



Publications Office
of the European Union

PUBLICATION OF REFERENCE DATA IN EU VOCABULARIES AND ERA ONTOLOGY USE CASE

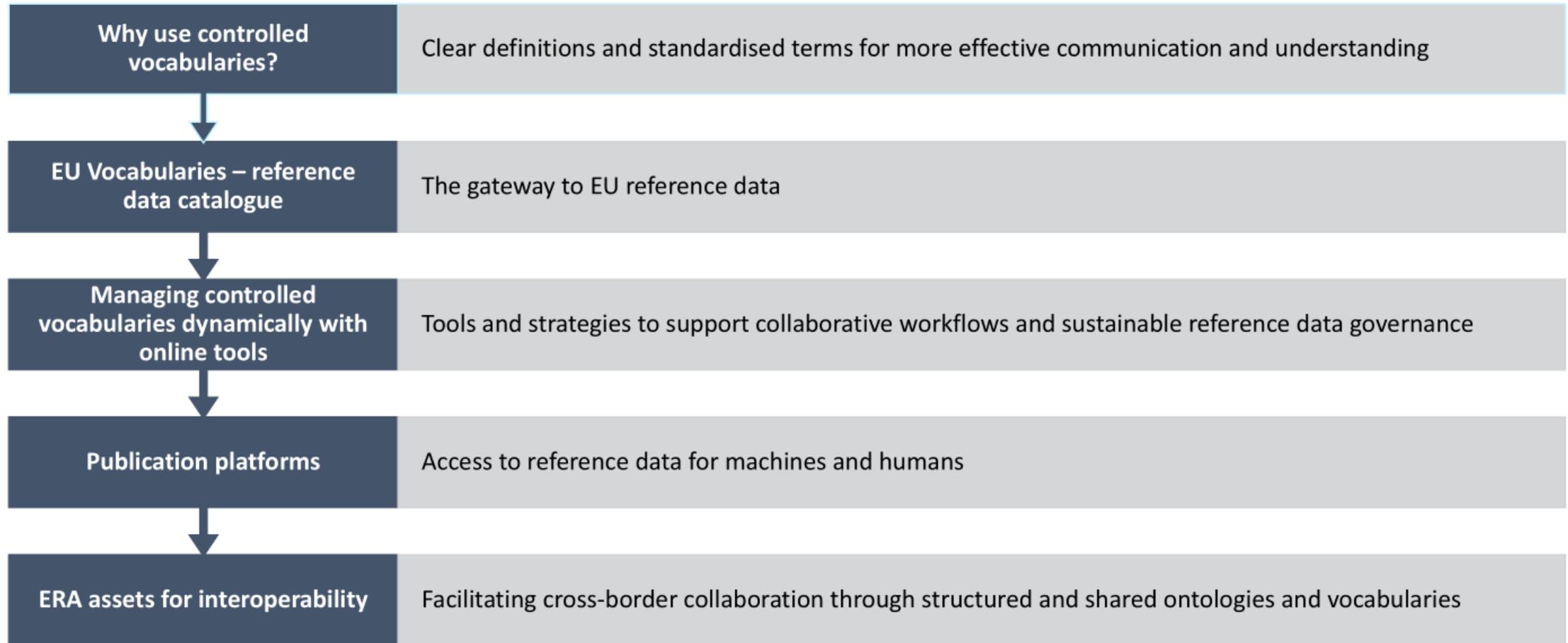
Anita Dutreuil

Publications Office of the European Union

Rail Data Forum 2025

11 - 13 June 2025

Outline



Who we are

The Publications Office of the European Union (OP)

The official publisher for all EU institutions, bodies and agencies

Multilingual expertise

Based in Luxembourg, working across all 24 official EU languages



EU law

EU law, national law and related information



European data

Data from EU institutions and European countries



EU tenders

Business opportunities in the European Union and beyond



EU research results

Information about the results of EU-funded projects



EU Whoiswho

The directory of the European institutions



EU publications

Publications of the EU institutions in various formats

EU Vocabularies

EU reference data and resources for knowledge management.

EU Web archive

Archive of websites of EU institutions and agencies.

Librarian's corner

Metadata services and European Commission Library resources.

Welcome to the style guide!



▼ About the style guide



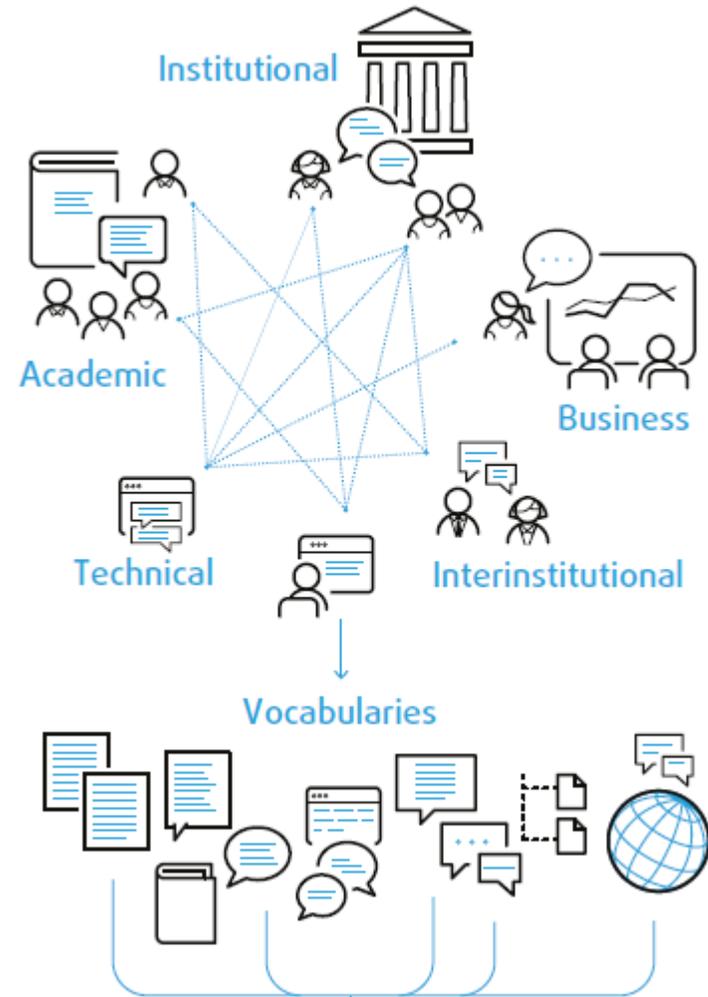
Our team

Reference Data and Style Guide Sector (OP.A.1.002)

We promote the standardisation of reference data, schemas, ontologies and linguistic resources across EU Institutions

We also provide support upon request and actively contribute to interinstitutional projects and initiatives

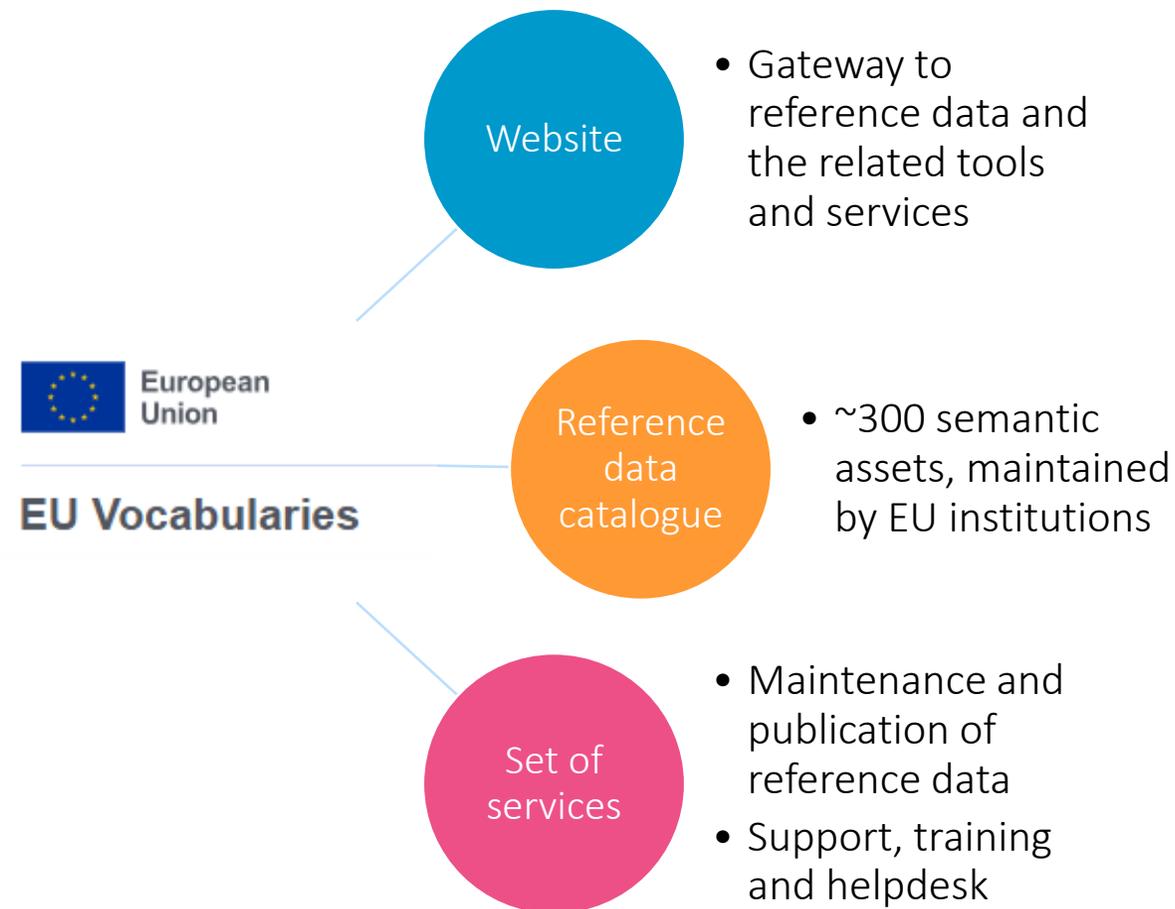
We are a diverse team of linguists, translators, terminologists, librarians and technical and semantic experts working together



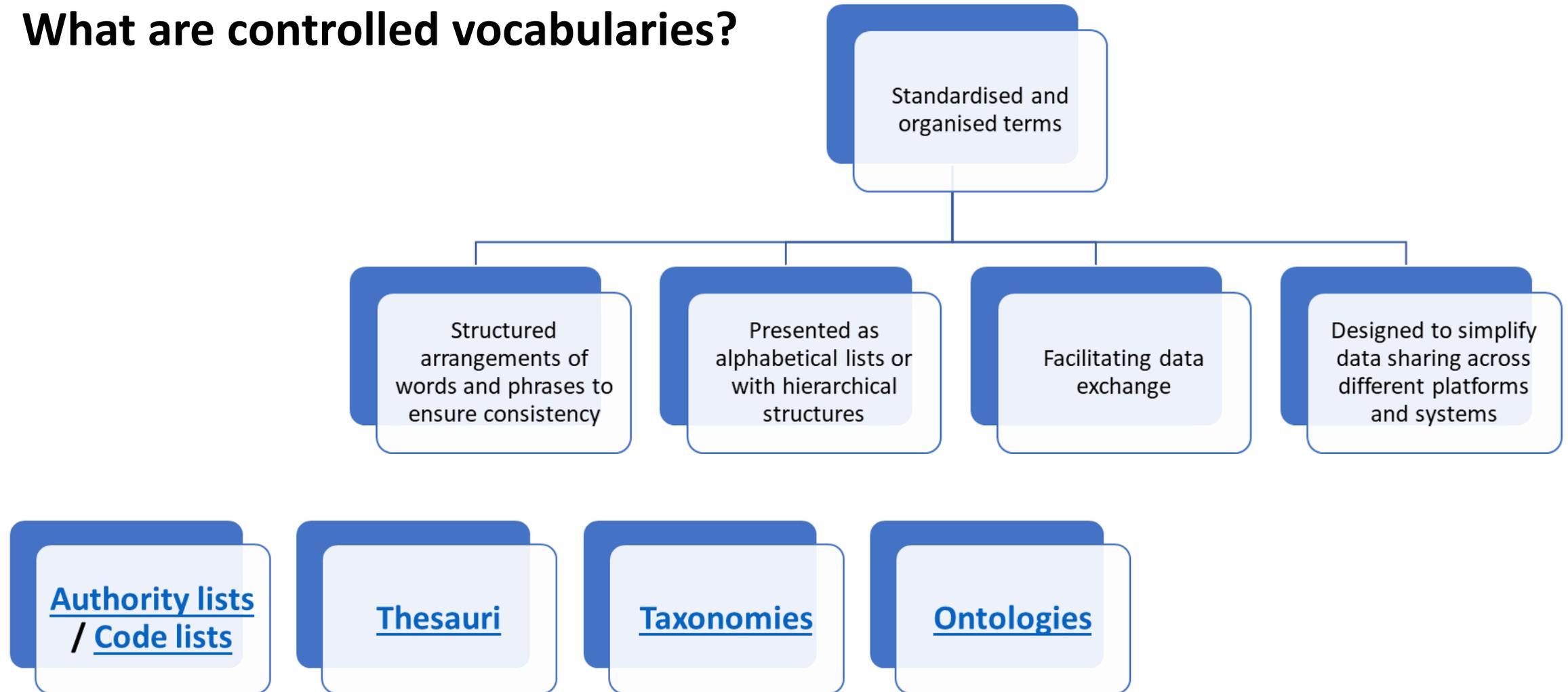
EU Vocabularies is...

EU Vocabularies

The screenshot shows the homepage of the EU Vocabularies website. At the top, there is a navigation bar with links to Publications Office, EU law, European data, EU tenders, EU research results, EU Whoiswho, and EU publications. Below this is a breadcrumb trail: Publications Office > EU Vocabularies. A secondary navigation bar includes Home, Controlled vocabularies, Models, Business collections, Online tools, Releases, and Help. The main content area is titled 'Search our catalogue' and features a search box with the placeholder text 'Search in EU Vocabularies'. Below the search box are buttons for 'Query Wizard', 'Flint editor', and 'SPARQL endpoint'. There is also a checkbox for 'EuroVoc only'. The page is divided into several sections: 'Reference data catalogue' (Browse the catalogue of reference datasets published by the Publications Office), 'Online tools and applications' (Discover online solutions to edit, disseminate and interact with your reference data), 'Recent releases and planning' (Explore the latest publication of vocabularies and models), and 'Support services' (Gain access to support services and the semantic technologies helpdesk). A 'WHAT'S NEW' section highlights 'EuroVoc 4.21' as the latest release. The 'EUROVOC' section describes it as a multilingual and multidisciplinary thesaurus covering the activities of the EU. At the bottom, there is a 'LET'S COLLABORATE' section.



What are controlled vocabularies?



Why use controlled vocabularies?

Interoperability

- To ensure seamless data exchange across systems and organisations

Structured and hierarchical data

- Organised data in a clear, logical structure for better management

Data quality and consistency

- Standardised terms and concepts to maintain high data integrity

Enhanced search capabilities

- To improve search accuracy and relevance through standardised terms

Multilingualism

- To facilitate data sharing in multiple languages with consistent terminology

Mappings between vocabularies

- To ensure that different vocabularies work together and improve data integration

Publication platforms: Cellar, EU Vocabularies and ShowVoc



Cellar
Common Data Repository

Semantic data repository
API, SPARQL endpoint,
machine-readable data

[Access CELLAR – SPARQL endpoint](#)



EU Vocabularies

Reference data catalogue
Browsing and searching,
multiple display views,
human-readable access

[Access EU Vocabularies](#)



Browsing interface
User-friendly access, based
on semantic web
technologies, support of
alignments

[Access ShowVoc](#)

Additionally: <https://data.europa.eu/> - the central point of access to European open data from international, European Union, national, regional, local and geodata portals



ERA datasets in EU Vocabularies

The Publication Office and ERA started cooperating in 2022

Several trainings and presentations of maintenance and display tools

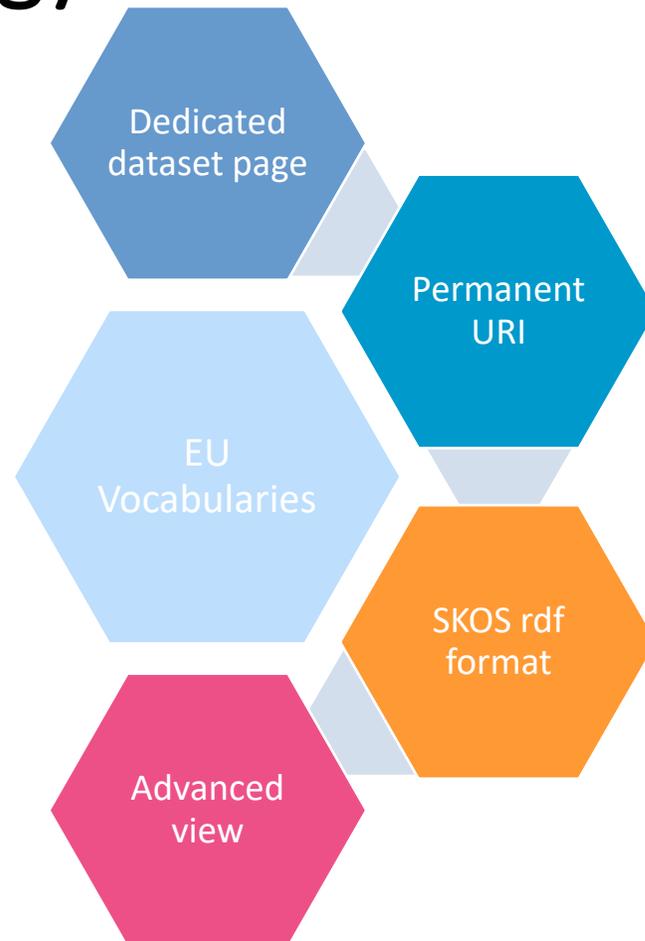
Publication of ERA ontology on EU Vocabularies and ShowVoc

Publication of the ERA codelists in ShowVoc

Creation of a dedicated business page on EU Vocabularies

Future maintenance in VocBench – collaborative space

Publication of the ERA ontology



Models ▾

Business collections ▾

Online tools ▾

Filter by:

View

Name

 Dataset details	Common Data Model
 Dataset details	DE-BIAS Ontology
 Dataset details	ECCF Core Ontology
 Dataset details	ELI Draft Legislation Ontology
 Dataset details	ELI Impact Ontology
 Dataset details	ELI Ontology
 Dataset details	ERA Ontology
 Dataset details	EU Budget Vocabulary

Business page on EU Vocabularies

Access point available to general public

One place to promote the work

Overview of selected codes lists:

- ✓ organised by category
- ✓ link to Github page
- ✓ link to ShowVoc visualisation

GSM-R Concept Schemes

This is the set of schemes grouping Concepts GSM-R equipment versions, GSM-R networks, GSM-R radio data communications, GSM-R versions, and GSM-R functions.

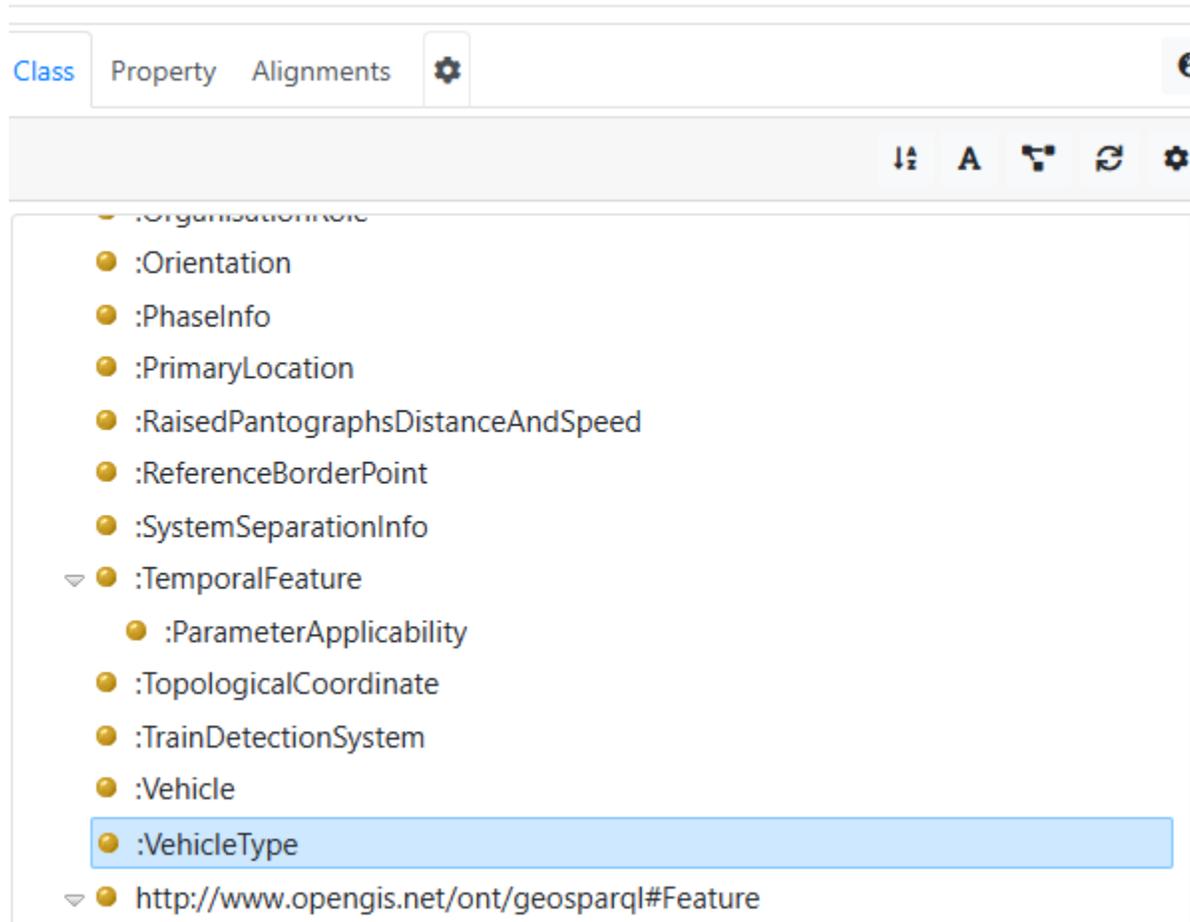
Equipment Version	Explore in ShowVoc
Networks	Explore in ShowVoc
Radio Data Communications	Explore in ShowVoc
Versions	Explore in ShowVoc
Optional functions	Explore in ShowVoc

Vehicle Concept Schemes

This is the set of schemes grouping Concepts related to types of vehicles, breaking conditions, contact lines and energy supply systems.

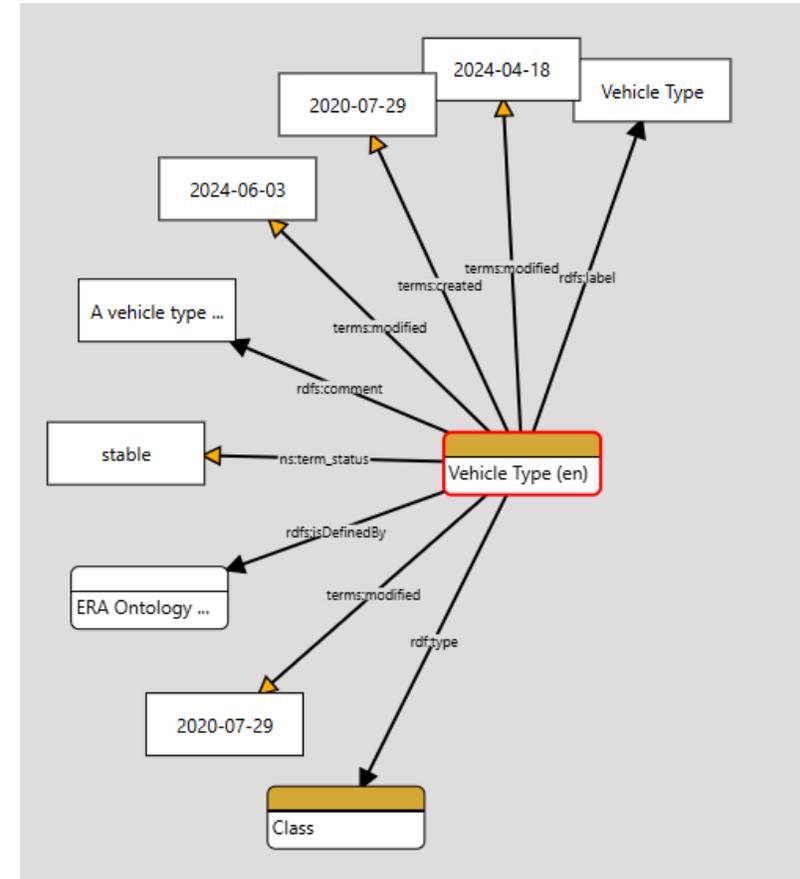
Axle Bearing Condition Monitoring	Explore in ShowVoc
Brake Parking Type	Explore in ShowVoc
Compliant Pantograph Heads	Explore in ShowVoc
Contact Line Systems	Explore in ShowVoc
Contact Strip Materials	Explore in ShowVoc
Eddy Current Braking	Explore in ShowVoc

Visualisation in ShowVoc



The screenshot shows the ShowVoc interface with the following elements:

- Navigation tabs: Class, Property, Alignments, and a settings gear icon.
- Toolbar: Icons for zooming, text size, font color, refresh, and settings.
- Class list:
 - OrganisationInfo
 - :Orientation
 - :PhaseInfo
 - :PrimaryLocation
 - :RaisedPantographsDistanceAndSpeed
 - :ReferenceBorderPoint
 - :SystemSeparationInfo
 - ▼ :TemporalFeature
 - :ParameterApplicability
 - :TopologicalCoordinate
 - :TrainDetectionSystem
 - :Vehicle
 - :VehicleType** (highlighted)
 - ▼ <http://www.opengis.net/ont/geosparql#Feature>



Reference Data in the Mobility Data Space

- **ERA Ontology:** The Mobility Data Space leverages the [ERA ontology](https://op.europa.eu/en/web/eu-vocabularies/era) - published on EU Vocabularies - to model transport entities (rail networks, infrastructure, services) <https://op.europa.eu/en/web/eu-vocabularies/era>
- **Mobility DCAT-AP:** Datasets in the Mobility Data Space conform to a specialised DCAT-AP profile (Mobility DCAT-AP) hosted on data.europa.eu, ensuring consistent metadata structures across modes and jurisdictions
- **The Frequency Authority Table** is used by the mobility DCAT-AP and has been adapted appropriately to meet the needs of the Data Space - so “hourly,” “every 15 min” and similar terms are linked to standardised URIs for unambiguous interpretation. [Frequency - EU Vocabularies - Publications Office of the EU](#)



Contact us

- anita.dutreuil@publications.europa.eu
- Website: <https://op.europa.eu/en/web/eu-vocabularies/home>
- Functional mailbox: OP-EU-VOCABULARIES@publications.europa.eu

