

IAMSLIC (2017)

Using Linked Open Data to Search Across Geoscience Repositories

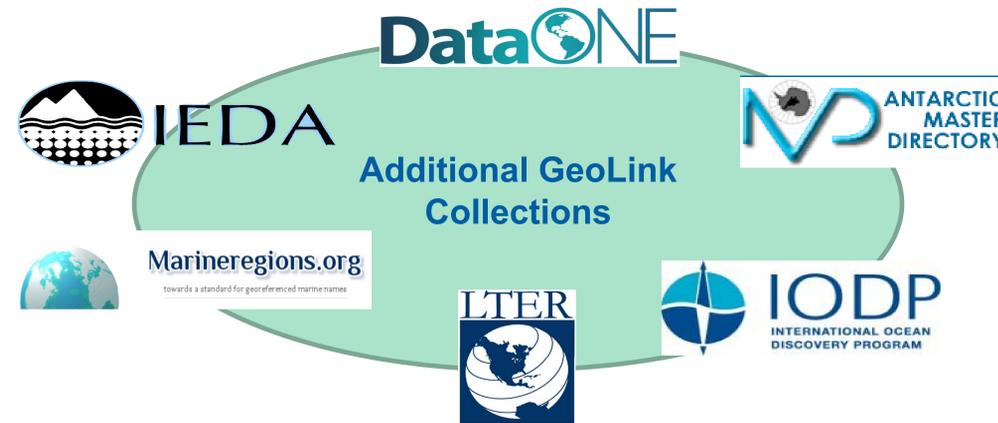
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The MBLWHOI Library collaborated in multi-year NSF EarthCube funded projects, applying semantic technologies to enable knowledge discovery, sharing, and integration

1 Phase one was **OceanLink**, an EarthCube Building Block where we tested ontology design patterns that linked together: two data repositories, Rolling Deck to Repository (R2R), Biological and Chemical Oceanography Data Management Office (BCO-DMO); the MBLWHOI Library Institutional Repository Woods Hole Open Access Server (WHOAS); National Science Foundation (NSF) funded awards; and American Geophysical Union (AGU) conference presentations.

The Library collaborated with scientific users, data managers, DSpace engineers, experts in ontology design patterns, and user interface developers to make WHOAS, a DSpace repository, linked open data enabled.

The code is available on GitHub https://github.com/dspace-oceanlink/DSpace/tree/oceanlink-5_x.



2 Phase two was **GeoLink**, extending the project to disciplinary areas beyond the ocean sciences to develop a set of reusable ontology design patterns that describe concepts and tools to facilitate discovery of content.

During this phase the Library implemented Editable Authority Control and a method to configure SPARQL queries against known endpoints such as R2R and BCO-DMO, allowing retrieval of specific resources to be associated with the metadata fields of DSpace records.

The Library also developed a component (widget) that provides a link in WHOAS to related information in other GeoLink repositories.

Code for the widget is available on GitHub https://github.com/atmickle/dspace_geolink_comonent_mblwhoilib

Editable Authority Record with URI and metadata values

<https://darchive.mblwhoilib.org/concept/uuid:63e5a992-1310-41c6-a1ff-a9a43dcae1f9>

Melville

Scheme

• vessel(a35e9463)

Attributes

| | |
|---------------|--------------------------------------|
| Identifier | 63e5a992-1310-41c6-a1ff-a9a43dcae1f9 |
| Creation Date | 2016-04-21 |
| Status | ACCEPTED |
| Source | sparql |

Metadata Values

| Field Name | Value |
|--------------------|--|
| dcterms:identifier | 318M |
| r2r:Operator | http://linked.rvdata.us/resource/organization/edu.ucsd.sio |
| r2r:Owner | http://linked.rvdata.us/resource/organization/gov.nsf |
| rdf:type | http://linked.rvdata.us/vocab/resource/class/Vessel |
| rdf:type | http://vocab.nerc.ac.uk/collection/L06/current/31/ |
| skos:exactMatch | http://vocab.nerc.ac.uk/collection/C17/current/318M/ |
| rdfs:label | Melville |

How the Widget Works

The widget uses javascript to search for Dublin Core subject tags that match our cruise format→ **Atlantis (Ship : 1996-) Cruise AT18-16**. The widget checks whether R2R has any information about this cruise.

If there is information, the GeoLink info box gets inserted into the page. The user can see more information about the cruise and go to the official cruise data entry. If there isn't an entry, the user doesn't see the GeoLink info box

WHOAS: Woods Hole Open Access Server
a repository for the Woods Hole scientific community

Search: Geochemistry of deep-sea hydrothermal vent fluids from the Mid-Cayman Rise, Caribbean Sea

Additional information is available from GeoLink
• Cruise Information (1)
AT18-16

Citable URI
<https://hdl.handle.net/1912/7128>

Location
Von Damm vent field

Rolling Deck to Repository (R2R)

Operator: Woods Hole Oceanographic Institution
Vessel: Atlantis
Cruise DOI: 10.7284/090474

Cruise Catalog: AT18-16

Project: Working Outside the Box - Hydrothermal Circulation and Chemosynthetic Life

FILE MANIFEST

| Resource Type | File Name | File Size | Quality | Download | Link # |
|---------------|------------------|----------------|---------|----------|--------|
| MP3 | Woods_Hole_OIGAS | 10.7284/090474 | R2R | Link # | Link # |
| MP3 | Woods_Hole_OIGAS | 10.7284/090474 | R2R | Link # | Link # |

Acknowledgments

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EAGER: Collaborative Research: Building Blocks, Leveraging Semantics and Linked Data for Geoscience Data Sharing and Discovery
EarthCube Building Blocks: Collaborative Proposal: GeoLink – Leveraging Semantics and Linked Data for Data Sharing and Discovery in the Geosciences

