



# Semantic vocabularies, tools for interoperability

The Publications Office of the European Union

Workshop:

German credential services to meet SDG

09/09/2020



## Summary

- Who is the Publications Office
- What platforms do we offer
- How can the vocabularies be relevant for interoperability



## Who is the Publications Office

The Publications Office of the European Union, is an interinstitutional office whose task is to publish the publications of the institutions of the European Union.

Its core activities include production and dissemination of legal and general publications in a variety of paper and electronic formats, managing a range of websites



**Publications Office  
of the European Union**

<https://op.europa.eu>



## What platforms do we offer

- Catalogue of datasets from the EU institutions and other bodies
- Public procurement notices from the European Union and beyond
- The *Official Journal of the European Union*, EU case law and other resources for EU law
- Information about the results of EU-funded projects





Official Journal  
of the European Union  
L 119  
Legislation

Law | EUR-Lex



EU Publications



Research & Innovation  
CORDIS



EU Open Data



Business opportunities  
TED



EU Whoiswho



EU DATATHON  
2020



# What is behind them



TOOLS &  
SYSTEMS



DOMAIN  
EXPERTISE



METHODOLOGIES  
& PROCEDURES



TRAININGS &  
PRESENTATIONS



VOCABULARIES





# What are the standard vocabularies published by the Publications Office

**Authority tables**

In order to harmonise and standardise the codes and the associated labels used in the Publications Office and on interinstitutional level in the conte...

[Learn more >](#)



Country names, languages, licences, time periods, learning activities, learning schedules, learning opportunities, learning settings

**Thesauri**

A thesaurus is a controlled and structured vocabulary where concepts are represented by labels. In the context of the EU Vocabularies, a thesaurus is a ...

[Learn more >](#)



**EuroVoc, DET** (Digital Europa Thesaurus)

**Taxonomies**

A taxonomy is a set of controlled vocabulary terms organised into a hierarchical structure. Each term in a taxonomy is in one or more parent/child relationship to other ...

[Learn more >](#)



**EuroSciVoc** - European Science Vocabulary,  
**NUTS** - Nomenclature of Territorial Units for Statistics,  
**CPV** – Common Procurement Vocabulary,

EuroVoc <> **Wikidata**  
EuroVoc <> **Rameau**  
EuroVoc <> **UNESCO**  
EuroVoc <> **INSPIRE**  
EuroVoc <> **Agrovoc**



**Alignments**

Alignments are common in database interoperability projects and tasks however, from the perspective of the semantic web we are referring to ontology alignments when a variab...

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# Subject matter collections



## Business collections

[AKN4EU](#)

[BITS \(Book Interchange Tag Suite\)](#)

[CDM \(Common Data Model\)](#)

[Core Vocabularies](#)

[DCAT-AP for data portals in Europe](#)

[Digital Europa Thesaurus \(DET\)](#)

[ELI \(European Legislation Identifier\)](#)

[eProcurement](#)

[Europass](#)

[EuroSciVoc](#)

[Formex](#)

[IMMC Core metadata exchange protocol](#)

[OJEEP \(Official Journal Electronic Exchange Protocol\)](#)

[OP Core metadata element set](#)

[OP data structures and standards](#)

## Europass Vocabularies

<a href="#">Accreditation</a>	<a href="#">Encoding</a>	<a href="#">Learning opportunity</a>
<a href="#">Assessment</a>	<a href="#">Entitlement</a>	<a href="#">Learning schedule</a>
<a href="#">Communication channel</a>	<a href="#">Entitlement status</a>	<a href="#">Learning setting</a>
<a href="#">Communication channel usage</a>	<a href="#">Learning activity</a>	<a href="#">Target group</a>
<a href="#">Credential</a>	<a href="#">Learning and verification</a>	<a href="#">Verification</a>
<a href="#">Education credit</a>	<a href="#">Learning assessment</a>	<a href="#">Verification status</a>







## What makes them special ...



They are multilingual



They are big



They are connected



They are managed



## What is the experience we offer



Produce and publish more than 100 multilingual vocabularies



Use and facilitate the collaborative management and editing of controlled vocabularies and metadata



Engage with and meet the needs of the semantic web and Linked Open Data requirements



Use and promote the use of controlled vocabularies and metadata on all available channels



Promote and support interoperability





## Resource Description Framework (RDF)



OWL Web Ontology Language

Terse RDF Triple Language

SKOS Simple Knowledge Organization System



# VocBench

The screenshot displays the VocBench web application interface, which is used for managing and querying vocabulary data. The interface is divided into several main sections:

- Navigation and Project Management:** At the top, there are tabs for "About VocBench", "Projects", "Data", "Metadata", "SPARQL", "History", "Validation", and "Tools". The current project is identified as "OP\_EuroVoc\_4.10\_12112019".
- Concept List:** On the left side, a vertical list of concepts is shown, each with a circular icon and a label. The selected concept is "32 EDUCATION AND COMMUNICATIONS (en)". Other visible concepts include "04 POLITICS (en)", "08 INTERNATIONAL RELATIONS (en)", "10 EUROPEAN UNION (en)", "12 LAW (en)", "16 ECONOMICS (en)", "20 TRADE (en)", "24 FINANCE (en)", "28 SOCIAL QUESTIONS (en)", "36 SCIENCE (en)", "40 BUSINESS AND COMPETITION (en)", "44 EMPLOYMENT AND WORKING CONDITIONS (en)", "48 TRANSPORT (en)", "52 ENVIRONMENT (en)", "56 AGRICULTURE, FORESTRY AND FISHERIES (en)", "5G (en)", "60 AGRI-FOODSTUFFS (en)", "64 PRODUCTION, TECHNOLOGY AND RESEARCH (en)", "66 ENERGY (en)", "68 INDUSTRY (en)", "72 GEOGRAPHY (en)", "76 INTERNATIONAL ORGANISATIONS (en)", and "AAMS countries (en)".
- SPARQL Query Editor:** The central area features a SPARQL query editor with a text area containing a query: 

```
1 PREFIX ↔
32
33 SELECT * WHERE {
34   ?s ?p ?o .
35 } LIMIT 10
```

 Below the editor are buttons for "Submit", "Clear", and "Include inferred:", along with a "Save results as..." dropdown and a "Results count: 10 (Done in 1,618 sec)" indicator.
- Concept Detail View:** On the right, a detailed view of the selected concept is shown. It includes a "Types:" section with "rdf:type" set to "skos:Concept". Other sections include "Top Concept of:", "Schemes:", "Broaders:", "Lexicalizations:", "Notes:", and "Other properties:". The URL for the concept is "http://eurovoc.europa.eu/100150".
- Footer:** The bottom of the interface shows the version "v. 6.0.1" and the copyright notice "© ART Group, 2016".



# HOW ARE THE VOCABULARIES RELEVANT FROM AN INTEROPERABILITY PERSPECTIVE



## Benefits

- Use of standardized vocabularies to make data exchange easier
  - *Have your documents organised using a vocabulary like EuroVoc*
  
- Use of multilingual vocabularies to provide easier access for international students and exchange of information with other international entities
  - *Your applications are instantly multilingual*
  - *Your documents can be easily translated*
  
- Reduce the effort to manage the content associated with your applications
  - *No worries related with updating lists and menus*



# How we can help



VocBench

Collaborative environment for editing semantic content



*CELLAR*

One of the largest semantic repositories around



PMKI

A new interoperability solution targeting public administration and businesses



*Open Data Portal*

The gateway to make your datasets known and share them freely



Knowledge

EU Vocabularies team is open to discuss the various use cases





## Publications Office of the European Union

**THANK YOU**

<https://op.europa.eu>

<https://op.europa.eu/en/web/eu-vocabularies>

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