

Workshop Report

Interagency Working Group on Ocean and Coastal Mapping Technical Workshop Consortium for Ocean Leadership, Washington, DC 7-8 June 2011

Executive Summary

The Interagency Working Group on Ocean and Coastal Mapping (IWG-OCM) sponsored this technical workshop as part of a new approach to developing the OCM Inventory. The Inventory will reduce duplication of mapping efforts and facilitate cooperative mapping activities and data accessibility by offering (1) a clearinghouse for data and interpretive information and (2) a registry of completed and projected mapping activities. The Technical Workshop was convened to:

- recommend technical methods and standards;
- provide estimates of time requirements; and
- identify nontechnical risks and challenges.

Workshop participants were asked to focus on rapid development of a catalog of bathymetry and coastal elevation data held by major federal repositories, while recommending methods and standards consistent with eventual expansion to include (a) other types of ocean and coastal mapping data (especially sub-bottom profiles and land/seafloor images); (b) data holdings at minor federal repositories, regional, state, thematic, and academic repositories, and additional repositories that may be built; as well as (c) plans, requests and needs for new data acquisition; and (d) Web services that provide OCM data.

In addition to this report, the products of the Technical Workshop will include (1) a document providing guidance to Federal repositories for enabling compatibility with the OCM Inventory (guidance document) and (2) a prototype OCM Inventory portal that will be compatible with the National Ocean Council (NOC) prototype portal for coastal and marine spatial planning (CMSP). The guidance document will include the topics discussed in this workshop report: metadata elements, standards, and vocabularies; Web Service descriptions; and methods of contributing records to the Inventory. This report is a plan for completing the guidance document and the OCM Inventory prototype portal.

The OCM Inventory will meet the requirements of the Ocean and Coastal Mapping Integration Act for discovery and access to data and products, and will also provide access to essential data for the NOC and coastal and marine spatial planning. As the NOC prototype portal is scheduled

for release in August or September 2011, Workshop participants agreed to produce a prototype OCM Inventory portal that will be compatible with the NOC prototype while also testing the Inventory workshop’s technical recommendations. When the recommended actions are completed, the public will be able to use the OCM Inventory to search for, identify, and retrieve bathymetry and coastal elevation data collected by the federal government.

Contents

Executive Summary	1
Background.....	3
Technical Workshop Program	4
Recommendations for General Approach.....	5
Recommendations for Minimizing Risks and Obstacles	6
Recommendations for Specific Topics in the Guidance Document	7
Metadata guidance	7
Metadata vocabularies	8
Guidance for submitting metadata records	9
Data registration.....	9
OCM Inventory Portal	9
Timeline, Milestones.....	10
Appendix 1: Workshop Announcement.....	12
Appendix 2: OCM Inventory Requirements Development Document.....	14
Appendix 3: List of Workshop Participants.....	14
Appendix 4: Workshop Agenda.....	21
Appendix 5: Acronyms and Abbreviations.....	23

Background

This workshop was the second of two meetings sponsored by the Interagency Working Group on Ocean and Coastal Mapping (IWG-OCM) in order to plan a new way of developing the OCM Inventory. The first workshop, held at NOAA's National Geophysical Data Center (NGDC) in Boulder, CO on 12-13 January 2011, included presentations from major federal ocean and coastal mapping data centers and from related activities including the National Ocean Council and the Rolling Deck to Repository (R2R) project. The January workshop recommended a general approach and also produced a high-level OCM Inventory Requirements Development Document that lays out the services the national OCM Inventory should provide (see Appendix 2). The requirements document served as the basis for this Technical Workshop.

The OCM Inventory is a project of the IWG-OCM which falls under the jurisdiction of the Subcommittee on Ocean Science and Technology (SOST). The Inventory project developed in response to the findings of the U.S. Ocean Action Plan (2004) and supports requirements of the Ocean and Coastal Mapping Integration Act of 2009. Development of the Inventory began with a technical workshop in September 2007, which recommended partnership with the Geospatial One-Stop (GOS) program. Early development of the Inventory focused on (1) encouraging and assisting IWG-OCM agencies to publish metadata records to GOS, especially records for planned and completed data acquisition activities, and (2) encouraging and assisting the Geospatial One-Stop Program Office in modifying the GOS portal so that users would have confidence that they were discovering all OCM records that were relevant to their query. The current effort builds on these activities, using recent developments in Web services and the National Spatial Data Infrastructure.

The OCM Inventory will be a comprehensive national list of ocean and coastal mapping data and activities, including a clearinghouse for data and interpretive information as well as a registry of completed and projected mapping activities, and will be accessible through a web portal. The Inventory would reduce duplicate mapping efforts, facilitate cooperative mapping activities, and improve data discovery and accessibility.

The goals of the inventory are captured in the pending *2010 Report to Congress on Progress Made in Implementing the Ocean and Coastal Mapping Integration Act*:

- It will be built on and integrate the individual web map services of the primary Federal data repositories,
- it will provide metadata and depict geographic coverage of the data,
- it will utilize common terminology/vocabularies,
- it will be dynamic in reflecting changes in the data repositories, and
- it will adapt to changes in technology.

Participants in the January 2011 IWG-OCM workshop agreed that the inventory should also:

- Allow users to search for metadata in a meaningful way.
- Provide metadata that is sufficient to answer the basic question, “Are the data useful for and in a format that supports my purposes?”
- Provide users with the capability to develop data collection partnerships by providing information regarding organizations that need OCM data or are planning to collect data.

An incremental approach to development of the OCM Inventory was approved at the January 2011 workshop. The first step will be coordination of major federal repositories of bathymetry and coastal elevation data. This focus was chosen in order to start Inventory development with a small and well-defined scope and also provide this foundation data quickly for the prototype NOC portal for coastal and marine spatial planning. The development order of subsequent steps is not yet defined, but the Inventory will be expanded to include: (a) other types of ocean and coastal mapping data, starting with sub-bottom profiles and imagery of the seafloor and coastal land surface; (b) plans and needs for data acquisition; (c) data services; and (d) information from sources other than the major federal repositories.

Technical Workshop Program

The workshop included technical experts from major federal repositories of bathymetry and coastal elevation data, as well as participants with expertise in metadata, semantics, and online services for data discovery. All IWG-OCM Agencies were invited to send representatives to the workshop (see announcement in Appendix 1). The list of workshop participants is provided in Appendix 3. The full workshop agenda is provided in Appendix 4.

The workshop began with a summary of work on the OCM Inventory through the January 2011 workshop and a discussion of the workshop goals. A shared foundation for technical discussions was provided by a series of presentations:

- Review of the Inventory Requirements Development Document, presented by Eddie Wiggins of USACE.
- Updates on the Federal Geospatial Platform and Data.gov, presented by Dr. Jerry Johnston of EPA.
- Review of a draft workshop report, presented by Fran Lightsom of USGS.
- Update on development of the CMSP Information Management System and Portal, presented by Doug Vandegraaf of BOEMRE.
- Advice on encouraging data sharing, presented by Lynda Wayne of FGDC.
- Summary of major federal repositories of bathymetry and coastal elevation data, presented by Robby Wilson of NOAA.
- Update on UNOLS/ECS work on shared standards for ISO metadata and vocabularies, presented by Anna Milan of NOAA.
- The capabilities of the Esri Geoportal server, presented by Marten Hogeweg of Esri.

Following the presentations, workshop participants discussed general recommendations, risks, and obstacles. Next, they divided into two groups to discuss metadata and technology elements and outline the topics to be addressed in the post-workshop guidance document to enable federal repositories to achieve compatibility with the OCM Inventory. At the end of the workshop, plans were made to create a prototype portal and complete the guidance document including specific tasks, assignments, and a time line.

Recommendations for General Approach

The workshop recommends that the OCM Inventory utilize the features of the Esri Geoportal Server, a flexible open-source technology that is supported by Esri. This technology is recommended because Esri Geoportal:

- Is flexible, allowing multiple metadata formats and protocols for contributing metadata;
- Includes geospatial search and display features;
- Seems likely to be widely implemented;
- Is both a portal and a service that can be harvested or linked into a network of federated portals.

OCM Agencies have some familiarity with this technology, with Geoportal instances being built at NGDC and the USACE Mobile District and similar functionality being implemented using other technology at USGS.

The workshop recommends that agencies participate in the OCM Inventory by making metadata Web accessible in one of three ways: (1) registering Web services that contain metadata records and can be searched remotely by the OCM Geoportal, (2) registering collections of metadata that OCM Geoportal can harvest, or (3) creating metadata records directly in the OCM Geoportal collection. The metadata can be in multiple standards, including traditional FGDC, several varieties of ISO, and Dublin Core (possibly appropriate for data requests). Workshop participants will produce a guidance document that will advise agencies on these standards and protocols.

The guidance document will also recommend more detailed metadata standards. To the extent that agencies comply with this guidance, that portal users will be able to discover all the relevant information with a single query. Agencies following the guidance will put comparable information in the same fields of their metadata records, will use standard formats to express time and location, and will use terminology from controlled vocabularies. Geoportal can match synonyms from different vocabularies by using an ontology, so data providers can write metadata using their preferred terminology. The guidance will focus on the core metadata elements required for data discovery: who is responsible for the data; what measurements are included; when, where, and why the data was acquired; and how and in what format the data can be obtained.

Workshop participants will also produce a prototype OCM portal that will test the plan by serving a limited amount of metadata, a subset of the OCM Inventory that is selected to be useful for the CMSP prototype portal, which is also scheduled to be launched by August or September 2011. NGDC will be building the prototype OCM portal. Agencies will contribute metadata records of a range of types, using several different protocols, in order to test and learn how to use the Geoportal technology.

This approach is based on the obligation of each agency collecting/holding OCM data to create metadata (not a new requirement) and the work of the OCM group over the last few years to strengthen agencies' metadata, which was published to Geospatial One-Stop. Esri Geoportal technology will integrate this information into an inventory that has a useful public interface so the search returns for a query can be limited to a meaningful result. The returns can include embedded web maps built from the web service. This method is sustainable and scalable. The metadata, Web-accessible folders, and Web services that are required for the OCM Inventory can be used and re-used to support other inventories, discovery methods, and requirements - such as CMSP information management system, integrated agency inventories, regional or topical inventories that support specific programs.

Recommendations for Minimizing Risks and Obstacles

Workshop participants identified the following risks and obstacles for the general approach proposed in this document, and recommended measures for achieving success.

Unifying portal. If the OCM Inventory depends on a specific portal developer or project, there is a risk that the portal will be discontinued or diverted to another purpose, resulting in a lack of support for the Inventory.

Workshop recommendation: The standards and methods used must be adaptive to multiple portal developments.

Compatibility with OCM community. The ultimate success of the OCM Inventory will require participation of all producers and consumers of OCM data. Will this approach, which was developed by representatives of major federal data repositories, be technically feasible for state agencies and academic departments?

Workshop recommendation: Consult with the technical teams setting up regional information systems for coastal and marine spatial planning (suggest starting with the Northeast and Mid-Atlantic regions).

FGDC/ISO format transition. The geospatial community is in a period of transition between metadata using the 1998 FGDC standard and the newer ISO 19115 standard. Much existing metadata is in FGDC format and agencies have few resources for translating to the new standard.

Workshop recommendations: Start with an approach that can make use of metadata in either form, with the intention of providing efficient, low-cost metadata translators when they are available.

Encourage the use of the ISO standard for new metadata that is created.

Limited resources. Agency data repositories are based on older computer systems and do not have funding to implement newer systems.

Workshop recommendations: The Inventory will use, and build on, work that has been done before, for example by accepting metadata in FGDC as well as ISO standards, to avoid requiring costly changes in agency systems.

The Inventory will be developed in partnership with other efforts, such as the NOC information system, to minimize additional work required to support the OCM Inventory.

Agencies can partner with other agencies to host their data or metadata in Web services and update their metadata to reflect this Web accessibility; the IWG-OCM can assist by providing a list of Federal metadata repositories that can accept data from other bureaus or agencies.

Incompatible metadata methods. In some agencies, methods and procedures for generating metadata may not be able to adapt to the OCM Inventory guidance.

Workshop recommendation: The Inventory guidance should be considered a set of guidelines, examples and best practices to ensure metadata can be discovered, not a set of requirements for submitting metadata to the Inventory.

Recommendations for Specific Topics in the Guidance Document

Metadata guidance

Person or organization responsible: Anna Milan (NOAA)

Points of contact for agencies::

NOAA	Anna Milan
USGS	Carolyn Degnan, Gayla Evans, Jamie Cormier
USACE	Charlene Sylvester

Product: Written guidance on minimum metadata elements and standards/templates for compatibility with the OCM Inventory. Guidance will include good examples for several different metadata types.

Technical recommendations:

- Metadata will be provided using FGDC or ISO standards, in an xml format.
- Metadata will be made available by agencies to the OCM Portal application.
- FGDC and ISO metadata both have standards for expressing time and place, and these should be used.
- Unique identifiers for metadata records should be created using the ISO file identifier element and the FGDC title and metadata creation date.
- In addition to the metadata elements listed in the Requirements Development Document, metadata records should include information or instructions for obtaining data and metadata.
- Guidance should focus on data discovery metadata elements, not data use elements.

Metadata vocabularies

Person or organization responsible: Charlene Sylvester (USACE)

Product: A set of recommended terms and vocabularies to be used for particular metadata elements in the future, to ensure compatibility with the OCM Inventory.

Technical recommendations:

- Vocabulary recommendations should be based on a survey of the vocabularies already in use.
- With the Geoportal technology, agencies can provide synonyms to selected vocabularies.
- Guidance should focus on data discovery metadata elements, not data use elements.

Guidance for submitting metadata records

Person or organization responsible: TBD

Product: Written guidance for data providers on submission of metadata records to the Inventory.

Technical recommendations:

- Because the OCM Inventory is being built using the Esri Geoportal Server technology, no configuration guidance is needed for OGC services to be compatible with the OCM Inventory.
- The OCM Inventory must contain metadata records in order for data and services to be discovered. Three choices exist to populate the OCM Inventory with metadata about data or services:
 - Create FGDC record
 - Create ISO record
 - Import service using GetCapabilities
- The metadata files must use common keywords or tags as described in metadata sections of the guidance document to enable effective user search and discovery.
- The metadata must contain a description of the data or what the service provides.

Data registration

Person or organization responsible: Each agency that is providing data to the Inventory

Products: Written guidance on procedures to register a data repository's data service with the OCM Inventory.

Technical recommendations:

- Because the Esri Geoportal Server requires that data and services be registered with the server, the collection register exists automatically when the server is populated.
- Each agency should keep a registry of its own metadata in the event the OCM Inventory is inaccessible.

OCM Inventory Portal

Person or organization responsible: NGDC

Products: Written guidance to allow selection and/or configuration of a portal to produce an integrated view of the total OCM Inventory.

Technical recommendations:

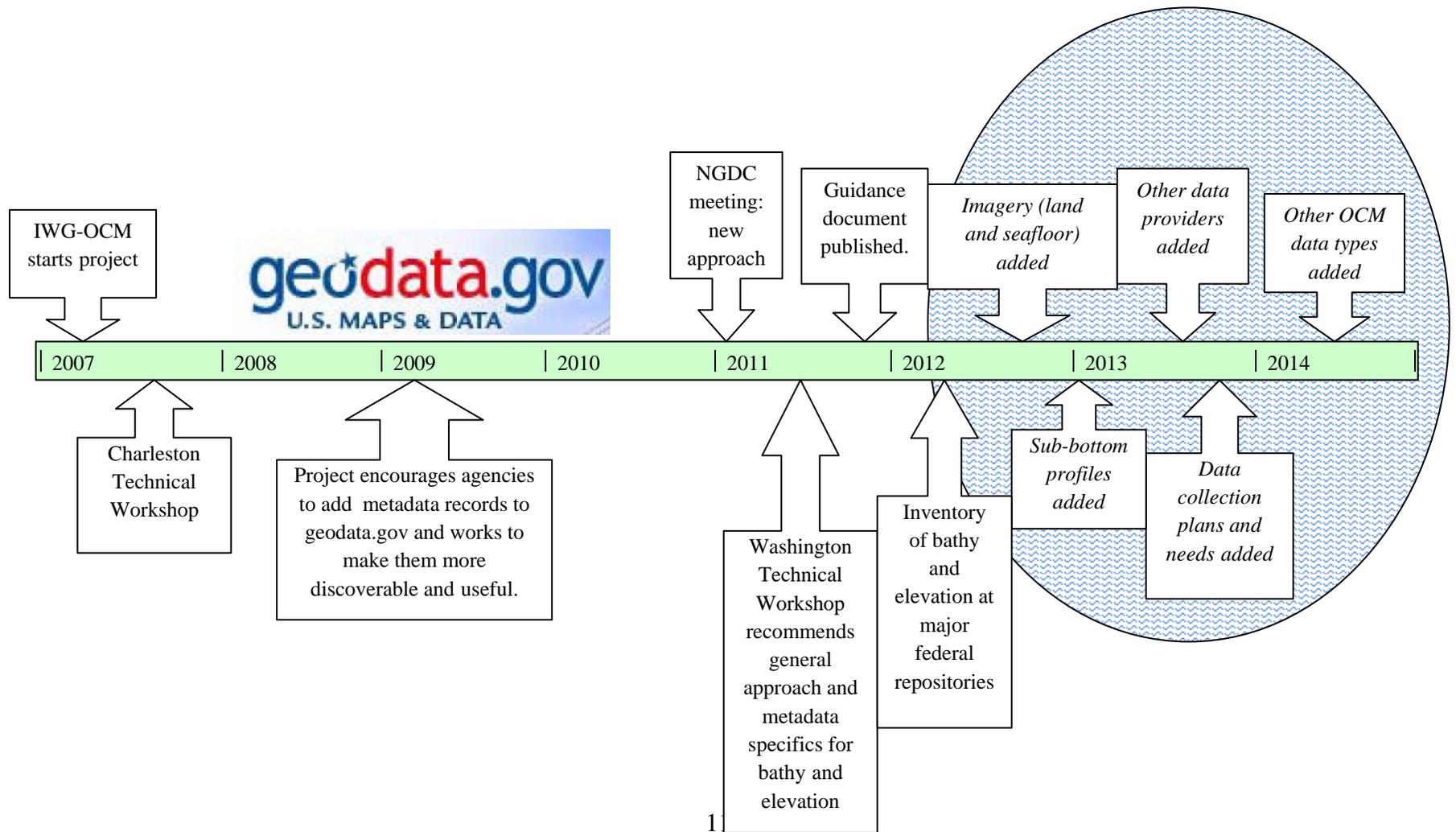
- Make use of Esri Geoportal Server. This technology allows users to search, discover and display results from registered metadata records and services.
- At the workshop, NGDC agreed to develop a prototype portal using the Esri Geoportal Server technology.

Timeline, Milestones

The workshop will result in two products: a guidance document for agencies that provide OCM data; and an OCM prototype portal that will interact with the National Ocean Council prototype portal for CMSP. Workshop participants will work on these tasks through the summer to establish the portal on a public server by August 31 and publish the guidance by September 30. The prototype portal will focus on coastal elevation and bathymetry data from participating federal repositories, with a focus on the Northeast and Mid-Atlantic regions.

June 7-8, 2011	Technical workshop
July 1	All workshop notes sent to Fran
July 20	Demonstration of NOAA CMSP registry
July 20	Final version of workshop report
August 5	Spreadsheets of info about web services and data for OCM prototype portal submitted by all agencies
August 15	Test of harvest operations on existing geoportal
August 31	Public-facing OCM prototype portal (subject to approval for public Web Service)
August 31	Metadata guidance finished
August 31	Technology guidance finished
September 30, 2011	Complete guidance document finished

OCM Inventory History and Proposed Future



Appendix 1: Workshop Announcement

What: National Ocean and Coastal Mapping Inventory Technical Workshop

Sponsor: Interagency Working Group on Ocean and Coastal Mapping (IWG-OCM)

Background: The IWG-OCM sponsored the first of two OCM Inventory Workshops on 12 and 13 January 2011. The second workshop will focus on addressing the technical issues required to move the inventory development forward.

Workshop Deliverable - A clearly defined and unobstructed path forward to create a national inventory of ocean and coastal data and data acquisition plans – with an initial focus on elevation data - by coordinating Federal data services and metadata standards so that data from all the major federal repositories can be discovered through any geospatial web portal. See attached OCM Inventory Requirements Development Document. The path forward will:

1. enable the inventory to be expandable, first to the remaining framework OCM data types and then to other OCM data types;
2. enable the inventory to be expandable to include elevation and other OCM data from repositories other than the major federal ones, including minor federal repositories, regional, state, thematic, and academic repositories, as well as potential repositories that may be built to archive data from sources that cannot maintain their own repositories.;
3. be sufficiently compelling such that agency representatives can recruit necessary management support within their agencies;
4. be sufficiently detailed such that agency representatives will be able to initiate projects or activities that lead to successful data discovery through any geospatial web portal. These implementation details might consist of metadata templates, vocabularies for particular metadata fields, and defined formats for other metadata fields;
5. use existing geospatial portals for data discovery, unless the technical workshop recommendations include a plan for producing a dedicated OCM Inventory portal to include existing budget and program constraints; and
6. include - or will enable the inventory to be expanded to include - data services and plans for data acquisition.

Additional workshop information will be distributed shortly. Please identify representatives from your agency who have the requisite technical knowledge to participate in this workshop..... We look forward to your participation.

Respectfully,

IWG-OCM Inventory Project Team:

Fran Lightsom, USGS

Eddie Wiggins, USACE

Roger Parsons, NOAA



Appendix 2: OCM Inventory Requirements Development Document

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

Appendix 3: List of Workshop Participants

Name	Agency
Christine Taylor	BOEMRE
Doug Vandegraft	BOEMRE
Jerry Johnston	EPA and Data.gov
Marten Hogeweg	Esri, GeoPortal
Jonathan Westcott	FEMA
Paul Rooney	FEMA
Lynda Wayne*	FGDC
Anna Milan	NOAA
Chris Fox	NOAA
David Neufeld	NOAA
Jihong Dai	NOAA
Josh Murphy	NOAA
Mark Blankenship	NOAA
Mohamed Chaouchi	NOAA
Nipa Parikh	NOAA
Rebecca Arenson	NOAA
Robby Wilson	NOAA
Sheri Phillips	NOAA
Stephanie Kavanaugh	NOAA
Susan McLean*	NOAA
Tim Battista	NOAA
Yuanjie Li	NOAA
Eddie Wiggins	USACE
Gregg G. Williams*	USACE
Irven Ingram*	USACE
Lucas Culbertson*	USACE
Charlene Sylvester	USACE/JABLTCX
Amar Nayegandhi*	USGS
Carolyn Degnan	USGS
Fran Lightsom	USGS
Gayla Evans	USGS
Greg Miller	USGS
Jamie Cormier	USGS

* = remote participant

Appendix 4: Workshop Agenda

Interagency Working Group on Ocean and Coastal Mapping Technical Workshop June 7-8, 2011

Consortium for Ocean Leadership, 1201 New York Ave, NW, 4th Floor
Washington, DC

AGENDA

Workshop Objective:

- Recommended technical requirements for creating a national inventory of ocean and coastal mapping data from all major Federal repositories that is discoverable through any geospatial Web portal.

Tuesday, June 7th

8:30am	Welcoming Remarks, Workshop Objectives – <i>Fran Lightsom, USGS</i> <i>Chris Fox, NOAA</i>
	Workshop Guidelines and Participant Self-introductions – <i>Stephanie Kavanaugh, NOAA</i>
	Review of Inventory Requirements Document – <i>Eddie Wiggins, USACE</i>
	Review of Draft Workshop Report – <i>Fran Lightsom, USGS</i>
	Updates on the Federal Geospatial Platform and Data.gov – <i>Dr. Jerry Johnston, EPA</i>
	Update and Discussion: CMSP Information Management System and Portal – <i>Doug Vandegraft, BOEMRE</i>
LUNCH	LUNCH
	Federal Elevation Data Repository Web Services and Metadata Survey Results – <i>Robby Wilson, NOAA</i>
1:00pm	Data Sharing: What Works What Doesn't – <i>Lynda Wayne, FGDC</i>
	Federal Elevation Data Repository Web Services and Metadata Survey Results – <i>Robby Wilson, NOAA</i>

	UNOLS / ECS ISO Metadata and Controlled Vocabularies –<i>Anna Milan, NOAA</i>
	Discussion of General Recommendations and Risks & Obstacles – <i>Fran Lightsom & Stephanie Kavanaugh</i>
3:15pm	Discussion of General Recommendations and Risks & Obstacles – <i>Fran Lightsom & Stephanie Kavanaugh</i>
3:30pm	Breakout Sessions Part 1: Technology and Metadata
4:30pm	Wrap Up Day 1 – <i>Chris Fox & Stephanie Kavanaugh</i>
5:00pm	ADJOURN Planning Team debrief

Wednesday, June 8

8:30am	Recap of Day 1 Discussions – <i>Fran Lightsom, USGS</i>
	ESRI Geoportal Server – <i>Marten Hogeweg, ESRI [1.5 hours of discussion and presentation]</i> http://www.esri.com/news/releases/10_4qtr/geoportal-server.html
	Discussion & Breakout Groups Session 2: Technology and Metadata
	LUNCH
1:00pm	Breakout Group Report Outs
2:30pm	Next Steps – <i>Fran Lightsom & Chris Fox</i>
3:15pm	ADJOURN
6:00pm	NOAA FISH FRY

Appendix 5: Acronyms and Abbreviations

BOEMRE	Bureau of Ocean Energy Management, Regulation, and Enforcement < http://www.boemre.gov/ >
CMSP	Coastal and marine spatial planning < http://www.cmsp.noaa.gov/ >
ECS	Extended Continental Shelf < http://continentalshelf.gov/ >, an interagency project related to the United Nations Convention on the Law of the Sea
Esri	The company that makes ArcGIS < http://www.esri.com/ >
FGDC	Federal Geographic Data Committee < http://www.fgdc.gov/ >
GOS	Geospatial One-Stop < http://www.geodata.gov/ >
ID	Identifier or identification
ISO	International Organization for Standardization < http://www.iso.org/ >
IWG-OCM	Interagency Working Group for Ocean and Coastal Mapping
MMC	Multipurpose Marine Cadastre < http://www.marinecadastre.gov/ >
NGDC	National Geophysical Data Center, part of NOAA < http://www.ngdc.noaa.gov/ >
NOAA	National Oceanic and Atmospheric Administration < http://www.noaa.gov/ >
NOC	National Ocean Council < http://www.whitehouse.gov/administration/eop/oceans >
OCM	Ocean and coastal mapping
OGC	Open Geospatial Consortium < http://www.opengeospatial.org/ >
OGC GetCapabilities	OGC common services specification for describing the capabilities of servers
R2R	Rolling Deck to Repository < http://www.rvdata.us/ >, an NSF-funded project for management of underway data from UNOLS vessels
SOST	Subcommittee on Ocean Science and Technology < http://www.whitehouse.gov/administration/eop/ostp/nstc/oceans >, part of the National Science and Technology Council
UNOLS	University-National Oceanographic Laboratory System < http://www.unols.org/ >
USACE	United States Army Corps of Engineers < http://www.usace.army.mil/ >
USGS	United States Geological Survey < http://www.usgs.gov/ >
WHOI	Woods Hole Oceanographic Institution < http://www.whoi.edu/ >
WMS	OGC Web Map Service < http://www.opengeospatial.org/standards/wms >
WSDL	Web Service Definition Language < http://www.w3.org/TR/wsdl >