



**Dear observable property terminology providers and consumers,**

**Your responses to this questionnaire will contribute to our RDA I-ADOPT Working Group's task to document existing terminologies and digital objects' annotation practices used for the naming and description of measured, observed, or modelled variables. This information should enable us to build a good understanding of the various approaches; to identify overlaps, complementarity and gaps; to assess how they meet user requirements and reach consensus on a common interoperability framework.**

**We encourage you to submit terminology examples related to observable properties connected to the nitrogen case study. This is because we want to use these examples to compare the various approaches and this is easier done when applied to similar kinds of observations. However, if you do not have any nitrogen-related terms then please submit examples which are most representative of your own domain or user community.**

**If you are a provider of more than one terminology you are kindly asked to fill in the questionnaire for each terminology separately.**

**Please contact the group by emailing [gmon@bodc.ac.uk](mailto:gmon@bodc.ac.uk) if you have any questions or by posting an issue on: <https://github.com/i-adopt/terminologies>**

**Looking forward to your contribution. Best regards,**

**The RDA I-ADOPT Working Group**

**(\*) We use the term "terminology" as the overarching name for any set of fixed denotations that are used to describe something with the goal to reduce ambiguity and facilitate interoperability. A terminology can range from a simple controlled vocabulary (a simple list of terms) to a complex ontology (formal definitions of terms and their relations semantically expressed in a machine-readable way). This term may also include taxonomies, thesauri, or any other kinds of knowledge organization sources.**

**The chairs of I-ADOPT**



## **Section A: Entry question**

- A1. Are you a provider or a consumer of the observable property terminology that you are describing?**

*In other words,*

*do you help develop, provide, or recommend this terminology to be used by others or  
do you use this terminology in your work and do you apply an annotation practice you want to share with the community?*

terminology provider (you create, host or manage a terminology)

consumer (you use a terminology for data annotation or other purposes)

both

## **Section B: General questions related to the observable property terminology you want to describe**

- B1. What is the name and the URL of the terminology you want to describe?**

*The terminology must be related to the naming and/or description of observable properties*

Name of the terminology								
URL of the terminology								

- B2. In what role(s) are you involved with the terminology?**

developer	<input type="checkbox"/>
curator	<input type="checkbox"/>
administrator	<input type="checkbox"/>
publisher	<input type="checkbox"/>
consumer	<input type="checkbox"/>
Other	<input type="checkbox"/>

## Other



**B3. Please give a brief description of the terminology**

**B4. Which domain(s) is/are the terminology representing?**

terrestrial ecosystems

biodiversity

aquatic ecosystems

hydrology

oceanography

glaciology

atmospheric science

climatology and meteorology

solid earth science

soil science

remote sensing

agricultural science

Other



Other

**B5. Please name the main data repository, system or data product that uses the terminology for observable properties.**

Name

URL



- B6.** Do you know of any other data repository, system or data product using the terminology of observable property? If so, please provide a list below.

*Please provide the name and the URL (if possible) of each resource in one extra line.*

## Section C: Specific questions related to the terminology you want to describe

- C1. Which of these observation types does your terminology support?**

physical	<input type="checkbox"/>
chemical	<input type="checkbox"/>
genetic	<input type="checkbox"/>
biological	<input type="checkbox"/>
derived	<input type="checkbox"/>
dimensional	<input type="checkbox"/>
statistical	<input type="checkbox"/>
Other	<input type="checkbox"/>

▼

Other

- C2. What kind of measurement does your terminology support?**

quantitative, numeric	<input type="checkbox"/>
qualitative, nominal	<input type="checkbox"/>

- C3. What was the main use case for the development of the terminology?**



C4. What other use cases, if any, does the terminology address?

## Section D: General questions related to the use of observable property terminology

D1. Please describe the type of data you are working with

D2. Which domain is the data you are working with representing?

terrestrial ecosystems

biodiversity

aquatic ecosystems

hydrology

oceanography

glaciology

atmospheric sciences

climatology and meteorology

solid earth sciences

soil science

remote sensing

Other

Other



**D3.** Please name the main data repository, system or data product for which you use a terminology for observable properties.

Name								
URL								

**D4.** Do you use or need observable property terminologies for other data repositories, systems, or data products? If so, please provide a list below.

*Please provide the name and the URL (if possible) of each resource in one extra line*

Figure 1. The relationship between the number of species and the area of forest cover in each state.

**D5. Please name the main terminology you use for describing observable properties**

## **Section E: Specific questions related to the use of terminologies**

E1.

## Data Life Cycle phases (ENVRI)

**At which phase of data life cycle do you use terminologies for observable properties?**

- |                               |  |
|-------------------------------|--|
| data acquisition              |  |
| data curation                 |  |
| data publishing               |  |
| data processing (aggregation) |  |
| data use                      |  |

## E2. For which purpose do you use observable property terminologies?

- |                         |                          |
|-------------------------|--------------------------|
| data values annotation  | <input type="checkbox"/> |
| adata record annotation | <input type="checkbox"/> |
| linked data             | <input type="checkbox"/> |



data search interface

harmonizing metadata

data (products) integration

Other

Other

### E3. Which of these observation types are you interested in?

physical

chemical

genetic

biological

derived

dimensional

statistical

Other

Other

### E4. Which kind of measurement should the terminology support?

quantitative, numeric

qualitative, nominal

## Section F: Reuse of other resources

Common questions

### F1. Which registry of biological taxonomy do you use, if any?

World register of Marine Species (WoRMS)

Integrated Taxonomic Information System (ITIS)

Catalogue of Life (CoL)

Wikidata



Locally built reference list

not relevant

none (the biological name is free text)

Other

Other

**F2. To what chemical database(s) do you refer for the chemical substance name?**

Chemical Abstract Service (CAS)

Chemical Entities of Biological Interest (ChEBI)

Semantic Web for Earth and Environmental Technology Ontology (SWEET)

Locally built reference list

none (i.e. the chemical name is free text)

not relevant

Other

Other

**F3. Which unit ontology do you use?**

Measurements Units Ontology (MUO)

Ontology of units of Measure and related concepts (OM)

Library of Quantity Kinds and Units (QU)

Quantities, Units, Dimensions and Data Types Ontologies (QUDT)

Semantic Web for Earth and Environmental Terminology (SWEET)

Units of Measurement Ontology (UO)

none (units are stored as free text)

none (units are standardized for all measurements)



Other

Other

**F4. What other external terminologies do you refer to when describing observable properties?**

*For each resource provide name and URL (if possible), one entry per line.*



## Section G: Approach description

In this section we focus on methodological questions.

If you are a terminology provider, we ask you to describe how this terminology should be applied together with other terminologies when describing digital objects (data, sensors, processes).

If you are a terminology user, we ask you to describe your annotation practice with observable property terminologies when describing your digital objects.

If you are both, we expect you would apply the same approach.

### G1.

**What semantic or conceptual model(s) if any do you use to describe your data?**

Dataset Schema (DATS)	<input type="checkbox"/>
Experimental Factor Ontology (EFO)	<input type="checkbox"/>
Observation & Measurement (O&M)	<input type="checkbox"/>
Statistical Data and Metadata Exchange+Data Documentation Initiative (SDMX/DDI)	<input type="checkbox"/>
Complex Property Model (CPM)	<input type="checkbox"/>
Extensible Observation Ontology (OBOE)	<input type="checkbox"/>
Scientific Variable Ontology (SVO)	<input type="checkbox"/>
Semantic Sensor Network Ontology (SOSA/SSN)	<input type="checkbox"/>
none	<input type="checkbox"/>
Other	<input type="checkbox"/>

Other

**G2. If you can, please provide a diagram or any other schematic representation of the relationships linking the concepts you use when annotating your digital object (like image below).**

**G3. What kinds of nitrogen-related observable properties are relevant to the tasks you are responsible for?**

*Please select all that apply from the list below. Add others as required. Keep the information fairly high level. You will have the option to submit a file with the more detailed terms later on in this section.*

concentration in water including suspended particulate matter



concentration in ice

concentration in soil

concentration in sediments

concentration in biota

concentration in air

biogeochemical fluxes

biological processes rates

natural isotope distributions

none

Other

Other

**G4. Please provide a few representative examples of terms and definitions of concepts you use to describe/name observable properties**

*Please use the spreadsheet template: <https://github.com/i-adopt/terminologies/raw/master/Template%20for%20OPT%20providers.xlsx>. For each of the datasets, please provide all terminology concepts/classes needed for the description of the observable property.*

**G5. Please provide any additional information, which can help us to understand better your approach.**

*This can be a link to a publication, or any other reference material.*



## Section H: Comments to the group

- H1. Are there any particular issues or challenges associated with your approach to describe observable property data?

- H2. Are there any particular challenges we, as a group, need to consider as part of the nitrogen case study?

- H3. Are there any particular challenges we, as a group, need to consider when addressing other case studies?

- H4. Do you want to add any other comment?

## Section I: Background information

You nearly completed the questionnaire. In order to generate some basic statistics, we would ask you to answer some questions on your background and affiliation. Answering the questions is not mandatory but would help us. Beside this, no further personal information (e.g. IP) is collected and stored.

### I1. Contact information

*Your name and/or ORCID and/or contact email*

Name

ORCID



E-mail

**I2. Which of the following describes your job best?**

- network manager
- site manager
- researcher
- field scientist
- data provider
- data manager
- data modeller
- Other

Other

**I3. If you are a researcher, in which research domain(s) do you operate?**

- terrestrial ecosystem
- biodiversity
- aquatic ecosystem
- hydrology
- oceanography
- glaciology
- atmospheric sciences
- climatology and meterology
- solid earth sciences
- soil sciences
- remote sensing



Other

Other

**I4. Affiliation**

**I5. Country**

**I6. What is your affiliation's role?**

Data Center

Research Infrastructure

Consultancy

University

Small or Medium sized Enterprise (SME)

Public sector

Other

Other



**Thanks for contributing to the survey. This is an important input to the development of a community-agreed framework for representing terminologies**

**Please visit us at I-ADOPT.**

**If you are interested in more in-depth information about the system and its architecture, please refer to the Working Group's case statement**

**The I-ADOPT Chairs Barbara Magagna, Gwenaelle Moncoiffe, Michael Diepenbroek and Maria Stoica**