

Connecting the “National Backbone” with Regional Observing System Federations in the Integrated Ocean Observing System

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Abstract: The Integrated Ocean Observing System (IOOS) currently being planned through the efforts of the Ocean.US office, will include a coastal ocean component, to be composed of the “national backbone” of Federal agencies, combined with regional federations of observing systems. The “national backbone” must facilitate capacity building within regions, to ensure that all states and regions can contribute to and benefit from the IOOS. The coastal component of IOOS depends on enhancing existing federal networks for in situ measurements to improve resolution and expand measurements, and on building the National Federation by establishing regional observing systems.

From a functional standpoint, the coastal component will include three subsystems: observing, data management and communication, and analysis and modeling. Communication is critical for the ultimate success of IOOS, by creating linkages between the “national backbone” and the regional federations, and also by facilitating interchange of data and products between the three subsystems of the coastal ocean component. The national backbone must maintain and operate the data management infrastructure, including establishing standards and protocols for measurements, and data exchange and management procedures to insure rapid access to data sources.

NOAA’s National Coastal Data Development Center (NCDDC) was mandated to provide for the archive of, access to, and stewardship of long-term coastal data

records. NCDDC’s IT technology is designed to facilitate locating critical coastal data sets, by developing metadata catalogs for Web-enabled data searching, building gateways for access to coastal data maintained in geographically-distributed repositories, and creating tools for geospatial data display of relevant data sets.

NCDDC is an important participant in the IOOS Data Management and Communication (DMAC) subsystem, which will merge distributed components of IOOS, and function as a unifying element within the international GOOS framework. Key functional elements of the DMAC system are data transport, quality control, data assembly, limited product generation, metadata management, data archeology, data archival, data discovery, and administration functions. The data management and communication implementation plan also includes creation of “middleware,” a common set of standards and protocols that connects heterogeneous data sources to diverse user communities.

NCDDC is also an important participant in the communication between the federal backbone and regional observing system federations. It hosted the organizational workshop of the Gulf of Mexico Coastal Ocean Observing System (G-COOS) in January 2003, and NCDDC Program Managers are cooperating with diverse regional federations in the Gulf of Maine (GOMOOS), the Southeastern Bight (Caro-COOPS, COTS, and SEA-COOS), in this effort to organize the IOOS system.