

The MMI Registry and Repository

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OOR Open Ontology Repository – July 30, 2009

Outline

- Requirements
- MMI ORR
- BioPortal Back-end
- BioPortal Front-end
- MMI Added Modules
- Next steps

Some central repository requirements

- Controlled vocabulary creation
 - Registration/storage of vocabularies
 - Metadata association
 - Versioning
 - Semantic query support
 - Term mapping/aligning
 - Mapping repository
 - Vocabulary and term URI resolution
- **Easy-to-use** tools for creation of vocabularies and mappings
 - **Community driven**, collaborative creation
 - Provide **semantic mediation services** to diverse data portals and tools

<http://marinemetadata.org/community/teams/ont/mmirepository/oorreqtsplus>

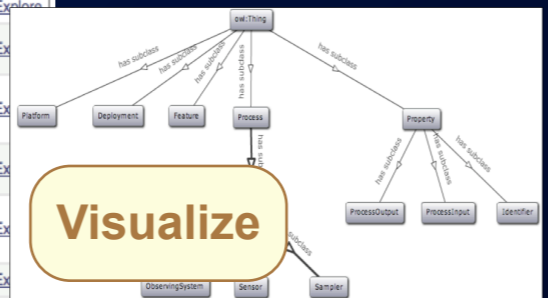
MMI ORR = BioPortal + MMI modules

- BioPortal, back- and front-end
- MMI Modules
 - Voc2RDF: Creation of vocabularies
 - Metadata (OMV + MMI extensions)
 - Versioning (“versioned” and “unversioned” URIs)
 - Ontology and Term URI Resolution
 - VINE: Term mappings editor
 - SPARQL endpoint
 - Experimental front-end

MMI Ontology Registry and Repository

Ontology Name	Format	Version	Author	Uploaded On
Argo QA/QC Flags	OWL-DL	20081116T040146	Stephanie Watson	11/15/2008
CDIP Term Vocabulary	OWL-DL	20081120T002506	CDIP	11/19/2008
CeNCOOS subset and extension of CF-1.3	OWL-DL	20081119T162507	Dale Robinson	11/19/2008
CeNCOOS water monitoring subset and extension of CF parameter vocabulary	OWL-DL	20081119T231517	Dale Robinson	11/19/2008
cencoops-seadatanet test mapping	OWL-DL	20081115T000000	carlos rueda	11/15/2008
Climate and Forecast (CF) standard names parameter vocabulary	OWL-DL	20081115T000000	Luis Bermudez	11/15/2008
Demo in the q2o break out	OWL-DL	20081119T000000	q2o	11/19/2008
Extended Continental Shelf (ECS) Device Vocabulary	OWL-DL	20081120T002335	Amilan	11/19/2008
GCOOS Vocabulary	OWL-DL	20081116T063341	Matt Howard and Felimon Gayanilo	11/15/2008
GCOOS Vocabulary	OWL-DL	20081117T235159	YIXIN LUO	11/17/2008

Browse



Visualize

Ontology Metadata

Please specify your ontology file.

Local file: /Users/carueda/voc2rdf-ou

Original base URI: http://mmisw.org/ont/_tmp_/parameter

```
<?xml version="1.0"?>
<rdf:RDF
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:omvmmi="http://mmisw.org/ont/mmi/20081020/ontologyMetadata/"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema#"
  xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
  xmlns:owl="http://www.w3.org/2002/07/owl#"
  xmlns:omv="http://omv.ontoware.org/2005/05/ontology#"
  xmlns:dc="http://purl.org/dc/elements/1.1/"
  xml:base="http://mmisw.org/ont/_tmp_/parameter">
  <owl:Ontology rdf:about="http://mmisw.org/ont/_tmp_/parameter">
```

Register and annotate

Ontology Metadata

New base URI: Fields marked * are required. Use commas to separate values in multi-valued fields.

General Usage/License/Permissions Original source

Resource type: parameter

URI of resource type: http://mmisw.org/ont/mmi/topicTheme/parameter

Full title: Project Athena Parameters

Keywords: ocean, physical oceanography, environmental science, climate change

Link to original vocabulary: http://marinemetadata.org/community/teams/athena/parameters.html

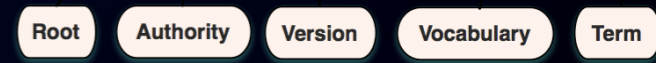
Link to documentation: http://marinemetadata.org/community/teams/athena

Authority abbreviation: mmitest

Contributor(s): Jane Collaborator, Joe Ontology Manager, Fido the Mascot

Resolve URIs

http://mmisw.org/ont/mmi/20081203/parameter/sst



MMI ORR

Map terms

Create and convert



Vocabulary Conversion

The class refers to the main theme associated with your vocabulary. You can manually type in the contents of your vocabulary or paste it from your original text file. Use the check box at the bottom for a convenient (read-only) tabular view of the contents. Uncheck it to copy the contents with an example.

Class: Discipline: ISO MD_Keyword: Dis

name	description	comment
1 sea surface salinity	sea water salinity	salinity at the sea surface (above 3m.)
2 sst	water temperature	temperature at the sea surface (above 3m.)
3 depth	measurement depth	derived from pressure

Vocabulary Conversion

Upon successful conversion, this panel will show the resulting vocabulary in RDF/XML format.

```
<?xml version="1.0"?>
<rdf:RDF
  xmlns="http://mmisw.org/ont/_tmp_/parameter/"
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:omvmmi="http://mmisw.org/ont/mmi/20081020/ontologyMetadata/"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema#"
  xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
  xmlns:owl="http://www.w3.org/2002/07/owl#"
  xmlns:omv="http://omv.ontoware.org/2005/05/ontology#"
  xmlns:dc="http://purl.org/dc/elements/1.1/"
  xml:base="http://mmisw.org/ont/_tmp_/parameter">
  <owl:Ontology rdf:about="http://mmisw.org/ont/_tmp_/parameter">
    <omv:acronym>parameter</omv:acronym>
    <omv:name>Parameter Vocabulary</omv:name>
    <omv:uri>http://mmisw.org/ont/_tmp_/parameter</omv:uri>
```

Congratulations! You are now in RDF/XML format. Copy and paste the contents in a file on your computer.

Do you want to upload this vocabulary in the MMI ORR right away?

Yes, register

This button will open the Metadata Editor to use to proceed with the ontology for registration in the Registry and Repository to log in.

Environment

Search on the following ontologies: all none quality quality0

Search for: use REGEX

Map Mapping Results

Label	Code	Description	Source Notes
http://mmisw.org/ont/igoss/qualityFlag_0	0	No quality flag	Integrated
http://mmisw.org/ont/igoss/qualityFlag_1	1	No quality flag	Integrated
http://mmisw.org/ont/igoss/qualityFlag_2	2	No quality flag	Integrated

Total mappings: 3 Direct: 3 Inferred: 0

SPARQL query:


```
PREFIX dc: <http://purl.org/dc/elements/1.1/>
SELECT ?resource ?creator
WHERE { ?resource dc:creator ?creator. } LIMIT 12
```

Submit

Search

resource	creator
http://mmisw.org/ont/igoss/20081113T203318/qualityFlag	Stephanie Watson
http://mmisw.org/ont/gcoos/20081118T044314/sensor	YIXIN LUO
http://mmisw.org/ont/mmi/20081119T135714/usjgofs_hydro	Cyndy Chandler
http://mmisw.org/ont/q2o/20081117T133042/qualityFlag	Sara Haines
http://mmisw.org/ont/qartod/20081113T212733/qualityFlag	Stephanie Watson
http://mmisw.org/ont/cf/20081116T050933/parameter	Luis Bermudez
http://mmisw.org/ont/ecs/20081120T164852/device_map	Amilan
http://mmisw.org/ont/cencoops/20081116T071031/parameter	Dale Robinson
http://mmisw.org/ont/ndbc/20081114T205115/qualityFlag_hard	Stephanie Watson
http://mmisw.org/ont/seadatanet/20081116T060423/qualityFlag	Stephanie Watson
http://mmisw.org/ont/mmittest/20081117T202337/qualityFlag	Carlos Rueda
http://mmisw.org/ont/cencoops/20081119T231517/parameter	Dale Robinson

MMI ORR Back-end

- No changes in BioPortal back-end
- Most operations via REST calls (eg., ontologies, auth)
-  Ontology URI
 - Key to allow access by users and software clients
 - Key to social changes: adoption and understanding
- URI-based operations via direct access to DB
- SPARQL endpoint using Jena

BioPortal Front-end

- Configuration
 - Back-end REST URLs (Rails and FlexViz)
 - Rails
 - config/environment.rb
 - FlexViz
 - public/flex/FlexoViz.html
 - Ports
 - lib/BioPortalRestfulCore.rb (8080, 80)
 - Email addresses
 - app/models/notifier.rb
 - Google Analytics ID
 - app/views/layouts/_footer.html.erb

BioPortal Front-end

- Challenges
 - Internationalization
 - Non-developer deployment / adaption
 - Rails knowledge
 - Flex changes
 - Speed of development

MMI ORR – Added module

Marine Metadata Interoperability
Ontology Registry and Repository alpha

carueda | Sign out | Help

Create vocabulary | Upload

Name	Author	Version	Submitter
AGU Index Terms	AGU	20090604T210443	paul
ARGO Instruments	ARGO	20090605T194103	paul
ARGO Parameters	ARGO	20090605T194513	paul
Download as ▾	Stephanie Watson	20081116T040146	graybeal
▾ RDF/XML	MMI	20090317T183911	carueda
▾ Versions	BODC	20090708T212053	paul
▾ N3	BODC	20090708T210747	paul
BODC Parameter- Group Dictionary	BODC	20090708T212942	paul
BODC Units	BODC	20081120T002506	cdip
CDIP Term Vocabulary	CDIP	20081119T231517	dhr.sfsu@gmail.c
CeNCOOS water monitoring subset and extension of CF parameter vocabulary	Dale Robinson	20090623T173752	graybeal
Climate and Forecast (CF) standard names parameter vocabulary	CF Metadata		

- Experimental “admin” front-end
 - Browse by various categories (authority, submitter, etc.)
 - Maintenance tasks (deletion, reassign ownership, etc.)
 - Evaluate REST interface
 - Gain experience for developing other potential front-ends

Next steps – Back-end

- Upgrade to latest release of BioPortal/OOR
 - Evaluate REST services
 - Promote URIs as first-class citizens
- Ontology Metadata (OMV, BMO, MMI)
- Enhanced support for mappings using SKOS
- Re-hosting ontologies
- Groups, permissions
- Versioning

Next steps – Front-end

- Centralized config
- Development models
- Theming
- Plug-ins
- Visualization (inc. individuals)

Next steps – In general

- Integration and closer alignment
 - Collaborative Vocabulary and Mapping Development
 - OOR, BioPortal, Protégé, CODS, NeOn
 - End-to-end semantic solutions for Earth science communities
- Broader vision
 - Inter-repository APIs
 - Standard metadata ontologies

Thank you!

- MMI ORR: <http://mmisw.org/or>
- Project: <http://code.google.com/p/mmisw>
- Marine Metadata Interoperability: <http://marinemetadata.org>
- Ontology Requirements:
<http://marinemetadata.org/community/teams/ont/mmirepository/oorreqtsplus>

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