



NANOOS

NORTHWEST ASSOCIATION OF NETWORKED OCEAN OBSERVING SYSTEMS

WASHINGTON - OREGON - NORTHERN CALIFORNIA

NANOOS DMAC - Data Management and Communications

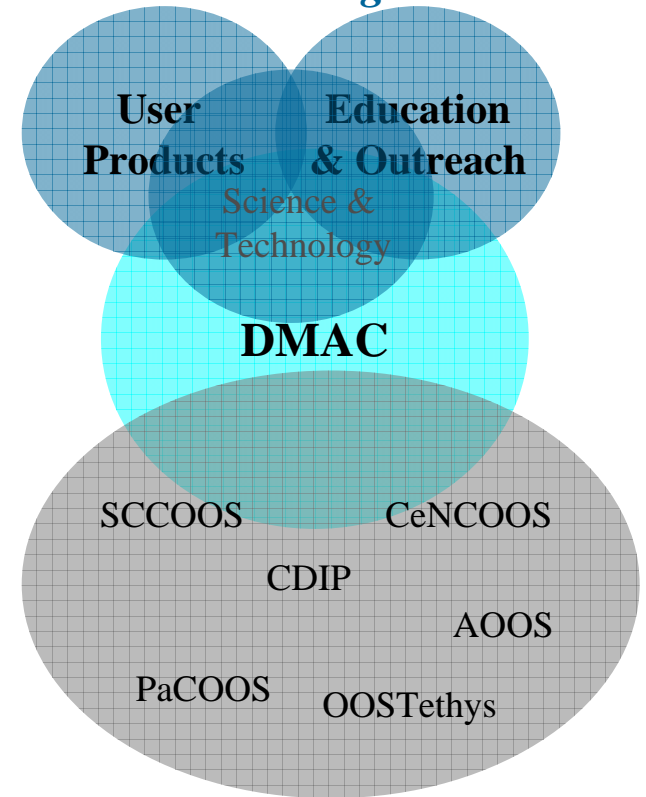
Stephen A. Uczekaj
NANOOS DMAC Committee Chair
NANOOS Program Mgr, Boeing Phantom Works



NANOOS DMAC Mission

- **Develop and implement a Data Management and Communications architecture and services supporting Pacific Northwest regional coastal ocean observing system (RCOOS), as part of the U.S. Integrated Ocean Observing System (IOOS)**
- **Provide a framework for integrating regional sensor data and modeling services**
- **Support emerging IOOS standards**
- **Work closely with other NANOOS committees**
- **Share results and leverage other regional efforts**

NANOOS Standing Committees



Related Efforts

DMAC Goal is focused on delivering Pacific Northwest region ocean observation data services for ingest, search, access, retrieval and viewing



DMAC and User Products Standing Committee Members

DMAC

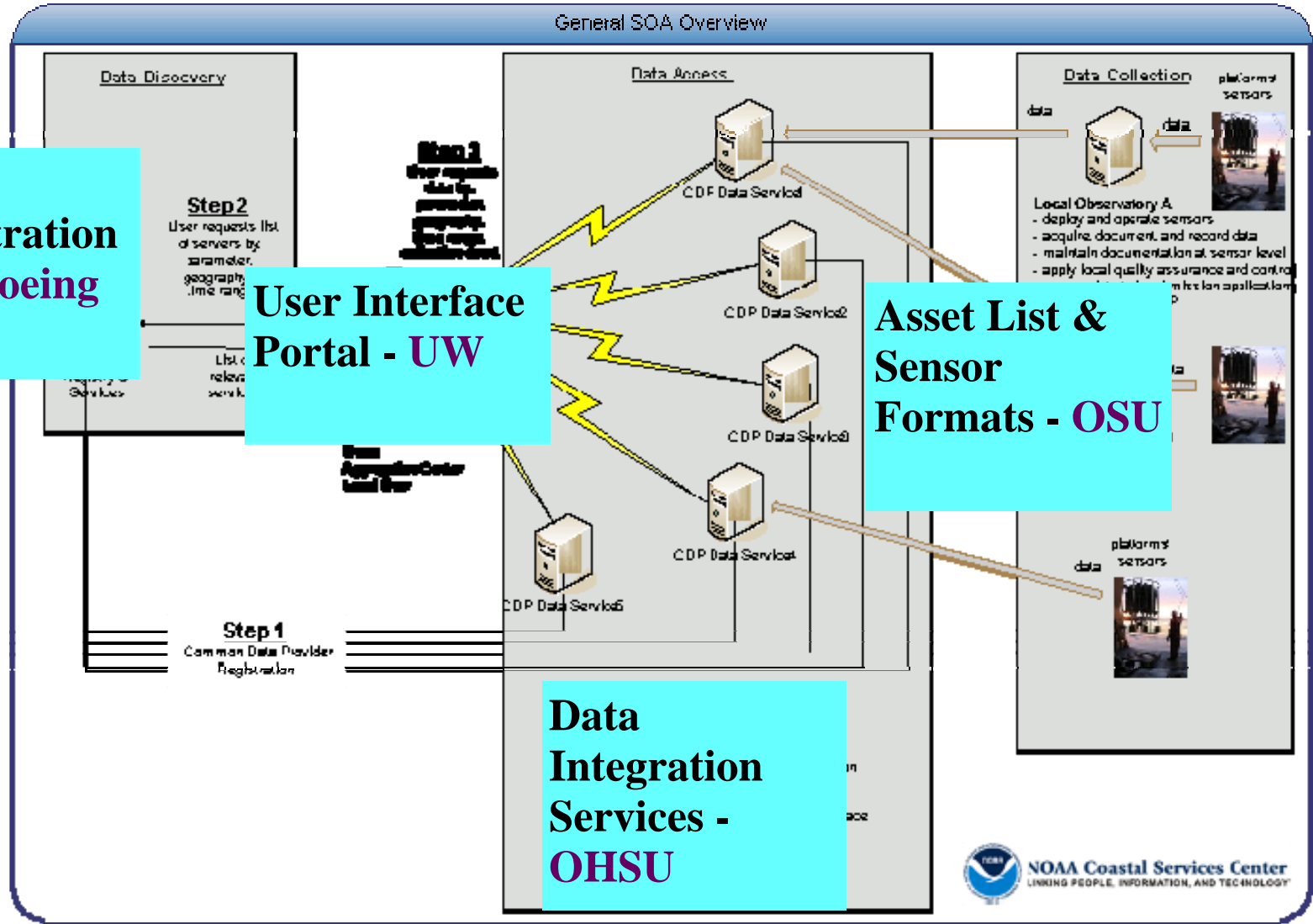
- **Stephen Uczekaj (Boeing), DMAC Chair**
- **Jon Allan (DOGAMI), UPC Chair**
- **Richard Balza (Boeing)**
- **Rick Blair (Boeing)**
- **Bill Howe (CMOP, OHSU)**
- **John Kurtz (Boeing)**
- **Stuart Maclean (APL, UW)**
- **Troy Tanner (APL, UW)**
- **Craig Risien (COAS, OSU)**

User Products (UPC)

- **Jon Allan (DOGAMI), UPC Chair**
- **Pat Corcoran (OR Sea Grant)**
- **Dave Foley (NOAA)**
- **Bill Howe (CMOP, OHSU)**
- **David Jones (APL, UW)**
- **Robert Jones (NWIFC)**
- **Mike Kosro (COAS, OSU),
Education/Outreach Chair**
- **Stuart Maclean (APL, UW)**
- **Jan Newton (APL, UW)**
- **Janet Olsonbaker (APL, UW)**
- **Craig Risien (COAS, OSU)**
- **Amy Springer (NANOOS),
Education/Outreach Coordinator**
- **Ted Straub (COAS, OSU)**
- **Stephen Uczekaj (Boeing), DMAC Chair**



NANOOS SOA Based on NOAA Data Integration Framework (DIF)



Metadata and Service Registration & Lookup - Boeing

User Interface Portal - UW

Asset List & Sensor Formats - OSU

Data Integration Services - OHSU





Asset List and Sensor Formats

- Asset List Document (currently Excel)
 - Document of Pacific NW region ocean observation assets

Data Description	Data Type	Time Span	Sample Resolution	Sample Type	Station ID or Description	Station Location	Data URL	Data Format	Name	Affiliation	Contact	Data Manager and Contact
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- Asset List Service (in work)
 - Metadata Repository
 - Provides XML storage of asset list data format
 - Document Data Provider
 - Provides asset list upload, download and archiving
 - Portal Application Data Provider
 - Provides graphical view of Assets on a map (similar to NANOOS pilot)



Data Integration Services

- Data Provider Registration and Lookup
 - Portal Registration Process
 - Form interface describing Information Types, Formats, Links
 - Automatic Registration and Visualization for Simple Data Upload
 - Assisted Registration and Visualization for Complex Data Upload
- Data Provider Service Types – 5 core types
 - **Document Data Provider**: file or URL service type
 - **Web Service Data Provider**: simple SOA service type (SOS)
 - **Aggregation Data Provider**: complex SOA service type with multi-parameter integration through other data provider services or DB
 - **Product Service Data Provider**: simple visual data provider supporting graphs and plots
 - **Portal Application Data Provider**: link to interactive application with dynamic graphic interface



Metadata and Service Registration Lookup

- Metadata Repository Discovery
 - Data formats parsed into database
 - Discovery service interface for metadata registration and lookup
 - Supports ability to add and search for data types
- Data Provider Service Discovery
 - Service descriptions parsed into database
 - Discovery service interface for data provider registration and lookup
 - Supports ability to add and search for data provider services



User Interface Portal

- Portal Development
 - Reorganization of Menus
 - Organization of content that allows some elements to be customized by users
 - Database driven content where possible (Noteworthy, Links)
 - Utilities that allow a wide range of developers to add content to the portal
 - Web-based image cropping/scaling utility used when adding certain types of content (Noteworthy, Links)
- Future Development
 - Increase database driven content where possible (Asset List, Lesson Plans,)
 - User log in to allow customizations and saved settings
 - Allow users from the community to contribute content
 - Visualization tools that allow users to view data in customizable ways
 - Search tool that allows users to find data available from the registry



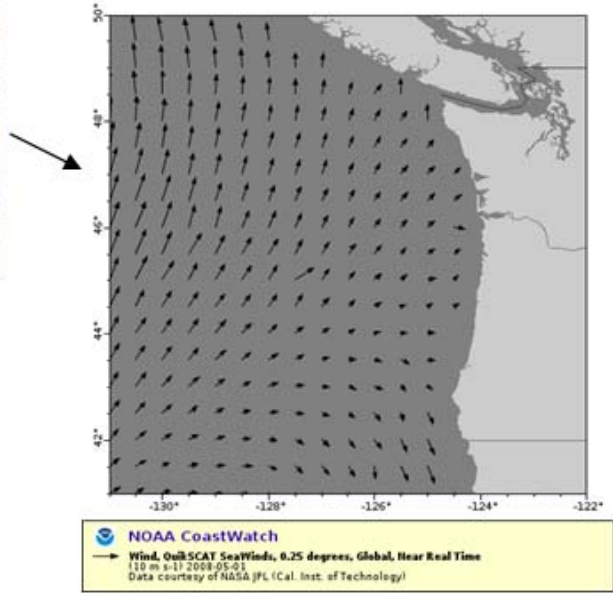
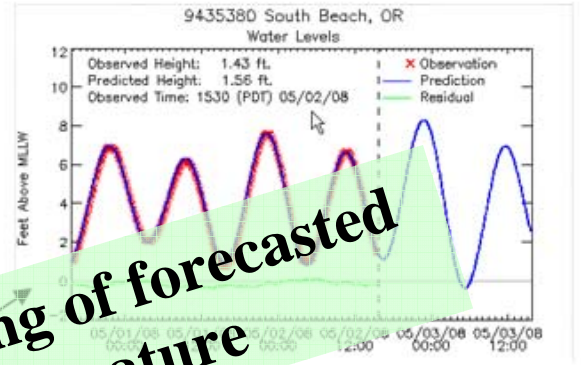
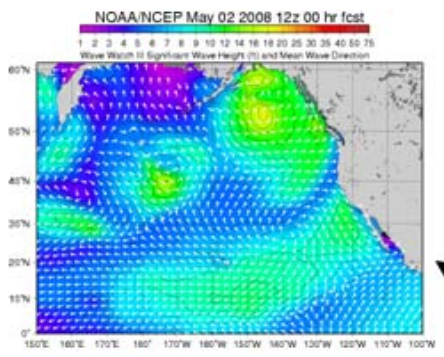
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NANOOS: Boater Information System (BIS)

vision is to integrate diverse information into common visual interface



BIS addresses need for fast access and viewing of forecasted regional wind, currents, tides and temperature

Fisherman presently access a variety of websites for nowcast and futurecast information of weather and ocean related products.



NANOOS: Boater Information System (BIS)
is an example of a **Portal Application Data Provider**

- BIS was developed with a board consisting of members from the boater community
- BIS combines already available information on winds, tides and currents into a unique display engine specifically for recreational boaters.
- It is an application developed by UW Applied Physics Laboratory and is being updated to include new capabilities and data for NANOOS
 - NOAA Wavewatch III wave forecasts,
 - HF current data where available,
 - Weather alerts



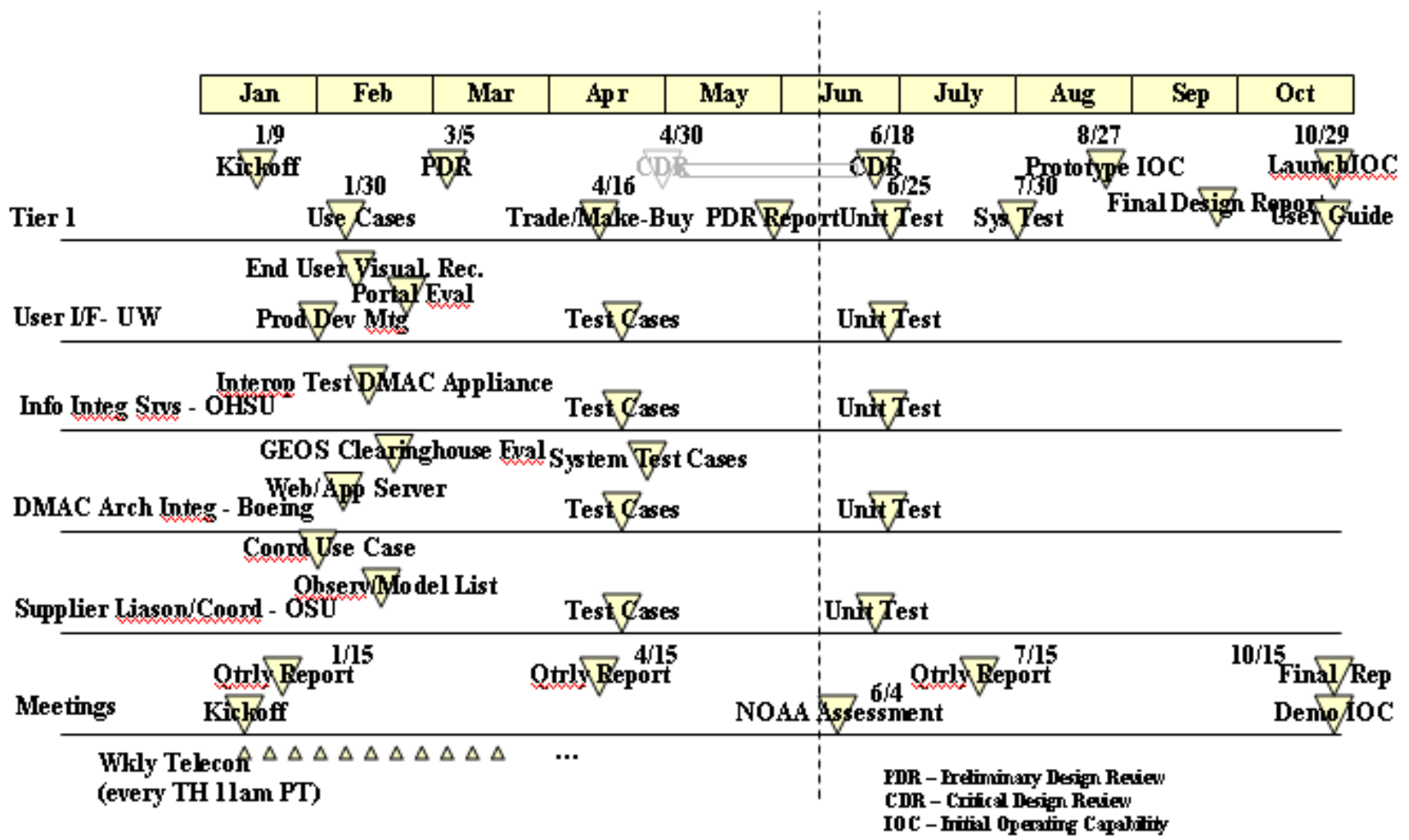


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NANOOS DMAC Schedule





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NANOOS Website Status

- Production site: www.nanoos.org
 - Initial concept currently online
- Development Site: development
 - Updated website in work
 - Re-host of current applications mid-2008
 - Full update to include DMAC and new applications Sept 2008