

Building trust through transparency in the NERC Vocabulary Server (NVS)

Alexandra Kokkinaki¹, Gwenaëlle Moncoiffé¹, Quyen Luong¹, Adam Leadbetter², Rob Thomas², Simon Cox³

¹The British Oceanographic Data Centre (BODC) (UK)

²Marine Institute (Ireland)

³CSIRO Land and Water (Australia)

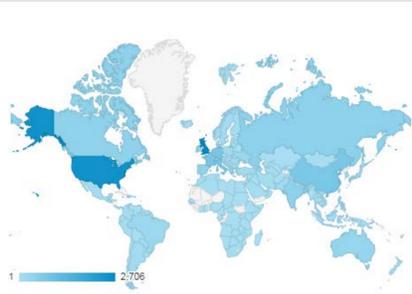
#1 NERC Vocabulary Server (NVS)

What is NVS?

NVS has been serving the marine and wider community with controlled vocabularies for over a decade. NVS provides access to standardised lists of terms which are used for data mark-up, facilitating interoperability and discovery in the marine and associated earth science domains.

- Linked data
- SKOS
- RDF/XML
- SOAP
- REST
- Unique URIs
- Mappings
- SPARQL
- W3C

Who uses NVS?



External Mappings



Publication



<http://vocab.nerc.ac.uk/sparql/>



<http://vocab.nerc.ac.uk/vocab2.wsdl>



<http://vocab.nerc.ac.uk/collection/>

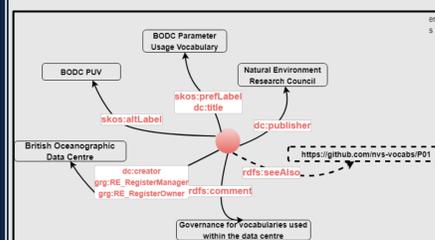
#2 Trust

Governance transparency

Creation of GitHub repositories for collaborative NVS vocabularies to:

- ❖ capture discussions and governance decisions
- ❖ be publically available
- ❖ Support the expansion of the SeaVoX governance group

Governance transparency



RDF model of an NVS vocabulary associated with a github repository

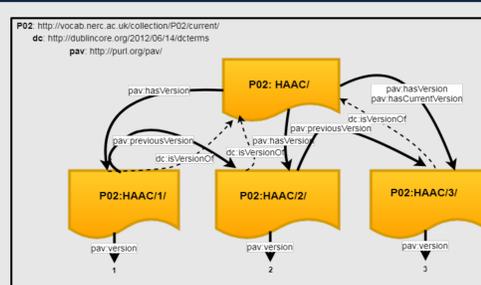
- <https://github.com/nvs-vocabs/L22>
- <https://github.com/nvs-vocabs/P01>
- <https://github.com/nvs-vocabs/P06>
- <https://github.com/nvs-vocabs/S02>
- <https://github.com/nvs-vocabs/S04>
- <https://github.com/nvs-vocabs/S06>
- <https://github.com/nvs-vocabs/S07>
- <https://github.com/nvs-vocabs/S25>
- <https://github.com/nvs-vocabs/S26>
- <https://github.com/nvs-vocabs/S27>
- <https://github.com/nvs-vocabs/S29>
- <https://github.com/nvs-vocabs/W03>

Example of github repositories linked to NVS vocabs

Versioning

- ❖ Version control on the concept level
- ❖ Users access previous versions of a concept
- ❖ Model based on PAV ontology: provenance, authoring and versioning: <http://purl.org/pav/>

Concept Versioning

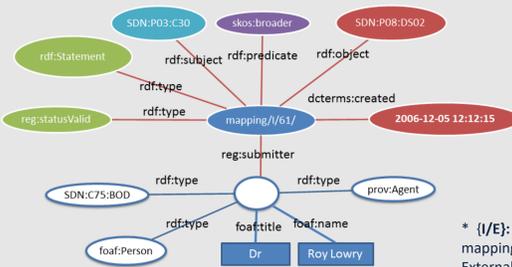


Versioning of concepts RDF model based on pav ontology

Mappings

To ensure that there is confidence in NVS mappings, information relating to **who** has carried out the mappings and **when** is stored alongside the mappings. Each mapping is associated with a unique URI and resolves to RDF that reifies the mapping and includes the additional provenance information

Provenance of mappings



http://vocab.nerc.ac.uk/mapping/{I/E}/{MAPREF}*

* {I/E} specifies if the mapping is Internal or External
{mapref} is the unique identifier of the mapping.

#3 Collaborative tools



The VOCAB EDITOR allows external authorities to edit their vocabularies and associated mappings and submit for publication to the NVS. Within the Vocab Editor authorised editors may maintain lists under their governance.



The VOCAB BUILDER tool allows users to browse these vocabularies based on their semantic building blocks. Registered users can also log in and submit new terms.

Vocabulary enquiries at vocab.services@bodc.ac.uk

Acknowledgments

This work was partly funded by the European project SeaDataCloud (2016–2020) under grant agreement No. 730960). Funded and supported by the National Environmental Research Council (NERC). Special thanks to Jena mailing list, Adam Shepherd (WHOI) and Nicholas Car (CSIRO) for providing their insight and expertise when needed.