

Further Developments of Common Vocabularies within SeaDataCloud and related european Projects

ODIP II Final Workshop
Galway, Ireland - 02 October 2017

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Online Access through the NERC Vocab Server (NVS)

Machine-to-machine

- RDF restful API <http://vocab.nerc.ac.uk>
- SOAP API <http://vocab.nerc.ac.uk/vocab2.wsdl>
- SPARQL end point <http://vocab.nerc.ac.uk/sparql/>

Browser interfaces

- **NVS Search** – Search across and within vocabularies
https://www.bodc.ac.uk/resources/vocabularies/vocabulary_search/
- **NVS Editor** – Allow external editors to submit and edit new terms and mappings to specific vocabularies (access control)
https://www.bodc.ac.uk/resources/vocabularies/vocabulary_editor/
- **NVS Vocabulary Builder** (V2 due for release next month) -- Search and submit parameter codes using the semantic building blocks of the BODC parameters.
https://www.bodc.ac.uk/resources/vocabularies/vocabulary_builder/



Vocabularies hosted at BODC

Status as of September 2017

- **Collections**
 - 231 vocabulary collections accessible through the NVS
 - 70 (30%) are owned and governed by BODC
 - 48 (21%) are under SDC/EMODnet/SeaVox/SWE content governance
 - Remainder (113) are owned by 25 different governing bodies
- **Concepts**
 - 151977 valid concepts including:
 - P01 parameter codes: 37368
 - L22 instrument codes :1198
- **Mappings**
 - 595073 internal mappings between concepts
 - 20804 mappings of NVS concepts to external resources
- **Calls to NVS server**
 - Between 37000 and 90000 calls per months in 2017
- **Requests for new codes**
 - In 2017: regularly over 20 requests per month every month
 - Often 1/3 external but 50:50 external:internal in August and September



Vocab Management Group

- Technical lead: **Alexandra Kokkinaki**
- Content lead and overall group coordination: **Gwen Moncoiffé**
- Instruments (L22 and L05) and SWE Vocab lead: **Louise Darroch**
- Vocab schema management: **Sean Gaffney**
- Consultant: **Roy Lowry**
- Overlap of expertise and training of new members to ensure every domain is covered by at least 2 members of staff:
 - Chemical domain: Gwen Moncoiffé and Lou Darroch
 - Biological domain: Gwen Moncoiffé and **Arwen Bargery**
 - Physical domain: **Mark Hebden** and **Dani Edgar**
 - Instruments and platforms: Lou Darroch, **Vi Paba** and Dani Edgar
 - Gatekeepers: Gwen and Sean
- New requests through enquiries@bodc.ac.uk

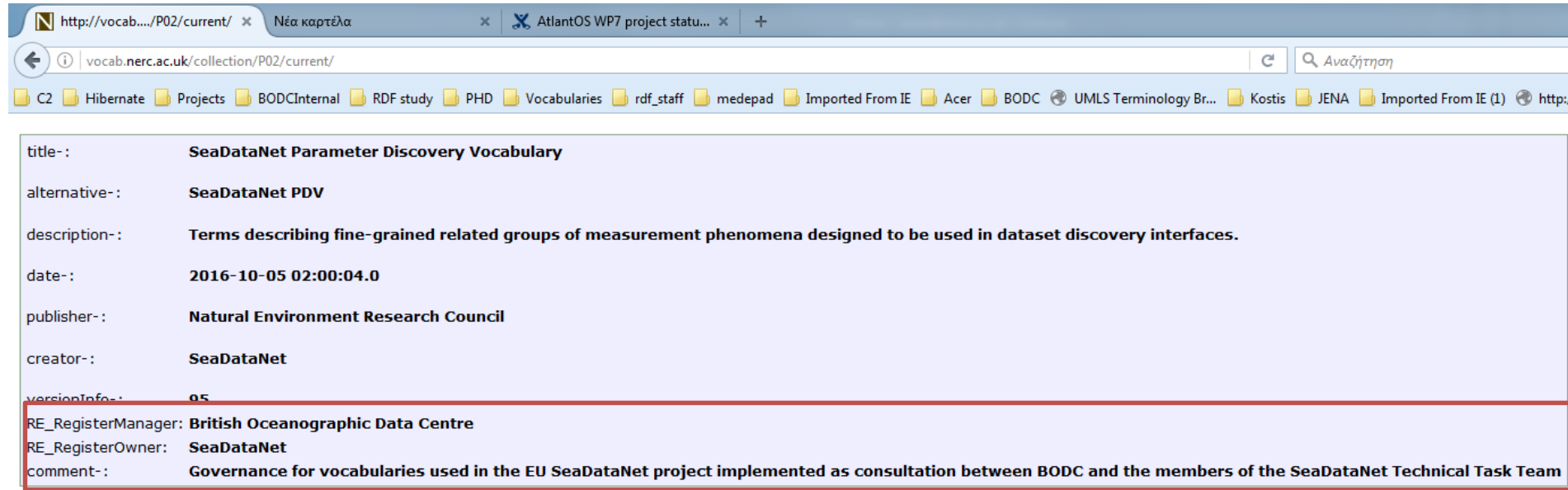


SeaDataCloud Vocabulary deliverables

- Improve the transparency of the vocabulary governance model
→ not yet started
- Develop new vocabularies
→ Started
- Undertake a review of P02 and P03 vocabularies
→ Started
- Make versioning and history of concepts visible through NVS
→ not yet started
- Document the provenance of mappings
→ started (see presentation by A. Kokkinaki)
- Further develop the Vocabulary Builder tool
→ started and near completion



Improve the transparency of the vocabulary governance model



http://vocab.nerc.ac.uk/collection/P02/current/ Néα καρτέλα AtlantOS WP7 project statu... +

vocab.nerc.ac.uk/collection/P02/current/ Αναζήτηση

C2 Hibernate Projects BODCInternal RDF study PHD Vocabularies rdf_staff medepad Imported From IE Acer BODC UMLS Terminology Br... Kostis JENA Imported From IE (1) http://

title-: **SeaDataNet Parameter Discovery Vocabulary**

alternative-: **SeaDataNet PDV**

description-: **Terms describing fine-grained related groups of measurement phenomena designed to be used in dataset discovery interfaces.**

date-: **2016-10-05 02:00:04.0**

publisher-: **Natural Environment Research Council**

creator-: **SeaDataNet**

versionInfo-: **0.5**

RE_RegisterManager: **British Oceanographic Data Centre**

RE_RegisterOwner: **SeaDataNet**

comment-: **Governance for vocabularies used in the EU SeaDataNet project implemented as consultation between BODC and the members of the SeaDataNet Technical Task Team**

Broaden and extend the current **SeaVox** governance group.

A combined SeaDataNet and MarineXML Vocabulary Content Governance Group moderated by BODC



Improve the transparency of the vocabulary governance model

- Adopt best practices as determined by RDA Vocabularies Services Interest Group
- Add contact details to the governance authority
- Track governance discussions and decisions following models from ISO 19135 and ISO/IEC 11179-3
- Tie a mailing list conversation with a version number
- Archived mailing lists
- Will support a more open governance, greater collaboration and input from the user community and domain experts

Not yet started



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Collaborations in developing new vocabularies

- **Sensor Web Enablement (SWE) Marine Profile Group**
 - 7 New collections have been created and population has started
 - Governance group is active
 - BODC Vocab contact is Louise Darroch
 - Governance via the Vocab Editor is being set up
- **Flow Cytometry Vocabularies WG (SDC)**
 - Domain expert consultation
 - Discussions between domain experts, data managers and vocab experts on-going
 - BODC Vocab contact is Gwen Moncoiffé
- **Marine Micro-litter Vocabularies (EMODnet Chemistry)**
 - Discussions between domain experts, data managers and vocab experts have taken place
 - Set of collections and concepts ready for publication
 - BODC Vocab contact is Gwen Moncoiffé



New Vocabularies e.g. SWE

SWE Marine profiles group lead by 52North

OGC SWE Vocabularies governed by SWE Marine Profile group

- <http://vocab.nerc.ac.uk/collection/W03/current/> --> SensorML Event Types
- <http://vocab.nerc.ac.uk/collection/W04/current/> --> SensorML Capabilities
- <http://vocab.nerc.ac.uk/collection/W05/current/> --> SensorML Characteristics
- <http://vocab.nerc.ac.uk/collection/W06/current/> --> SensorML Classification
- <http://vocab.nerc.ac.uk/collection/W07/current/> --> SensorML Identification
- <http://vocab.nerc.ac.uk/collection/W08/current/> --> SensorML Contacts

- New vocabularies as requested
- OGC vocabularies as suggested by the SWE Marine Profiles group
- Improve the governance and transparency of the group based on experience from SeaVox
- Ongoing



Review of P02 and P03 Vocabularies

- P02 and P03 SDN vocabularies need to be reviewed and some terms will need to be deprecated
- Upgrade to **existing systems** and **software** so that the deprecation of concepts and terms is supported. Under the coordination of the TTG (Maris), development work will be required to **CDI import** (Maris), **Mikado software** (Ifremer), **Nemo software** (Ifremer), **Download Manager** software (Ifremer), **CSR XML import** (BSH), CSR data input webform (BSH), **EDIOS import** (BODC), **EDMED import** (BODC)
- A draft proposal for rationalising P02 and P03 (mainly terms related to biological codes) is being drafted and will be submitted for consultation to the SDC-TT

Started



Make Versioning of Concepts Visible

- Individual concepts have version control stored internally and a mechanism will be developed to allow users access to the version history of individual concepts through the NVS.

P02	PSAL	Salinity of the water column	WC_Sal		29-Jul-04	29-Jul-04	accepted	1
P02	PSAL	Salinity of the water column	WC_Sal	Parameters quantifying the concentration of sodium chloride in any body of water at any point between the bed and the atmosphere	29-Jul-04	02-Mar-07	accepted	2

Not yet started



Vocabulary Builder Tool

- Also known as the "one-armed bandit" or fruit-machine concept
- Wheels = semantic elements of the P01 parameter preferred labels
- Developed as part of EMODnet Chemistry > chemical codes
- Built as a search and submission tool requiring the user to log in
- Re-deployed as a search tool with option to log in to submit new terms
- Functionality extended to search any type of parameter using 3 entry points corresponding to the 3 P01 semantic models
 - Chemical Entity Parameters
 - Biological Entity Parameters
 - Physical Entity and Other Parameters
- Remodellisation work to expose the whole P01 parameter dictionary through these 3 semantic models
- Modelling work to develop a structured semantics to support some of the descriptive elements of the **SeaVoX Device Catalogue (L22)** is also being investigated





Semantic Model Vocabulary Builder

Some of BODC's vocabulary collections like for example, the BODC Parameter Usage Vocabulary (P01) are based on a semantic model. The semantic model uses a defined set of controlled vocabularies (the semantic building blocks) and organises them into a structured label which is then used to populate the preferred label field of the main vocabulary. This helps maintain a consistent logic when naming related concepts.

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.

The following vocabularies are available as semantic models

[Chemical entity parameter codes](#) (subset of P01)

[Biological entity parameter codes](#) (subset of P01)

[Physical entity and other parameter codes](#) (subset of P01)

[Measurement matrix concepts](#) (S26 and a component of the P01 semantic models)

[Biological entity concepts](#) (S25 and a component of the P01 semantic models)

To submit new terms please [register](#) with BODC or [log in](#)



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P01 Physical Entity and Other Parameter Code Builder [help](#)

Preferred label

[show/hide exact results](#) | [reset all](#)

Found **3714** exact matches

[Select a measurement property](#)[Select a statistical parameter](#)[Select a physical entity \(if applicable\)](#)[Select a measurement-matrix relationship](#)[Select a matrix](#)[Select a sample preparation \(if applicable\)](#)[Select an analytical method \(if applicable\)](#)[Select a post-analysis processing \(if applicable\)](#)[Return to index](#)[Login to enable new concept creation](#)

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P01 Physical Entity and Other Parameter Code Builder [help](#)

Preferred label

Practical salinity

[show/hide exact results](#) | [reset all](#)

Found 31 exact matches

✓ Select a measurement property

Approved

Select approved concept

Found 8 | Showing (1 - 8) | 1

Practical salinity

Absorbance

Abundance

Practical salinity

Proportion by dry weight

Proportion by volume

Proportion by weight or volume

Select Salinity

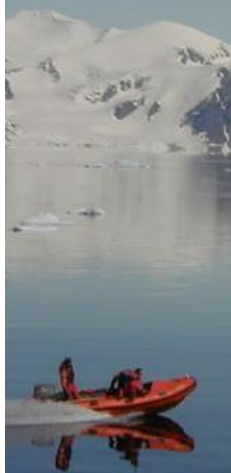
Select a physical entity (if applicable)



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P01 Physical Entity and Other Parameter Code Builder [help](#)

Preferred label

Practical salinity

[show/hide exact results](#) | [reset all](#)

Found 31 exact matches

✓ Select a measurement property

Approved

Select approved concept

Found 8 | Showing (1 - 8) | 1

Practical salinity

[Clear selection](#)

i The quantity of dissolved ions (predominantly salt in seawater) expressed on a scale (PSS-78) based on the conductivity ratio of a seawater sample to a standard KCl solution.

Select a statistical parameter

Select a physical entity (if applicable)

Select a measurement-matrix relationship

Select a matrix

Select a sample preparation (if applicable)

Select an analytical method (if applicable)



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P01 Physical Entity and Other Parameter Code Builder [help](#)

Preferred label

Practical salinity not specified water body

[show/hide exact results](#) | [reset all](#)

Found 25 exact matches | Showing (1 - 5) | [1](#) [2](#) [3](#) [4](#) [5](#) [Next](#) [Last](#)

Identifier	Alternative label	Preferred label
PSLTZZ01	P_sal	Practical salinity of the water body
PSALST02	P_sal_CTD2	Practical salinity of the water body by CTD (second sensor) and computation using UNESCO 1983 algorithm
PSALCU02	P_sal_CTD_uncalib2	Practical salinity of the water body by CTD (second sensor) and computation using UNESCO 1983 algorithm and NO calibration against independent measurements
PSALCC02	P_sal_CTD_calib2	Practical salinity of the water body by CTD (second sensor) and computation using UNESCO 1983 algorithm and calibration against independent measurements
PSALST01	P_sal_CTD	Practical salinity of the water body by CTD and computation using UNESCO 1983 algorithm

✓ Select a measurement property

✓ Select a statistical parameter

Select a physical entity (if applicable)

Select a measurement-matrix relationship

✓ Select a matrix

Select a sample preparation (if applicable)

Select an analytical method (if applicable)

Select a post-analysis processing (if applicable)

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P01 Biological Entity Parameter Code Builder

help

Preferred label

[show/hide exact results](#) | [reset all](#)

Found **7116** exact matches

- Select a measurement property
- Select a primary biological entity
- Select a secondary biological entity (if applicable)
- Select a matrix
- Select a measurement-matrix relationship
- Select a statistical qualifier (if applicable)
- Select a sample preparation (if applicable)
- Select an analytical method (if applicable)
- Select a post-analysis processing (if applicable)

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P01 Biological Entity Parameter Code Builder

[help](#)

Preferred label

Abundance *Skeletonema costatum* (ITIS: 2402: WoRMS 149074)

[show/hide exact results](#) | [reset all](#)

Found 2 exact matches | Showing (1 - 2) | 1

Identifier	Alternative label	Preferred label
Q3709929	Abund(inc)_BE005168	Abundance of <i>Skeletonema costatum</i> (ITIS: 2402: WoRMS 149074) per unit volume of experiment water sample by optical microscopy
P101M01Z	P10101	Abundance of <i>Skeletonema costatum</i> (ITIS: 2402: WoRMS 149074) per unit volume of the water body by optical microscopy

✓ Select a measurement property

✓ Select a primary biological entity

Select a secondary biological entity (if applicable)

Select a matrix

Select a measurement-matrix relationship

Select a statistical qualifier (if applicable)

Select a sample preparation (if applicable)

Select an analytical method (if applicable)

Select a post-analysis processing (if applicable)

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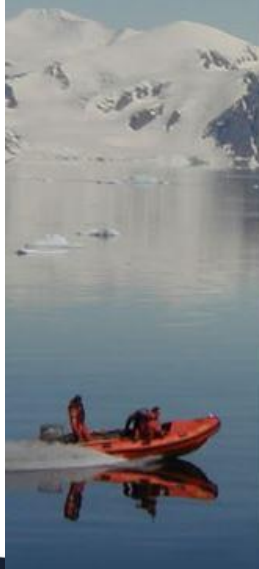
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P01 Chemical Entity Parameter Code Builder

[help](#)

Preferred label

[show/hide exact results](#) | [reset all](#)

Found **13085** exact matches

[Select a measurement property](#)

[Select a measurement statistical qualifier](#)

[Select a chemical substance](#)

[Select a measurement-matrix relationship](#)

[Select a matrix](#)

[Select a select a sample preparation \(if applicable\)](#)

[Select a select an analytical method \(if applicable\)](#)

[Select a select a post-analysis processing \(if applicable\)](#)

[Matrix vocabulary builder](#) | [Biological entity vocabulary builder](#) | [Biological Parameter concepts vocabulary builder](#)
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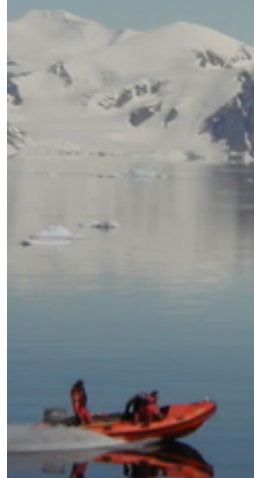
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P01 Chemical Entity Parameter Code Builder

[help](#)

Preferred label

Activity not specified of americium-241 {241Am CAS 14596-10-2} per unit dry weight of sediment

[show/hide exact results](#) | [show/hide close match results](#) | [reset all](#)

Found 2 exact matches | Showing (1 - 2) | [1](#)

Identifier	Alternative label	Preferred label
A41CSPXT	BSAm241Cont	Activity of americium-241 {241Am CAS 14596-10-2} per unit dry weight of sediment by alpha plus beta spectroscopy
A41CGSXT	BSAm241Cont	Activity of americium-241 {241Am CAS 14596-10-2} per unit dry weight of sediment by gamma spectroscopy

Found 2 close matches

✓ Select a measurement property

✓ Select a measurement statistical qualifier

✓ Select a chemical substance

✓ Select a measurement-matrix relationship

✓ Select a matrix

Select a select a sample preparation (if applicable)

Select a select an analytical method (if applicable)

Select a select a post-analysis processing (if applicable)



↑ -- Activity of americium-241 {241Am CAS 14596-10-2} per unit dry weight of sediment by alpha plus beta spectroscopy --

URI	http://vocab.nerc.ac.uk/collection/P01/current/A41CSPXT/		
Identifier ()	SDN:P01::A41CSPXT		
Preferred label (en)	Activity of americium-241 {241Am CAS 14596-10-2} per unit dry weight of sediment by alpha plus beta spectroscopy		
Alternative label (en)	BSAm241Cont		
Definition (en)	Unavailable		
Version Info ()	2		
Deprecated()	false		
Broader	http://vocab.nerc.ac.uk/collection/P02/current/SRAD/	Activity sediment americium-241	
Broader	http://vocab.nerc.ac.uk/collection/S06/current/S0600043/		
Broader	http://vocab.nerc.ac.uk/collection/S26/current/MAT00136/		
Broader	http://vocab.nerc.ac.uk/collection/S27/current/CS002761/		
Related	http://vocab.nerc.ac.uk/collection/P06/current/UBQK/	per unit dry weight of alpha plus beta spectroscopy	
Related	http://vocab.nerc.ac.uk/collection/S02/current/S041/		
Related	http://vocab.nerc.ac.uk/collection/S04/current/S04117/		
Date ()	2015-07-28 11:45:23.0		

Questions?



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