levels, sufficient to move the project into the Implementation and Operational phases? Are roles and responsibilities between key positions suitably defined? Have key management and staff positions been filled and are sufficient resources assigned to ensure project success?

- The organizational approach for both JOI and the IOs is defined in the *Project Execution Plan* (PEP, section 3.0). The management structure for JOI, including the responsibilities of each position, is shown in the *Project Development Plan*.
- Biographies for named personnel are available on the web and in the breakout sessions.
- High level information provided in the plenary talks. Additional detail in Program Support breakout group.

11. Project organizational structure. Do international and interagency partnerships exist? What is the nature of these partnerships if they do exist and how will they be managed? How will dissolution of partnerships would the project?

- ORION currently has one international partner: NEPTUNE Canada. As part of this relationship, NSF has a Memorandum of Understanding (MOU) with the University of Victoria. Members of the NEPTUNE Canada Office participate on ORION Advisory Committees and the ORION Program Office and NEPTUNE Canada have monthly telecom meetings. The RCO IO will work closely with NEPTUNE Canada on management and procedures.
- No international partners impose risk for the OOI costs or time schedule.
- Possibilities of leverage with NEPTUNE Canada, other international partners, and other US agencies.
- Brief descriptions in plenary talks. Additional information provided in Program Support breakout session. Daly/Isern/Detrick

12. Processes for OOI documentation management and configuration control. Are plans in place for establishing and maintaining a Document Control System?

- The ORION Office will evaluate, choose, and beta-trial software for document management and configuration control during planning for the PDR. Further information can be found in the *Project Development Plan* and will be provided in the Program Support breakout session. Williams/Lunde/Jones

13. Project technical and financial status reporting, Project Management Control System, and financial controls. Is progress being made in the development of a Project Management Control System (PMCS) that will enable development of a resource-loaded schedule by completion of the Preliminary Design Phase? Are appropriate financial tracking and accounting systems currently in place in the ORION Project Office?

- The tools and approaches to determine costs, schedule, risk performance, configuration and document management are outlined in the *Project Execution Plan* and the *Project Development Plan*.
- The ORION Office will evaluate, choose, and beta-trial of software during planning for the PDR.
- High level information provided in the plenary talks, with additional information in the Program Support breakout session. Williams/Jones

14. Internal and institutional oversight, advisory committees, and plans for building and maintaining effective relations with the research community that will use the OOI to conduct research. Is the current ORION community advisory structure adequate to continue to provide the ORION Program Office with advice and community input during the implementation and operations phases or are changes needed?

- The history and organization of the ORION advisory structure will be provided in the plenary talks.
- The history of OOI planning is outlined in the *OOI History* document on the CDR website.
- The current advisory structure provides the ORION Office with the needed advice and support. Additional committees will be added as the program evolves and new activities come on line (e.g., an Observatory Operations Committee).
- During implementation, a member from the ORION advisory committee will participate on IO coordination teams for risk, configuration management, systems engineering, and interface coordination. Williams
- Additional details and future plans will be provided in the Program Support breakout session. Daly/Detrick

15. Quality Control and Quality Assurance plans for components of the OOI. Are appropriate project governance controls being utilized within the ORION Project Office including configuration management and change controls? How will these controls be implemented between the Project Office and the Implementing Organizations?

- A draft *Configuration Management Plan*, as described in the *Project Execution Plan* (section 3.6), is also available on the web and in the Program Support breakout section.
- High level information will be provided in the plenary talks and additional details in the Program Support breakout session. Williams

16. Environmental assessments and permitting related to implementation of the OOI. Are procedures for acquiring environmental permits adequate?

- A programmatic Environmental Assessment has been subcontracted to SRI by JOI. An initial *Environmental Assessment* report from SRI is available on the ORION website.
- NSF is actively involved in the EA process.
- High level information in plenary talk. Additional details will be provided in the Project Support breakout session. Lunde/Kokinda/Isern

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- To support implementation planning, the EA report contains a section that describes the environmental permits that the OOI may need from local regulatory agencies.

17. Systems integration, testing, acceptance, commissioning, and operational readiness criteria for all components of the OOI. Has the approach for systems integration, testing, acceptance, and commissioning of OOI assets been clearly defined?

- The strategy for the concept of operations and for the transition to operations is available in the *Project Execution Plan* (section 5.0).
- A formal Concept of Operations will be developed in the Preliminary Design Phase as described in the Project Development Plan.
- MARS will be important as a test bed facility for all aspects of integration, acceptance, and operations procedures.
- High level information provided in plenary talk. Additional information will be provided in the Program Support breakout group. Williams

18. Is the scope of work, budget, and schedule needed to complete the OOI Preliminary Design and prepare for the Preliminary Design Review adequately documented? Has the project team satisfactorily described the systems integration activities required to develop a preliminary design for the OOI?

- The *Project Development Plan* (PDP) documents the tasks, budget, and timelines for the project development period between the CDR and the PDR.
- Common elements among the observatories will be treated through working groups among the IOs.
- Information summarized in the plenary talk; more detail will be available in the Project Support breakout session. Williams/Lunde

19. Plans for transitioning OOI assets to operational status. Was the plan for transition and phasing from Implementation to the Maintenance and Operation Phases, including initial estimates for annual operations and maintenance funding, and strategies for ensuring the Implementing Organizations have the capabilities needed to transition from implementation to operation well supported?

- The strategy for the concept of operations and for transition to operations is available in the *Project Execution Plan* (section 5.0).
- Initial estimates for operation and maintenance funding is in the CND and will be provided in the breakout group sessions.
- The IO RFPs contain requirements for transitioning to operations.

20. Estimates for the operations and maintenance phase of the OOI. Are estimates for the operations and maintenance costs of the OOI well supported?

- Risk elements – ship costs and availability, contracts with industry are possible.
- Costs for O&M are provided in the Excel spreadsheets.
- We have reasonable estimates of O&M costs for the CDR, based on:
  - past experience (e.g., LEO-15, MVCO, OceanSites),
  - costs derived from other projects currently being developed (e.g., MARS, VENUS), and
  - current ship operations.