



National Ocean and Coastal Mapping Inventory

Requirements Development Document

Introduction

The nation needs an ocean and coastal mapping inventory to reduce duplicate data collection activities, facilitate cooperative mapping activities, and improve data discovery and accessibility. The inventory will serve as a clearinghouse for data and interpretive information as well as a registry of completed and projected data acquisition activities, accessible through any geospatial web portal. In response to the findings of the U.S. Ocean Action Plan (2004) and in support of the Ocean and Coastal Mapping Integration Act of 2009, the Interagency Working Group on Ocean and Coastal Mapping (IWG-OCM) of the Subcommittee on Ocean Science and Technology (SOST) began development of a comprehensive national inventory of ocean and coastal mapping data and activities in 2007. Although the IWG-OCM has made significant progress over the past three years with respect to registering large quantities of authoritative ocean and coastal mapping (OCM) metadata in Geospatial One-Stop, an integrated and publically-accessible national OCM inventory is yet to be fully realized.

Multiple federal groups are developing web portals to meet the growing demand for easy access to a comprehensive suite of physical and environmental data, including ocean and coastal mapping data and metadata. These include the Multipurpose Marine Cadastre (<http://csc-s-web-p.csc.noaa.gov/MMC/>), the National Data Information Management System called for in the National Ocean Policy, Geospatial One-Stop, The National Map, and Data.gov. To discover commonalities and identify opportunities to leverage resources and expertise between the various inventory and portal development efforts, the IWG-OCM sponsored a two-day workshop hosted by the National Geophysical Data Center in Boulder, CO, on 12 and 13 January 2011. On-site and remote workshop participants represented NOAA, USGS, USACE, BOEMRE, U.S. F&WS, NPS, NSF, National Ocean Council, and Lamont Doherty Earth Observatory. The workshop recommended immediate development of a high-level OCM Inventory Requirements document describing what services the inventory should provide, necessary inventory properties, constraints on the development and use of the inventory, and the requirements of customers, end-users, and inventory developers. This requirements document will guide the continued development of the national inventory.

The IWG-OCM has re-energized its efforts to develop an OCM inventory, hereafter "Inventory." The Inventory will initially focus on the framework layers for OCM, which includes elevation (topography and bathymetry), imagery (land and seafloor), and sub-bottom information. Metadata in the inventory will describe existing data, planned and ongoing data collection activities, and services that provide these data and information. The Inventory will leverage the data management requirements for federally-funded mapping activities to ensure that these activities and the resulting data are included. Once the process is established through efforts to include framework layers, additional information layers will be added.

Provided below is the contact information for the IWG-OCM team members who have participated in the development of this document.

Contact Information

Name	Agency/Office	Contact Number
Fran Lightsom	USGS/ Woods Hole	508-457-2242
Roger Parsons	NOAA/NOS	301-713-2776 x 205
Lisa Taylor	NOAA/NGDC	303-497-6767
Eddie Wiggins	USCAE / ERDC – CHL	601-634-2471
Robby Wilson	NOAA / Special Projects	301-713-3000 x 120
Doug Vandegraft	BOEMRE	703-787-1312

Requirements

Section 1: Inventory Contents and Components

The Inventory will consist of:

1. A comprehensive collection of metadata records that describe existing data, interpretive information, and online data services ;
2. A registry of data collection activities including those planned, in-progress, and completed, as well as requirements for new data;
3. Capabilities to ingest FGDC and ISO compliant metadata files and to automatically update the metadata collection to reflect changes in data repositories;
4. Search and discovery capabilities if these cannot be provided by existing external tools.

Section 2: Metadata Details

The metadata collection should allow inventory users to answer the basic question, “Are the data useful for and in a format that supports my purposes?” Additionally, the registry of data collection activities should provide users with the capability to develop data collection partnerships by providing information regarding what organizations need OCM data or are planning to collect data, where and when data are to be collected, and for what purposes. The metadata fields necessary for these purposes are listed in Table 1, below. In addition, some metadata fields will require standardization or processing in order to provide acceptable search and discovery capabilities:

1. Certain fields in future metadata records should rely upon standardized vocabulary. Additionally, a translator is needed to relate the standardized vocabulary to synonyms in legacy records [this might be a ‘tool’ requirement rather than an

Inventory requirement, but if somehow ‘fixed’ to the Inventory, any and all search tools would benefit.]

2. Dates must all be defined formats.
3. Positional data from input metadata files and data services should be converted to a common reference system to facilitate searches.

Section 3: User Search Needs

Users must be able to search the Inventory spatially or by text matching.

Spatial Searches

1. Users must be able to specify limits of desired data through graphical entry on a map, importing a boundary file (i.e. shape file, other types?), or by manual entry of bounding coordinates.
2. The user should be able to specify if results are to be within, overlapping or outside the provided boundary.
3. Users should be able to specify the region of interest by providing its geographic name.

Text Matching

1. Users must be able to easily search for records by matching key words or phrases. The user may be presented a drop-down lists for certain fixed vocabulary searches. Users should be allowed to enter their own text for free text search capabilities.
2. The text matching should be able to operate on alpha and numeric text searches.

Table 1: Metadata fields required.

Metadata for Online data services

Importance	Element	FGDC Field
Critical	Organization/agency that maintains the service	1.1/8.1
Critical	Link to online service	1.1/8.10
Critical	Service description	1.2.1
Critical	Keywords	1.6
Important	Title	1.1/8.4
Important	Purpose of service	1.2.2
Important	Regional coverage	1.5.1
Beneficial	Time period when data was collected	1.3/9.3
Beneficial	Measurements details: instruments, parameters.	5.1

Metadata for Data and interpretive information

Importance	Element	FGDC Field
Critical	Organization/agency that is responsible for the data	1.1/8.1
Critical	Links to obtain online data	1.1/8.10? 6.4.2.2.1.1.1?
Critical	Topical description	1.2.1
Critical	Time when data was collected	1.3/9.3
Critical	Description of spatial coverage (bounding box)	1.5.1
Critical	Keywords	1.6
Important	Title	1.1/8.4
Important	Purpose of data	1.2.2
Important	Access constraints	1.7
Important	Use Constraints	1.8
Important	Contact information to obtain data that is not online	6.1
Beneficial	Browse graphic	1.10
Beneficial	Description of spatial coverage (polygon showing precise area of coverage)	1.5.2
Beneficial	Spatial resolution	4.1.1
Beneficial	Measurements details: instruments, parameters.	5.1
Beneficial	Accuracy	5.1.2.7

Metadata for the Activity Registry

Importance	Element	FGDC Field
Critical	Organization/agency that is managing the activity or requires the new data.	1.1/8.1
Critical	Topical description	1.2.1
Critical	Purpose of data	1.2.2
Critical	Status of activity	1.4.1
Critical	Description of mapping area (bounding box)	1.5.1
Critical	Keywords	1.6
Critical	Point of contact	7.4/10
Important	Title	1.1/8.4
Important	Time of activity	1.3/9.3
Important	Measurements details: instruments, parameters.	5.1
Beneficial	Spatial resolution	4.1.1
Beneficial	Accuracy	5.1.2.7