



Exploring meaning in data: a hands-on course in semantics and analysis for FAIR Research

## Module 2: Semantic artefacts lifecycle

Martina Pulieri

**IR0000032 – ITINERIS, Italian Integrated Environmental Research Infrastructures System**

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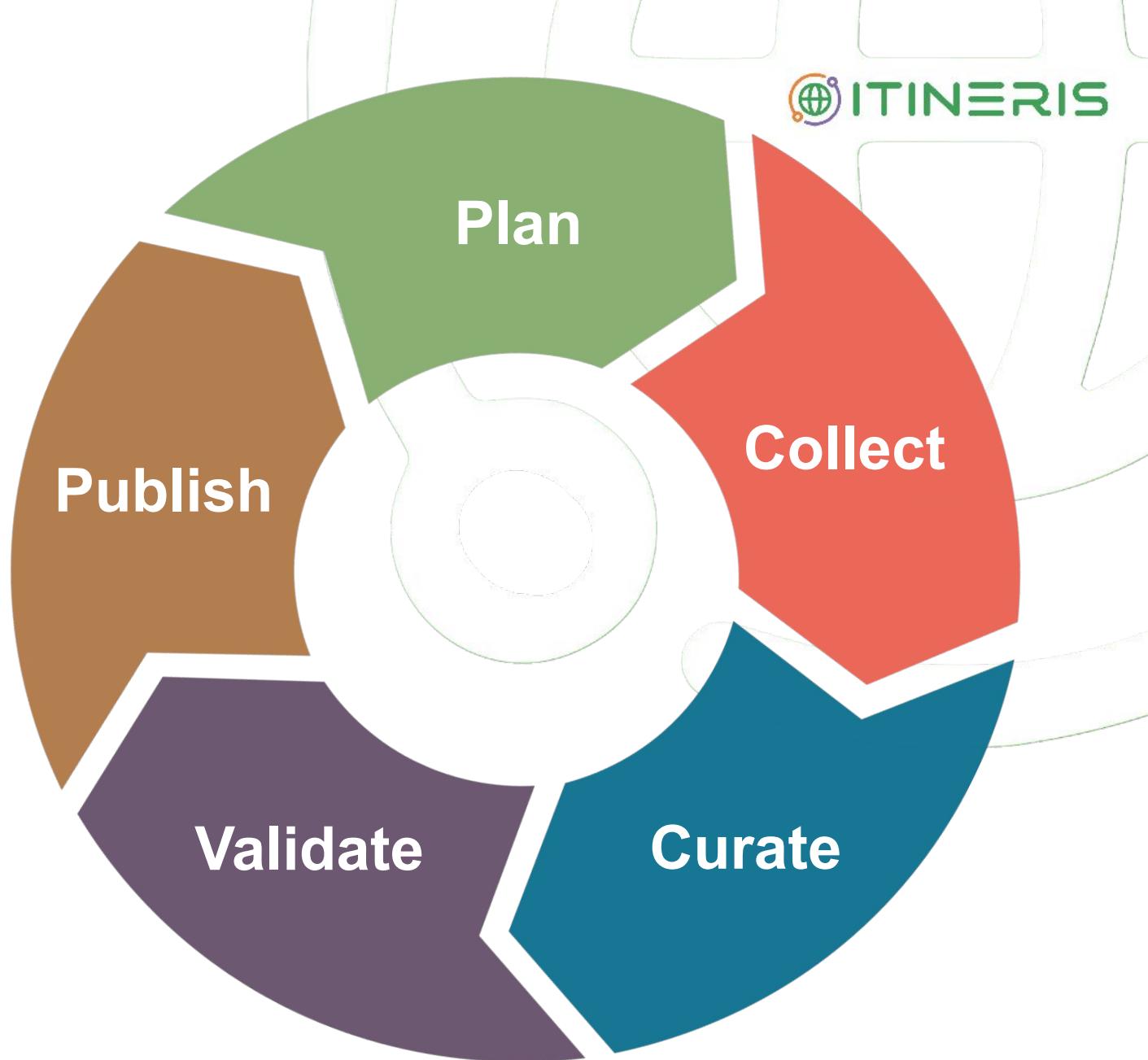


# Data lifecycle

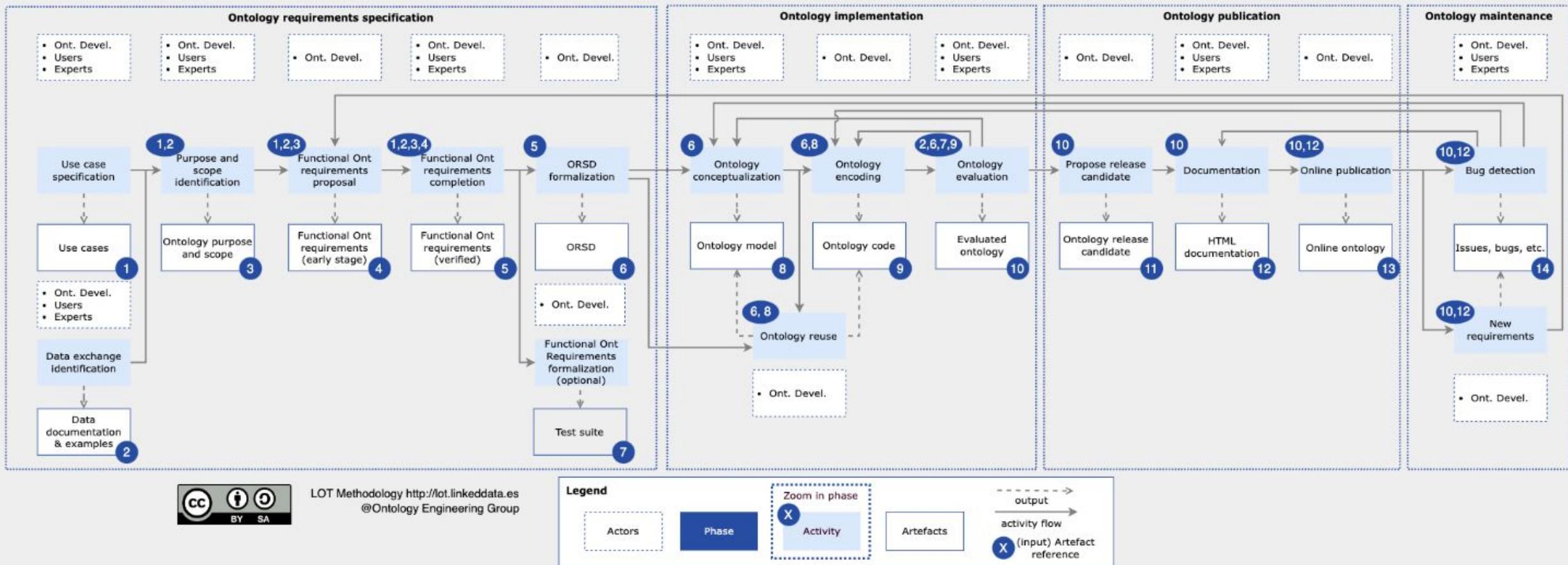
A data lifecycle refers to the stages that data goes through from its creation or acquisition, through its usage and maintenance, to its eventual disposal.



# Which are the actors involved?

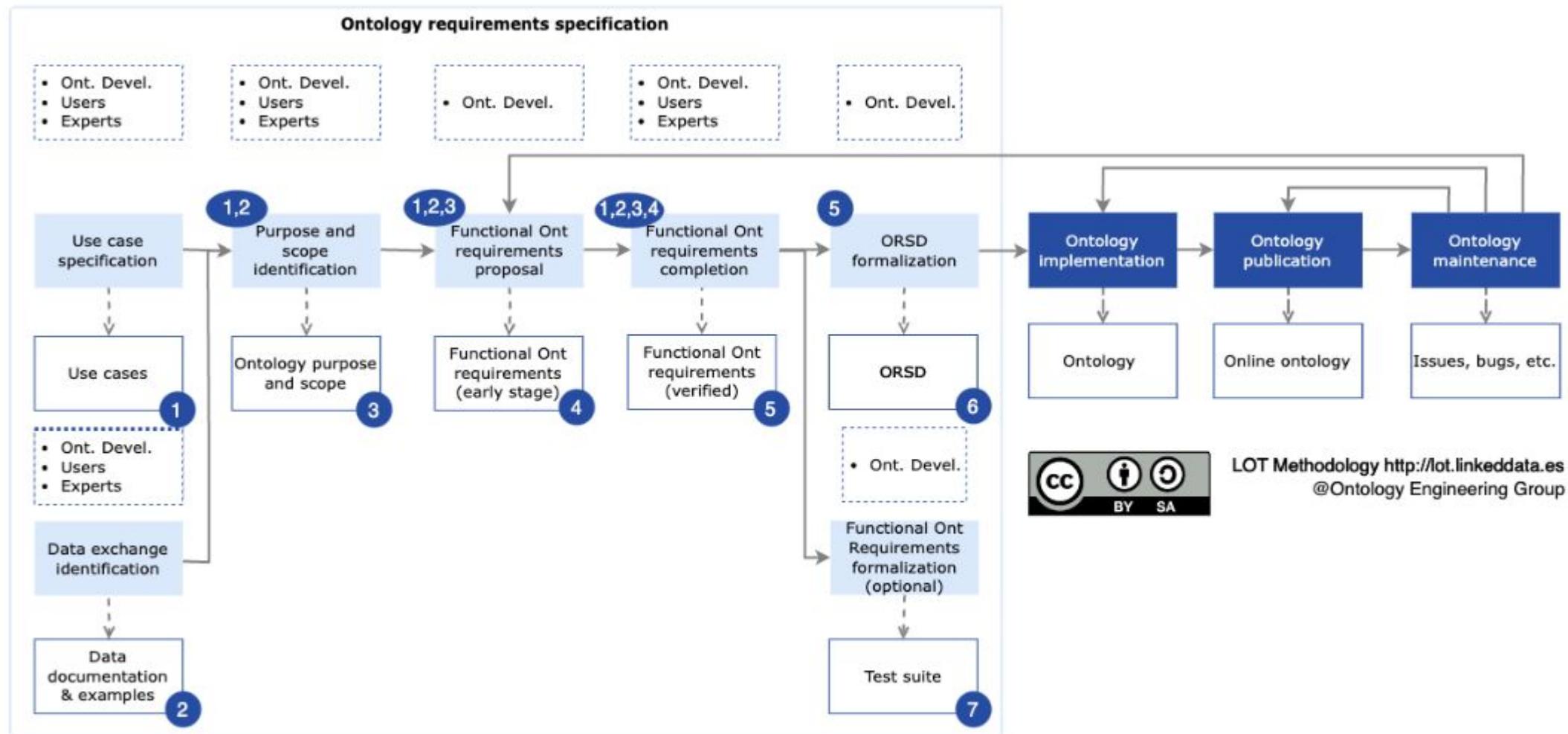


# Linked Open Terms workflow



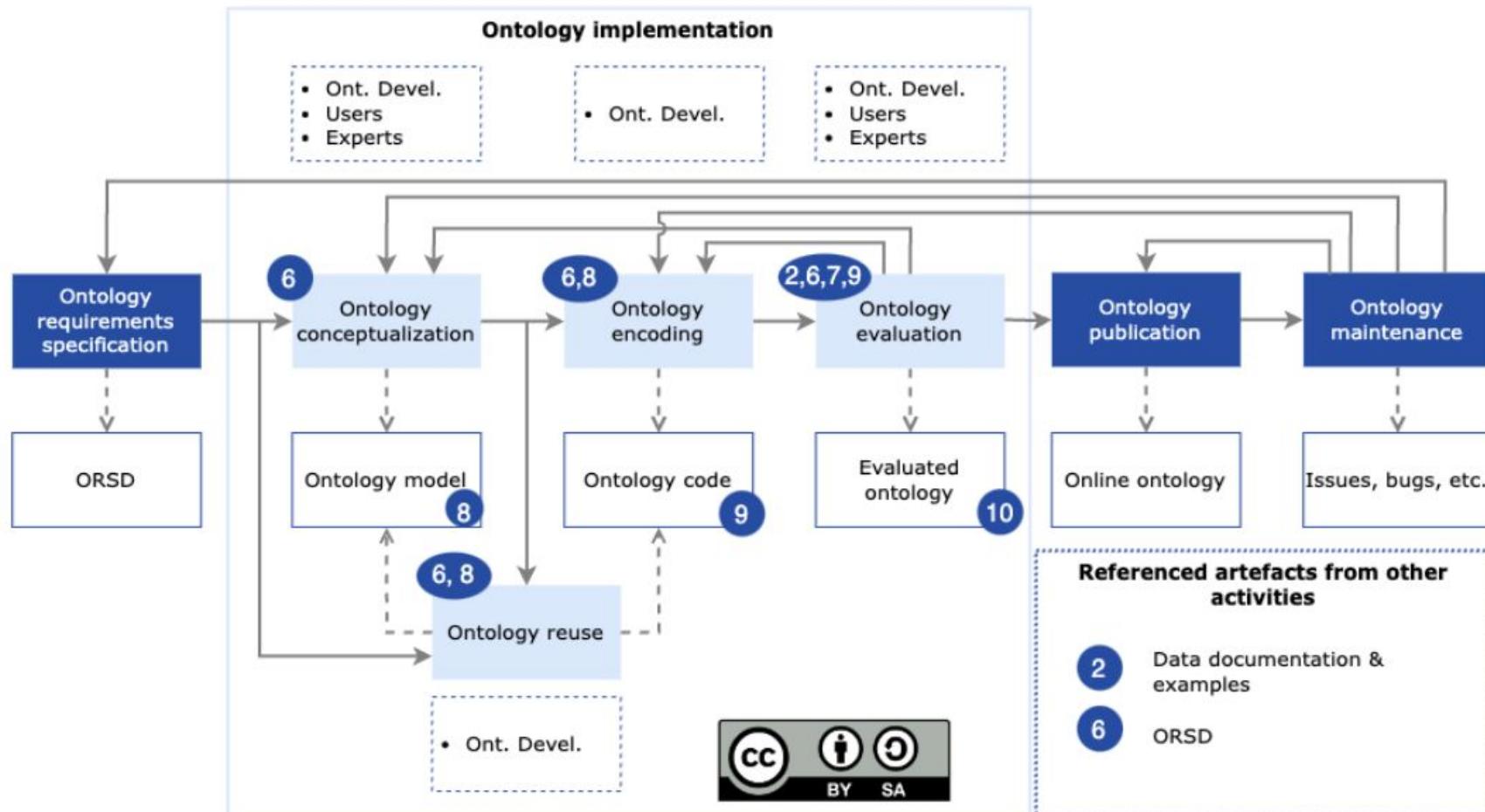
Methodology detailed workflow

# Semantic artefact requirements specification



## Requirements specification workflow

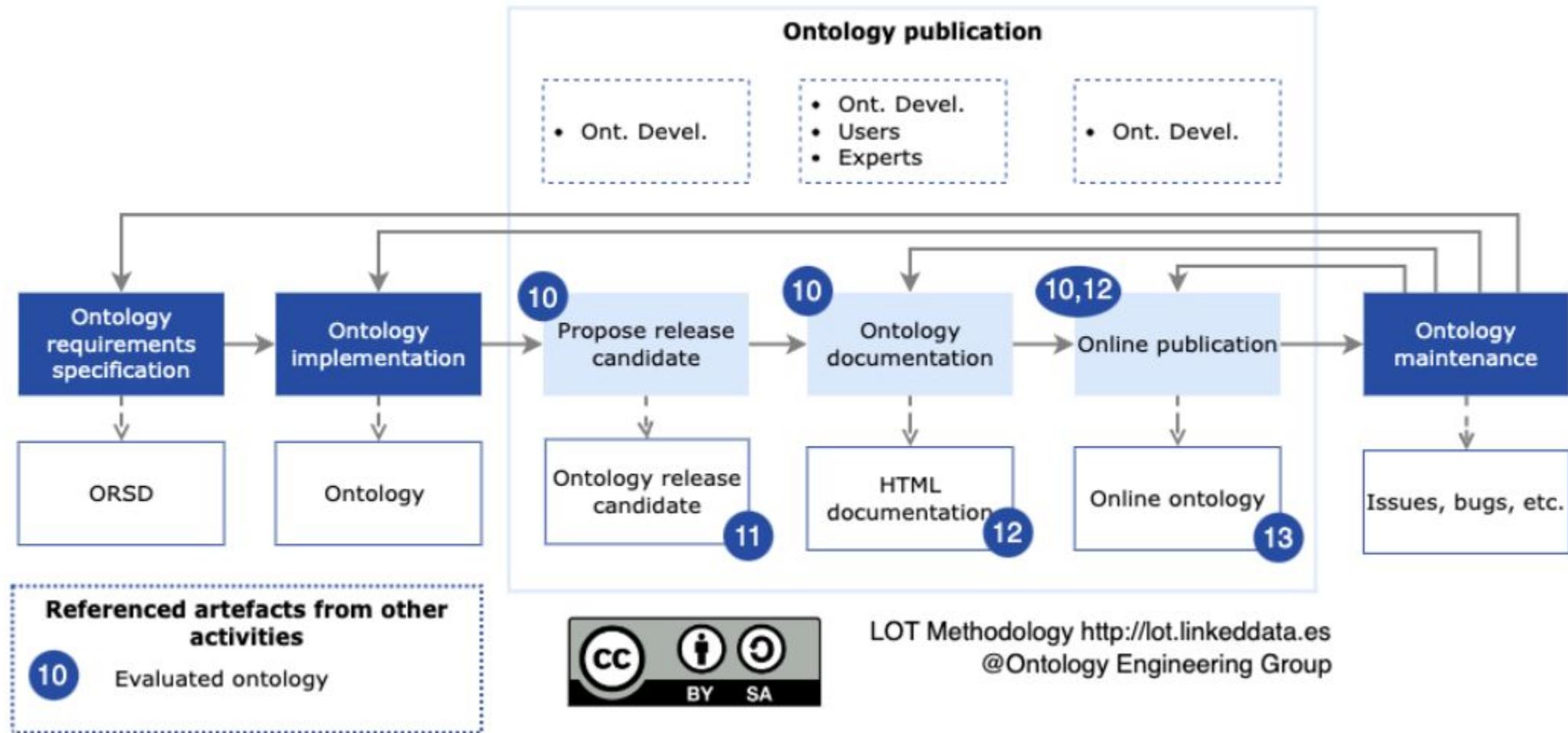
# Semantic artefact implementation



LOT Methodology <http://lot.linkeddata.es>  
@Ontology Engineering Group

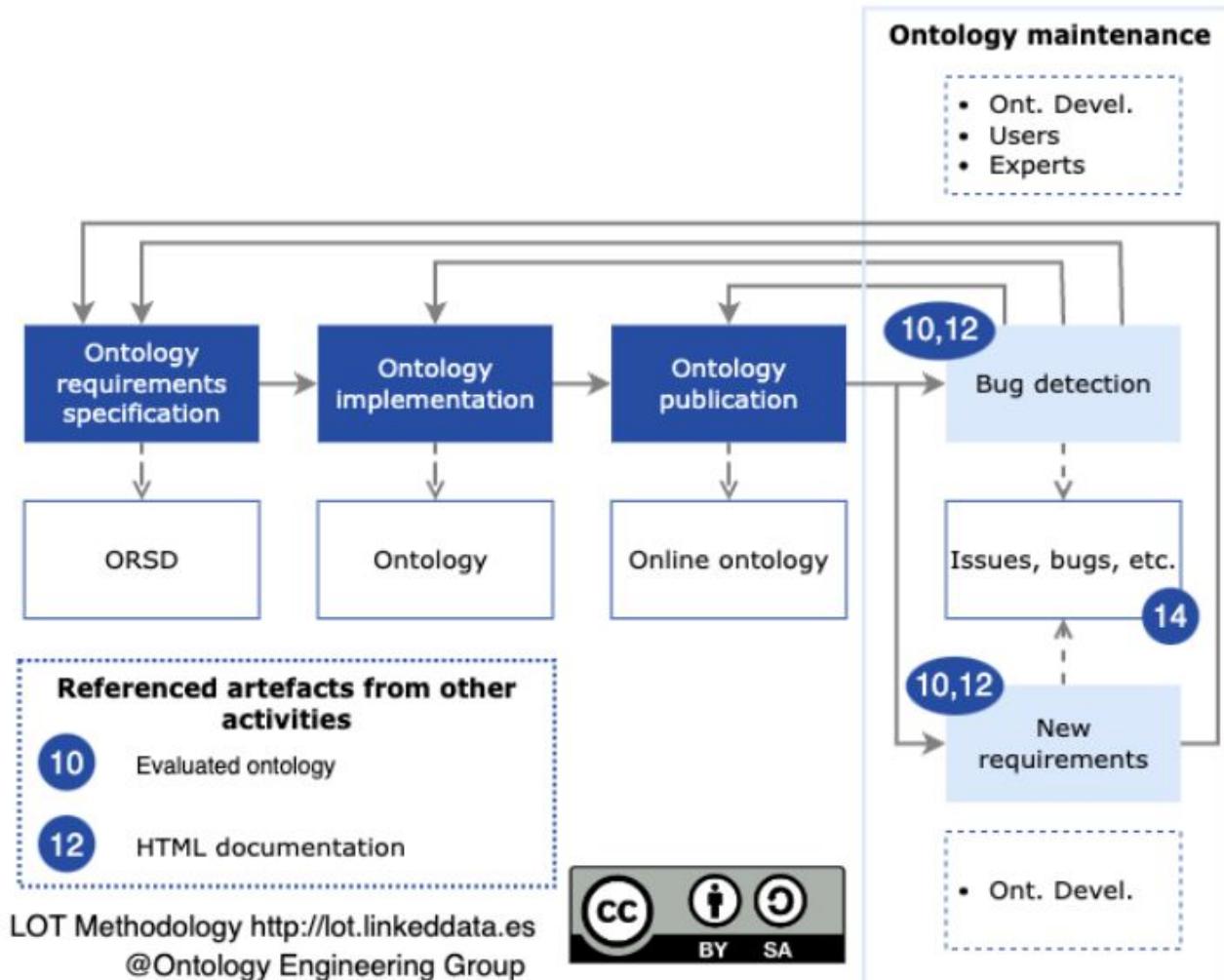
Ontology implementation workflow

# Semantic artefact publication



Ontology publication workflow

# Semantic artefact maintenance



Ontology maintenance workflow

# Tools for semantic artefacts editing

Name	Type	Supported Standards	Key Features	License	Link
Protégé	Desktop/ Web	OWL, RDF, RDFS	Full-featured editor, plugins, reasoning support	Open Source	<a href="http://protege.stanford.edu">protege.stanford.edu</a>
PoolParty	Web	SKOS, OWL, RDF	Semantic taxonomy, Linked Data, enterprise knowledge graphs	Commercial	<a href="http://poolparty.biz">poolparty.biz</a>
VocBench	Web	SKOS, OWL, RDF	Collaborative, multilingual, open data-ready	Open Source	<a href="http://vocbench.uniroma2.it">vocbench.uniroma2.it</a>
TemaTres	Web	SKOS, ISO 25964	Multilingual thesaurus management, RDF export	Open Source	<a href="http://vocabularyserver.com">vocabularyserver.com</a>
SKOS Play!	Web	SKOS	Visualization and validation of SKOS thesauri	Open Source	<a href="http://skos-play.sparna.fr">skos-play.sparna.fr</a>

# Semantic artefact catalogues

- Ding and Fensel, 2001. Ontology libraries: “A system that offers various functions for managing, adapting and standardising groups of ontologies. It should fulfil the needs for re-use of ontologies.”
- Hartman et al., 2009. Ontology repository: “A structured collection of ontologies (...) by using an Ontology Metadata Vocabulary. References and relations between ontologies and their modules build the semantic model of an ontology repository. Access to resources is realised through semantically-enabled interfaces applicable for humans and machines.”.

# Semantic artefact catalogues

- BioPortal
- AgroPortal
- EcoPortal
- BiodivPortal
- EarthPortal
- OntoBee
- OBO Foundry
- EBI Ontology Lookup Service (OLS)
- AberOWL
- Linked Open Vocabularies
- OntoHub
- Marine Metadata Initiative's Ontology Registry and Repository
- ESIP Federation's Community Ontology Repository
- ARDC Research Vocabularies Australia
- NERC vocabulary server
- Loterre



**Skosmos**



## Vocabulary information

TITLE AGROVOC Multilingual Thesaurus

LAST MODIFIED Tuesday, May 6, 2025 08:24:42

TYPE <http://www.w3.org/2004/02/skos/core#ConceptScheme>

SKOSXL:PRELABEL [http://aims.fao.org/aos/agrovoc/xl\\_en\\_4237c5f5](http://aims.fao.org/aos/agrovoc/xl_en_4237c5f5)

VOID:INDATASET <http://aims.fao.org/aos/agrovoc/void.ttl#Agrovoc>

URI <http://aims.fao.org/aos/agrovoc>

### Resource counts by type

Type	Count
Concept	41409
Collection	3

### Term counts by language

Language	Preferred terms	Alternate terms	Hidden terms
Arabic	41408	1981	13
Belarusian	19487	3059	7
Catalan	568	8	5
Czech	38037	8810	0
Danish	23481	36	0
German	38893	7785	7
Greek	194	2	0
English	41409	12230	67



## Welcome to Finto.fi!

Finto.fi is a centralized service for interoperable thesauri, ontologies and classification schemes for different subject areas. You can use Finto.fi to browse vocabularies or integrate the vocabularies into your own system using the [open APIs](#).

Finto AI provides a user interface and API for automated subject indexing.

You can find more information in the Finto customer wiki.



### GENERAL

#### Available vocabularies and ontologies

Allärs - General  
FGF - Finnish g  
HCLCS - Helsin  
KANTO - Kansa  
KOKO Ontolog  
Metatietosana  
PLC - Finnish F  
Pondus catego  
Topics for Coll  
UCUM - The Ur  
UDC Summary  
YSA - General I  
YSO - General  
YSOn käsite-ek  
YSO-time

### SOCIETY

IPTC NewsCode  
JUHO - Julkisha  
JUPO - Finnish  
Services

# ISTEX Loterre

Terminological resources to be shared out

## Enter search term

from all

English

Search

Help

## Vocabulary list

### HUMANITIES & SOCIAL SCIENCES

Administrative Sciences  
Art and Archaeology  
Conference Exhibition (CX) Terminology Resource (Getty Research Institute)  
Corporate Bodies (CB) Terminology Resource (Getty Research Institute)  
Educational sciences  
Ethnology  
History and Sciences of Religions  
History of Science and Technology  
Linguistics  
Literature

## Loterre?

Loterre (Linked open terminolo  
a platform for multidisciplinary  
scientific resources sharing, co  
the linked open data standard  
principles.

73

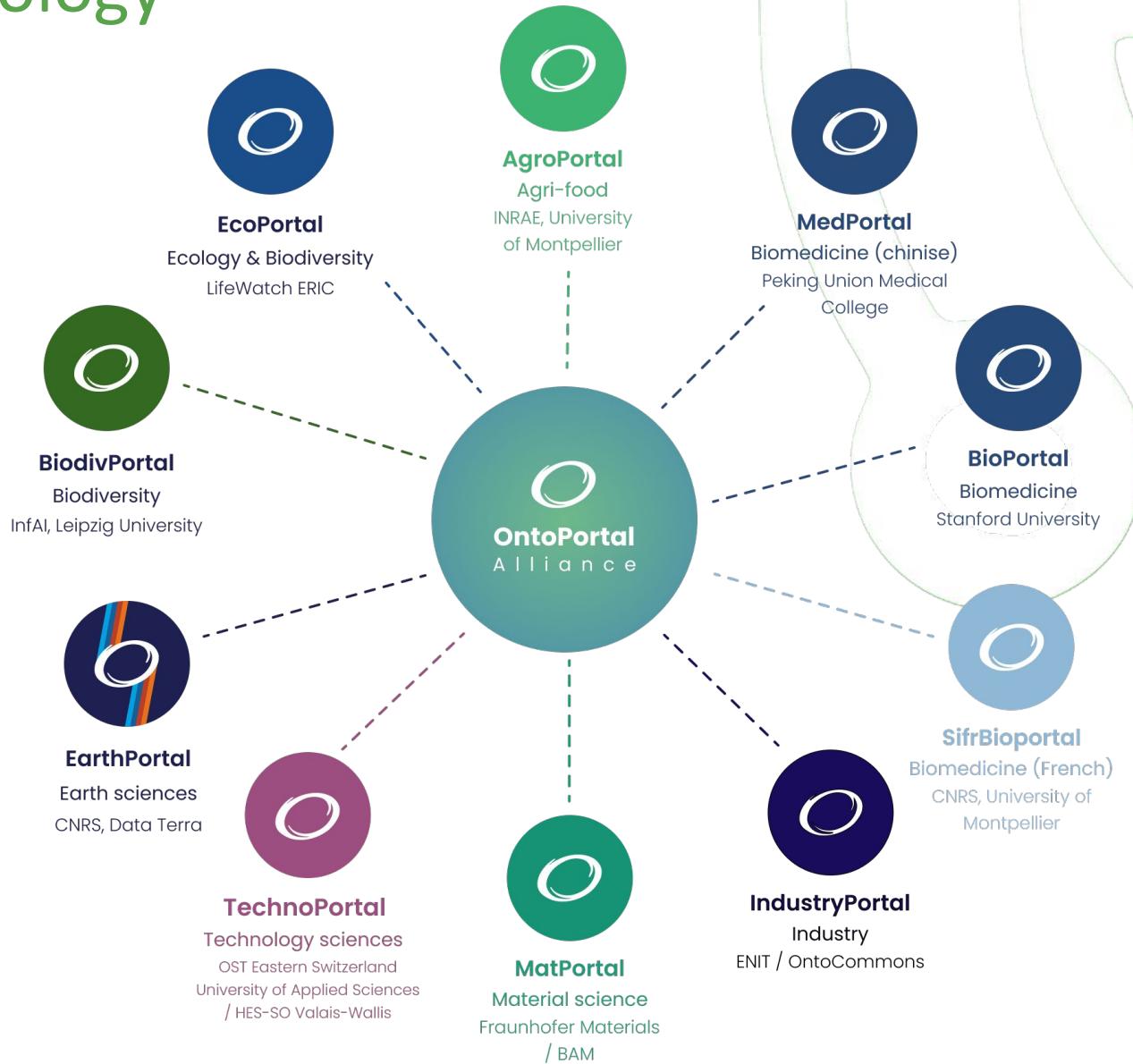
terminolo  
are available

DOCUMENTAT

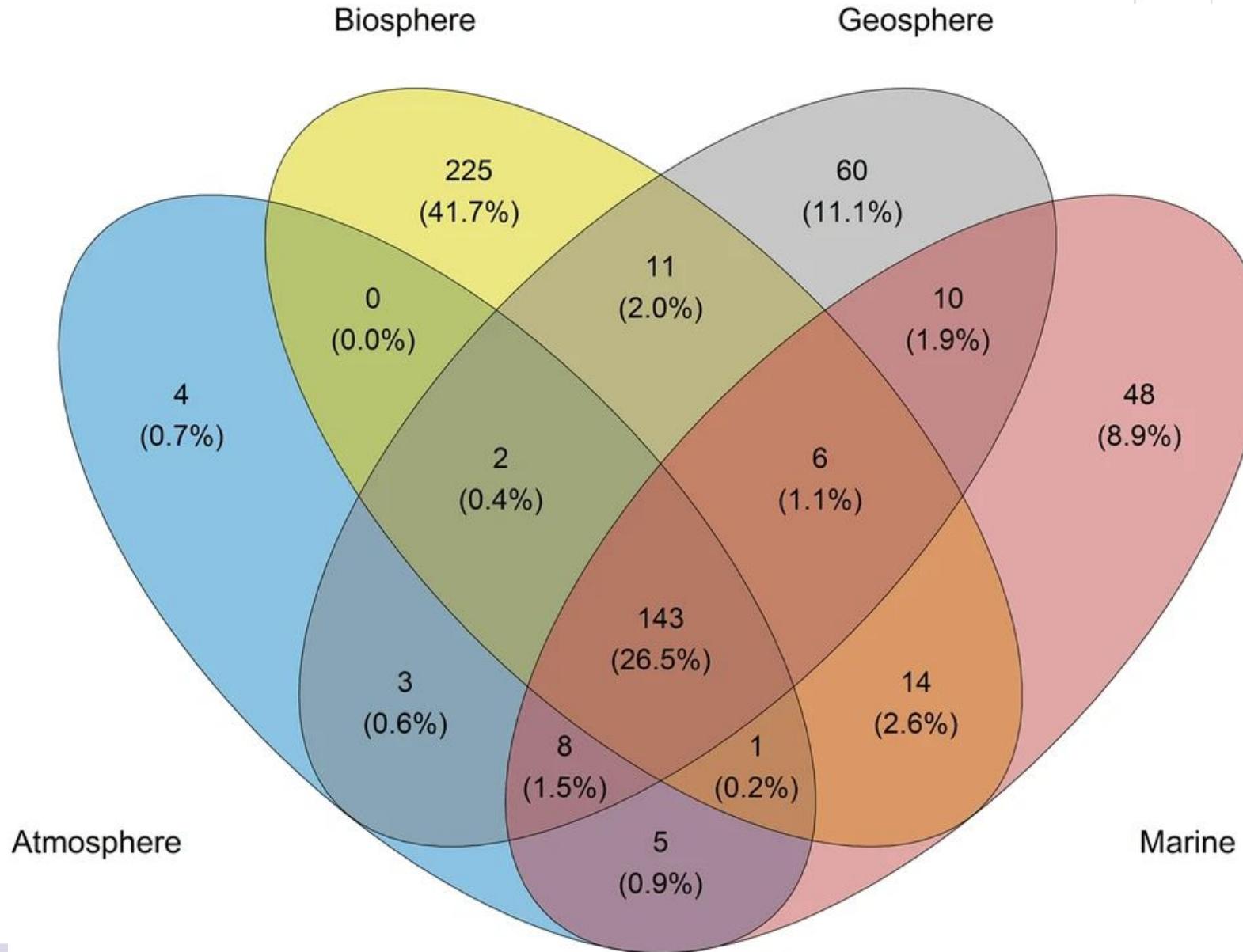
SERVICES

CONTACT

# OntoPortal technology

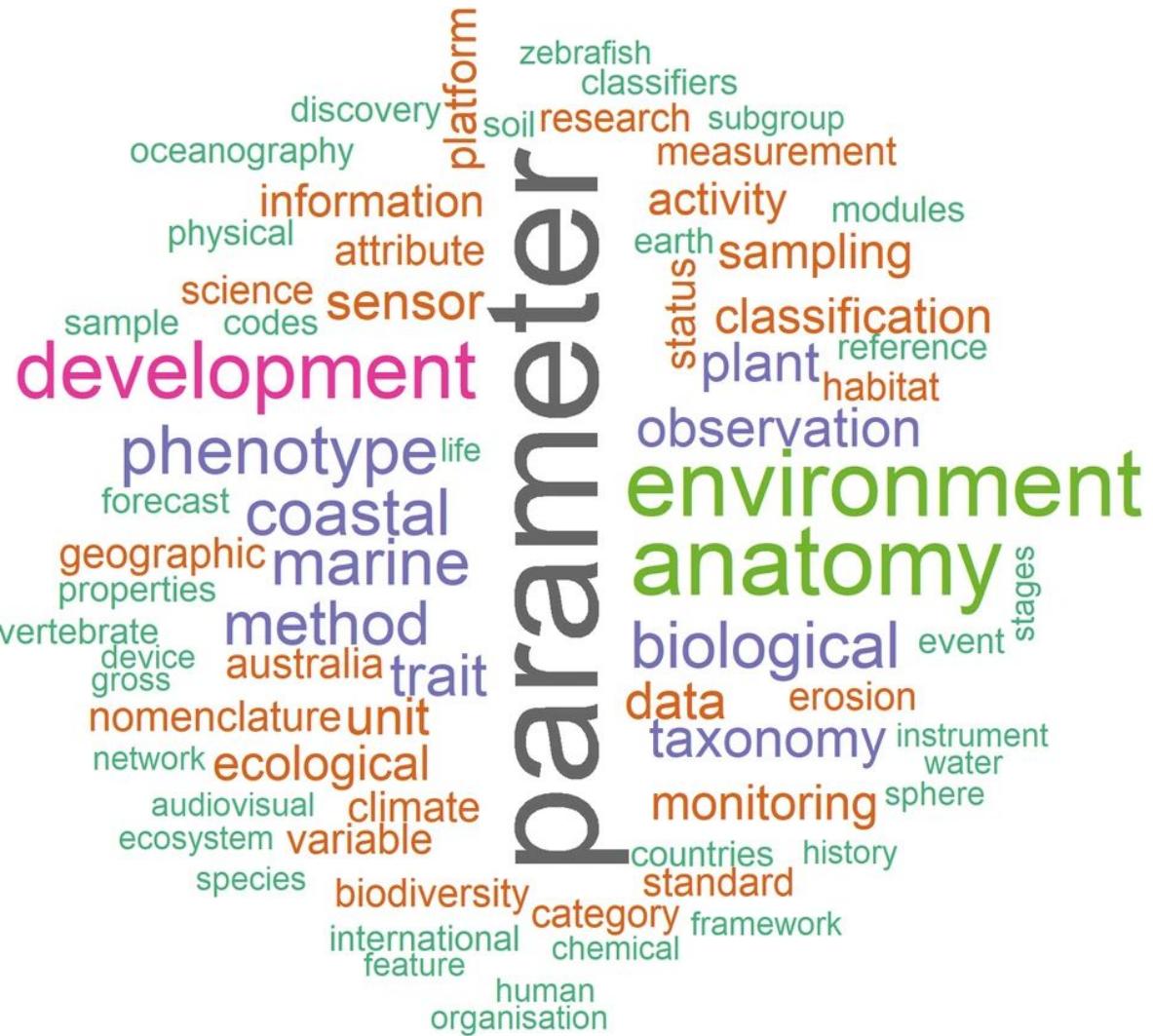


# Multiple catalogues with similar thematic niche



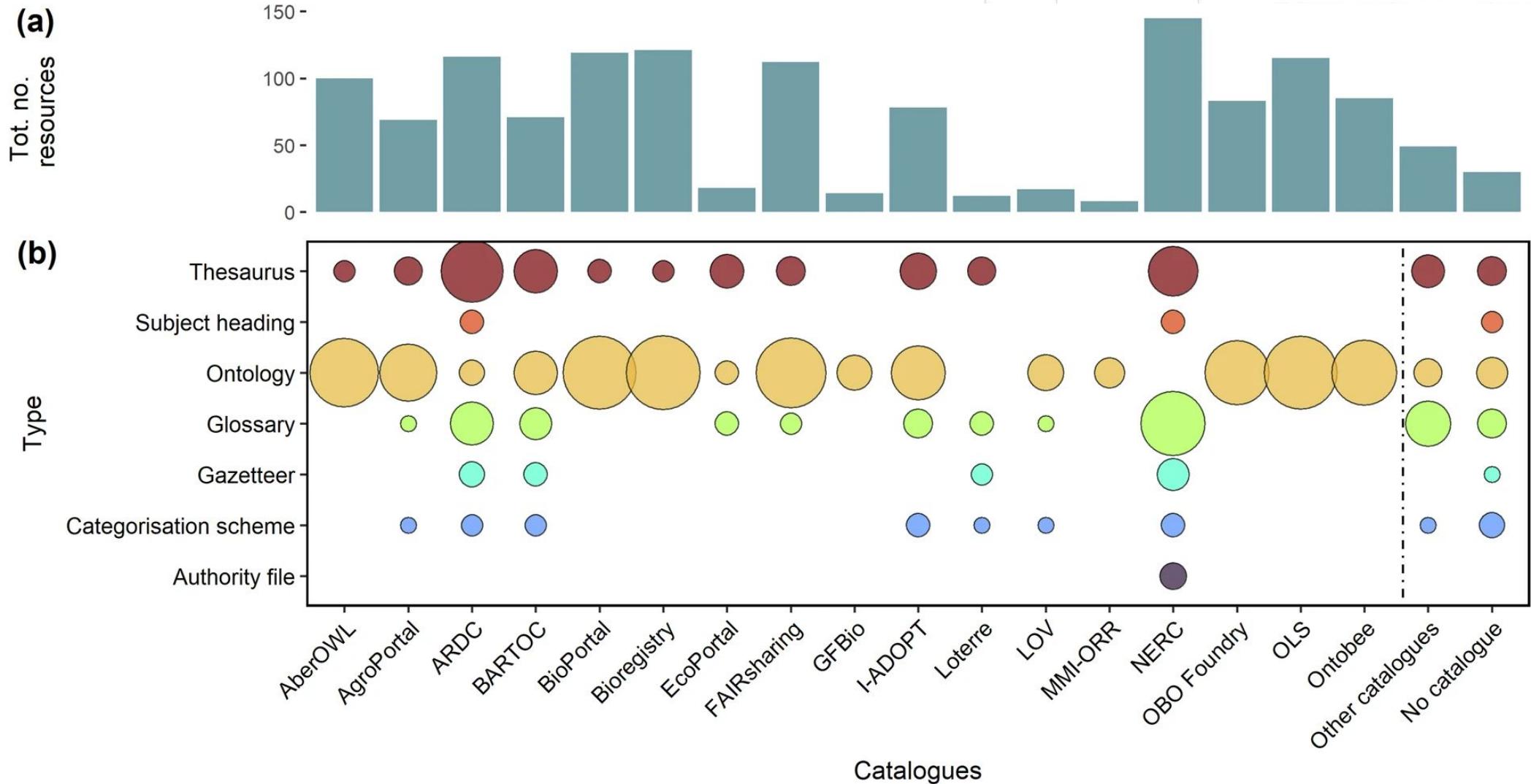
Venn diagram displaying the number and percentage (in bracket) of shared and unique semantic artefacts of the four environmental domains considered in this study according to the ITINERIS classification of environmental domains.

# Multiple catalogues with similar thematic niche

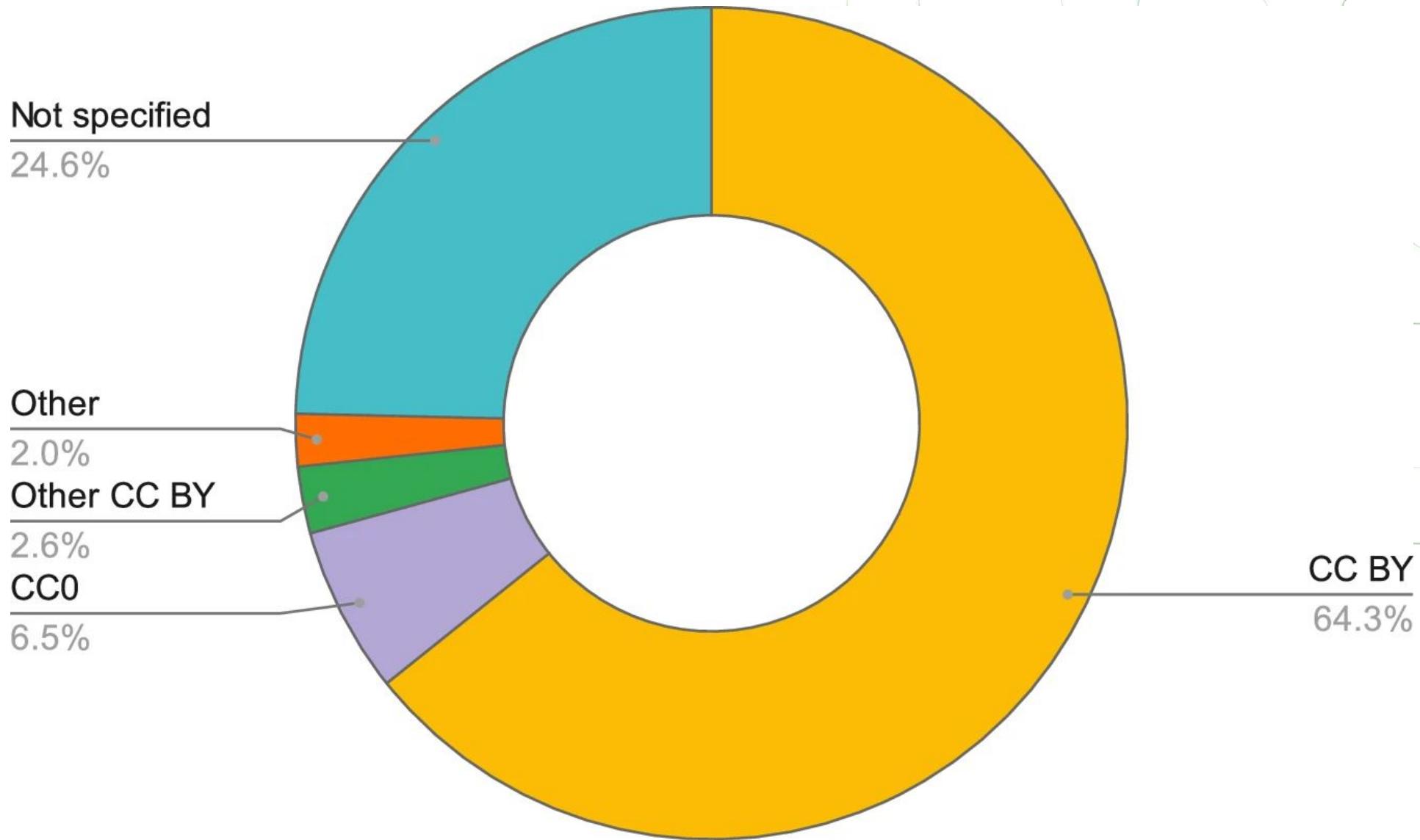


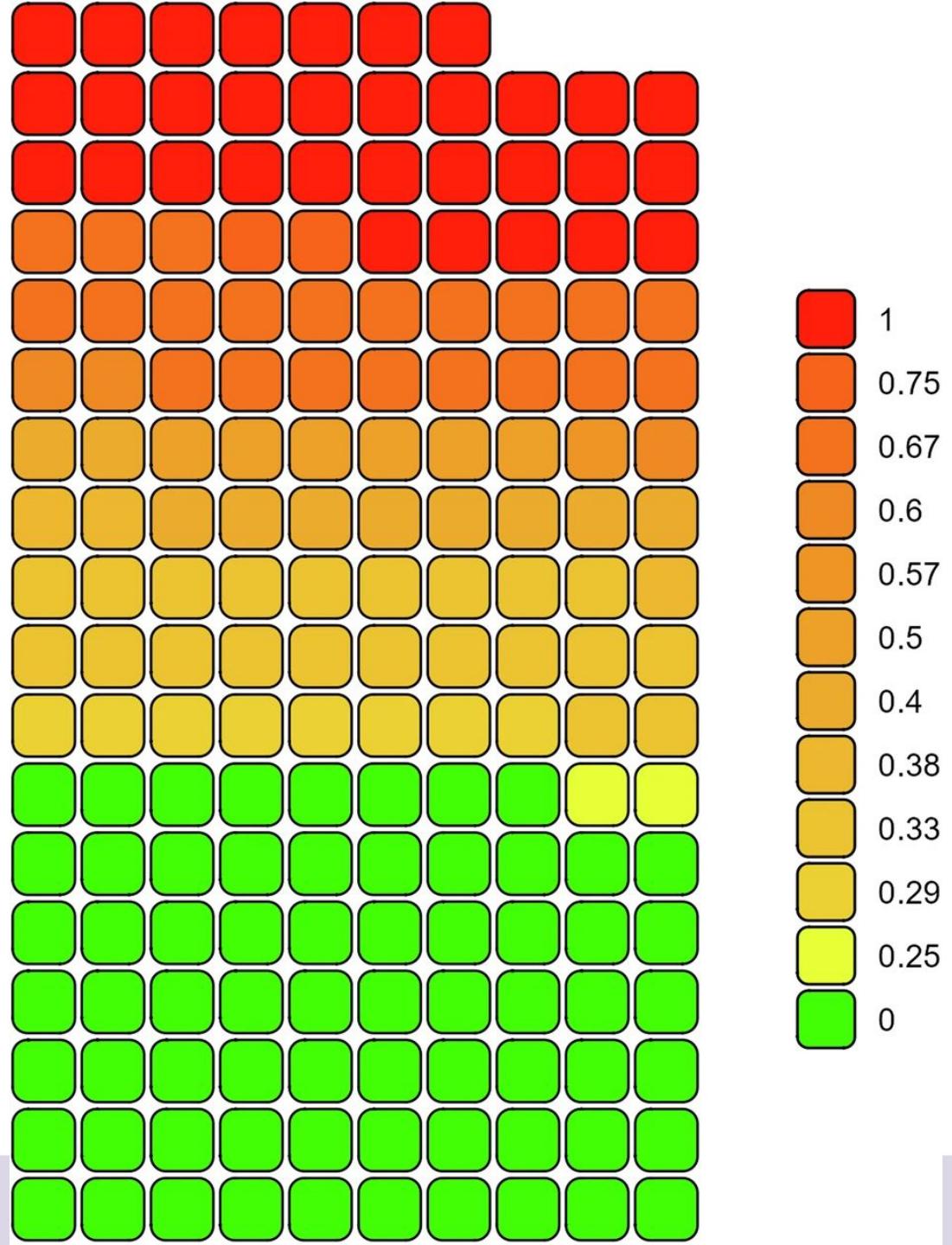
Word Cloud showing the most common terms used to describe the semantic artefacts included in this study. The image is the result of a text mining analysis performed on the titles of the compiled semantic artefacts.

# Multiple catalogues with similar thematic niche



# Multiple catalogues with similar thematic niche





# OntoPortal Federation



**EcoPortal** Browse Mappings Recommender Annotator Landscape VocBench [Login](#)

## Welcome to EcoPortal,

The LifeWatch ERIC repository of semantic resources for ecology and related domains

Search a semantic resource or a term (e.g., Environmental impact) >

Do you want to share a semantic resource?

Uploading a semantic resource, ontology, vocabulary, terminology, thesaurus, ... is a way of sharing your knowledge with others.

Search a semantic resource or a term (e.g., Environmental impact) >

TRAITS\_THES 484 visits  
CMECS 268 visits  
PHYTOTRAITS 106 visits

**AgroPortal** Browse Mappings Recommender Annotator Landscape [Login](#) EN ▾

## Welcome to AgroPortal,

The home of ontologies and semantic artefacts in agri-food and related domains.

Search an ontology or a term (e.g., plant height) >

AGROVOC 200 visits  
THESAGRO 88 visits  
INRAETHES 71 visits

**EarthPortal** Browse Mappings Recommender Annotator Landscape Projects [Login](#) EN ▾

## Welcome to EarthPortal,

The home of ontologies and semantic artefacts for Earth sciences.

Search an ontology or a term (e.g., oxygen) >

OSO 127 visits  
SWEET 66 visits  
ENVTHES 21 visits

**BiodivPortal** Browse Mappings Recommender Annotator Landscape [Login](#)

## Welcome to BiodivPortal,

The home of ontologies and semantic artefacts in biodiversity and related domains.

Search an ontology or a term (e.g., plant height) >

NCBITAXON 2M concepts  
CHEBI 183K concepts  
OBA 72K concepts

Do you want to share an ontology?

Uploading an ontology or another type of semantic artefact (vocabulary, terminology, thesaurus, ...) is a way of sharing your knowledge with others.

By uploading and sharing your ontology to EarthPortal, you can:

What are the benefits of using BiodivPortal?

# Metadata for Ontology Description and Publication Ontology (MOD)



MOD: Metadata for Ontology Description and publication

Release December 6, 2021

**This version:**

<https://w3id.org/mod/2.0>

**Latest version:**

<https://w3id.org/mod/2.0>

**Previous version:**

<http://www.isibang.ac.in/ns/mod/1.4>

**Revision:**

2.0

**Authors:**

Biswanath Dutta, ([Indian Statistical Institute, Bangalore Centre, India](#))

Clement Jonquet, ([University of Montpellier, France](#))

**Contributors:**

Yann Le Franc ([e-Science Data Factory S.A.S.U., Paris, France](#))

Luiz Bonino ([University of Twente, Enschede, the Netherlands](#); [Leiden University Medical Center, Leiden, the Netherlands](#))

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language [en](#)



# THANKS!

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