SeaDataCloud

SeaDataNet experience and contribution

Alexandra Kokkinaki
Home Organisation: The British Oceanographic Data Centre, NOC, UK

sdn-userdesk@seadatanet.org – www.seadatanet.org
SeaDataNet

- A pan-European infrastructure set up and operated for managing marine and ocean data in cooperation with the NODCs and data focal points of 34 countries bordering the European seas.
Metadata services

- Projects (3,079)
- Organisations (4,523)
- Research cruises (48,836)
- Observing programmes (363)
- Data index (2,151,046)
- Data sets (4,193)

Organisations (4,523)
EDMED metadata format, based on ISO 19115 content model
Annotated NERC Vocabulary Server (NVS)

<table>
<thead>
<tr>
<th>Data set name</th>
<th>Atlantic meridional overturning circulation observed by the RAPID-MOCHA-WBTS array at 26°N from 2004 to 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data holding centre</td>
<td>British Oceanographic Data Centre</td>
</tr>
<tr>
<td>Country</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>Project</td>
<td>Rapid Climate Change</td>
</tr>
<tr>
<td>Time period</td>
<td>01 April 2004 to 28 February 2017</td>
</tr>
<tr>
<td>Ongoing</td>
<td>No</td>
</tr>
<tr>
<td>Geographical area</td>
<td>North Atlantic across 26.5°N from Florida Straits to African coast</td>
</tr>
</tbody>
</table>

**OBSERVATIONS**

Vertical spatial coordinates, Date and time, Lagrangian currents and transport rates in the water column, Salinity of the water column, Temperature of the water column, Transport in the water column

**Parameters**

Current profilers, submarine cables, CTD, current meters

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Current profilers, submarine cables, CTD, current meters</th>
</tr>
</thead>
</table>

**Description**

The RAPID-MOCHA-WBTS dataset comprises measurements of current velocity, temperature, salinity and pressure. Oceanic volume transports are calculated as the product of these variables resulting in continuous measurements of the Atlantic Meridional Overturning Circulation (AMOC). The data collection is obtained from a mooring array across 26.5°N in the Atlantic Ocean and cable measurements across the Florida Straits. The measurement array extends from the Bahamas to the African coast. The data has been collected periodically from 2004 to 2017. The data are collected independently by various UK and USA research groups. Measurements between the Bahamas and Africa were made using a variety of MicroCT CTD sensors, various current meters and ADCP. All instruments are located on 36 moorings in various locations at 26.5°N. An underwater cable makes current velocity measurements across the Florida Straits. The RAPID-MOCHA-WBTS programme aims to deliver a multi-decadal time series of observations of AMOC. The observations will be used from other sources to determine and interpret recent changes in the AMOC to assess the risk of rapid climate change due to changes in the MOC and to investigate the potential for predicting the MOC and its impacts on climate. The RAPID-MOCHA-WBTS programme is a joint effort between NERC in the UK (the UK Principal Investigation is David St. John), NOAA (Chris Mienak and RSMAS (Prof. Bill Johns) in the USA. The Atlantic MOC transport (and its components) calculated from the above data, and

https://www.bodc.ac.uk/resources/inventories/edmed/report/6178/
Set of best practices for publishing and interlinking **structured** data for access by both **humans** and **machines**
Steps

• Reusing existing patterns
  – Better understanding outside of SDN
  – Better interoperability with other organisations
  – FAIRer
Catalogues vs existing patterns

- EDMO –W3C Organisation
- EDMED –W3C DCAT / W3C Prov
- EDMERP –W3C Prov/ DBPediaResearch Project
- CDI –W3C DCAT
- ODV metadata to INSPIRE / ISO O&M
- CSR -Liaised with US-NSF Rolling Deck to Repository & with Australia (through ODIP/SDC)
- EDIOS –INSPIRE Environmental Monitoring Facilities
URIs

- https://edmed.seadatanet.org/
  - https://edmed.seadatanet.org/search/
  - https://edmed.seadatanet.org/sparql/
  - https://edmed.seadatanet.org/report/<ID>
- https://edmo.seadatanet.org/
  - http://edmo.seadatanet.org/sparql/
- https://edios.seadatanet.org/
  - http://linked.bodc.ac.uk/sdn/edios/
- https://edmerp.seadatanet.org/
- https://cdi.seadatanet.org/
Wood et al, 2018, Exposing the SeaDataNet metadata catalogues via SPARQL endpoints, IMDIS Conf, Barcelona.
What is NVS

- A Vocabulary server
- Provides access to lists of standardised terms related to the oceanographic and wider community
- Term = unique URI with which people refer to it
- URI: resolves to machine/human readable standard formats (Linked Data)
- Unperpins SDN infrastructure
NERC Vocabulary Server

EPOS IP Final Event – September 27th 2019 | Madrid, Spain

sdn-userdesk@seadatanet.org – www.seadatanet.org
InteroperAble Descriptions of Observable Property Terminology

- An RDA Working Group
- Within RDA Interest Group on Vocabulary and Semantic Services (VSSIG)
- RDA WG page:
  - [https://www.rd-alliance.org/groups/interoperable-descriptions-observable-property-terminology-wg-i-adopt-wg](https://www.rd-alliance.org/groups/interoperable-descriptions-observable-property-terminology-wg-i-adopt-wg)
- Chairs:
  - Barbara Magagna, Michael Diepenbroek, Gwenaelle Moncoiffe, Maria Stoica
Objectives

Creating a community-agreed framework for:

- representing observable properties
- by bringing together interested and experienced members
- to encode measured, observed, derived, and computed properties

In order to:

- Improve the “I” of FAIR on property description at large scale
- Align properties specified by various bodies
- Make properties machine-processable

sdn-userdesk@seadatanet.org – www.seadatanet.org
WHAT?
Capturing complex and essential data information using semantic technology

HOW?
- Collaborative effort to connect existing semantic resources
- Strong network of:
  - thesauri developers,
  - ontology creators
  - information managers
  - Data producers and publishers

Results
Workshop in Dublin, Ireland in March 2019 gathered technical & content experts:
Strategies for linking
- observations to authoritative thesauri
- authoritative thesauri to domain ontologies
Initiated alignment between:
- NERC Vocabulary Server
- Open Biological and Biomedical Foundry
Plan future alignments of well-adopted marine terminologies
Collective strategy for sustained interoperability
Use case featuring UNESCO-IOC Ocean Best Practices System

sdn-userdesk@seadatanet.org – www.seadatanet.org