WP8: Governance of standards and development of common services

Overview of WP8 achievements

Presented by Mark Hebden (NOC-BODC)

SeaDataCloud Final Meeting – 29-30 October 2020

(Formal) WP partners

- WP8.1: *Common Vocabularies* - **NOC-BODC**, MI, ICES, CSIRO, JCOMMOPS, ETT, IFREMER
- WP8.2: *Linked Data* - **MI**, NOC-BODC, IFREMER, CNR, BSH, MARIS, SYKE
- WP8.3: *Data formats and INSPIRE* - **NOC-BODC**, CNR, SYKE, CSIRO
- WP8.4: *Authentication and Authorisation* - **IFREMER**
- WP8.5: *SDC monitoring system* - **HCMR**, GRNET, UKRI-STFC, OGS

With help from others along the way!

Outline

Focus on three Tasks:

- **W8.1 Further development of SeaDataNet Common Vocabularies**
  - Building greater technical resilience in NVS infrastructure
  - Developing tools and improving workflows
  - Vocabulary growth over the 4 years

- **WP8.2 Application of Linked Data principles for the common SeaDataNet directories (EDMED, EDMERP, EDMO, CSR, EDIOS and CDI)**
  - Unlocking the potential of Linked Data
  - SPARQL Endpoint implementation

- **WP8.3 SeaDataNet format progression**
  - Also considering INSPIRE

WP8.1 Further Development of SeaDataNet Common Vocabularies

Improved transparency of the vocabulary governance model

Our common vocabularies are gaining in popularity externally and are **supporting an increasingly global and diverse user base**

Greater transparency:

- Greater potential for collaboration with domain experts = **content enrichment**
- Maintains user **trust** and ensures **sustainability**
- A recommendation from the RDA VSSIG

- Prior to SeaDataCloud content governance limited to NVS capturing Registered Owner, **no contact details for governance authority** or records of **governance discussions or details**

Preliminary consultation with NVS stakeholders (including ODIP and the SDC TTG) led to…

Agreed Solution:

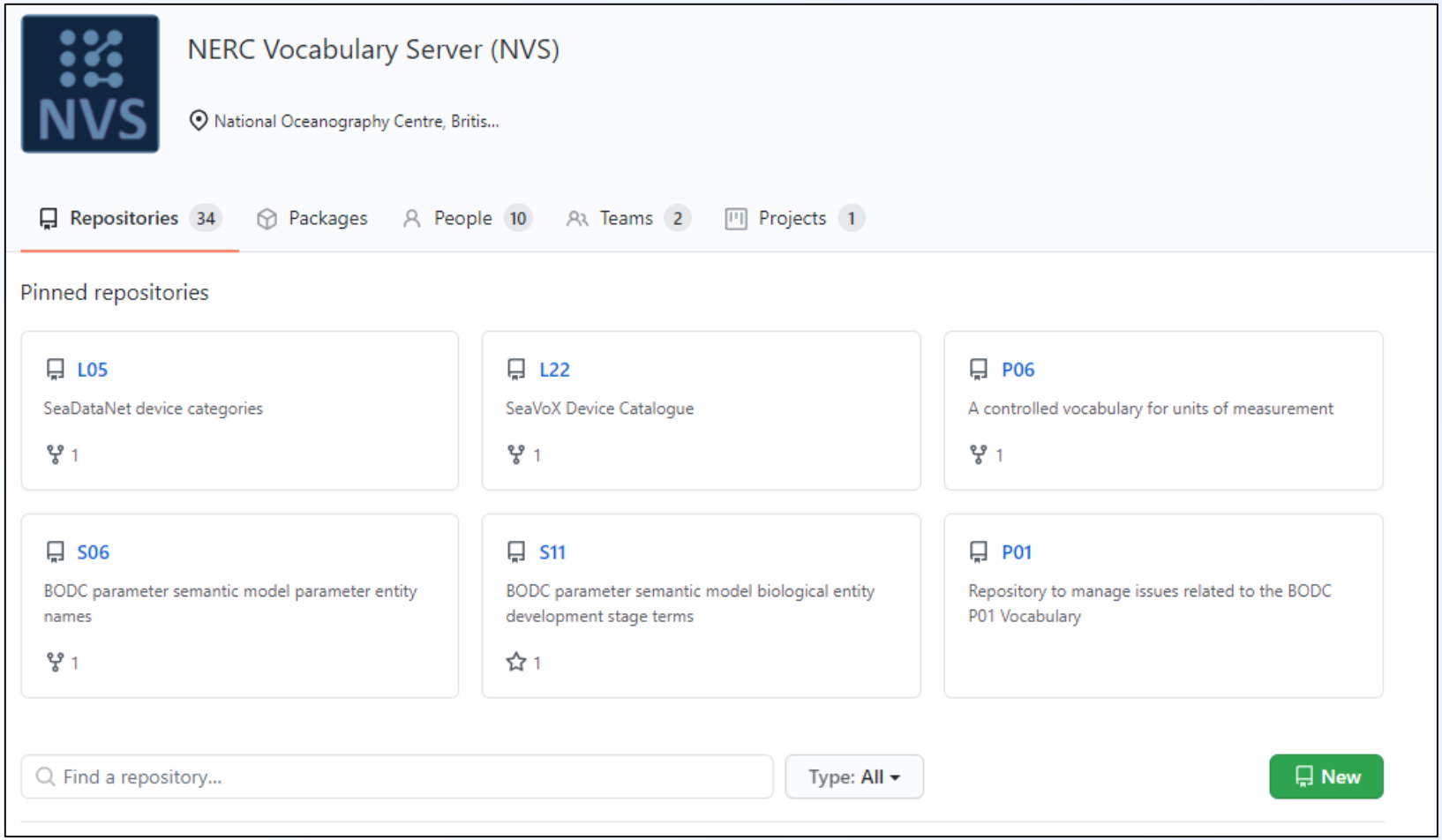
1. **GitHub** setup and creation of repositories for individual vocabulary collections to preserve governance decisions and promote greater collaboration

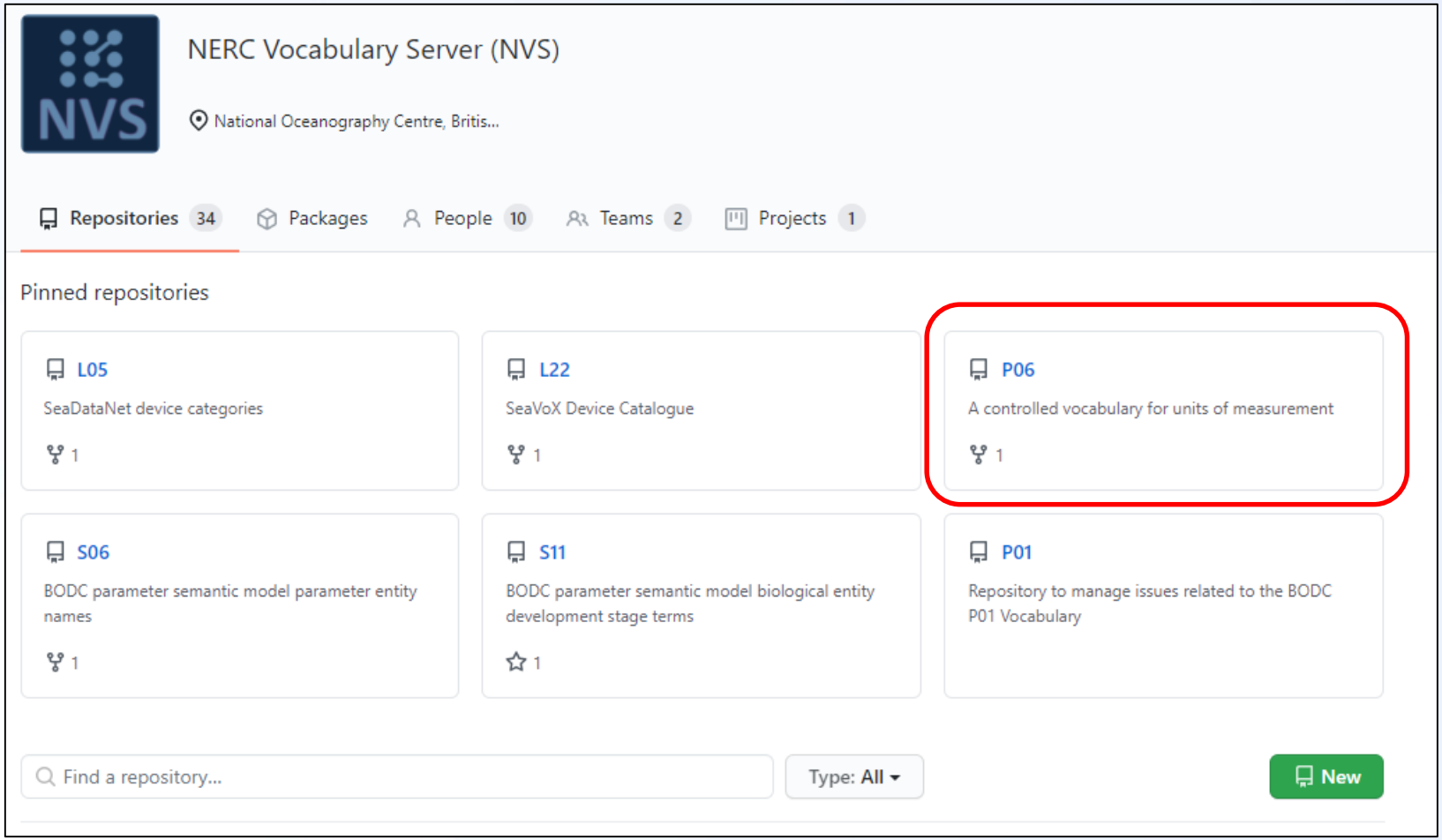
2. Targeting NVS holdings that fall under **NOC-BODC, SeaDataNet or SeaVoX governance**

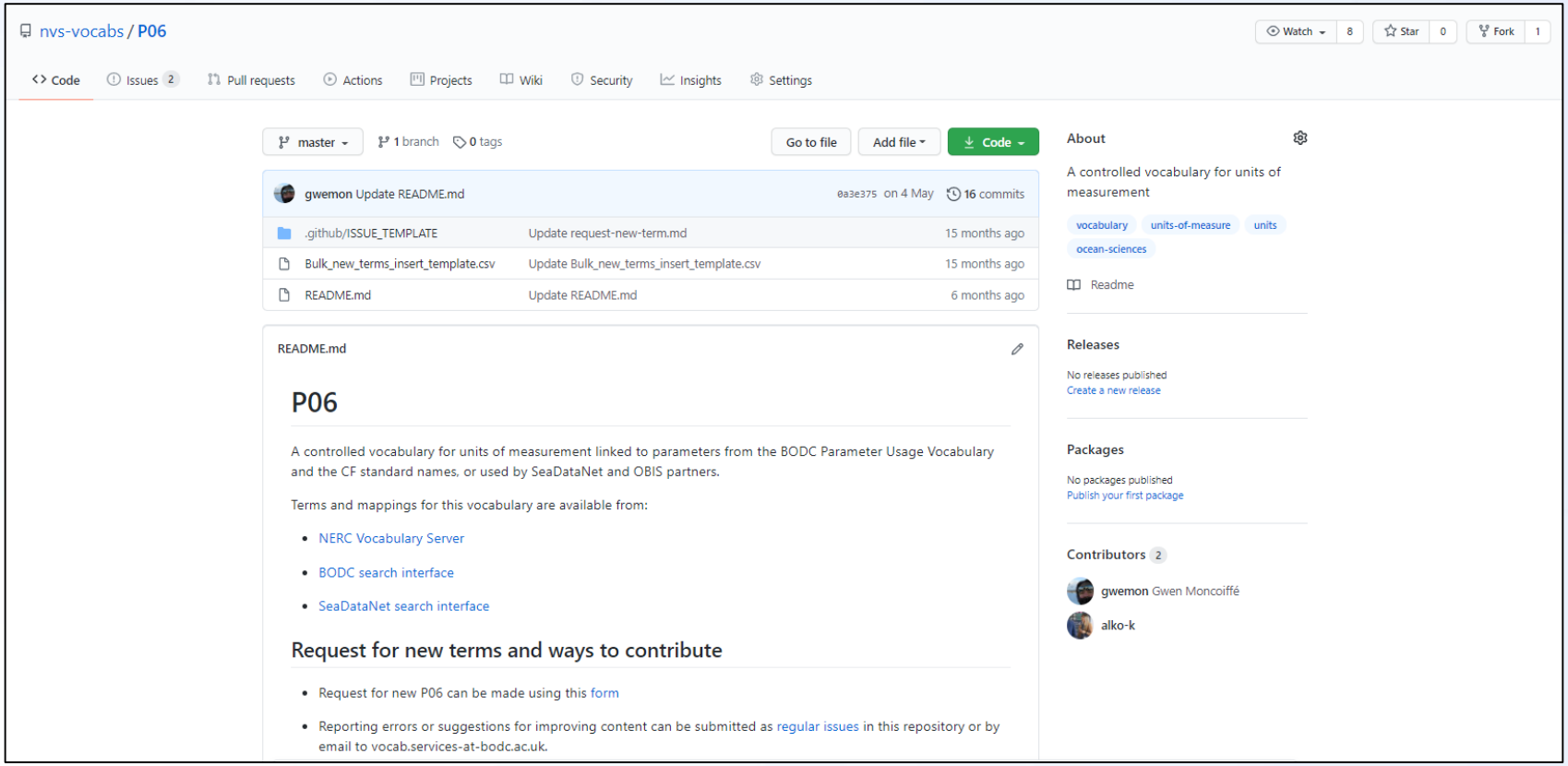
3. **NVS database extension** to include formal links to the GitHub repositories

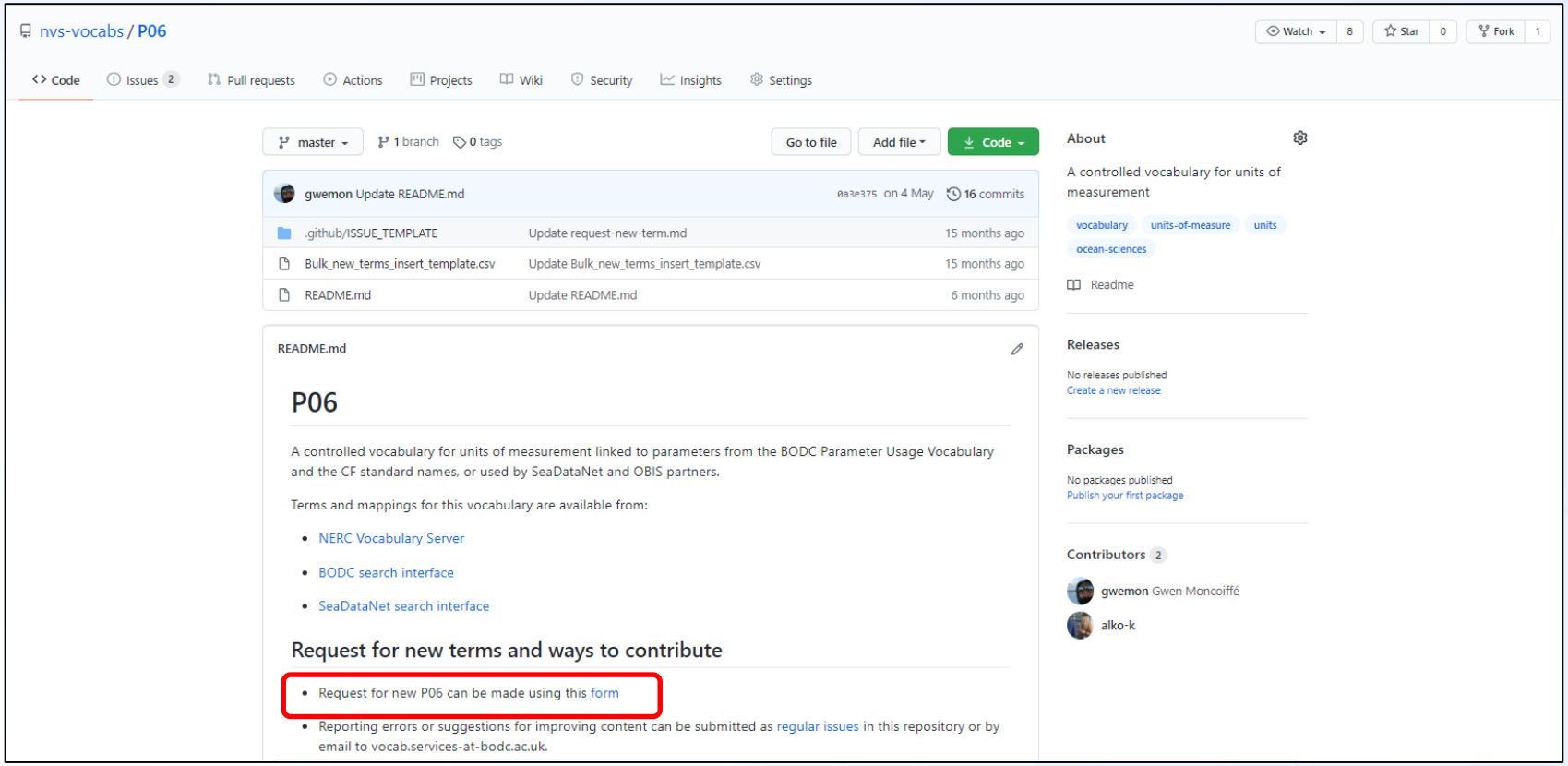
4. **Publication** of the extended NVS infrastructure via our RESTful, SOAP and SPARQL web services

github.com/nvs-vocabs

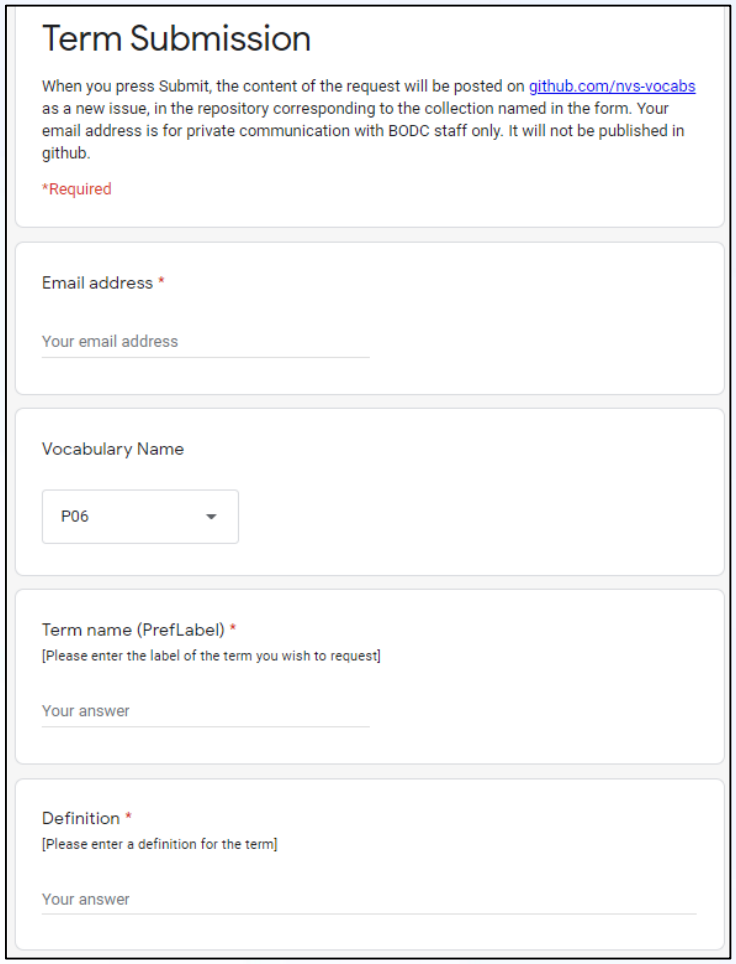



NERC Vocabulary Server (NVS)
National Oceanography Centre, Britis...
Repositories 34
Packages
People 10
Teams 2
Projects 1
Pinned repositories
L05
SeaDataNet device categories
1
L22
SeaVoX Device Catalogue
1
P06
A controlled vocabulary for units of measurement
1
S06
BODC parameter semantic model parameter entity names
1
S11
BODC parameter semantic model biological entity development stage terms
1
P01
Repository to manage issues related to the BODC P01 Vocabulary
Find a repository...
Type: All
New


nvs-vocabs / P06
Watch 8
Star 0
Fork 1
Code
Issues 2
Pull requests
Actions
Projects
Wiki
Security
Insights
Settings
master
1 branch
0 tags
Go to file
Add file
Code
gwemon Update README.md
0a3e375 on 4 May
16 commits
.github/ISSUE_TEMPLATE
Update request-new-term.md
15 months ago
Bulk_new_terms_insert_template.csv
Update Bulk_new_terms_insert_template.csv
15 months ago
README.md
Update README.md
6 months ago
README.md
P06
A controlled vocabulary for units of measurement linked to parameters from the BODC Parameter Usage Vocabulary and the CF standard names, or used by SeaDataNet and OBIS partners.
Terms and mappings for this vocabulary are available from:
NERC Vocabulary Server
BODC search interface
SeaDataNet search interface
Request for new terms and ways to contribute
Request for new P06 can be made using this form
Reporting errors or suggestions for improving content can be submitted as regular issues in this repository or by email to vocab.services-at-bodc.ac.uk.
About
A controlled vocabulary for units of measurement
vocabulary
units-of-measure
units
ocean-sciences
Readme
Releases
No releases published
Create a new release
Packages
No packages published
Publish your first package
Contributors 2
gwemon Gwen Moncoiffé
alko-k


nvs-vocabs / P06
Watch 8
Star 0
Fork 1
Code
Issues 2
Pull requests
Actions
Projects
Wiki
Security
Insights
Settings
master
1 branch
0 tags
Go to file
Add file
Code
gwemon Update README.md
0a3e375 on 4 May
16 commits
.github/ISSUE_TEMPLATE
Update request-new-term.md
15 months ago
Bulk_new_terms_insert_template.csv
Update Bulk_new_terms_insert_template.csv
15 months ago
README.md
Update README.md
6 months ago
README.md
P06
A controlled vocabulary for units of measurement linked to parameters from the BODC Parameter Usage Vocabulary and the CF standard names, or used by SeaDataNet and OBIS partners.
Terms and mappings for this vocabulary are available from:
NERC Vocabulary Server
BODC search interface
SeaDataNet search interface
Request for new terms and ways to contribute
Request for new P06 can be made using this form
Reporting errors or suggestions for improving content can be submitted as regular issues in this repository or by email to vocab.services-at-bodc.ac.uk.
About
A controlled vocabulary for units of measurement
vocabulary
units-of-measure
units
ocean-sciences
Readme
Releases
No releases published
Create a new release
Packages
No packages published
Publish your first package
Contributors 2
gwemon Gwen Moncoiffé
alko-k

Google Form integration



Term Submission

When you press Submit, the content of the request will be posted on github.com/nvs-vocabs as a new issue, in the repository corresponding to the collection named in the form. Your email address is for private communication with BODC staff only. It will not be published in github.

*Required

Email address *

Your email address

Vocabulary Name

P06

Term name (PrefLabel) *

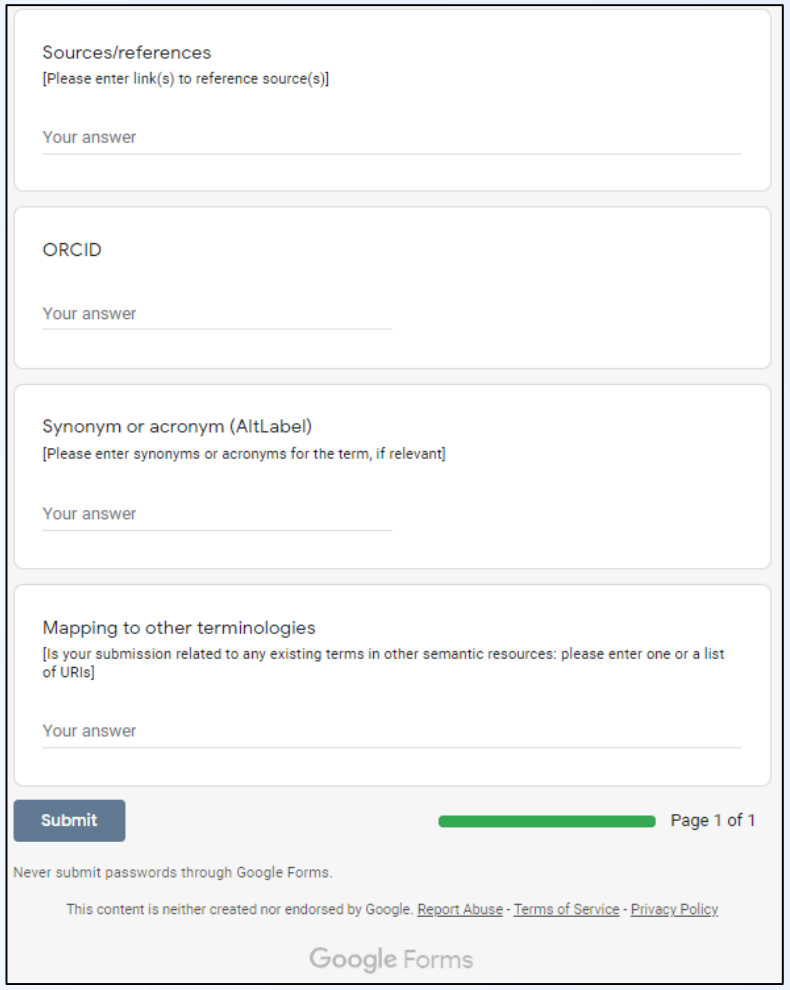
[Please enter the label of the term you wish to request]

Your answer

Definition *

[Please enter a definition for the term]

Your answer



Sources/references

[Please enter link(s) to reference source(s)]

Your answer

ORCID

Your answer

Synonym or acronym (AltLabel)

[Please enter synonyms or acronyms for the term, if relevant]

Your answer

Mapping to other terminologies

[Is your submission related to any existing terms in other semantic resources: please enter one or a list of URIs]

Your answer

Submit

Page 1 of 1

Never submit passwords through Google Forms.

This content is neither created nor endorsed by Google. Report Abuse - Terms of Service - Privacy Policy

Google Forms

rdfs:seeAlso delivered on the RESTful interface

title-:	**BODC-approved data storage units**
alternative-:	**BODC units**
description-:	**Terms approved for use by BODC to describe the measurement units for data held in its repositories.**
date-:	**2020-10-09 03:00:02.0**
publisher-:	**Natural Environment Research Council**
creator-:	**British Oceanographic Data Centre**
versionInfo-:	**122**
comment-:	**Governance for vocabularies used within the data centre**
see also-:	https://github.com/nvs-vocabs/P06

⇑ -- 10^-8 * Cubic metres per kilogram --

URI	http://vocab.nerc.ac.uk/collection/P06/current/UMKS/
Identifier ()	SDN:P06::UMKS
Preferred label (en)	**10^-8 * Cubic metres per kilogram**
Alternative label ()	10^-8m^3kg^-1
Version Info ()	2
Has Current Version	http://vocab.nerc.ac.uk/collection/P06/current/UMKS/2/
PAV Version ()	2
PAV Authored On ()	2019-01-20 17:30:02.0
Definition (en)	Unavailable
Deprecated ()	false
Broader	http://vocab.nerc.ac.uk/collection/P24/current/VOLPERMASS/
Related	http://vocab.nerc.ac.uk/collection/P01/current/NMSKMSXT/
Related	http://dbpedia.org/resource/Kilogram
Related	http://dbpedia.org/resource/Metre
Related	http://vocab.nerc.ac.uk/collection/P01/current/NMSKMSNC/
Date ()	2019-01-20 17:30:02.0

⇑ -- Amperes --

URI	http://vocab.nerc.ac.uk/collection/P06/current/AMPB/
Identifier ()	SDN:P06::AMPB
Preferred label (en)	**Amperes**
Alternative label ()	A
Version Info ()	1
Has Current Version	http://vocab.nerc.ac.uk/collection/P06/current/AMPB/1/
PAV Version ()	1
PAV Authored On ()	2020-04-07 10:42:31.0
Definition (en)	The SI base unit of electric current equal to a flow of one coulomb per second.
Deprecated ()	false
Same as ()	http://qudt.org/vocab/unit/A
Date ()	2020-04-07 10:42:31.0

GitHub repositories also established to…

- **Encourage discussions** related to community-specific vocabulary needs:

  https://github.com/nvs-vocabs/ArgoVocabs

  https://github.com/nvs-vocabs/SWEMarineProfileVocabs

  https://github.com/nvs-vocabs/EMODnetChemVocabs

- **Share technical knowledge**:

  https://github.com/nvs-vocabs/nvsSPARQL

Deprecation of vocabularies

- Meeting our '**social contract**' to maintain published URIs and not litter the WWW with broken links.

Sub-Task established deprecation '**ground rules**':

- NVS terms that are no longer fit for purpose are deprecated, but only if a replacement is available.
- User-experience is not compromised. Auto-replacement of deprecated terms in data served via SeaDataNet. Data Centre alerted of obsolete codes.

- Handling of NVS deprecation by SeaDataNet software

Handling of deprecation – RESTful web services

⇑ -- Temperature of the water body --

URI	http://vocab.nerc.ac.uk/collection/P01/current/TEMPZZXX/
Identifier ()	SDN:P01::TEMPZZXX
Preferred label (en)	**Temperature of the water body**
Alternative label (en)	Temp_(unspec)
Definition (en)	This is an obsolete term for this definition. Use TEMPPR01 instead
Version Info ()	3
Has Current Version	http://vocab.nerc.ac.uk/collection/P01/current/TEMPZZXX/3/
Has Version	http://vocab.nerc.ac.uk/collection/P01/current/TEMPZZXX/2/
Has Version	http://vocab.nerc.ac.uk/collection/P01/current/TEMPZZXX/1/
PAV Version ()	3
PAV Authored On ()	2015-04-09 08:38:40.0
Deprecated()	true
ReplacedBy	http://vocab.nerc.ac.uk/collection/P01/current/TEMPPR01/
Broader	http://vocab.nerc.ac.uk/collection/P02/current/TEMP/
Broader	http://vocab.nerc.ac.uk/collection/P35/current/WATERTEMP/
Broader	http://vocab.nerc.ac.uk/collection/S06/current/S0600082/
Broader	http://vocab.nerc.ac.uk/collection/S26/current/MAT00640/
Related	http://vocab.nerc.ac.uk/collection/P06/current/UPAA/
Related	http://vocab.nerc.ac.uk/collection/S02/current/S032/
Date ()	2015-04-09 08:38:40.0

⇑ -- Temperature of the water body --

URI	http://vocab.nerc.ac.uk/collection/P01/current/TEMPPR01/
Identifier ()	SDN:P01::TEMPPR01
Preferred label (en)	**Temperature of the water body**
Alternative label (en)	Temp
Definition (en)	The degree of hotness of the water column expressed against a standard scale. Includes both IPTS-68 and ITS-90 scales.
Version Info ()	1
Has Current Version	http://vocab.nerc.ac.uk/collection/P01/current/TEMPPR01/1/
PAV Version ()	1
PAV Authored On ()	2009-11-03 16:19:38.0
Deprecated()	false
Replaces	http://vocab.nerc.ac.uk/collection/P01/current/PSSTZZ01/
Replaces	http://vocab.nerc.ac.uk/collection/P01/current/PTMAZZ01/
Replaces	http://vocab.nerc.ac.uk/collection/P01/current/TEMPZZXX/
Same as	http://vocab.nerc.ac.uk/collection/P09/current/TEMP/
Same as	http://vocab.nerc.ac.uk/collection/P09/current/TE01/
Same as	http://vocab.nerc.ac.uk/collection/P09/current/TE02/
Same as	http://vocab.nerc.ac.uk/collection/P09/current/TE03/

Versioning of concepts

- Prior to SeaDataCloud users could only access previous versions of vocabularies at the collection level.
- Sub-Task implemented a mechanism to expose previous versions and version history of vocabularies at the individual concept level

TTG-agreed URI model:

http://vocab.nerc.ac.uk/collection/P07/current/CF12N86/

- Brings the current concept version

http://vocab.nerc.ac.uk/collection/P07/current/CF12N86/1/

- Brings concept version 1

http://vocab.nerc.ac.uk/collection/P07/current/CF12N86/2/

- Brings concept version 2

http://vocab.nerc.ac.uk/collection/P07/current/CF12N86/3/

- Brings concept version 3 etc.

- Linked Data model designed, implemented and tested for collections and concepts

Provenance of mappings

- Delivering information about **who** made a mapping and **when** helps to ensure user confidence
- Extensive discussion and modelling by TTG, considering GDPR
- Unique URIs resolving to RDF describing the mapping and provenance

```
<?xml version="1.0" encoding="UTF-8"?>
- <rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#" xmlns:dc="http://purl.org/dc/terms/" xmlns:org="http://www.w3.org/ns/org#"
  xmlns:prov="http://www.w3.org/ns/prov#" xmlns:foaf="http://xmlns.com/foaf/0.1/" xmlns:reg="http://purl.org/linked-data/registry#">
    - <rdf:Description rdf:about="http://vocab.nerc.ac.uk/mapping/I/804913/">
        <rdf:type rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#Statement"/>
        <rdf:subject rdf:resource="http://vocab.nerc.ac.uk/collection/P01/current/ALATGP01/"/>
        <rdf:predicate rdf:resource="http://www.w3.org/2002/07/owl#sameAs"/>
        <rdf:object rdf:resource="http://vocab.nerc.ac.uk/collection/B39/current/latitude/"/>
      - <reg:submitter rdf:parseType="Resource">
          <rdf:type rdf:resource="http://xmlns.com/foaf/0.1/Person"/>
          <rdf:type rdf:resource="http://www.w3.org/ns/prov#Agent"/>
          <foaf:name>Rob Thomas</foaf:name>
          <foaf:title>Dr</foaf:title>
          <org:memberOf rdf:resource="http://vocab.nerc.ac.uk/collection/C75/current/BOD/"/>
        </reg:submitter>
        <reg:status rdf:resource="http://purl.org/linked-data/registry#statusValid"/>
        <dc:created rdf:datatype="http://www.w3.org/2001/XMLSchema#dateTime">2016-01-14 11:01:44</dc:created>
    </rdf:Description>
</rdf:RDF>
```

Provenance of mappings

- Delivering information about **who** made a mapping and **when** helps to ensure user confidence
- Extensive discussion and modelling by TTG, considering GDPR
- Unique URIs resolving to RDF describing the mapping and provenance

```
<?xml version="1.0" encoding="UTF-8"?>
- <rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#" xmlns:dc="http://purl.org/dc/terms/" xmlns:org="http://www.w3.org/ns/org#"
  xmlns:prov="http://www.w3.org/ns/prov#" xmlns:foaf="http://xmlns.com/foaf/0.1/" xmlns:reg="http://purl.org/linked-data/registry#">
    - <rdf:Description rdf:about="http://vocab.nerc.ac.uk/mapping/I/804913/">
        <rdf:type rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#Statement"/>
        <rdf:subject rdf:resource="http://vocab.nerc.ac.uk/collection/P01/current/ALATGP01/"/>
        <rdf:predicate rdf:resource="http://www.w3.org/2002/07/owl#sameAs"/>
        <rdf:object rdf:resource="http://vocab.nerc.ac.uk/collection/B39/current/latitude/"/>
      - <reg:submitter rdf:parseType="Resource">
          <rdf:type rdf:resource="http://xmlns.com/foaf/0.1/Person"/>
          <rdf:type rdf:resource="http://www.w3.org/ns/prov#Agent"/>
          <foaf:name>Rob Thomas</foaf:name>
          <foaf:title>Dr</foaf:title>
          <org:memberOf rdf:resource="http://vocab.nerc.ac.uk/collection/C75/current/BOD/"/>
        </reg:submitter>
        <reg:status rdf:resource="http://purl.org/linked-data/registry#statusValid"/>
        <dc:created rdf:datatype="http://www.w3.org/2001/XMLSchema#dateTime">2016-01-14 11:01:44</dc:created>
    </rdf:Description>
</rdf:RDF>
```

Provenance of mappings

- Delivering information about **who** made a mapping and **when** helps to ensure user confidence
- Extensive discussion and modelling by TTG, considering GDPR
- Unique URIs resolving to RDF describing the mapping and provenance

```
<?xml version="1.0" encoding="UTF-8"?>
- <rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#" xmlns:dc="http://purl.org/dc/terms/" xmlns:org="http://www.w3.org/ns/org#"
  xmlns:prov="http://www.w3.org/ns/prov#" xmlns:foaf="http://xmlns.com/foaf/0.1/" xmlns:reg="http://purl.org/linked-data/registry#">
    - <rdf:Description rdf:about="http://vocab.nerc.ac.uk/mapping/I/804913/">
        <rdf:type rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#Statement"/>
        <rdf:subject rdf:resource="http://vocab.nerc.ac.uk/collection/P01/current/ALATGP01/"/>
        <rdf:predicate rdf:resource="http://www.w3.org/2002/07/owl#sameAs"/>
        <rdf:object rdf:resource="http://vocab.nerc.ac.uk/collection/B39/current/latitude/"/>
      - <reg:submitter rdf:parseType="Resource">
            <rdf:type rdf:resource="http://xmlns.com/foaf/0.1/Person"/>
            <rdf:type rdf:resource="http://www.w3.org/ns/prov#Agent"/>
            <foaf:name>Rob Thomas</foaf:name>
            <foaf:title>Dr</foaf:title>
            <org:memberOf rdf:resource="http://vocab.nerc.ac.uk/collection/C75/current/BOD/"/>
        </reg:submitter>
        <reg:status rdf:resource="http://purl.org/linked-data/registry#statusValid"/>
        <dc:created rdf:datatype="http://www.w3.org/2001/XMLSchema#dateTime">2016-01-14 11:01:44</dc:created>
    </rdf:Description>
</rdf:RDF>
```

Provenance of mappings

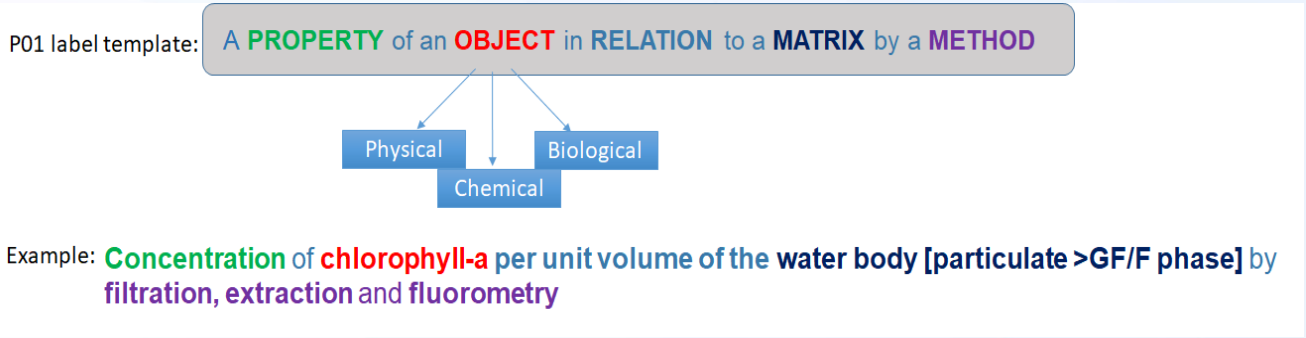
- Delivering information about **who** made a mapping and **when** helps to ensure user confidence
- Extensive discussion and modelling by TTG, considering GDPR
- Unique URIs resolving to RDF describing the mapping and provenance

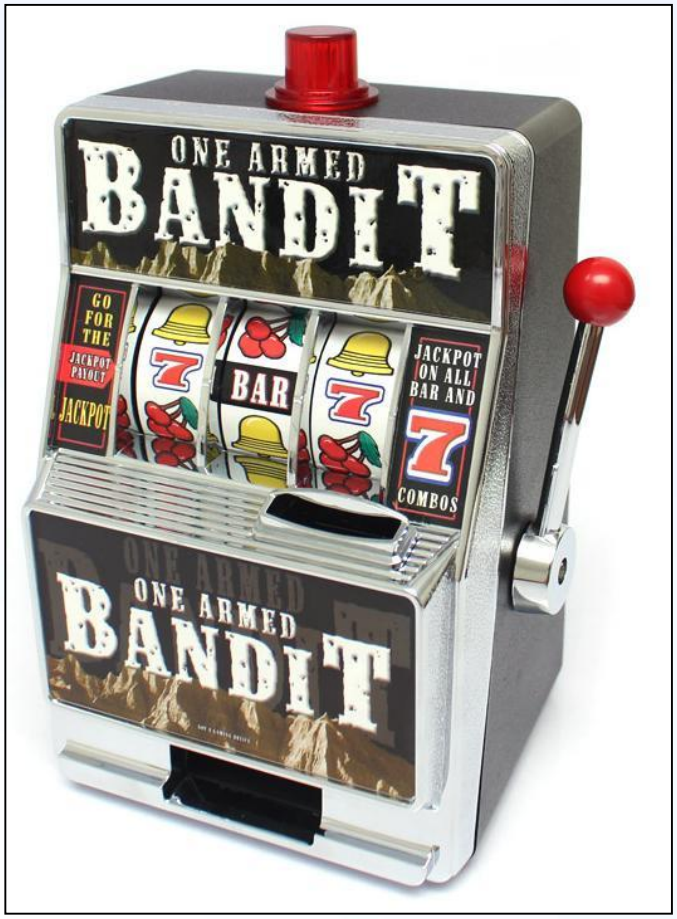
```
<?xml version="1.0" encoding="UTF-8"?>
- <rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#" xmlns:dc="http://purl.org/dc/terms/" xmlns:org="http://www.w3.org/ns/org#"
  xmlns:prov="http://www.w3.org/ns/prov#" xmlns:foaf="http://xmlns.com/foaf/0.1/" xmlns:reg="http://purl.org/linked-data/registry#">
    - <rdf:Description rdf:about="http://vocab.nerc.ac.uk/mapping/I/804913/">
        <rdf:type rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#Statement"/>
        <rdf:subject rdf:resource="http://vocab.nerc.ac.uk/collection/P01/current/ALATGP01/"/>
        <rdf:predicate rdf:resource="http://www.w3.org/2002/07/owl#sameAs"/>
        <rdf:object rdf:resource="http://vocab.nerc.ac.uk/collection/B39/current/latitude/"/>
      - <reg:submitter rdf:parseType="Resource">
          <rdf:type rdf:resource="http://xmlns.com/foaf/0.1/Person"/>
          <rdf:type rdf:resource="http://www.w3.org/ns/prov#Agent"/>
          <foaf:name>Rob Thomas</foaf:name>
          <foaf:title>Dr</foaf:title>
          <org:memberOf rdf:resource="http://vocab.nerc.ac.uk/collection/C75/current/BOD/"/>
        </reg:submitter>
        <reg:status rdf:resource="http://purl.org/linked-data/registry#statusValid"/>
        <dc:created rdf:datatype="http://www.w3.org/2001/XMLSchema#dateTime">2016-01-14 11:01:44</dc:created>
    </rdf:Description>
</rdf:RDF>
```

Operationalise the vocabulary builder

- Extension and operationalisation of the pilot NVS Vocabulary Builder tool developed under EMODnet Chemistry

- Users can browse the semantic building blocks of P01
- Registered users can submit new terms





Resources › Vocabularies › Vocabulary builder

P01 Physical Entity and Other Parameter Code Builder help

Preferred label

show/hide match results | reset all

Found **6294** matches

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

Resources › Vocabularies › Vocabulary builder

P01 Biological Entity Parameter Code Builder help

Preferred label

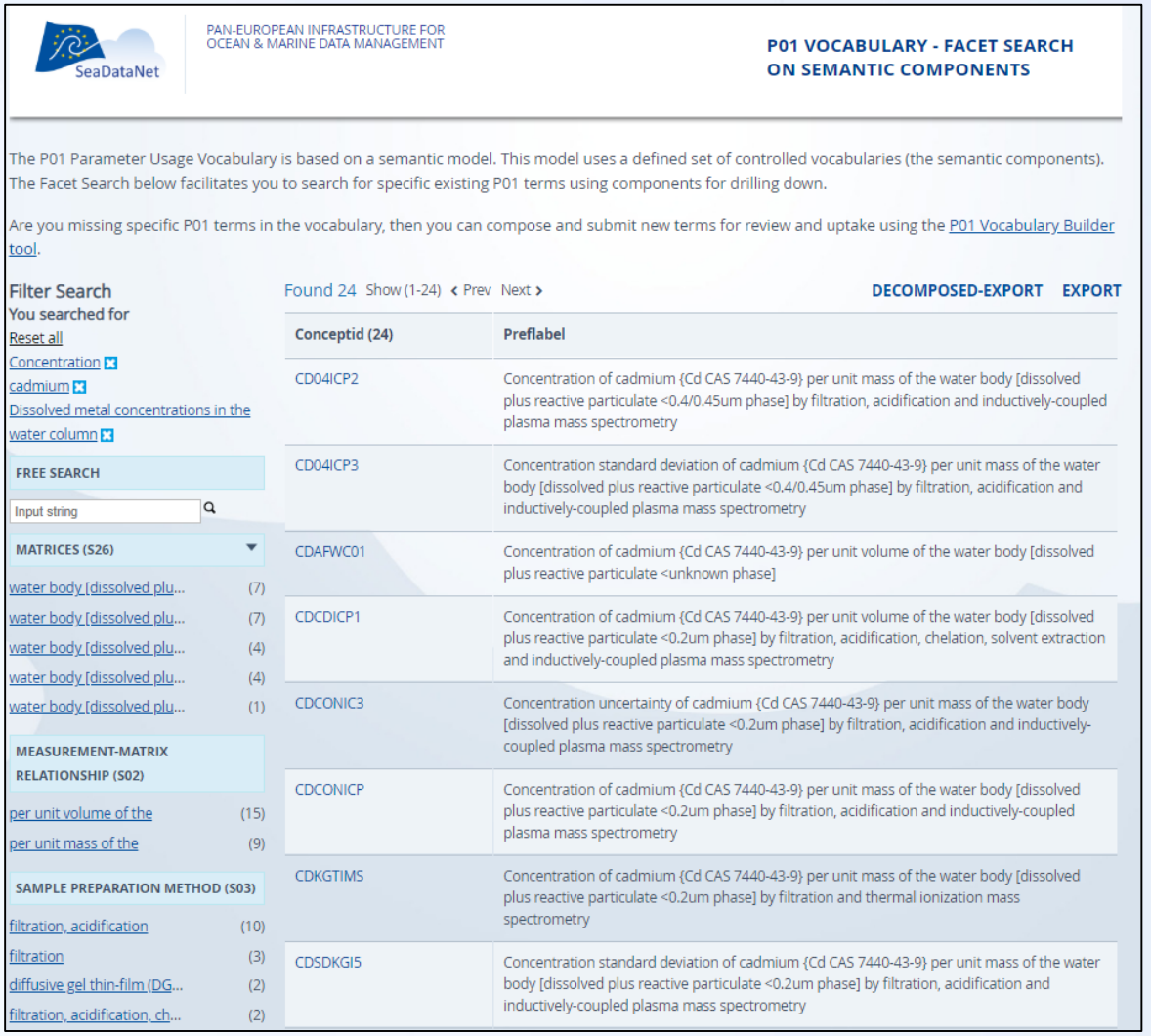
show/hide match results | reset all

Found **10734** matches

- Select a measurement property
- Select a statistical qualifier (if applicable)
- Select a primary biological entity
- Select a secondary biological 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)

MARIS search facet:

- Alternative (and complementary) search tool
- Drill down catalogue enabling lookup of terms
- Export functionality includes option to break down the P01 label into its composite semantic elements



PAN-EUROPEAN INFRASTRUCTURE FOR OCEAN & MARINE DATA MANAGEMENT

P01 VOCABULARY - FACET SEARCH ON SEMANTIC COMPONENTS

The P01 Parameter Usage Vocabulary is based on a semantic model. This model uses a defined set of controlled vocabularies (the semantic components). The Facet Search below facilitates you to search for specific existing P01 terms using components for drilling down.

Are you missing specific P01 terms in the vocabulary, then you can compose and submit new terms for review and uptake using the P01 Vocabulary Builder tool.

Filter Search

You searched for
Reset all
Concentration
cadmium
Dissolved metal concentrations in the water column

FREE SEARCH
Input string

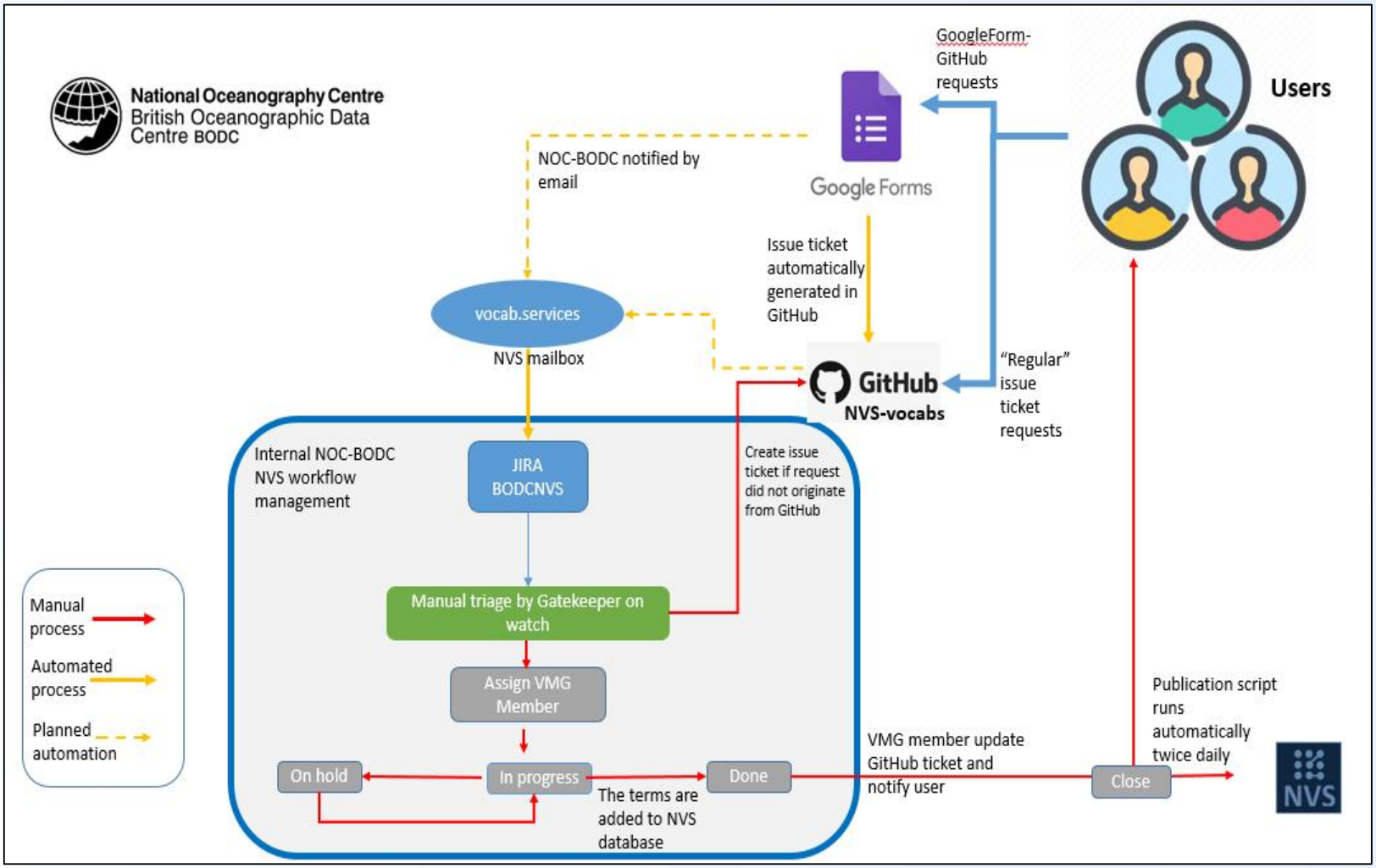
MATRICES (S26)
water body [dissolved plu... (7)
water body [dissolved plu... (7)
water body [dissolved plu... (4)
water body [dissolved plu... (4)
water body [dissolved plu... (1)

MEASUREMENT-MATRIX RELATIONSHIP (S02)
per unit volume of the (15)
per unit mass of the (9)

SAMPLE PREPARATION METHOD (S03)
filtration, acidification (10)
filtration (3)
diffusive gel thin-film (DG... (2)
filtration, acidification, ch... (2)

Found 24 Show (1-24) < Prev Next > DECOMPOSED-EXPORT EXPORT

Conceptid (24)	Preflabel
CD04ICP2	Concentration of cadmium {Cd CAS 7440-43-9} per unit mass of the water body [dissolved plus reactive particulate <0.4/0.45um phase] by filtration, acidification and inductively-coupled plasma mass spectrometry
CD04ICP3	Concentration standard deviation of cadmium {Cd CAS 7440-43-9} per unit mass of the water body [dissolved plus reactive particulate <0.4/0.45um phase] by filtration, acidification and inductively-coupled plasma mass spectrometry
CDAFWC01	Concentration of cadmium {Cd CAS 7440-43-9} per unit volume of the water body [dissolved plus reactive particulate <unknown phase]
CDCDICP1	Concentration of cadmium {Cd CAS 7440-43-9} per unit volume of the water body [dissolved plus reactive particulate <0.2um phase] by filtration, acidification, chelation, solvent extraction and inductively-coupled plasma mass spectrometry
CDCONIC3	Concentration uncertainty of cadmium {Cd CAS 7440-43-9} per unit mass of the water body [dissolved plus reactive particulate <0.2um phase] by filtration, acidification and inductively-coupled plasma mass spectrometry
CDCONICP	Concentration of cadmium {Cd CAS 7440-43-9} per unit mass of the water body [dissolved plus reactive particulate <0.2um phase] by filtration, acidification and inductively-coupled plasma mass spectrometry
CDKGTIMS	Concentration of cadmium {Cd CAS 7440-43-9} per unit mass of the water body [dissolved plus reactive particulate <0.2um phase] by filtration and thermal ionization mass spectrometry
CDSDKGI5	Concentration standard deviation of cadmium {Cd CAS 7440-43-9} per unit mass of the water body [dissolved plus reactive particulate <0.2um phase] by filtration, acidification and inductively-coupled plasma mass spectrometry


National Oceanography Centre
British Oceanographic Data Centre BODC
GoogleForm-GitHub requests
Users
NOC-BODC notified by email
Google Forms
Issue ticket automatically generated in GitHub
vocab.services
NVS mailbox
GitHub
NVS-vocabs
"Regular" issue ticket requests
Internal NOC-BODC NVS workflow management
JIRA BODCNVS
Create issue ticket if request did not originate from GitHub
Manual triage by Gatekeeper on watch
Assign VMG Member
On hold
In progress
Done
The terms are added to NVS database
VMG member update GitHub ticket and notify user
Close
Publication script runs automatically twice daily
NVS
Manual process
Automated process
Planned automation

Vocabulary growth

- Constant update to core vocabularies and services underpinning SeaDataNet to **support growth, new developments and promote greater interoperability** with other data networks.

- **New collections and concepts to support specific communities**, e.g:
  - WP9 new data streams – flow cytometry, HF Radar, gliders
  - OGC SWE
  - EMODnet Chemistry – micro-litter, contaminants (and other EMODnet Lots)
  - ENVRI-FAIR – Argo

- NVS growth also reflects uptake of SeaDataNet Common Vocabularies by wider international community (e.g. ODIP, OBIS) and **formal mappings within NVS and other semantic resources** (e.g. ChEBI, WoRMS, ICES vocabularies)

SeaDataCloud

Growth in numbers

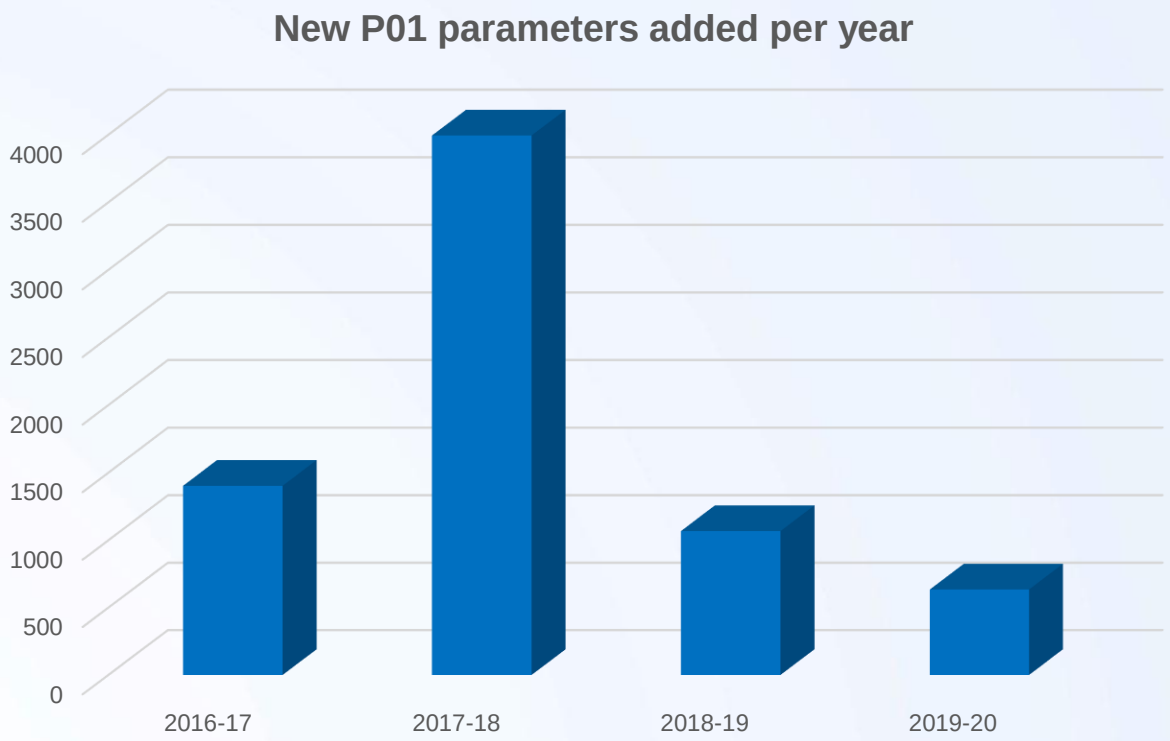
NVS growth during SeaDataCloud:

- **8** new governing authorities (e.g. ADMT, HELCOM, OSPAR, OceanGliders)
- **47** new collections
- **14,748** new concepts were added to collections
- **5,583** existing concepts were modified (descriptions improved, terms broadened)
- **310** concepts were deprecated
- Internal mappings grew by **79%**
- External mappings grew by **65%**

Growth in numbers (1st November 2016 – 30th September 2020)

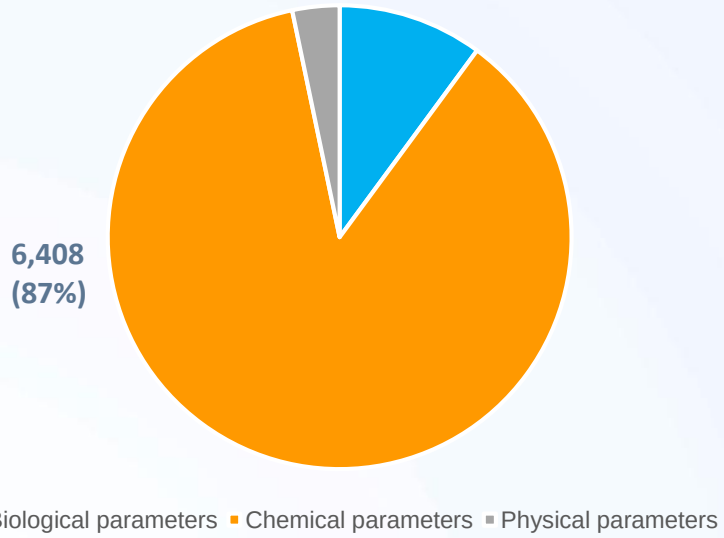
Collection ID	Collection title	Collection governance	Number of new terms added
P01	BODC Parameter Usage Vocabulary	BODC	7298
C17	ICES Platform Codes	ICES	2115
P07	Climate and Forecast Standard Names	CF	1844
S27	BODC parameter semantic model chemical substances	BODC	845
S25	BODC parameter semantic model biological entity names	BODC	671
L22	SeaVoX Device Catalogue	SVX	535
M23	HELCOM 'HUB' Underwater Biotope and Habitat Classification System	HELCOM	396
S05	BODC parameter semantic model data processing entity descriptions	BODC	213
S06	BODC parameter semantic model parameter entity names	BODC	187

Growth visualised

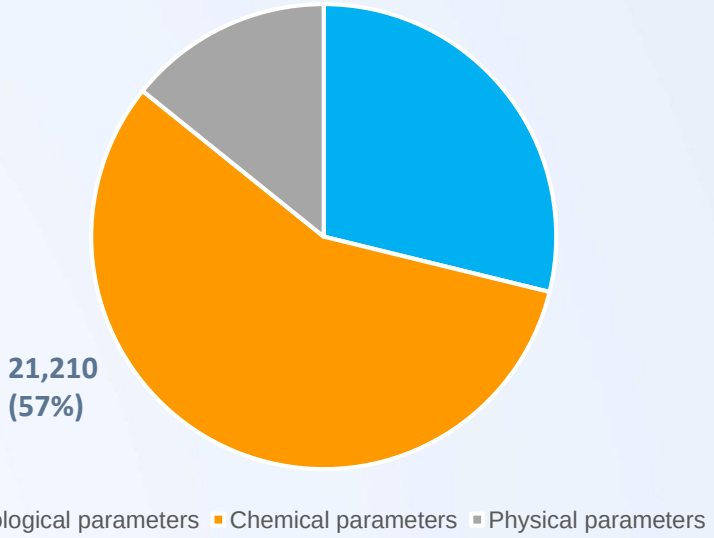


Growth visualised

P01 codes added between 2016-2020

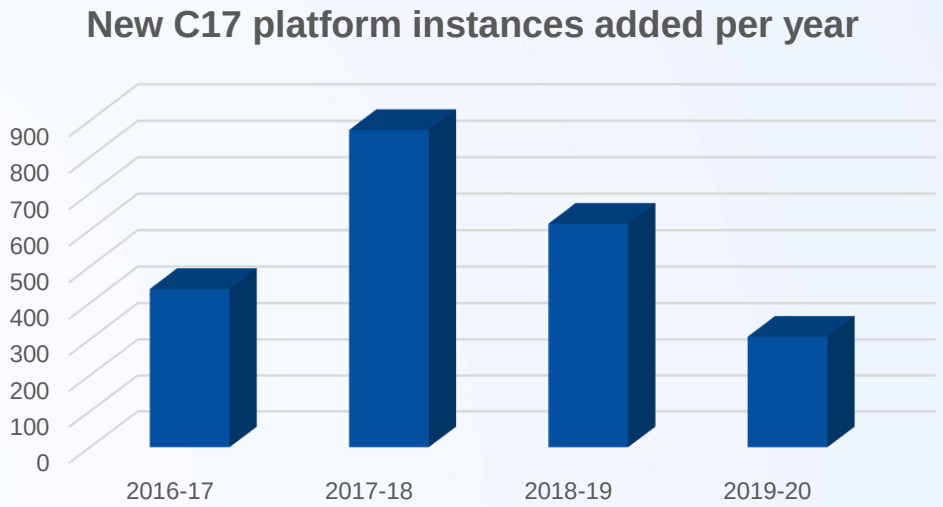


All valid P01 codes



Progressing the Platform Register

- Good progress with the harmonisation of platform vocabularies over SeaDataCloud
- Bringing together the **JCOMMOPS Voluntary Observing Ship (VOS) database** with the ICES Reference Code (RECO) platform register and subsequently into C17.
- Growth also reflects wider ongoing efforts to synchronise between RECO and C17 and routine additions of new platform instances, including influx of glider platforms.



WP8.2 Application of Linked Data principles for the common SeaDataNet directories (EDMED, EDMERP, EDMO, CSR, EDIOS and CDI)

- **Linked Data** – a mechanism for publishing structured data on the World Wide Web and using web addresses to provide connections between data objects.

- By careful review and adoption of relevant published Linked Data Standards we have an opportunity to:

➢ Improve connectivity within the SeaDataNet infrastructure

➢ Achieve greater interoperability with other organisations and networks

➢ Comply with INSPIRE

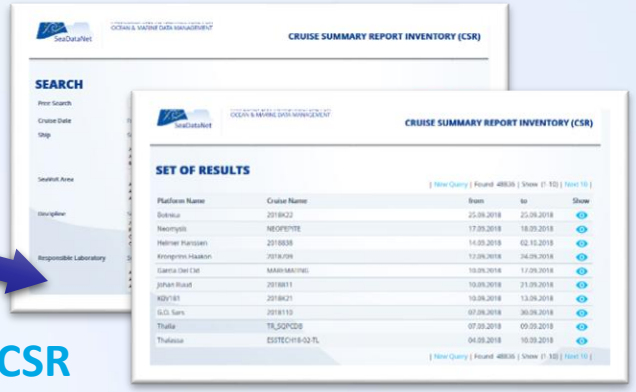
A Web of Data, not a Web of Documents

EDMERP

Projects

Organisations

EDMO

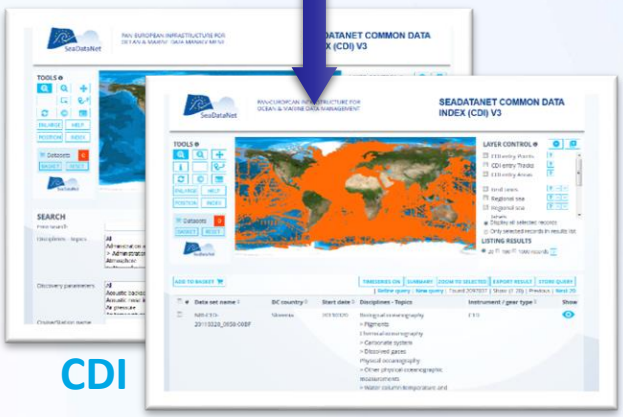


CSR

Research cruises

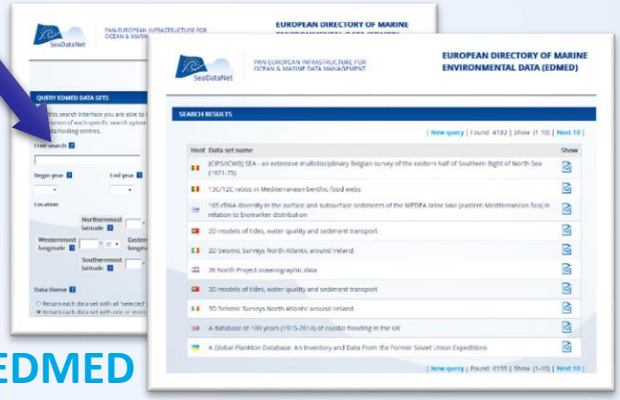
EDIOS

Observing programmes



CDI

Data index



EDMED

Data sets

Deliverable D8.3

- Detailed technical scoping for Linked Data implementation in SeaDataNet catalogues
- Outlining published Standards available for the SeaDataNet catalogues and associate mappings (including schema.org for exposure via Google Dataset Search)
- Recommendations for realisation as Linked Data resources

Deliverable D8.4

- Implementation of Linked Data principles – catalogue content stored as RDF triples and served via SPARQL Endpoints
- Harmonised ‘clean’ URI conventions for the SPARQL Endpoints
- Content negotiation for delivery via these URIs (serving human and machine-machine data transfer)

SeaDataNet

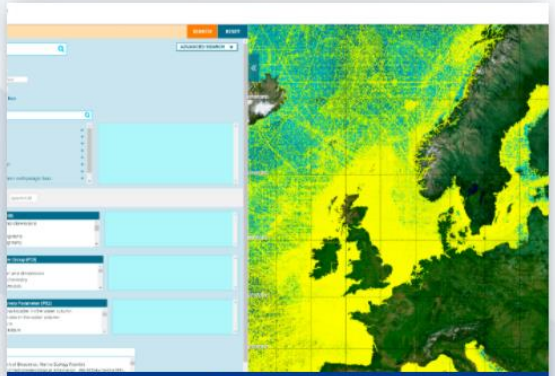
PAN-EUROPEAN INFRASTRUCTURE
FOR OCEAN & MARINE DATA
MANAGEMENT

**SEADATANET COMMON DATA INDEX (CDI)
DATA DISCOVERY AND ACCESS SERVICE**

CDI LANDING PAGE

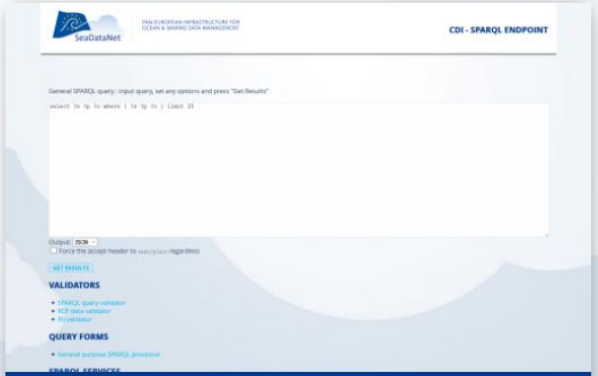
The SeaDataNet Common Data Index (CDI) service gives users a highly detailed insight in the availability and geographical spreading of marine data sets that are managed by more than 100 marine and oceanographic data centres, located in 34 countries, around and riparian to European seas. Moreover, it provides a unique interface for requesting access, and if granted, for downloading subsets from the rich and steadily increasing volume of marine data sets for physics, chemistry, geology, biology, geophysics, and bathymetry that these distributed data centres are managing. Currently, the CDI service gives access to more than 2.2 million metadata records and associated data sets, in majority in SeaDataNet standard data formats and using the SeaDataNet controlled vocabularies for many aspects next to free text.
CDI offers two interfaces, a regular HTML interface for "human users" and a SPARQL Endpoint for machine applications.

HTML SEARCH



CDI - HTML Search

SPARQL ENDPOINT



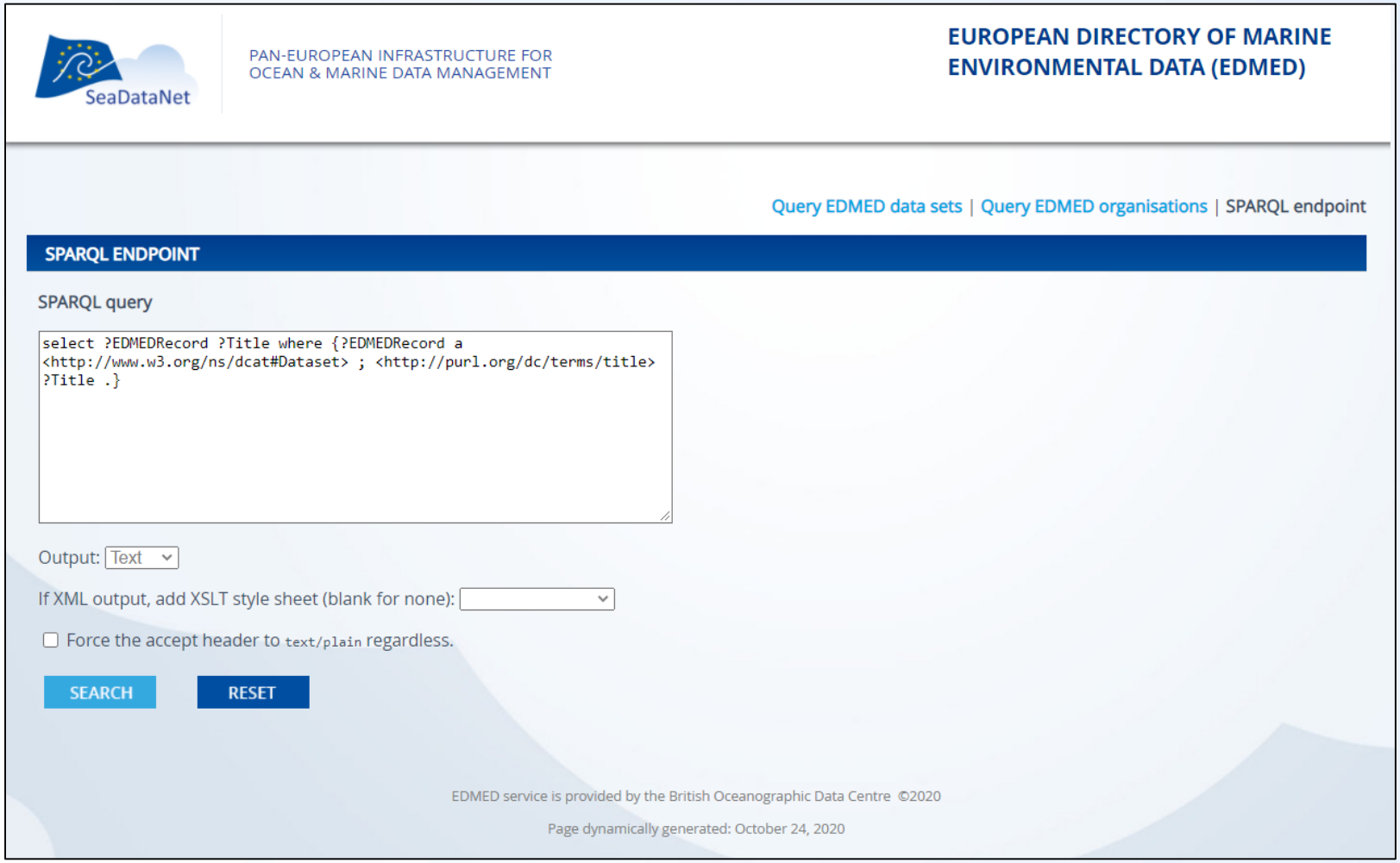
CDI - SPARQL Endpoint

The SPARQL endpoint follows the W3C rules and allows data to be harvested and indexed by machines applications like search engines. On the SPARQL endpoints webpage you will find the references to documentation how to use it.
The CDI V5 service provides powerful search options by combining full free search, facet search and geographic search options, powered by Elastic Search, SQL search, and Geo Server. In addition, users are provided with an integrated and effective data shopping, tracking and download service mechanism which gives a unique and harmonised access to the data sets, that are managed and contributed by the connected data centres.

The CDI service has been adopted by several European projects and drives the data search and access in multiple EMODnet portals. More data centres from Europe are invited to connect, this way increasing and expanding the availability of marine and ocean data sets for physics, biology, chemistry, marine litter, geology, geophysics, and bathymetry.

More details about the CDI service

How to contribute?


SeaDataNet
PAN-EUROPEAN INFRASTRUCTURE FOR
OCEAN & MARINE DATA MANAGEMENT
EUROPEAN DIRECTORY OF MARINE
ENVIRONMENTAL DATA (EDMED)
Query EDMED data sets | Query EDMED organisations | SPARQL endpoint
SPARQL ENDPOINT
SPARQL query
select ?EDMEDRecord ?Title where {?EDMEDRecord a
<http://www.w3.org/ns/dcat#Dataset> ; <http://purl.org/dc/terms/title>
?Title .}
Output: Text
If XML output, add XSLT style sheet (blank for none):
Force the accept header to text/plain regardless.
SEARCH
RESET
EDMED service is provided by the British Oceanographic Data Centre ©2020
Page dynamically generated: October 24, 2020

ellett line

Usage rights | Topic | Free | Saved data sets

SAMS

The Ellett Line and Extended Ellett Line CTD Section (1975-)

Explore at European Directory of Marin...

Data set updated Jan 30, 2017

Data set provided by

The Scottish Association for Marine Science

Licence

SeaDataNet licence

Time period covered

Jan 1, 1975 - Present

Area covered

Description

The fundamental dataset consists of full water column temperature and salinity profiles and later on, discrete inorganic nutrient data as well. The Extended Ellett Line consists of 58 identified stations between the North West coast of Scotland and Iceland, crossing the Scottish shelf, Rockall Channel and Iceland Basin. It has been occupied at least annually since September 1996. Prior to this date the section terminated at Rockall, with no observations made in the Iceland Basin. Between 1975 and January 1996 there were usually multiple occupations of this early section in a single year (sometimes as many as five), many of which targeted only a selection of the 35 stations collectively recognised today. Over the years various names were used to describe the hydrographic section (or components of it): The Rockall Section, The Anton Dohrn Seamount Section, The Shelf-Edge-Sound of Mull Section. These are now collectively termed the Ellett Line, after the scientist, David Ellett, who coordinated much of this early work. The Extended Ellett Line is the current title for a repeat hydrographic section with origins dating back to 1975. The water column profiles were collected using STDs/CTDs at recognised fixed stations along the section. The discrete inorganic nutrient data are obtained from water bottles fired at multiple depths on each profile, although these data are absent (or more limited) in the earlier stages of the time series. The overall Ellett Line/Extended Ellett Line dataset is recognised as a key oceanographic time series. Several important water masses are captured within it – water masses which help drive ocean thermohaline circulation and consequently regulate climate on a global scale. The multi-decadal nature of the dataset provides a rare opportunity for scientists to monitor changing ocean circulation patterns. Ellett Line occupations were first carried out by the Scottish Marine Biological Association (SMBA), now the Scottish Association for Marine Science (SAMS). The Iceland extension of the Line in 1996 also marked a move to joint maintenance, with Southampton Oceanography Centre (SOC), now the National Oceanography Centre (NOC), sharing the responsibility with SAMS.

WP8.3 Data formats and INSPIRE

D8.6 - Review of data formats, also considering the INSPIRE data models

- Looked to address SeaDataNet's aspirations of full alignment to INSPIRE Directive
- Examination of relevant INSPIRE themes - Environmental Monitoring Facilities (EF) and Oceanographic Features (OF), also considering Observations and Measurements (O&M) data model
- Proof of concept implementation mappings for various types of observations (mapping between INSPIRE and SeaDataNet schema)

- Review of SeaDataNet migration from NetCDF v3.6 to v4.0
- Formalised SeaDataNet NetCDF (CF) format for gridded data

WP8.3 Data formats and INSPIRE

Post D8.6 follow up:

- INSPIRE-aligned Mediterranean nutrient data assembled by OGS (SDN ODV – INSPIRE data model). Review by INSPIRE team of JRC and tuning

- WP9 activity around data/metadata validation and SDN-INSPIRE transformation services.

Work Package Deliverables

- D8.1: Report outlining vocabulary governance model, system for deprecation of vocabularies, versioning of concepts and provenance of mappings (M24)
- D8.2: Report outlining the status of the common vocabularies and vocabulary server, including vocabulary builder and new vocabularies added (M48)
- D8.3: Updated metadata formats and related XML schemas (M8)
- D8.4: Pilot SPARQL (RDF) Endpoints for EDMED, EDMERP, EDMO, CSR, EDIOS and CDI operational (M14)
- D8.5: Developing upgraded REST interfaces where needed (M18)
- D8.6: Review of data formats, also considering INSPIRE data models (M12)
- D8.7: AAI integration with GEANT/eduGain (shibboleth federation of identity) and social networks (Oauth, OpenID) and possible other AAI systems (e.g. Copernicus) (M24)
- D8.8: Upgraded monitoring system operational (M24)

Final thought from WP8…

- Significant technical advancement over the last four years, but only possible through **people**
- We've **removed silos**, strengthened existing **relationships** and forged new ones
- Our '**human interoperability**' continues through maintaining the SeaDataNet infrastructure, EMODnet, ENVRI-FAIR, RDA…