FY2007: Regional Integrated Ocean Observing System Development

NOAA initiated a competitive funding process in 2007 to continue building capacity for regional ocean observing systems towards three long-term outcomes; establishing coordinated regional observing and data management infrastructure, developing applications and products for regional stakeholders, and establishing regional and national data management and communications protocols. These projects are contributing to these outcomes.

GULF OF MEXICO REGION

The Gulf of Mexico Region includes the coastal states from Florida to Texas. Two awards were made to Texas A&M University totaling $798,000.

Project Title:

Integration of the Gulf of Mexico Coastal Ocean Observing System through Development of a Regional Data Portal

Recipient/ Lead Principal Investigator:

Texas A&M University/ Dr. Ann Jochens (*ajochens@tamu.edu*)

Cost:

Funded: $500,000

Performance:

This project will design and build a centralized Data Portal for the Gulf of Mexico Coastal Ocean Observing System Regional Association (GCOOS-RA). The Data Portal will aggregate data and model output from the region and serve these and selected products to the full range of GCOOS stakeholder communities, including local, state, and federal government agencies, private industry, and academics. The Portal design process will include a survey and ranking of elements of existing portals, a determination of regional user needs and requirements, and a system architecture design process modeled after the Department of Defense Architecture Framework (DoDAF). Project staff will closely monitor and participate in regional and national efforts to set and implement standards that meet the IOOS Data Management and Communication (DMAC) goals of regional and national machine-to-machine interoperability. They will work closely with the GCOOS councils and committees to arrive at a set of products that meet community needs. Staff will assess user satisfaction and, as feasible, the economic benefits derived from the Portal.

Schedule:

1. Develop GCOOS Portal.
    - Define vision, mission, and life-cycle requirements of GCOOS Data Portal.
    - Survey and assess extant portals and rank technologies employed.
    - Develop architectural views and design artifacts for Portal construction.
    - Build and test Portal.
    - Deploy and review the Portal.

(over)

2. Determine needs of the Education and Outreach (E/O) community for the data portal.
   - Establish linkages between selected GCOOS Education and Outreach volunteers and data management to obtain effective and timely E/O input to the Portal development.
   - Conduct workshop on data portal with education and outreach community to identify targeted E/O data and products to be served by the Portal.

Project Title:

Standardization of Local Data Network Nodes in the Gulf of Mexico Coastal Ocean Observing System Regional Association (GCOOS-RA)

Recipient/ Lead Principal Investigator:

Texas A&M University/ Dr. Ann Jochens (*ajochens@tamu.edu*)

Cost:

Funded: $297,868
Proposed (subject to available funds): Year 2 – $299,577; Year 3 – $300,859

Performance:

This project will standardize elements of the near real-time marine data delivery systems of ten major non-federal data providers of the Gulf of Mexico Coastal Ocean Observing System Regional Association (GCOOS-RA). Uniform data delivery systems will be developed that maximize interoperability within the region, between regions, and with the federal backbone to facilitate the production of operational data and model products in support of the regional and national needs. The three specific objectives are to: 1) establish a single common vocabulary for variables served; 2) serve point and vector data via an Open Geospatial Consortium (OGC) compliant Web Service interface; and 3) serve satellite data via a OCG Web Coverage Service (WCS) service interface.

Schedule:

1. Years 1 – 3: Conduct planning, coordination, and IT workforce entrainment.
   - Node managers to attend one regional DMAC planning and coordination meeting per year.
   - Node IT staff to attend two technical meetings per year on DMAC-centric topics e.g., metadata, ontology, Web Services.

2. Years 1 – 3: Establish a single common vocabulary for variables served by region.
   - Develop common vocabulary to be used by GCOOS data nodes with due consideration of guidance from IOOS Data Management and Communications (DMAC), Marine Metadata Interoperability (MMI) Project, and Regional Associations.
   - Implement vocabulary changes at each node.
   - Document process and outcomes on MMI web site.

3. Provide point and vector data via XML-based Web Service interface.
   - Year 1: Develop a common data model for and serve near real-time scalar data (e.g., temperature and salinity).
   - Year 2: Develop a common data model for and serve near real-time vector data (e.g., current speed and direction).
   - Years 3: Serve archived scalar and vector data via the Web Service interface.

4. Serve satellite products via an OGC Web Coverage Services (WCS) interface.
   - Year 1: Satellite provider nodes to select which satellite data to serve.
   - Year 2: Select/develop method for and serve near real-time satellite data through WCS interface.
   - Years 3: Serve archived satellite data through WCS interface.

5. Years 1 – 3: Build Education and Outreach user utility by establishing a working group to train those who will interface with stakeholders on communicating technologies, protocols, and standards.

NOAA Contacts:

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