



AGU 2012 - OOI's Cyberinfrastructure - An Opening

On Monday December 3, 2012, the OOI Cyberinfrastructure poster "OOI's Cyberinfrastructure - An Opening" will be presented in the IN13B Session (Open Data for Open Science in Geoinformatics Posters).



John Graybeal will be attending the poster during most of the Monday afternoon session. Come on by!

Summary

Session: IN13B, Open Data for Open Science in Geoinformatics Posters

Poster ID: IN13B-1503

Title: OOI's Cyberinfrastructure: An Opening

Authors: John Graybeal; Tim Ampe; Matthew Arrott; Alan D. Chave; Rod Cressey; Susanne Jul; Tim McPhail; Michael Meisinger; John A. Orcutt; Cheryl L. Peach; Oscar Schofield; Karen Stocks; Julie Thomas; Frank Vernon

Poster

- [OOI's Cyberinfrastructure - An Opening](#) (fatter PDF)

Abstract

The Ocean Observatories Initiative is a long-term, NSF-funded program to provide 25-30 years of sustained ocean measurements to study climate variability, ocean circulation and ecosystem dynamics, air-sea exchange, seafloor processes, and plate-scale geodynamics. The OOI will enable powerful new scientific approaches for exploring the complexities of Earth-ocean-atmosphere interactions, thereby accelerating progress toward the goal of understanding, predicting, and managing our ocean environment. The OOI can foster new discoveries that, in turn, move research in unforeseen directions.

The OOI Cyberinfrastructure will connect and coordinate the operations of OOI marine components and data processes, to meet the objectives of the oceanographic research and education communities. The CI will let all users easily interact with deployed resources, access collected data, and apply those data to their specific research and educational needs. The CI is a free and open product that adopts innovative and flexible strategies to bring the oceans to users, any time, any place, on any suitable device.

The OOI CI is dedicated to "using the latest computing technologies to solve the interoperability problem among vast amounts of heterogeneous geospatial data from various sources." OOI CI's charge is to be transformative, and its technologies and goals are just that (see URL). The Cyberinfrastructure integrates state-of-the-art and best-practice approaches to provide fully interoperable access to the widest possible collection of geospatial data. From the system-of-systems model of the planned observatories and the ingestion of data, models, and services; to the configurable, automated workflows producing real-time products, data curation and quality management strategies are supported to the fullest possible extent.

How do we build a system to efficiently support 750 core instruments across numerous platform types, add as-yet unknown instruments during the operations phase, and support any number of processes and external data in the system throughout its 25+ years of operation? What key strategies must be adopted, architectural approaches applied, and technologies integrated to provide complete discovery, access, and use of the system and its data? What defines the critical characteristics expected of the core system, the complete system, and the transformative system? And how can this system be leveraged by multiple science users, programs, and organizations beyond its initial target functionality?

We will present the CI team's best responses to these questions. The project is completing Release 2, two-thirds of the way to a fully public release, and halfway to the final system. The engagement of OOI marine operations and marine science teams prepares us to support marine operations, and the software will be applied to "real operations" very soon. Most of the fundamental marine and operational scenarios are in place at a basic level, and the capabilities have been laid out for a full suite of mature operations and science activities.

From these beginnings, we offer technical, social, and strategic perspectives on the challenges and solutions in geoinformatics data systems, and ask "Where to from here?"

Funding for OOI is provided by the National Science Foundation through a Cooperative Agreement with the Consortium for Ocean Leadership, which in turn funds the CI project.

