

IOOS Data Management: Mission, Roles, Responsibilities; Near term plans

Molly McCammon; Derrick Snowden

IOOS DMAC MISSION: To promote broad access to and use of ocean and coastal data for the benefit of stakeholders, NOAA, and other IOOC agencies.

Roles and Responsibilities: IOOS PO

- Serve as the architect (system design, and standards) for the overall IOOS DMAC system, which is made up of two components: national (federal programs serving up core oceanographic data and functional Data Assembly Centers), and regional (RA Data Assembly Centers).
- Facilitate mission implementation by IOOS PO, RAs and functional DACs
- Facilitate mission implementation within NOAA
- Facilitate mission implementation with other IOOC agencies & global programs

Roles and Responsibilities: IOOC

- Establishes required observation data variables to be gathered by both Federal and non-Federal assets and identify, in consultation with RAs, priorities for System observations;
- Establishes protocols and standards for System data processing, management and communication
- Develops certification standards and compliance procedures for the RAs to ensure compliance with applicable standards and protocols

Roles and Responsibilities: IOOS RAs

- Serve as regional Data Assembly Centers *
- Facilitate access to regional federal, state, local, tribal & private data, including both data collected by RA and other relevant regional data
- Develop regional data products & tools in response to stakeholder needs
- Collect regional stakeholder requirements for data and information for internal prioritization and to be shared with the PO and other RAs. Through sharing requirements we can create the most flexible DMAC design and reduce inefficiencies in the implementation
- Provide stewardship/services to local and regional data providers in addition to access, which could include data ingestion, QA/QC, archiving at national data center and other

**Data is inclusive of Obs, Products, Models etc*

Process for Decision Making

- Continued progress toward system implementation as described in the Ocean.US DMAC Plan, IOOS Blueprint (approved by IOOC), and IOOS PO DMAC Implementation Plan
- Other guidance and standards from ICOOS Act and IOOC
- Compliance with federal mandates and policies (e.g., NOAA Data Sharing Policy, President's EO on data sharing)
- Desire to meet NOAA mission and priorities and global program goals
- Some opportunistic (what initiatives are getting additional funding, traction, etc.), where is unique IOOS niche

Goals and Objectives

Goal 1: Develop and support overall architecture for national IOOS DMAC, which ties together the RA regional DACs, the functional DACs, and federal programs that observe core oceanographic variables.

Objective 1: Develop DMAC entry point (ioos.us) to provide standardized discovery of and access to core set of oceanographic variables datasets, products & services

Objective 2: Foster technical capacity for functional DACs: HFR, ATN, glider

Goals and Objectives

Goal 1: Develop and support overall architecture for national IOOS DMAC, which ties together the RA regional DACs, the functional DACs, and federal programs that observe core oceanographic variables.

Objective 3: Create portals and products for national audience

Objective 4: Coordinate/integrate within NOAA in order to ensure that NOAA oceanographic data meet common standards & protocols

Goals and Objectives

Goal 1: Develop and support overall architecture for national IOOS DMAC, which ties together the RA regional DACs, the functional DACs, and federal programs that observe core oceanographic variables.

Objective 5: Coordinate/integrate outside NOAA to ensure that other federal agencies' oceanographic data can be integrated within national & regional systems and meet common standards & protocols

Objective 6: Ensure compatibility w/global systems e.g. GOOS, JCOMM, GEOSS, OTN, GEOBON

Goals and Objectives

Goal 2: Facilitate development of RA DMAC capacity.

Objective 1: Foster base level technical capacity across all regions

- Develop base level web services: THREDDS, SOS across regions
- Support RA capacity to ingest non-IOOS funded local data in compliance with federal policies, IOOS standards

Objective 2: Provide technical support to RAs to ensure implementation across all regions

- Support RA compliance with standards and requirements including QARTOD
- Develop & assist with regional implementation of open source software to implement standards (e.g., ncSOS THREDDS plugin, i52N SOS server, netCDF compliance checker, Python client tools)
- Develop and operate system monitoring tools to monitor the health of the regional systems (server up time, metadata compliance, etc)
- Foster archiving of regional data at national archives (e.g., NCEI)

Objective 3: Foster regional support for other observing efforts like Marine Biodiversity Observing Network (MBON) and Marine Mammal Habitat Map (MMHMAP)

Discussion & Next Steps

- Are we all on the same page?
 - Are we clear about who and how decisions & priorities are getting made?
 - Do we know where we want to be in 5 years?
 - How do we move forward? What issues need further discussing, who, how & by when?
1. Could set up monthly webinars on various components of this for RA directors and DMAC people and IOOS PO.
 2. ~~Could set up small working group to flesh this out further, including set of 5 year hoped for outcomes~~
 3. Could do 1-2 day workshop next year....for RA directors and dmac managers and PO

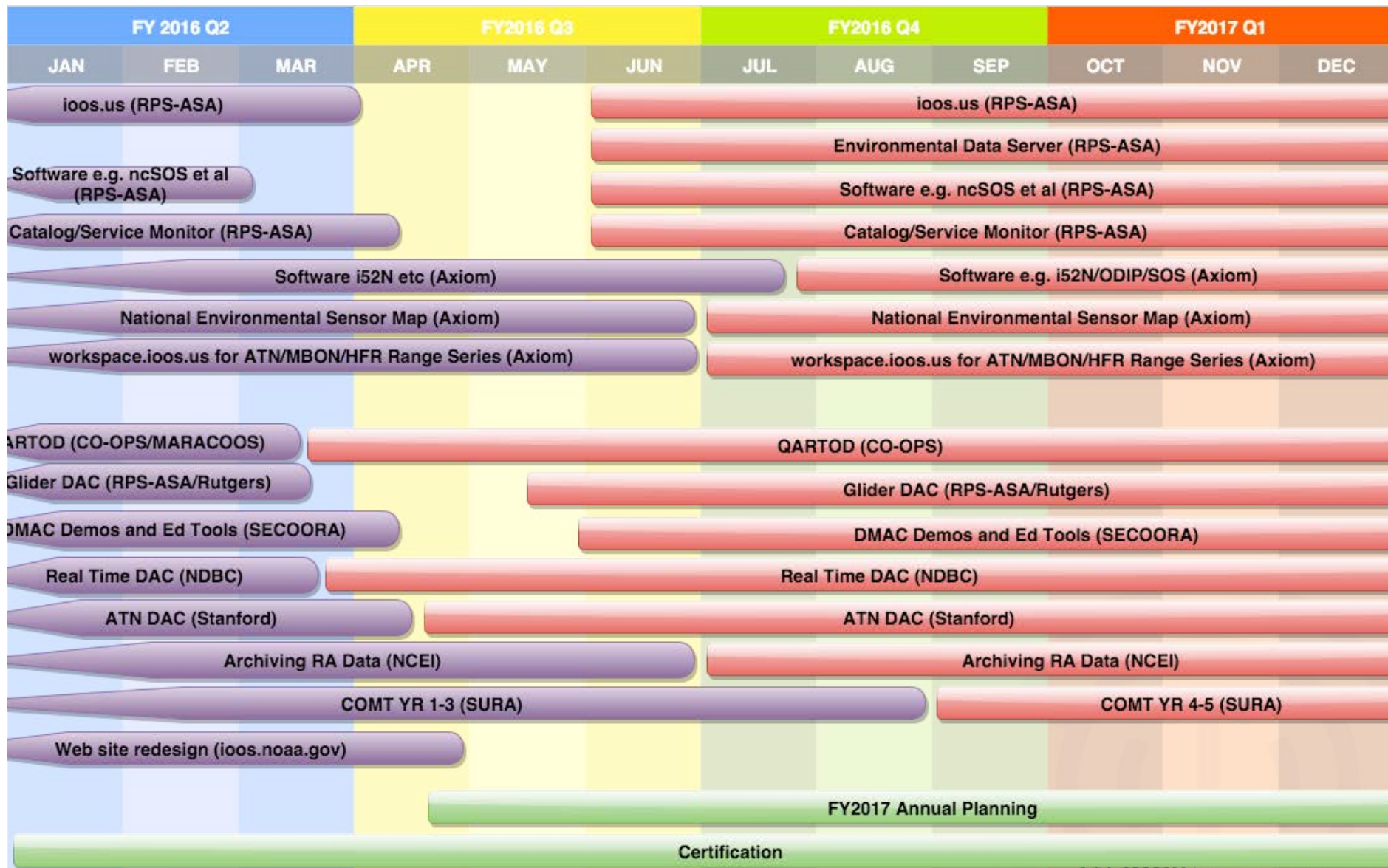
Outcomes/vision for 5 years from now

Discussion on the merits of creating a 5 year plan and how we might achieve it.

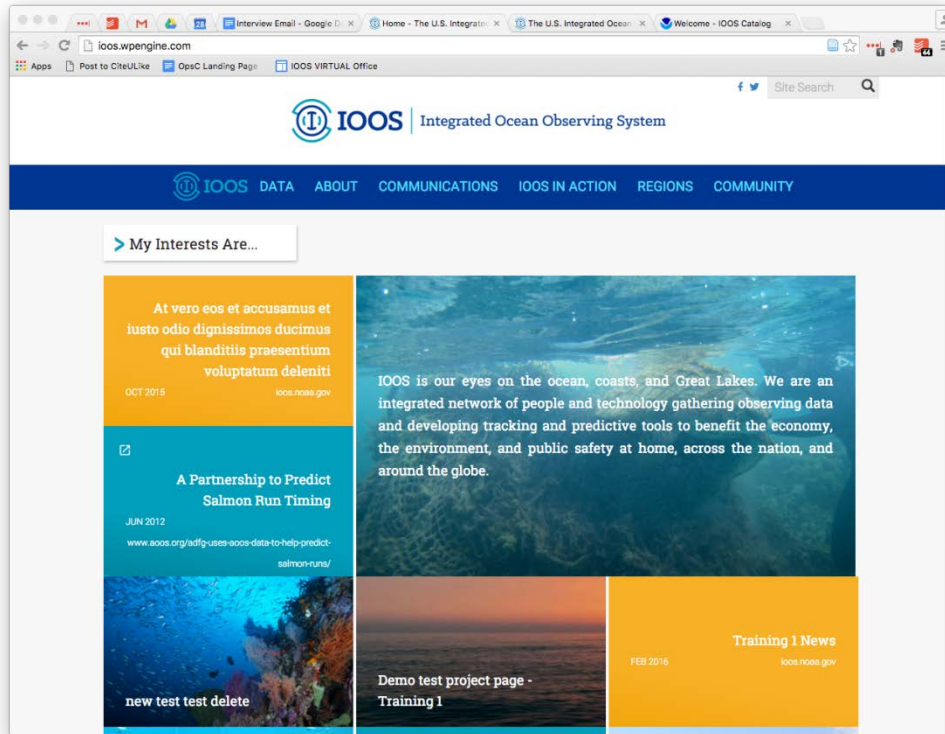
Outcomes/vision for 5 years from now

- RAs are established as an operational complement to Federal efforts in their provision of services and maintenance of cyberinfrastructure
- RAs have clear understanding of O&M costs and a strategy for minimizing.
- RAs are recognized as capable, agile, and reliable providers of ocean information
- RAs are sought after, hired, and provided long term funding to manage data and develop products and services. O&M charges are clear and budgeted.
- Value added products are developed based upon RA data offerings,
- Links from RA data to GTS are operational
- Use of RA data by feds is tracked
- RAs have established, transparent processes for prioritizing specific requirements identified by RAs for datasets, technology, metadata, etc.
- RAs are exemplar performers in balancing agility/flexibility with operational stability.
- RAs are individually and collectively present in all known/important community discovery portals
- Configuration management and technology adoption pathways and drivers are clear and mutually agreed to (we must stay current but not chase the latest fad)
- IOOS is an exemplar program in implementing NOAA Environmental Data Management policies which are increasingly Federal policies
- Increased focus on educating constituents on how to use IOOS services (both technology and science based products)
- RAs are promoting their data access services as much as their web portals
- Establish consistent and reliable link to NOAA programs
 - ORR ERMA has IOOS layers accurately branded
 - NowCOAST has IOOS layers accurately branded
 - Coastal modeling programs are using IOOS in situ data as an indispensable part of model development, validation, assimilation, operationally.
 - Same are using IOOS regional models when appropriate. IOOS runs models for the feds as appropriate based on research to operations transitions
- Incentivize data sharing by adopting and developing technologies that enable and encourage attribution to funding sources and personnel involved with various stages of the data life cycle like doi, fundref, cross-reference etc.

Selected Ops/DMAC Projects

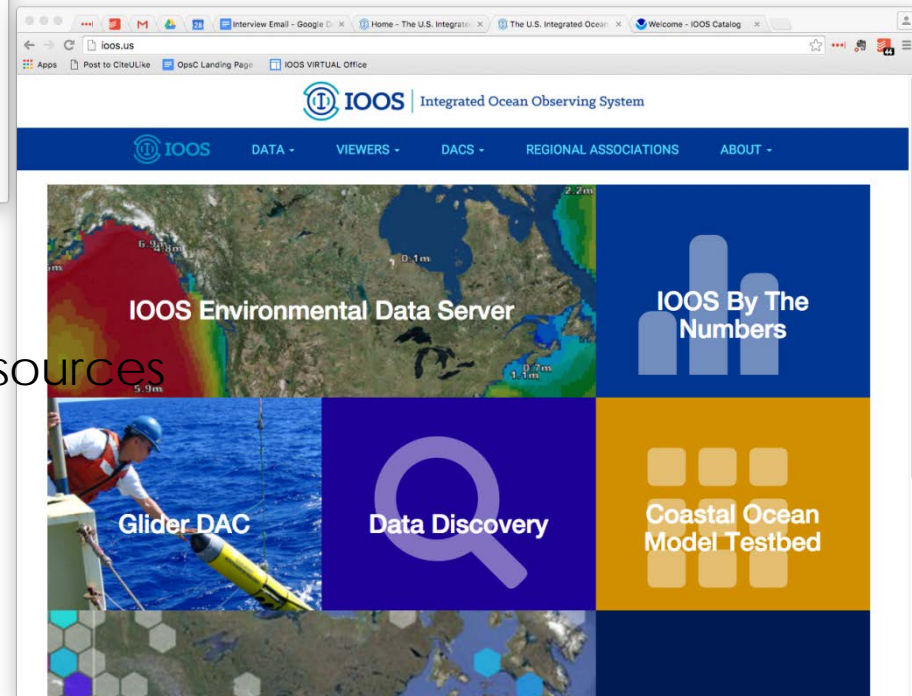


Consolidating our web presence



← ioos.noaa.gov

The main program web site.
Primary comms tool
Information for ongoing business
Documentation and policy



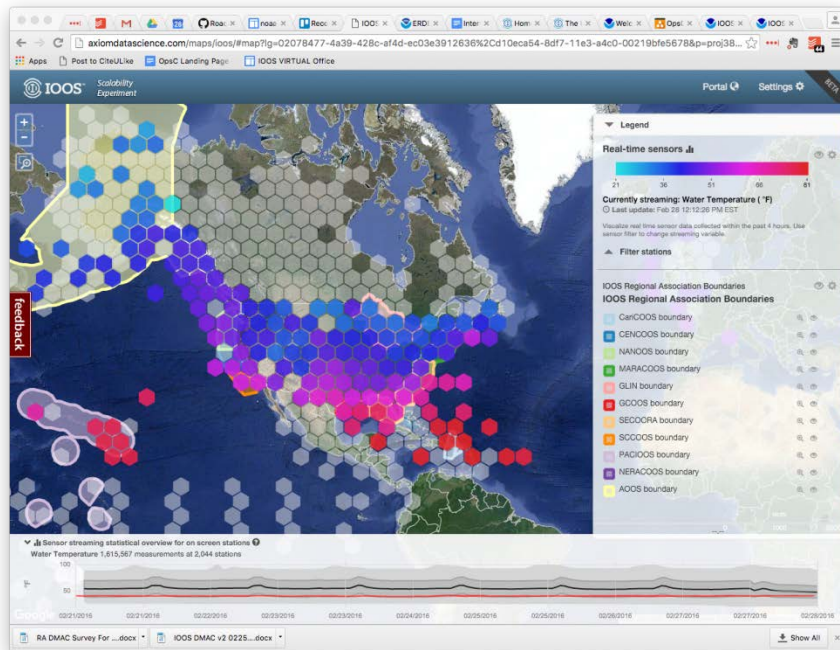
ioos.us →

Complementary site focusing on data resources

Main entry point to IOOS data and tools

- Data discovery catalog
- Service Monitor
- Products (EDS, National Map)
- DACs (all)

Next steps for the sensor map



AOOS, CeNCOOS done

NERACOOS, GLOS, GCOOS,
SECOORA, NANOOS, OceanSITES
underway

SCCOOS, PacIOOS, MARACOOS,
CariCOOS up next

Reconciling labels and attribution

Your feedback is welcome, see tab
on the left.

Currently hosted at:
[www.axiomdatascience.com/maps
/ioos](http://www.axiomdatascience.com/maps/ioos)

- Refresh Currents Done Oct 2015
- Refresh T/S Done Jan 2016
- Refresh Water Level (In progress) June 2016
- Glider Manual (Out for review) May 2016
- HFR Manual (Out for review) June 2016
- Planning for the next manual (In progress)
- Will update ioos.noaa.gov/qartod to include future plans

Archiving at NCEI

- [Intranet site](#) with guidance, status, real time updates and archive summary
- [SECOORA](#), [GLOS](#), Glider DAC, HFR DAC operational (Search Archive [Geoportal](#))
- AOOS/CSESP archived (One time submission)
- PacIOOS certified, planning for implementation
- Archive planning can be done prior to certification
- Matt Biddle funded through June 2017

RA Tasks for the coming year

- Upgrade your services (~1x/year)
- Publish your metadata in web accessible folders to support migration away from NGDC
- Continue to register every new data set published via services
- Data Management Plans