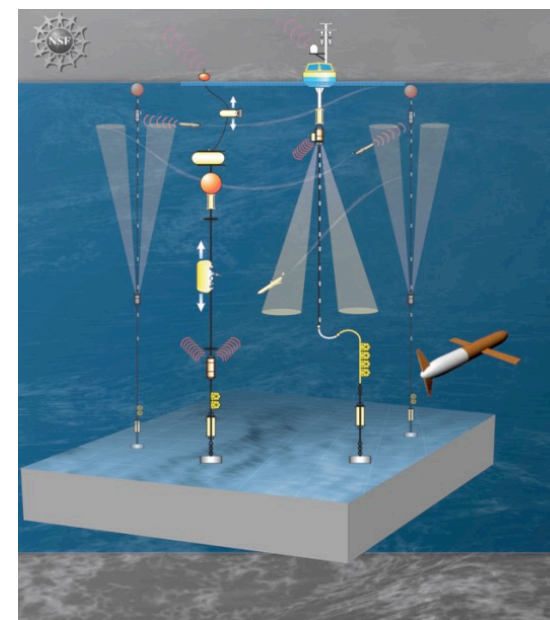
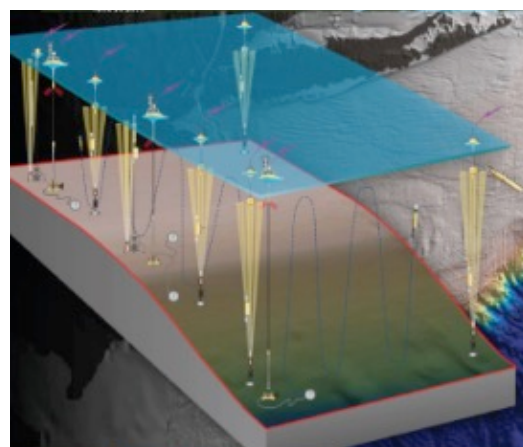
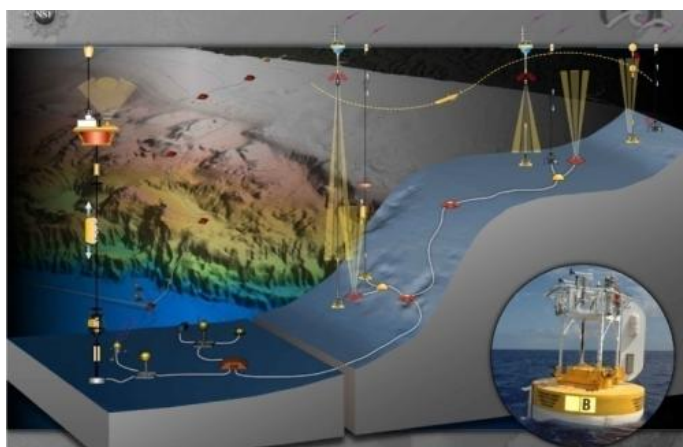




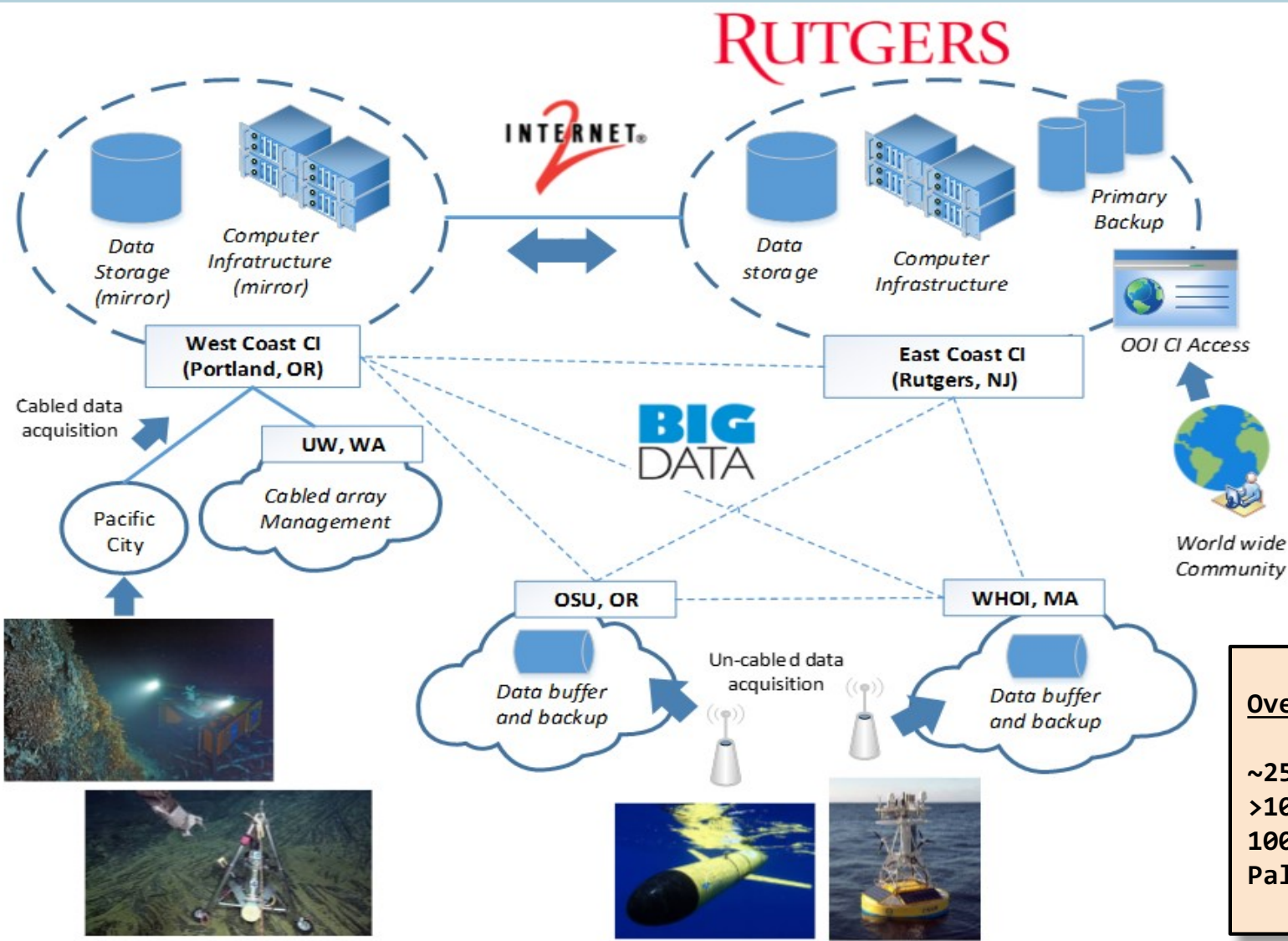
Ocean Observatories Initiative

OOI Cyber-Infrastructure

Presented September 26, 2017



OOI CI Overall Architecture



**Robust,
secure, and
scalable
production CI**

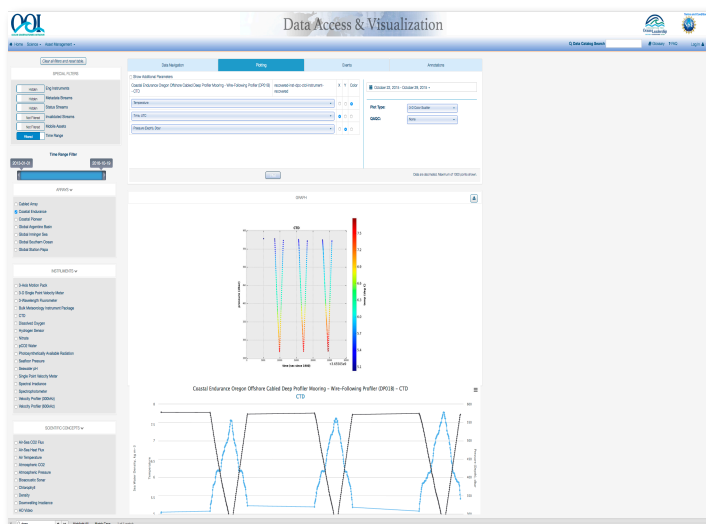
Overall Capacity:

~25PB storage
>100 servers (dual Xeon)
100G network backbone
Palo Alto Firewalls

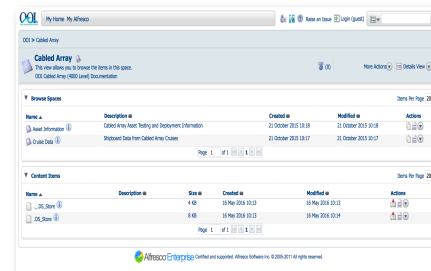


Integrated Software Stack

OOI Data Portal + M2M



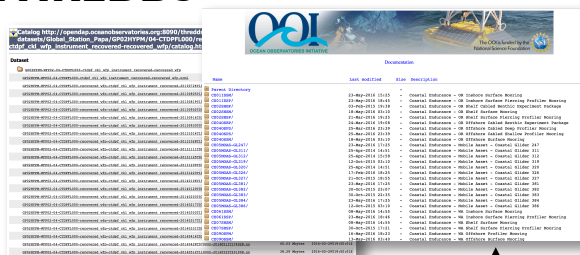
oceanobservatories.org



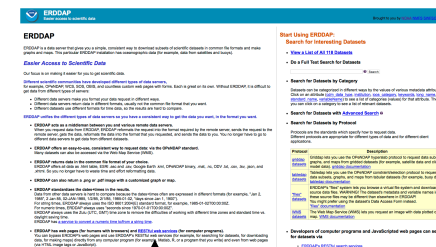
Alfresco (cruise and doc CM)

THREDDS

Raw data



ERDDAP



uFrame Service-Oriented Infrastructure

OOINet

OOI Data



UFrame Update

- UFrame/source code is available to OOI program without any limitation, based on all data provided
 - Final determination to be made by COL/NSF
- UFrame-based OOINet expertise/documentation exists
 - COL contracting for additional documentation
- Rutgers CI team is ready for UFrame-based OOINet operation and maintenance
 - **Highly qualified and experienced personnel** with the required skills
 - **Knowledge transferred** to Rutgers CI Team (e.g., has performed major modifications of the key components of the system)

UFrame Ingestion Functionality

- UFrame ingestion functionality developed, tested and delivered
- Demonstration delivered with easy-to-use capabilities (OOIFB members attended)
- Extensive training and support provided to data team
- RESTful API via M2M
 - Graphical clients available
 - Simple command-line scripting:

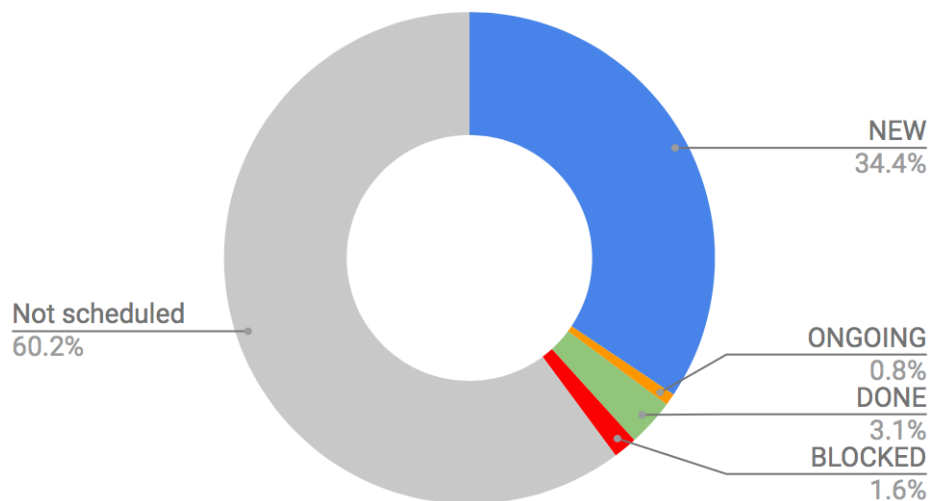
```
./ooi-m2m.sh -i GA02HYPM_D00001_ingest.csv (purge)
```

```
./ooi-m2m.sh -i GA02HYPM_D00001_ingest.csv (ingestion)
```

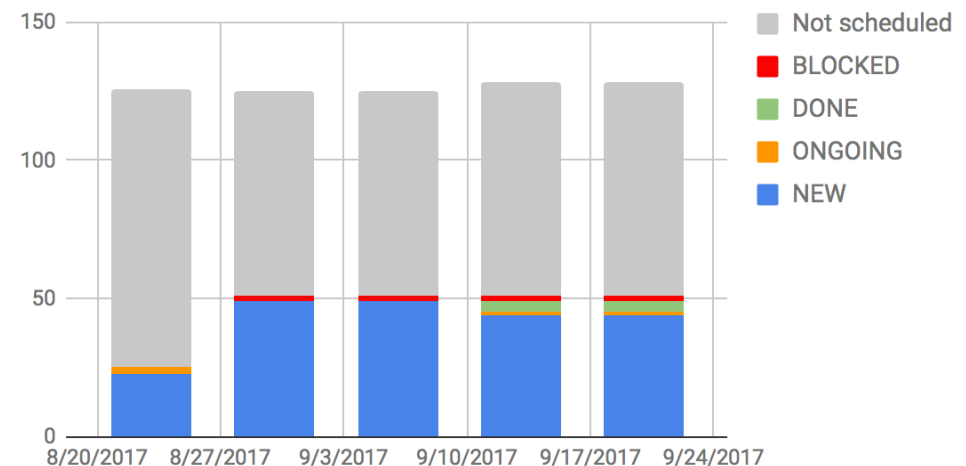
Ingestion Coordination Spreadsheet

- Provided access to ingestion functionality via M2M
 - Testing environments
 - Production environment

Current Status

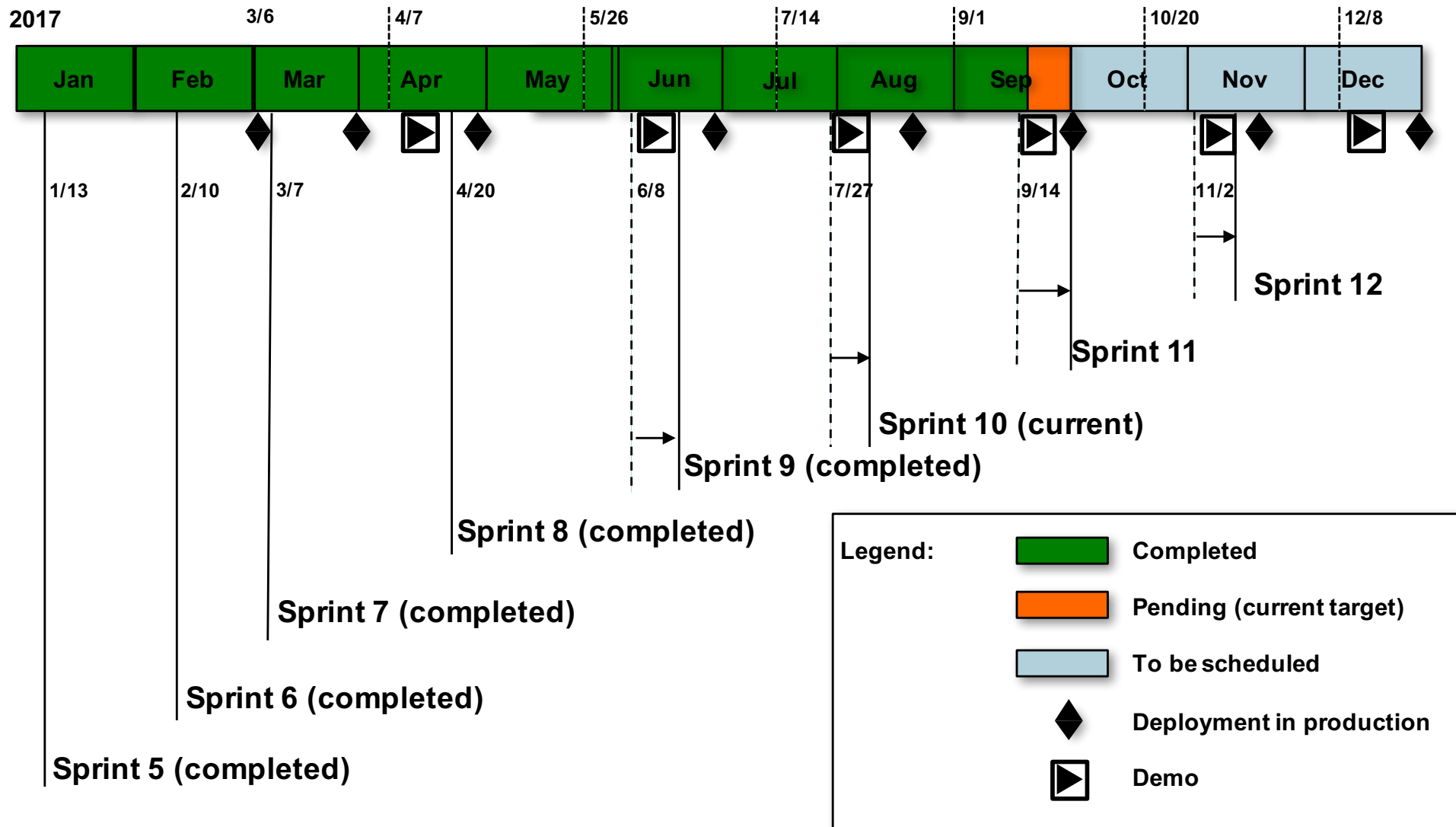


Weekly Progress



<https://docs.google.com/spreadsheets/d/15CZiUCoRvITZGVhq4uqNwCOuZYKC0iTF1WrwmwAGuX8/>

Overall CI Software Schedule



Software Schedule – Updates

- Enhancement efforts **focused on data delivery**
 - Integration improvements are for data delivery work
- CI system issues have been moved to Rutgers CI scope of work
 - Examples: FOSS, Cassandra upgrades
- SW schedule until end of 2017 expected to be boarded
- Current status of Redmine tickets

Redmine Category / Open Issues	Commissioning	Sep, 2017
Drivers/Parsers/Data Products	169	118
OOINet Integration	55	113
UFrame	231	99
User Interface	394	126
Entered without a Project name	111	0
Other Projects	54	0
TOTAL	1,014	456

Support for ERDDAP development

- Best practices followed in the ERRDAP environment deployment
 - DTAP model variant (i.e., quality of code, code review, testing unknown)
 - Deployment and source code under configuration management
- Architecture design by data team
 - Integration viability in OOI infrastructure discussed on April 2016
 - Resources/access provided in May 2016
 - Deployment requests to production begin on Nov 2016 (#11603, #10169, #12716)
 - ~300 Redmine notes involving Rutgers CI
- Testing environment
 - Full access to developers and no limitations to expedite ERDDAP development
 - Ingestion functionality fully available in the test system associated to ERDDAP
- Production environment
 - ERRDAP production log files fully available to developers (as other log files in production)
 - Deployment upon request (request under configuration management w/ rollback, etc.)
 - 11 deployment requests in 10 months (~1 request per month)
 - All deployments required follow up

CI Operations Update

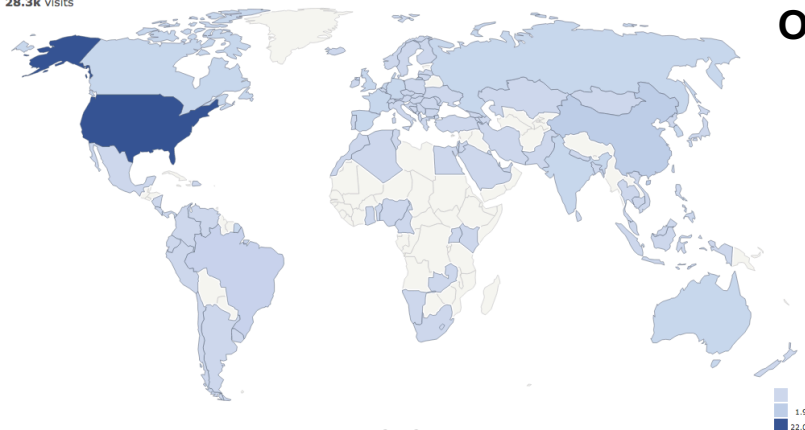
- CI availability
 - In 2017, OOI Cyberinfrastructure **availability** exclusive of scheduled downtime **has been 100%**.
 - It exceeds the requirement of “The CI network shall provide 97% availability exclusive of scheduled downtime”
- Cyber-security
 - 1,250 attacks mitigated January-June, 2017
- Deployments to production

Date	Component	Notes	Date	Component	Notes
2/2/2017	GUI	Deployed 1.3.2 bug fix version	8/2/2017	GUI	1.4.3 and 1.4.4
1/26/2017	GUI	Deployed 1.3.0 feature version, and 1.3.1 bug fix version shortly after the same day	8/2/2017	uFrame	1.2.5
1/26/2017	uFrame	Deployed 1.2.1, including the previous 1.1.3 release which was not deployed before	8/15/2017	GUI	1.4.5 and 1.4.5.1
3/6/2017	GUI	Deployed 1.4.0	8/15/2017	uFrame	1.2.6
3/6/2017	uFrame	Deployed 1.2.2	9/5/2017	GUI	1.4.5.1
4/3/2017	uFrame	Deployed Sprint 6 features	9/5/2017	uFrame	1.2.6-sr1
5/22/2017	GUI	Deployed 1.2.3	9/5/2017	ERDDAP	Uncabled frontend - Version Number: 1, Uncabled backend - Version Number: 1
5/22/2017	uFrame	Deployed 1.4.2			

Data Download Statistics (Jun'16 – Jun'17)

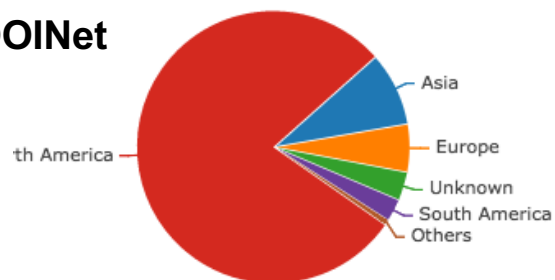
	OOINet (UI Portal)	THREDDS Server	Raw Data Server
Visits	28,341	3,681	18,829
Distinct countries	104	36	57
Direct entries	22,446 (79%)	3,324 (90%)	17,021 (90%)
Search engines	227(1%)	51 (1%)	(<1%)
From websites	3,228 (26%)	306 (8%)	1,792 (10%)
Distinct websites	131 (540 distinct URLs)	17 (92 distinct URLs)	30 (158 distinct URLs)
Data transferred	75.31 GB	923.3 GB	41.85 TB

28.3k visits



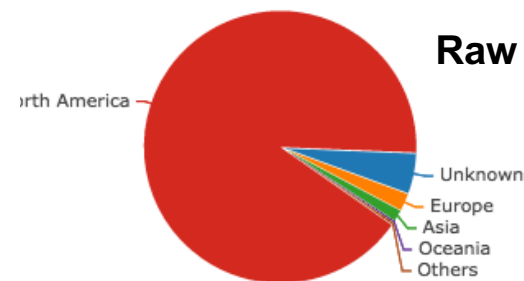
OOINet

OOINet



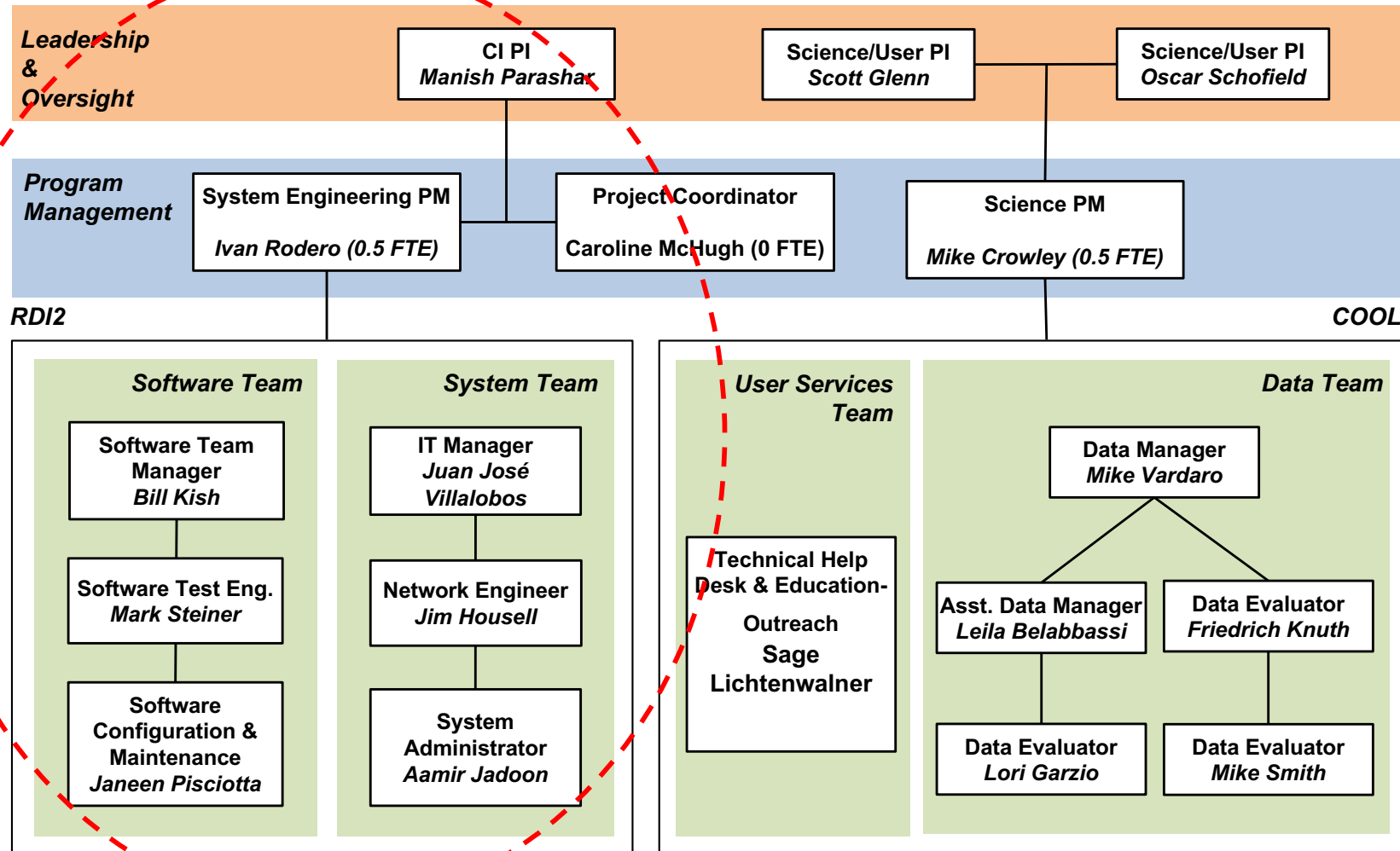
Country	Visits
United States	22,029
China	1,942
Unknown	965
Brazil	659
France	426
United Kingdom	297

Raw Data



Country	Visits
United States	16,989
Unknown	929
Germany	215
Canada	127
China	116
Israel	84

OOI CI Teams



Thank You!



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