Linked Data
Developments in SeaDataCloud

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Why Linked Data for SeaDataNet?
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- Types of questions we can ask...
  - “Which cruises have physical oceanographic data?”
  - “Give me all temperature data for the Celtic Seas for 2015”
Why Linked Data for SeaDataNet?
What we didn’t want to do
What we did about it

• Reusing existing patterns
  – Better understanding outside of SDN
  – Better interoperability with other organisations
  – Better INSPIRE compliance
What we did about it

• Reusing existing patterns
  – EDMO
  – EDMED
  – EDMERP
  – CDI
  – CSR
  – EDIOS
What we did about it

• Reusing existing patterns
  – EDMO – W3C Organisation
  – EDMED – W3C DCAT
  – EDMERP – W3C Prov / DBPedia Research Project
  – CDI – W3C DCAT
    • ODV metadata to INSPIRE / ISO O&M
  – CSR - ...
  – EDIOS – INSPIRE Environmental Monitoring Facilities
What we did about it

• Reusing existing patterns
  – Also
    • Sextant catalogue to W3C DCAT
CSR Patterns
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geolink:hasInstrument
geolink:hasInstrumentType
geolink:Dataset

prov:Agent
operation:hasInstrument
operation:AssociatedEvent

operation:Operation
operation:hasDescription
operation:hasTimeStamp
operation:atPort

operation:AssociatedEvent

cruise:PortCall
cruise:hasTimestamp

xsd:date
gsp:wktLiteral
Issues

• Creation of a SeaDataNet Linked Data ontology.
• Clean URIs for each catalogue
• Content negotiation
• NERC Vocabulary Server v.1 is deprecated.
• EDMO links to external vocabularies
• All terms in C19 are equated to prov:Location.
• A register of individuals and publications.
• Project record to an associated research programme links to another EDMERP record not an XML snippet.
• Dbpedia to PROV-O alignment.
• CDIs with EDMED codes included should be used to populate the DCAT Distribution information.
• Consider alignments in the DCAT keywords specification to the research classification vocabularies.
• A non-SDN/SDC namespace is used for the publication of the Linked Data terms.
• Port entries in C38 should be given an RDF linkage to their countries.
• Port entries in C38 should be made instances of geolink:Place and prov:Location.
• Research vessels entries in C17 should be made instances of prov:Entity.
• A CDI SKOS scheme should be set up on the NVS incorporating the P02, L05 and C19 vocabularies.
• Include links to ICES station dictionary URIs.
• Include links to terms from the BODC Series Feature Type vocabulary (C10).
Issues – URLs

http://www.bodc.ac.uk/data/information_and_inventories/edmed/report/[edmed_code]/
http://seadatanet.maris2.nl/v_edmerp/print.asp?n_code=[n_code]
Issues – URLs

http://cruise-summary.seadatanet.org/ [csr_code]
http://edmed.seadatanet.org/[edmed_code]
http://edmo.seadatanet.org/[n_code]
http://edmerp.seadatanet.org/[n_code]
http://cdi.seadatanet.org/[n_code]
http://edios.seadatanet.org/programme/[n_code]
http://edios.seadatanet.org/series/[n_code]
Issues – URLs
http://cruise-summary.seadatanet.org/[csr_code]


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Issues – EDMO interoperability


http://edmo.seadatanet.org/1 a org:Organization.
Issues – EDMO interoperability
Issues – EDMO interoperability

skos:exactMatch
Issues – EDMO interoperability

owl:sameAs

skos:exactMatch
Issues – EDMO interoperability

owl:sameAs

rdfs:seeAlso

skos:exactMatch
Issues – EDMO interoperability

owl:sameAs
so:claimsIdentical
rdfs:seeAlso
skos:exactMatch
Issues – EDMO interoperability

Recommended reading:
When owl:sameAs isn't the Same by Halpin et al
Next Steps

• Address pre-requisites in the issues

• Develop RDF implementation of catalogues
  – Alexandra will present EDMED developments

• Develop Schema.org mappings
  – Done for EDMED

• Develop Linked Data representation of IODE Ocean Expert entries