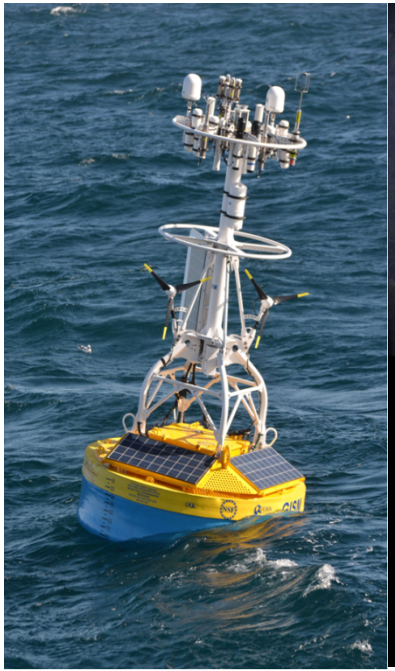
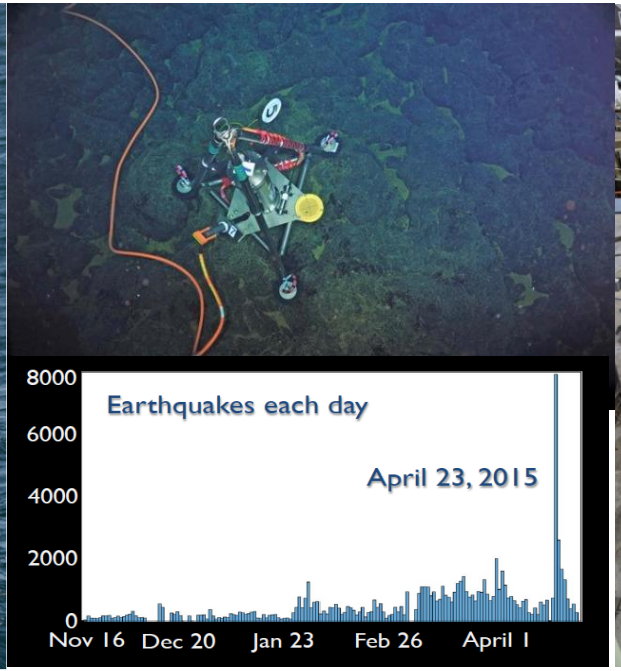
Ocean Observatories Initiative (OOI)

NSF Update

Presentation UNOLs Council Summer Web Conference

Jean McGovern, July 8,2015





OOI – Project Locations & Scope

Four Global high latitude sites

Station Papa
Irminger Sea
Argentine Basin
Southern Ocean

Two Coastal Arrays

Endurance Array
Pioneer Array

Cabled Array

Meso-scale,
Plate Scale network

CyberInfrastructure

Acquisition, Storage, Processing, and Distribution of Data

Deployed Scope of OOI (over 800 instruments distributed over all moorings, benthic packages, seafloor nodes, gliders and AUVs)

Global Arrays

Subsystems	Components	Instruments	Service Frequency
Global Arrays			
Station Papa	1 Subsurface Hybrid Profiler Mooring 2 Flanking Moorings 5 Gliders	12 32 9	Yearly
Irminger Sea	1 Surface Mooring 1 Subsurface Hybrid Profiler Mooring 2 Flanking Moorings 5 Gliders	23 12 32 9	Yearly
Southern Ocean	1 Surface Mooring 1 Subsurface Hybrid Profiler 2 Flanking Moorings 35Gliders	23 12 32 9	Yearly
Argentine Basin	1 Surface Mooring 1 Subsurface Hybrid Profiler 2 Flanking Moorings 5 Gliders	23 12 32 9	Yearly

Coastal Arrays

Subsystems	Components	Instruments	Service Frequency
Coastal Arrays			
Pioneer	3 Surface Moorings 2 Surface-Piercing Profilers Moorings 5 Profiler Moorings 3 AUVs 6 Gliders	60 18 29 18 30	Twice a year
Endurance (Oregon Line)	3 Surface Moorings 2 Surface-Piercing Profilers Moorings 1 Hybrid Profiler Mooring 1 Benthic Experiment Package 1 Multi-Function Nodes	50 18 16 10 8	Twice a year
Endurance (Washington Line)	3 Surface Moorings 2 Surface-Piercing Profilers Moorings 1 Profiler Mooring 6 Gliders	68 18 5 30	Twice a year

Cabled Arrays

Subsystems	Components	Instruments	Service Frequency
Regional Scale Nodes			
Hydrate Ridge	Seafloor: Primary and Secondary Profiler – Winched Profiler – Wire crawler Midwater Platform@ 200m Bottom Instrument Package	16 10 5 8 6	Yearly
Axial Seamount	Seafloor: Primary and Secondary Profiler – Winched Profiler – Wire crawler Midwater Platform @ 200m Bottom Instrument Package	26 10 5 8 6	Yearly

Connected by 880km of seafloor cable, with 10KW power, internet connectivity between 7 primary nodes, multiple secondary nodes, and all distributed instrumentation

Cyberinfrastructure

Computing platforms, software applications, storage, and high speed network equipment

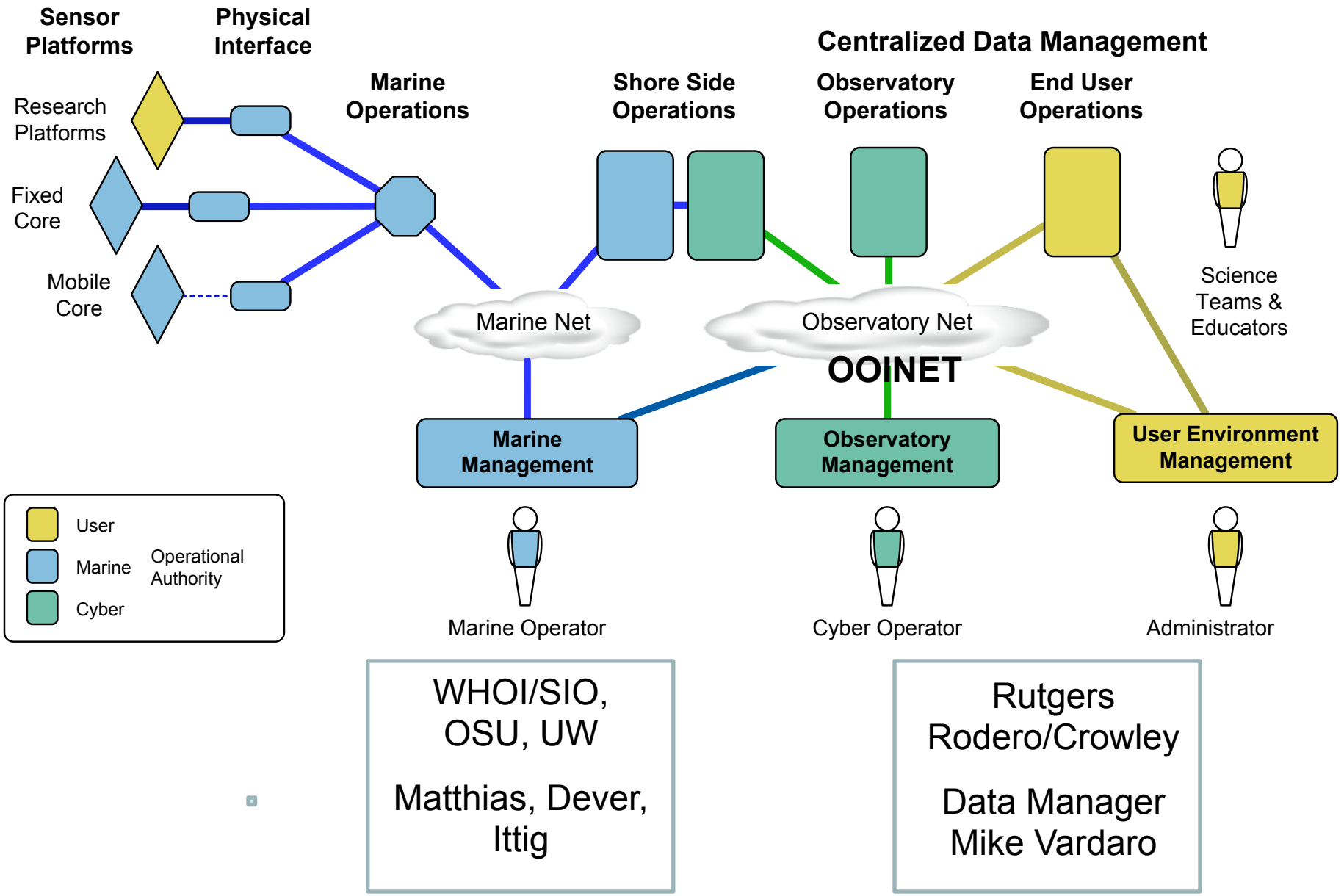
Cyber Points of Presence (CyberPoPs)
- **Acquisition Points**
- **Distribution Points**

Integrated Observatory Network – OOI Net
- **Hardware / Software**

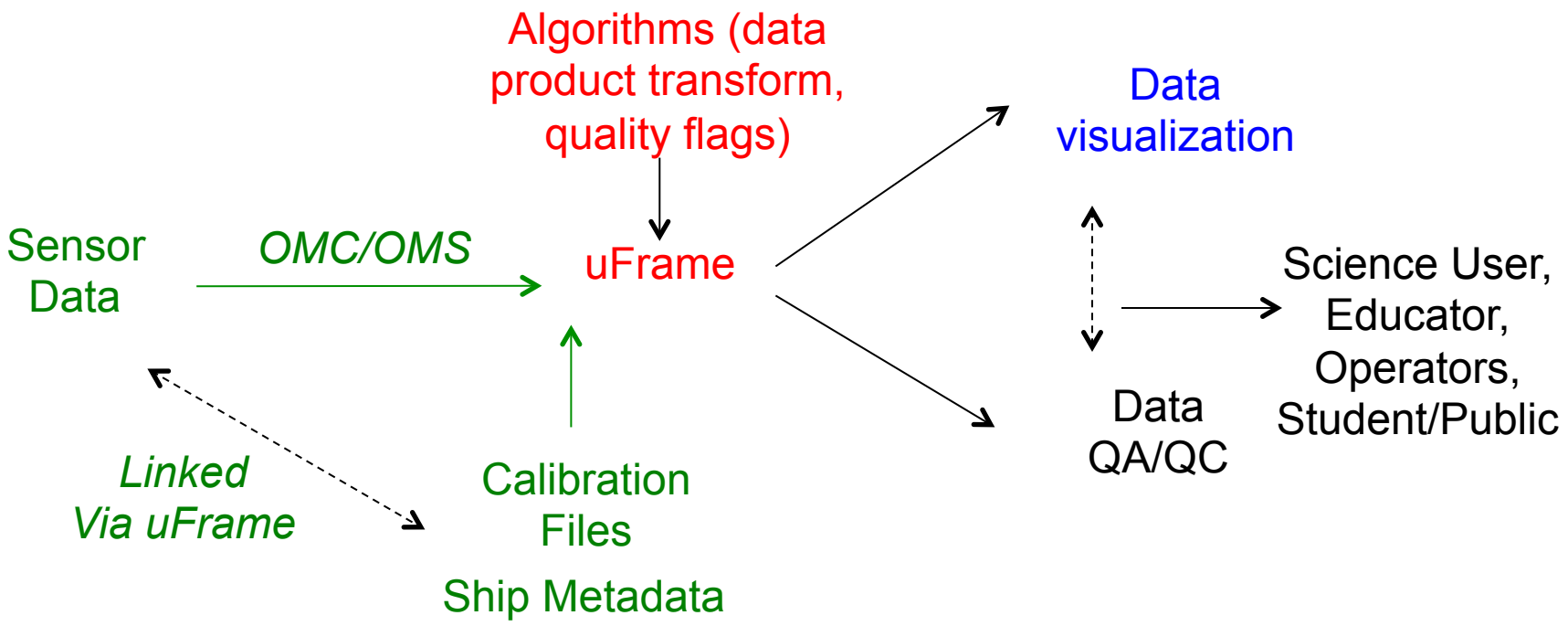
Redundant computing environment

Extensive details about each component can be found on the OOI website (http://oceanobservatories.org)

Ocean Leadership – Cyberinfrastructure Operations



OOI Data Quality ConOps



Marine IOs	OOI-net	Ux/Ui	Data Qa/Qc
WHOI, OSU, UW	*Rutgers Raytheon, ASA,*	*ASA, Rutgers*	*Rutgers, SMEs*

OOI – Status Update Summary

Construction:

- 95% of Marine Work is installed and delivering data!
- Schedule Extension is granted for October 31, 2015 completion
- Cyberinfrastructure is in alpha test phase, beta and final tests scheduled
- Data verification is in progress, Rutgers QA/QC team is hired and on site
- ALL data is being stored for release through OOINET

Construction: Work-to-go Milestones

- June 30, 2015: Marine infrastructure conditionally accepted (except AUV/fuel cell and cyberinfrastructure – Fall 2016)
- Summer 2015: Alpha/Beta system testing – load & GUI
- Sept. 2015: Completion of Cyberinfrastructure & Final User test
- Summer/Fall 2015: Delivery of pre-commissioned datasets as practicable
- October 2015: Final testing & acceptance
- November 1, 2015: Commissioned system is operational

Operational Transition – Starting June 2015

- Builds for first turns
- User & Community Engagement

UNOLS Ship time for OOI

Total Global 2014	**150**
Total Global 2015 YTD	109
Total estimated 2015	195
Total Intermediate 2014	**16**
Total Intermediate YTD	12
Total estimated 2015	26

2016 OOI Requested Ship Days

Global*	77
Ocean Class (N. Armstrong)	76
Jason	30

** 20 of global days NSF Barter on Ron Brown*

Notes on 2016 planning for ship time

-are based on UNOLS Ship time requests plus estimated transit days to the work area
-are not based on the UNOLS draft ship schedules
-do not include any transits that OOI may be responsible for

Community Outreach & additional CONOPs

Ocean Leadership/OOI Team

- Community review & input during pre-commissioned data verification
  - Coastal – February 2015
  - Global & Cable – July/August 2015
- Weekly Website updates via www.oceanobservatories.org
- Check for status of release of pre-commissioned data sets
- Beta/Final User testing – opportunity announcement
- In Operations, website will have technical/cost details for proposals (2016)

Ocean Observing Science Committee (UNOLs)

- User Workshop – January 2016

NSF

- NSF will fund science proposals via Science Core Programs
- Dear Colleague Letter (DCL) will announce OOI availability/details