Geospatial Line of Business (LoB)

National Oceanic and Atmospheric Administration's Metadata Enterprise Resource Management Aid Information Sheet

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The National Oceanic and Atmospheric Administration (NOAA) Metadata Enterprise Resource Management Aid (MERMAid) allows account holders to create and manage Federal Geographic Data Committee (FGDC) Content Standard Digital Geospatial Metadata (CSDGM) compliant metadata in a secure environment using a web browser. It allows users to establish unlimited metadata databases to organize their metadata records (i.e., by project, data type, personnel, etc.).

How it Works

MERMAid is a web-based tool used for creation, validation, management, or publication of metadata. It allows coastal data providers to create and manage metadata in a secure environment via a web browser using the open-source Z-Object Publishing Environment (ZOPE) as an underlying application. Contents of records are stored as generic objects in an Object Oriented Database (OODB), continuously validating the record against the production rules of the applied standard. MERMAid also features robust "help functions" that incorporate the production rules specified in the FGDC Standards and Workbook. All validated records published from MERMAid are harvested weekly by the Geospatial One-Stop (GOS) or by the National Spatial Data Infrastructures (NSDI) clearinghouses.

Specifications and Capabilities

Supported standards	FGDC CSDGM, Biological Profile, Shoreline Profile and Remote Sensing Extensions Version 1.2 • Ecological Metadata Language (EML) • Machine-Readable Cataloging (MARC) XML (export only, from FGDC Standards) Version 2.0 (in development) • ISO 191** family of standards for geospatial metadata[i] • North American Profile (NAP)[i]
System requirements	• JavaScript enabled • Active scripting enabled • Session cookies enabled
Integrates with ESRI	Requires manual import and export of records
Database type	Zope[ii] ; contents of records are stored as generic objects in an OODB
Data export format	• .xml • .txt • .html • Tabbed (only with Internet Explorer) • FAQ (only with Internet Explorer) • MARC XML (from FGDC Standards)
Access	• Web-based • Secure access via user account
Open-source	Yes, but not as complete bundle

Editing, validation and compliance capabilities	• Continuously validates the record against the production rules of the applied standard • Provides information to edit record for compliance in Validation Overview • Provides hyperlink in Validation Overviews that allows for navigation to location in record to edit • Offers WebDAV editing capability • Provides element level help
Help functions	MERMAid features robust "help functions" that incorporate the production rules specified in the FGDC Standards and Workbook, including element level help
Ability to integrate in a variety of environments	• Can be customized to match an organization's structure • Designed around an object model that can be configured to match individual experience levels and existing metadata processes • Secure web-based environment offers platform independence
Other features	• Hierarchical structure • Access tied to user roles and permissions • Can ingest existing records in text and .xml format • Can establish workflow for content and publishing approval • Supports additional publishing destinations (e.g. National Biological Information Infrastructure (NBII))
Latest version	• Version 1.2 • Individual services that will be used in MERMAid 2.0 are currently in development
Point of contact (As of 04/29/2010)	Rost Parsons *Chief Scientist* National Coastal Data Development Center (228) 688-4413 ncddcmetadata@noaa.gov
For more information	NOAA's MERMAid website: http://www.ncddc.noaa.gov/activities/mermaid/

Value to the Organization (Verified by the source organization)

- Cost-savings
  MERMAid provides a system for the complete management of geospatial metadata including the generation, validation and publishing workflow processes. It is used internally and is also provided at no cost as an account-based service to the geospatial data community.
- Time-savings
  Metadata creators can export records from MERMAid in text, .xml, and .html formats without using the complete validation, submittal process. Cut, copy and paste features allow the user to repeat particular elements in the record. An approval and publication workflow can be utilized, but its use is not essential. The Zope External Editor allows the use of other editors within the user interface.
- Return on investment
  MERMAid has proven to be a valuable training tool for creating FGDC CSDGM-compliant metadata because of the amount of context-sensitive help written in the system. Some federal and state organizations have been using MERMAid as an "enterprise system" that allows metadata management and publication to GOS and NBII clearinghouses.
- Improvements in metadata quality or completeness
  MERMAid uses the complete FGDC profile for each of the supported standards. All sections or compounds are available for users to provide complete documentation of data. Vigorous validation is applied to each record, so that it must meet the FGDC standards before the records can be submitted for review or publication.

[i] New feature in MERMAid 2.0. MERMAid 2.0, will feature many upgrades driven by new technological advances. MERMAid 2.0 will also integrate comments received from its diverse user community. For more information on MERMAid 2.0, visit: http://www.ncddc.noaa.gov/technology/mermaid-2.0/view.

[ii] MERMAid utilizes an object-oriented database available in the Web Application Server Z-Object Publishing Environment (Zope) to store, organize and manage the elements of a metadata record. Zope is a free, open-source, object-oriented web application server written in the Python programming language. It can be almost fully managed with a web-based user interface. Zope publishes on the web Python objects that are typically persisted in an object database, ZODB. Contents of MERMAid records, however, are stored as generic objects in an Object Oriented Database (OODB).