



Ocean Observatories Initiative

OOI Program Update

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ORRAP Briefing *Dec 7, 2010*



OOI overarching goals

OOI has two fundamental ***scientific and research mandates*** that underpin its construction:

- Sustained delivery of high-quality data for two to three decades;
- Maintenance of the expandability of the infrastructure to support new capabilities.

OOI overarching goals

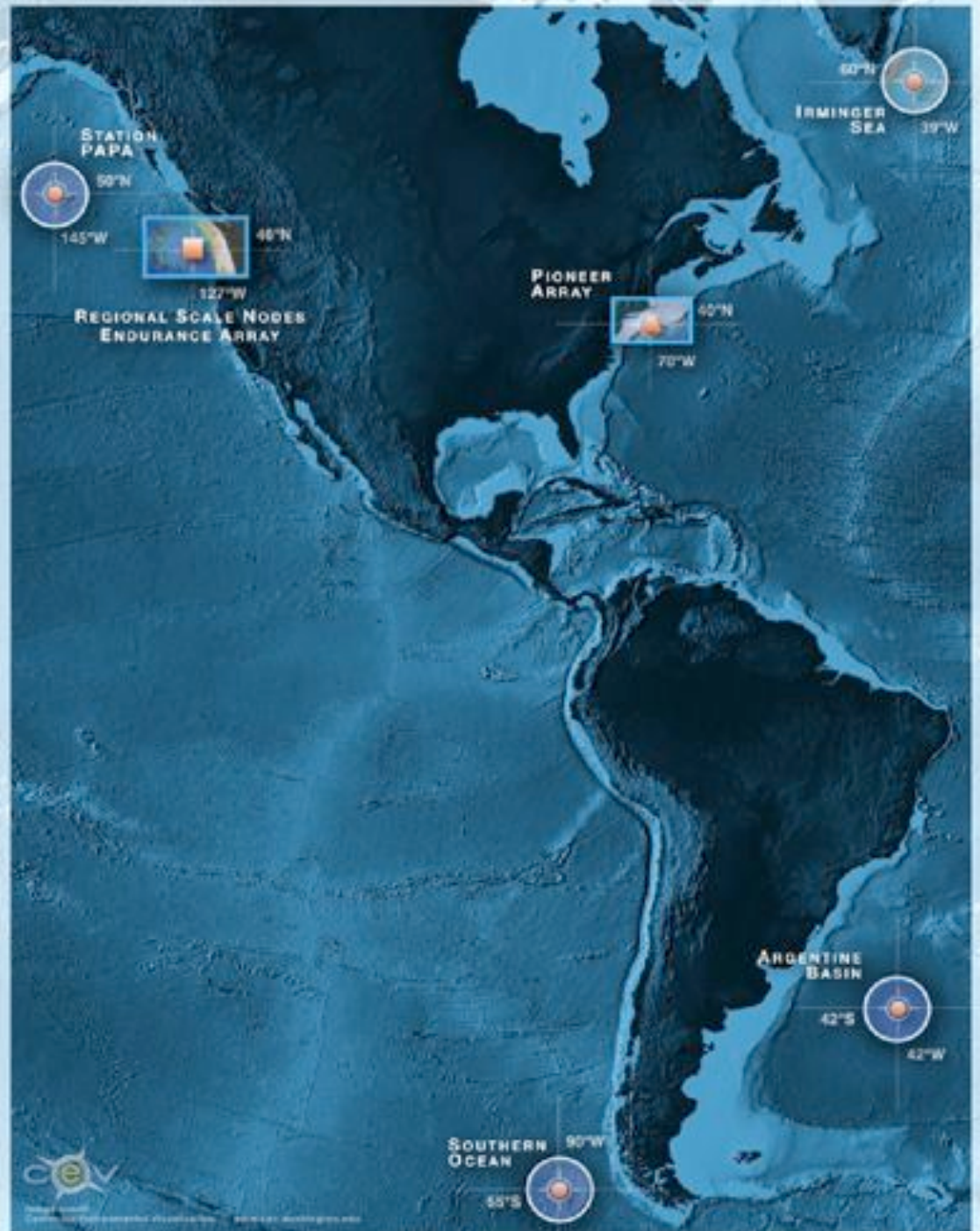
We address those mandates by meeting the science requirements during construction, and by building in the most cost-effective approaches to operating the infrastructure.

The most cost-effective approaches include:

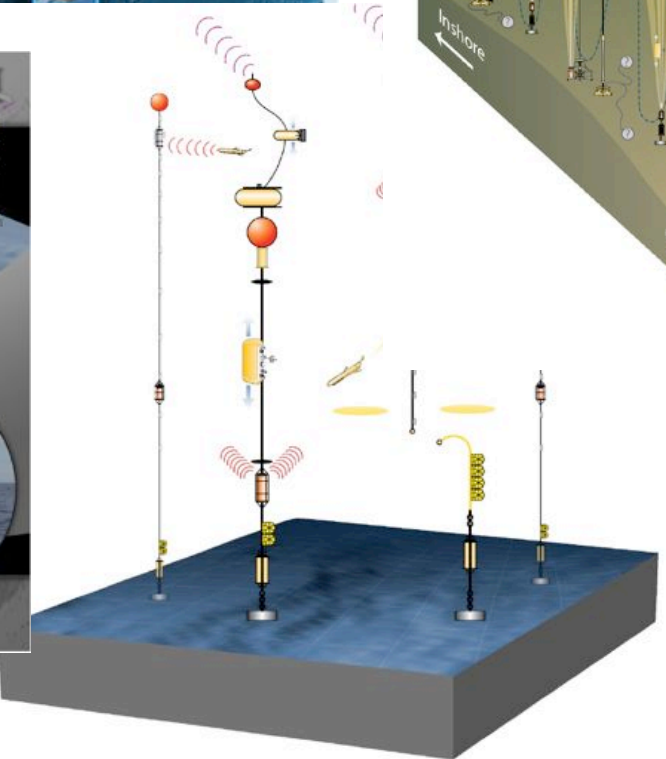
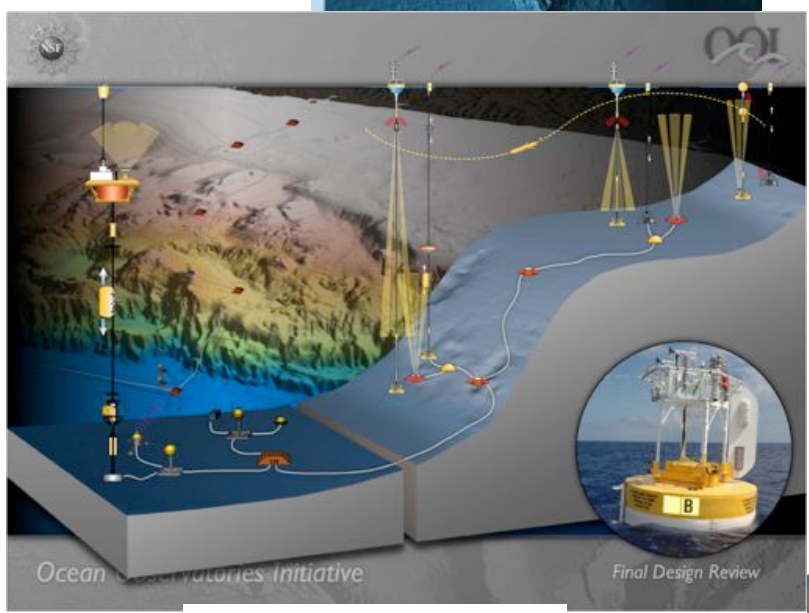
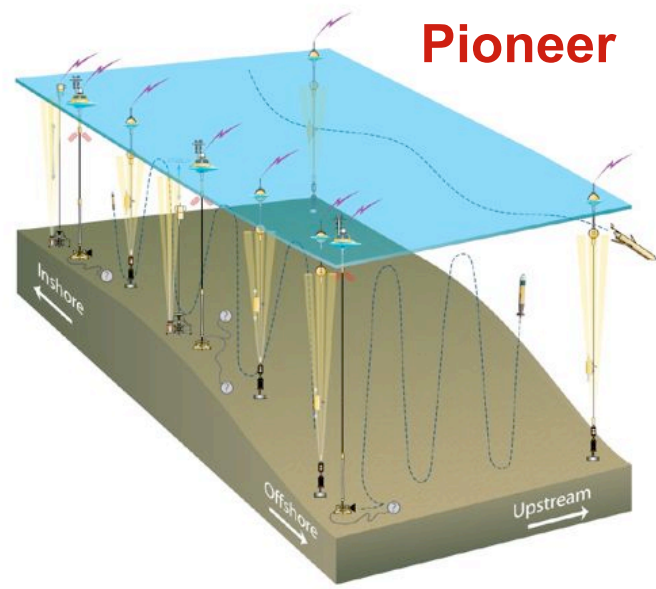
- A model for the lowest possible annual operating cost;
- No compromises to science, safety, and data integrity;
- Incorporation of established change control processes, risk management process, policies for adding new science...

Baseline Design

- 4 *Global* sites
- 3 *Regional* cabled sites in the NE Pacific
- 2 *Coastal* arrays: Mid-Atlantic Pioneer Array, PNW Endurance Array
- **Each scale** incorporates fixed and mobile assets
- **Cyberinfrastructure:** enables adaptive sampling, custom observatory views, collaborative analysis
- Interfaces for education users



Coastal and Global Scale Nodes (CGSN)



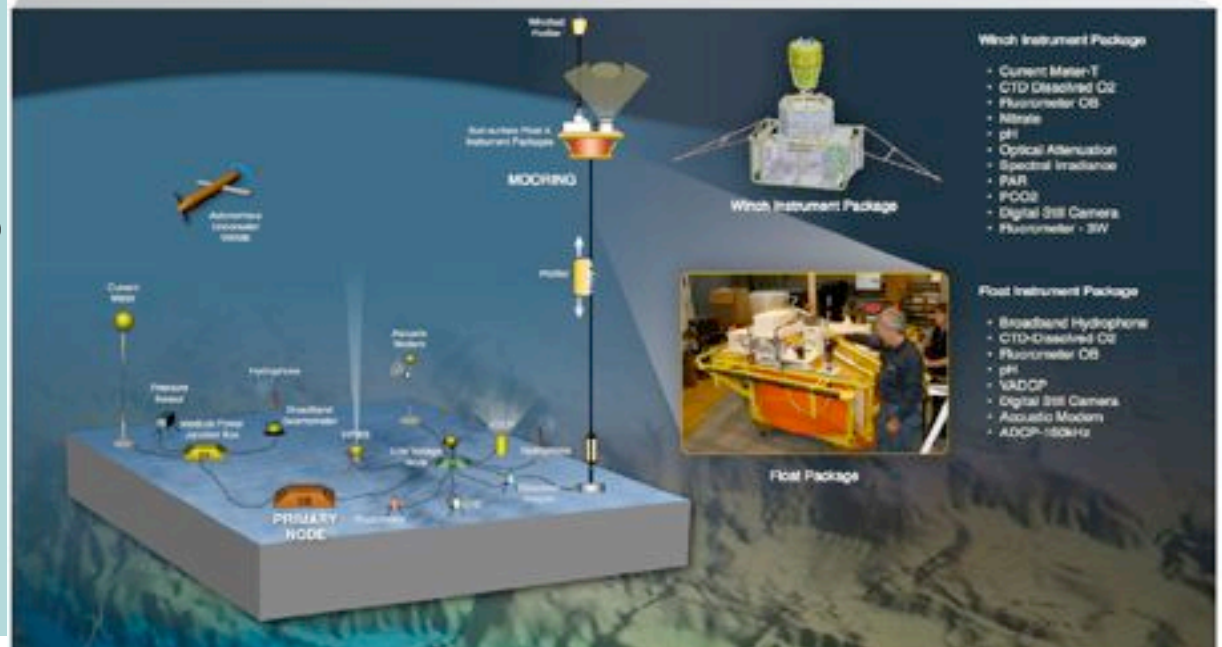
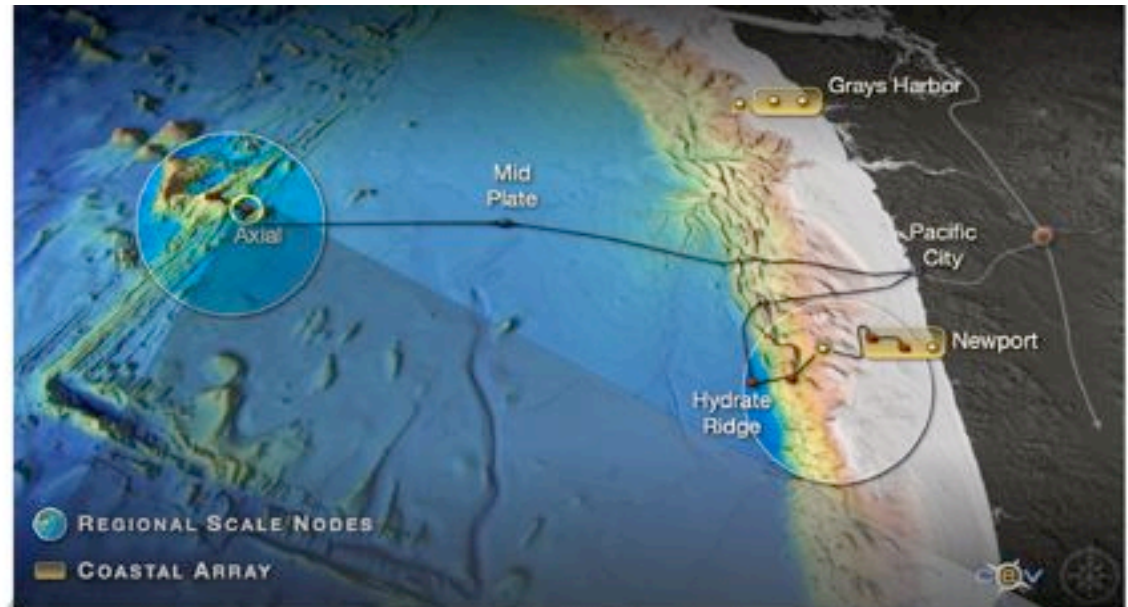
Global

Regional Scale

OOI assets off PNW coast are *unique*

Cable provides **high power** and **bandwidth** to

- Instrumented nodes on Juan de Fuca plate
- full water column moorings at Axial Volcano and Hydrate Ridge
- 2 moorings of Endurance Array connected to the cable



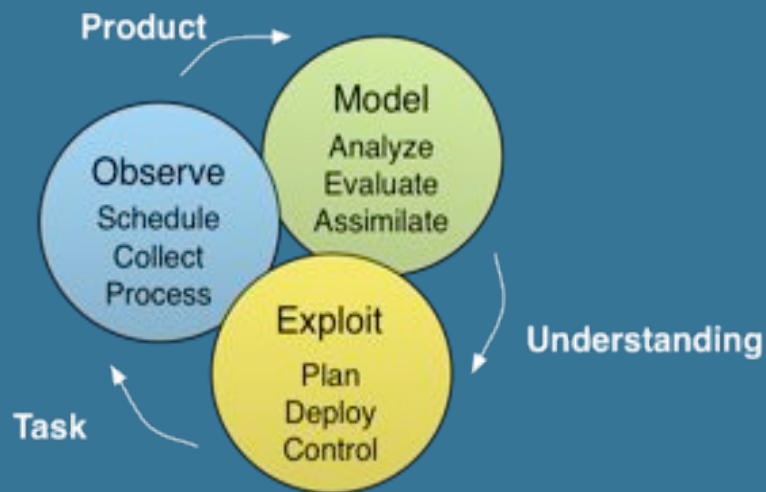
ORRAP Briefing, Dec 7, 2010



Cyberinfrastructure

Creates an *interactive* ocean laboratory integrated by a leading-edge, multi-scalar software tools.

open access...
fueling science,
education, and policy



NSF Construction Review - June 2010

Positives (quotes from the panel report)

- Significant progress has been realized over the first 9 months of the project.
- The COL project team holds the project to high standards and seems truly dedicated and concerned about project cost, schedule, and performance
- The Panel is enormously impressed and encouraged by OOI's efforts over the past year

Construction Review - June 2010

Areas needing improvement

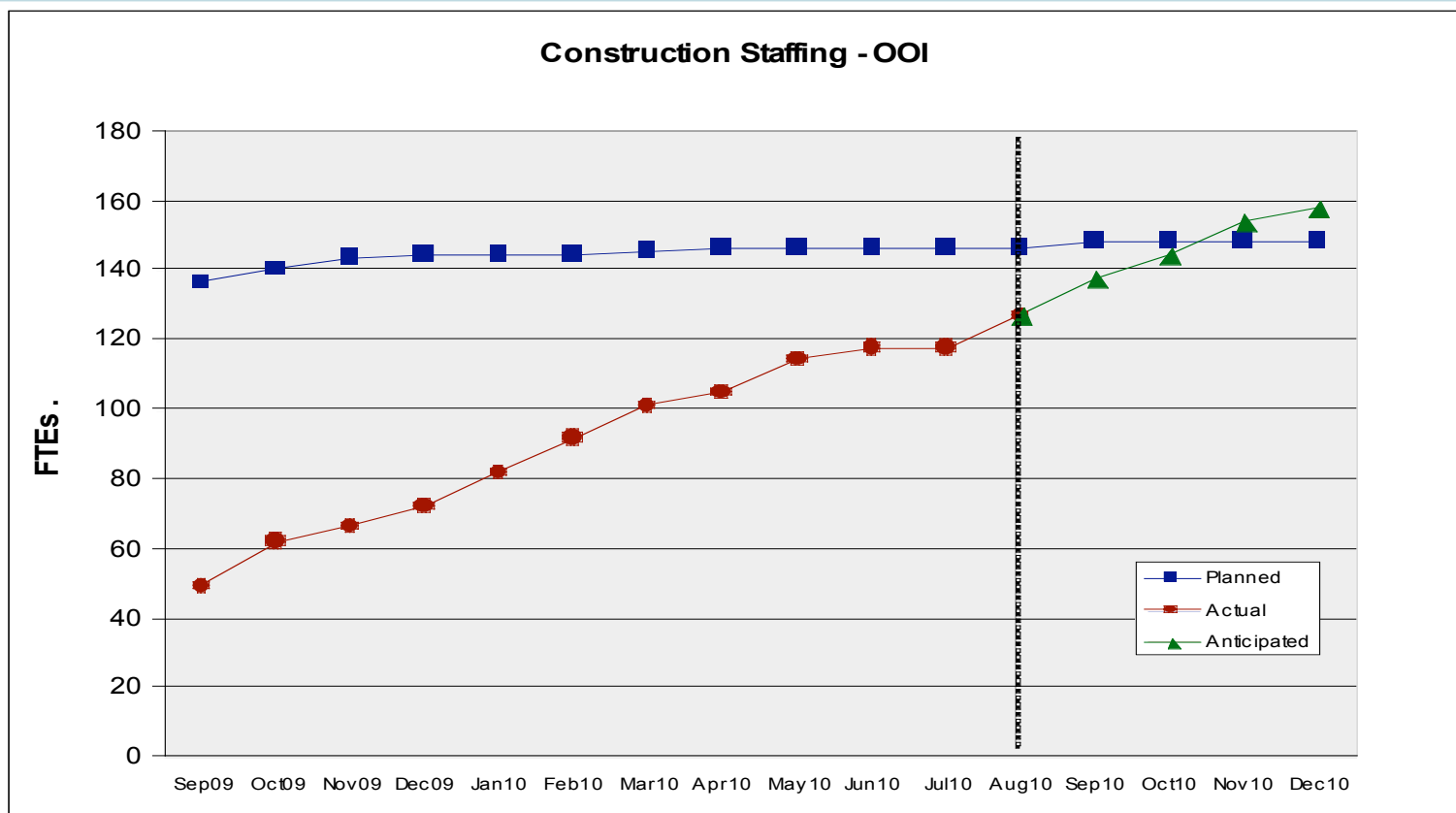
- Scheduling
- Safety and quality assurance
- More efficient management structure
- More frequent engineering design reviews
- Contingency plans for vessel use

O&M Review - August 2010

Modest encouragement

“The panel is optimistic that OOI can achieve operational success within the general budget and schedule framework outlined by NSF. We anticipate that this will not come about without some changes in staffing and structure, but based on the information we have seen, we view the general plan as viable, and the overall approach as appropriate.”

Staffing Progress



The OOI project implemented a 2.7 fold increase in staff during the first 12 months of construction. Initial staff will **triple** by December 2010.

O&M Review - August 2010

Areas needing improvement

- Experienced O&M staff at IOs
- More detailed budget / cost analysis
- Data management and planning (links to MREFC)
- Clearer description of the transition from construction to O&M
- More extensive risk analysis

O&M

Important upcoming O&M deliverables

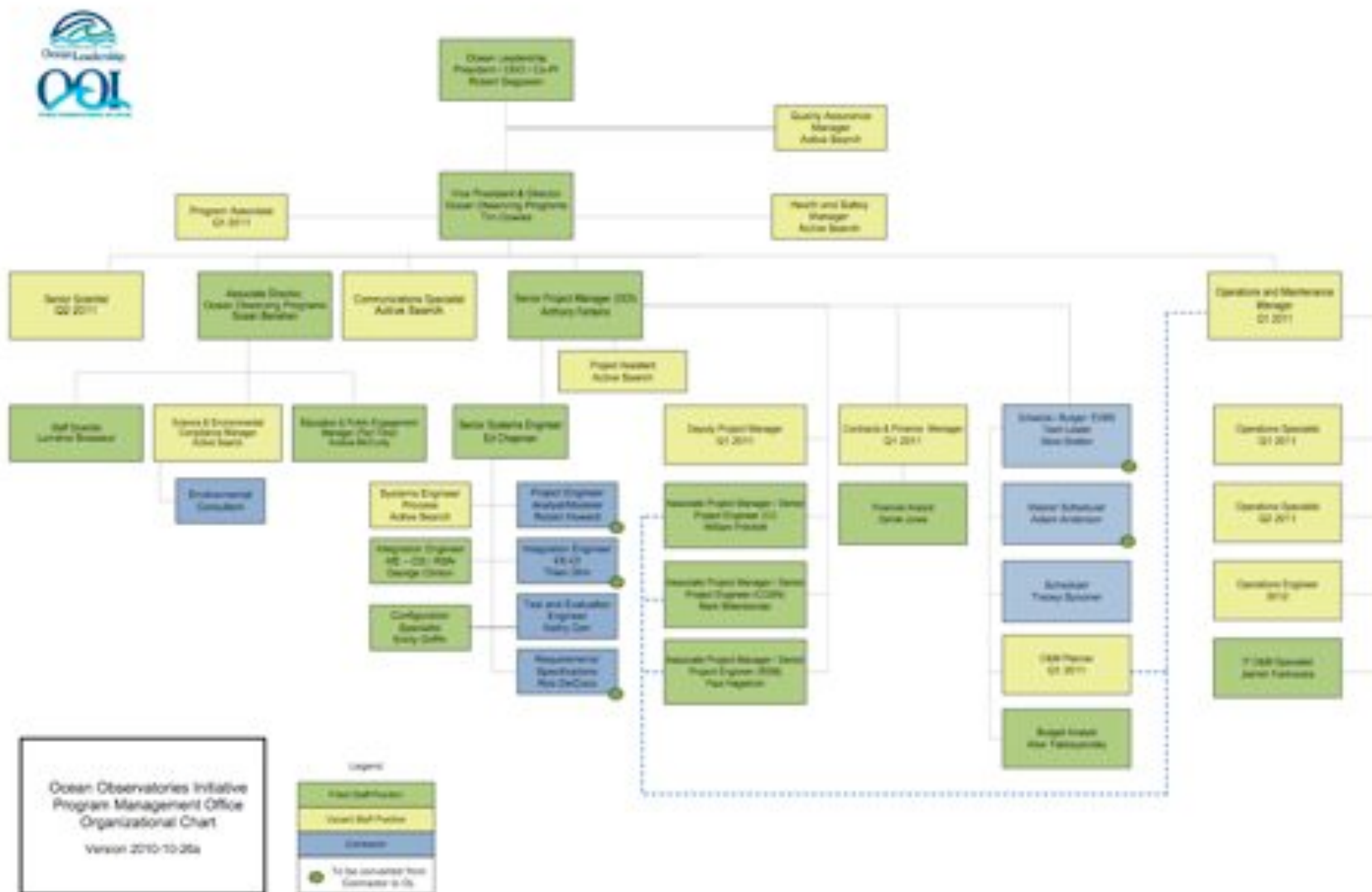
- Data Management Plan by January 1
- Full analysis of steady-state O&M costs (2015 and beyond) to be completed in 2011

Organizational Changes

Organizational changes within OOI Project Office and OL

- New Senior Systems Engineer - Ed Chapman
- Eliminated Project Director position in late August
- Moved Schedule/Earned Value under Project Manager in late August
- Science Communication Director (part-time OOI) moved to IODP full-time in July. Advertising for full-time OOI Communication
- New OL financial administrator largely dedicated to OOI
- Advertising for O&M Manager

OOI Program Office



Developing Collaborations

- **International cooperation**
 - Europe: NSF and EU will be developing formal collaboration between OOI and EMSO
 - Argentina, Chile: working on logistical issues
 - POGO meeting in Jan 2011 to further the international understanding of the project

Gaps

- Some high-value work elements are behind schedule
- Procurements have been a problem
- Still understaffed across the project even with remarkable growth over past 12 months
- Under pressure to show improvements in progress over the next few months - have instituted several program corrections with specific metrics for progress
- Web site and external communications

Action Plan

Our adjustments as Year 2 begins

- Continued acceleration of staffing across the project
- Unfinished Year 1 work will be completed with ‘surged’ resources
- Some Year 2 work may be outsourced or reassigned
- Procurement process has had intense focus for past 4 months - major procurements will occur by end of 2010
- ‘replan’ of the project schedule will be conducted over the next four months

Education and Public Engagement

- RFP issued in July
- Responses received by August 23
- Source selection panel convened Sept 8-9
- Clarification questions posed to responders with late Oct deadline for submission
- Expect final selection in December, award to follow as quickly as contracting process permits

Advisory actions

- OOI Program Advisory Committee (PAC) meets every six months - provides excellent feedback
- New UNOLS committee has formed - Ocean Observing Science Committee (OOSC) - with a charge that goes beyond OOI
- PAC and OOSC will have ex-officio representation at each other's meetings

Workshops in 2011

“External” - NSF supported

Subject to proposal pressure and funding availability -
one has been funded with FY10 \$\$ - Shelf-Slope
processes

Internal - OOI supported

Focus on sampling, data, and science scenarios

Construction Challenges and Lessons

Transition from planning to building

- Must have systems engineering practices in place
- Make sure business processes can accommodate 5 to 10-fold increase - contracts, funding, personnel

Preparing for the pace of construction

- Sufficient numbers of skilled staff
- Vetted schedules

Planning team may not be the building team