



Publications Office
of the European Union

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

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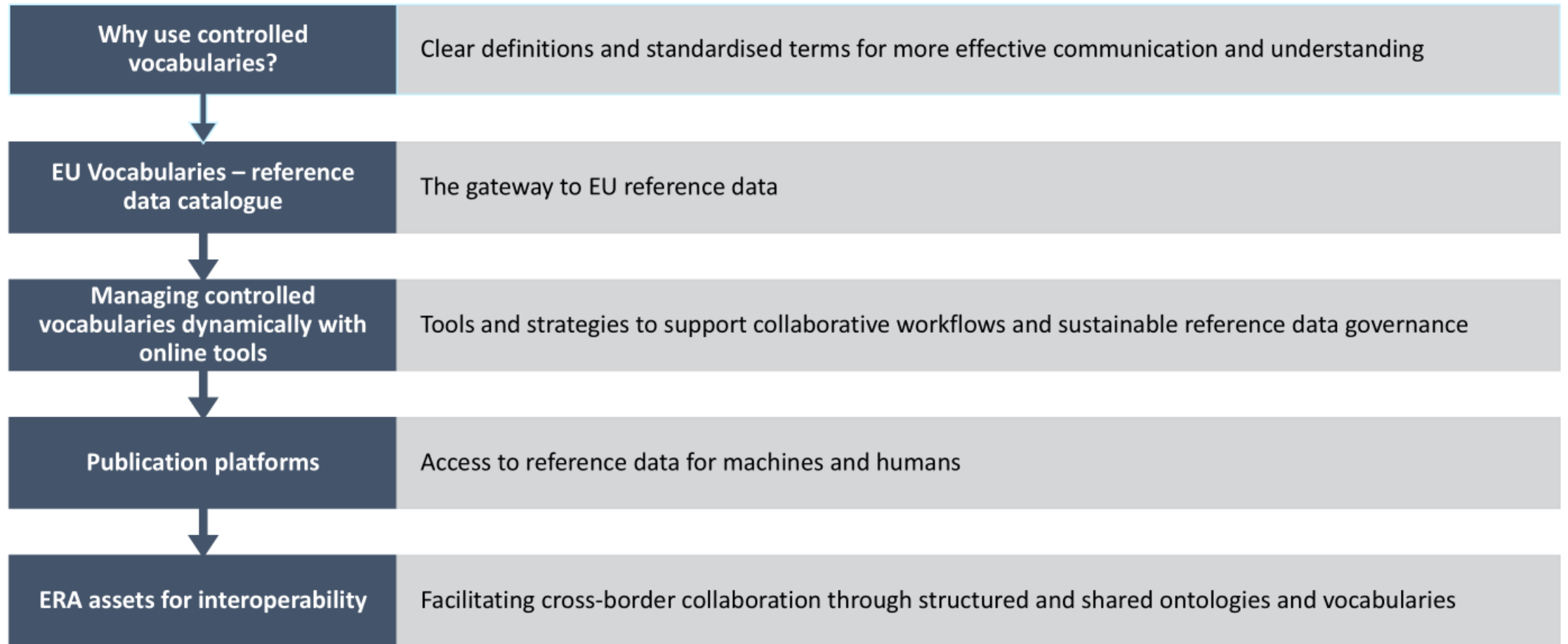
Publications Office of the European Union

Rail Data Forum 2025

11 - 13 June 2025



Outline



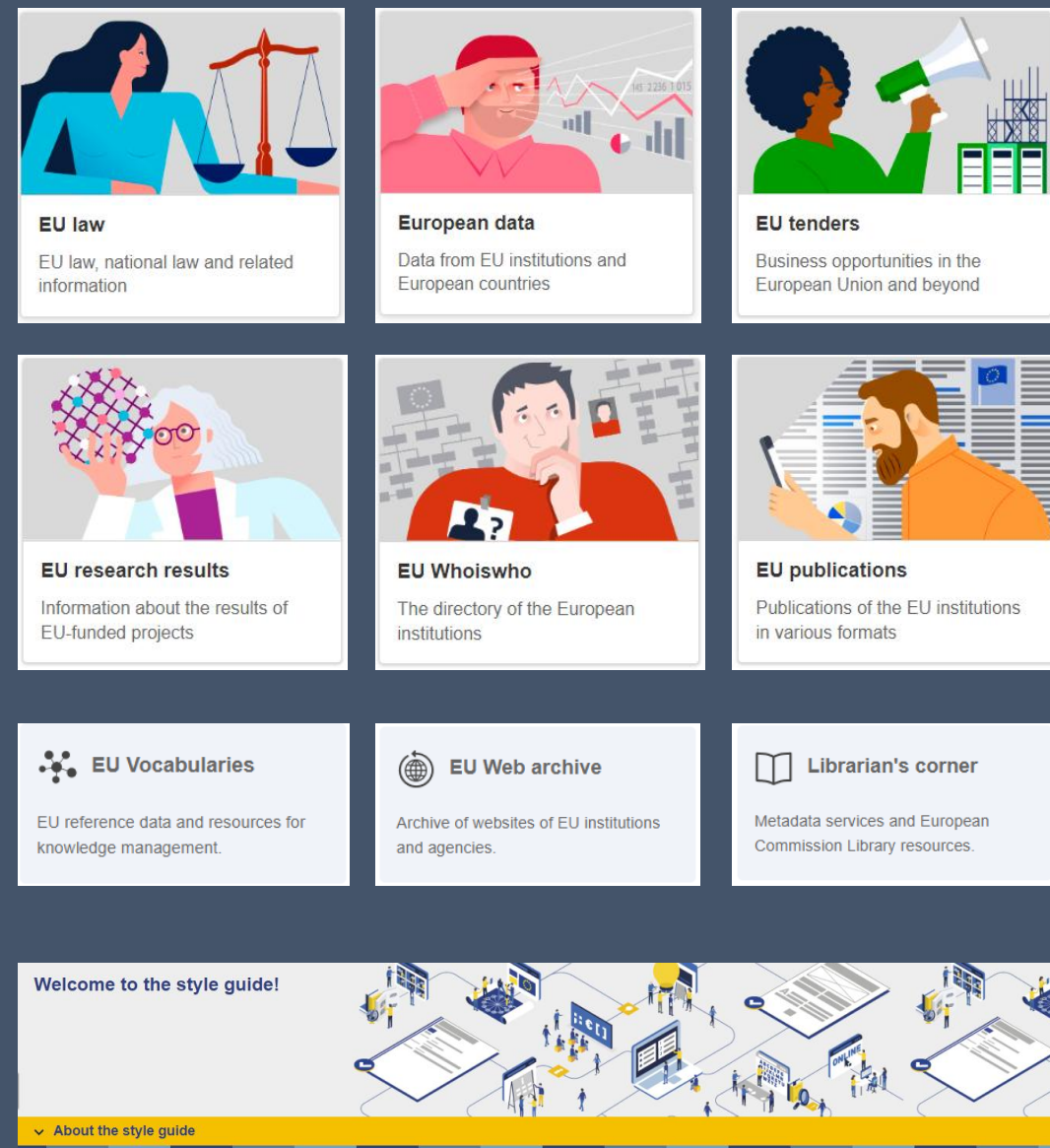
Who we are

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



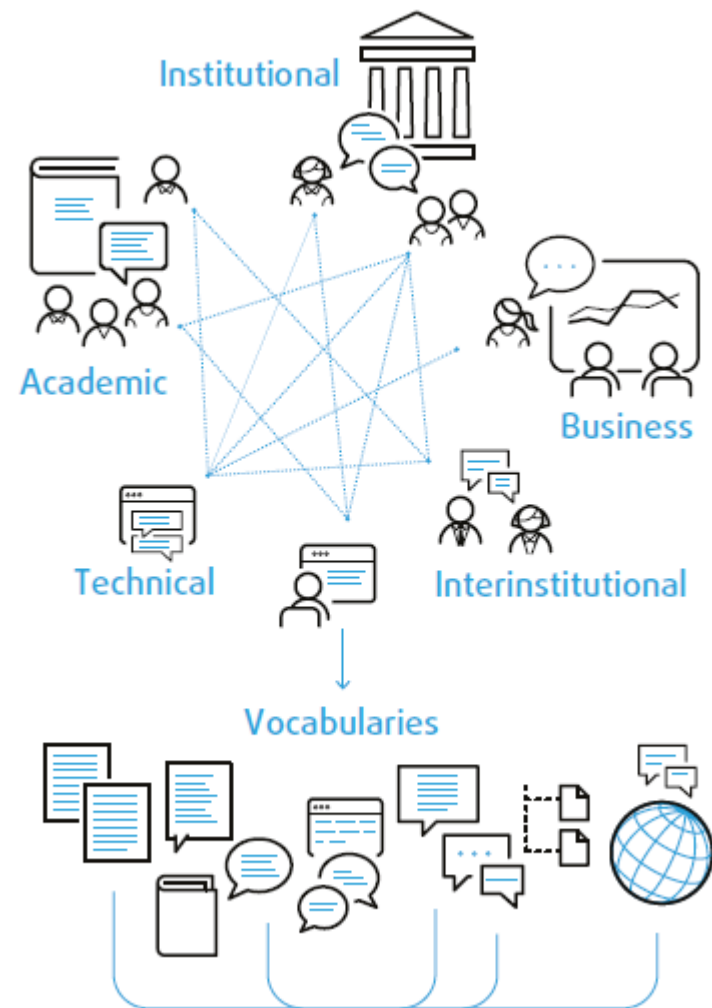
Our team

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 EU Vocabularies website. At the top is a blue navigation bar with links: 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 bar with the placeholder 'Search in EU Vocabularies', a 'EuroVoc only' checkbox, and buttons for 'Query Wizard', 'Flint editor', and 'SPARQL endpoint'. Below the search bar are four featured sections: 'Reference data catalogue' (with an image of a library and text 'Browse the catalogue of reference datasets published by the Publications Office'), 'Online tools and applications' (with an image of a keyboard and text 'Discover online solutions to edit, disseminate and interact with your reference data'), 'Recent releases and planning' (with an image of a server rack and text 'Explore the latest publication of vocabularies and models'), and 'Support services' (with an image of a person at a computer and text 'Gain access to support services and the semantic technologies helpdesk'). On the right side of the main content area, there are three 'WHAT'S NEW' sections: 'EuroVoc, the EU's multilingual thesaurus' (with a book icon and text 'EuroVoc 4.21 The release of EuroVoc 4.21 is now available online.'), 'EUROVOC' (with a cross icon and text 'Multilingual and multidisciplinary thesaurus covering the activities of the EU.'), and 'LET'S COLLABORATE' (with a group icon).

Website

- Gateway to reference data and the related tools and services



EU Vocabularies

Reference
data
catalogue

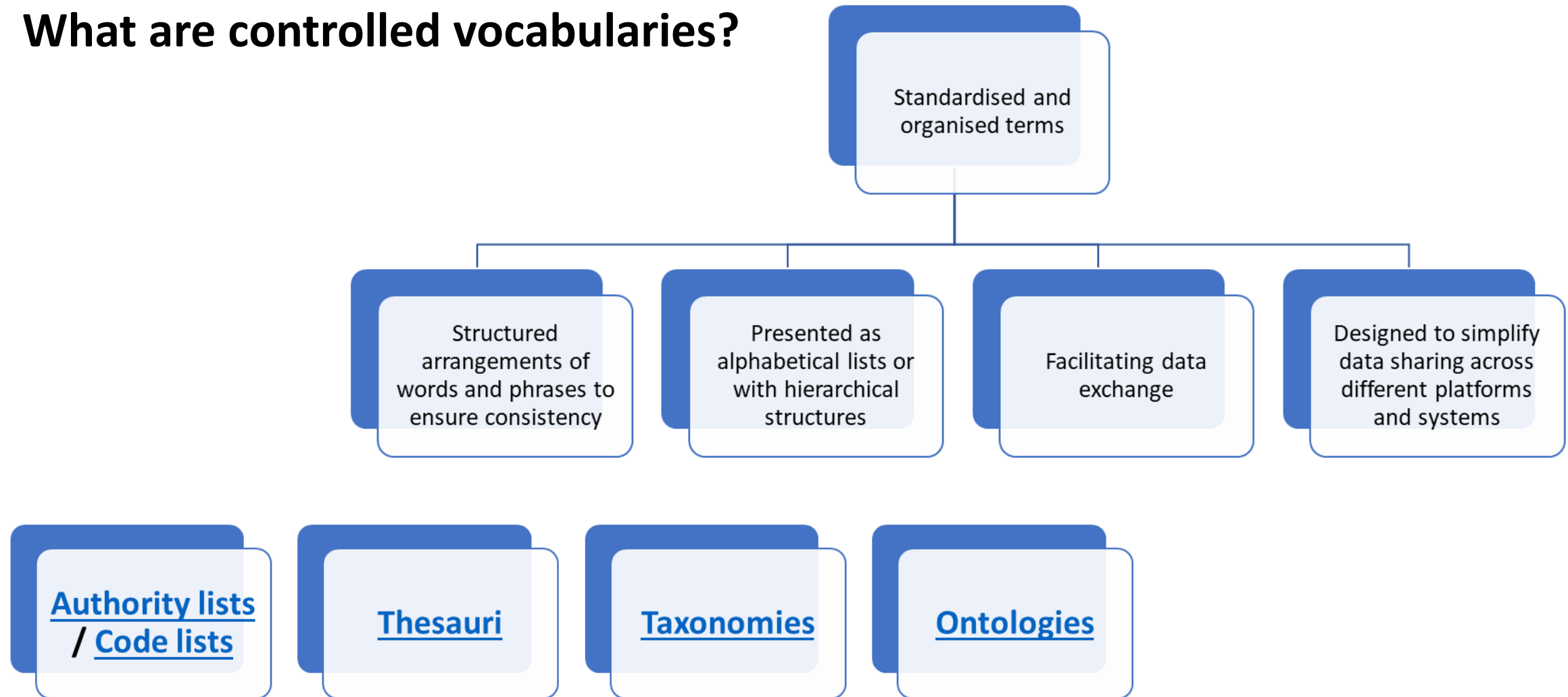
- ~300 semantic assets, maintained by EU institutions

Set of
services

- Maintenance and publication of reference data
- Support, training and helpdesk



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

Maintenance tool



Online editing tool for
controlled
vocabularies



Collaborative features



Based on semantic
technologies



Enhanced user
management



Designed for large
scale multilingual
vocabularies



Support of Linked Data
functionalities

The screenshot displays the VocBench web application interface. At the top, the current project is set to 'ERA_ontology' under 'Global Data Management'. The main navigation bar includes 'VocBench', 'Projects', 'Data', 'Metadata', 'SPARQL', 'History', 'Validation', and 'Tools'. The left sidebar lists various properties, with 'era:atoGradeAutomation' selected. The right sidebar shows details for 'ATO Grade of Automation (en)', including domains, ranges, and lexicalizations.



Publication platforms: Cellar, EU Vocabularies and ShowVoc



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

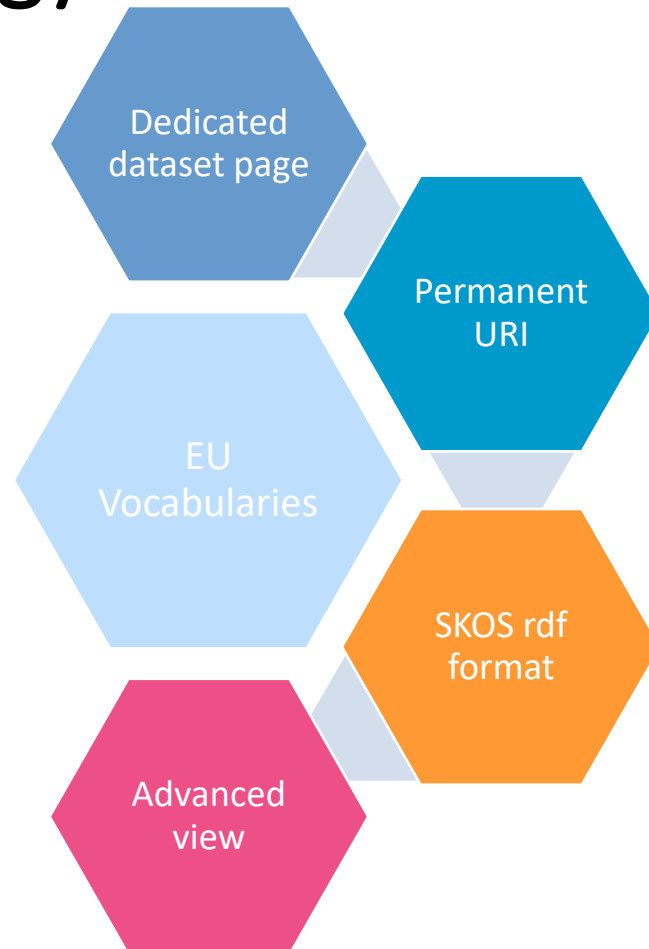
Publication of ERA ontology on EU Vocabularies and ShowVoc

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](#)

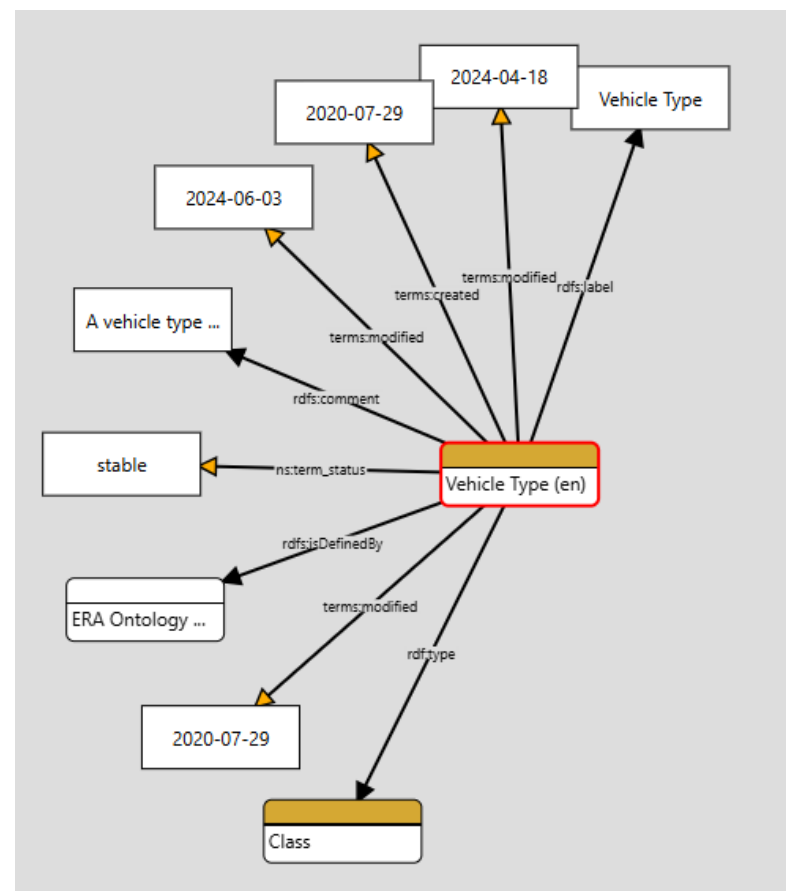
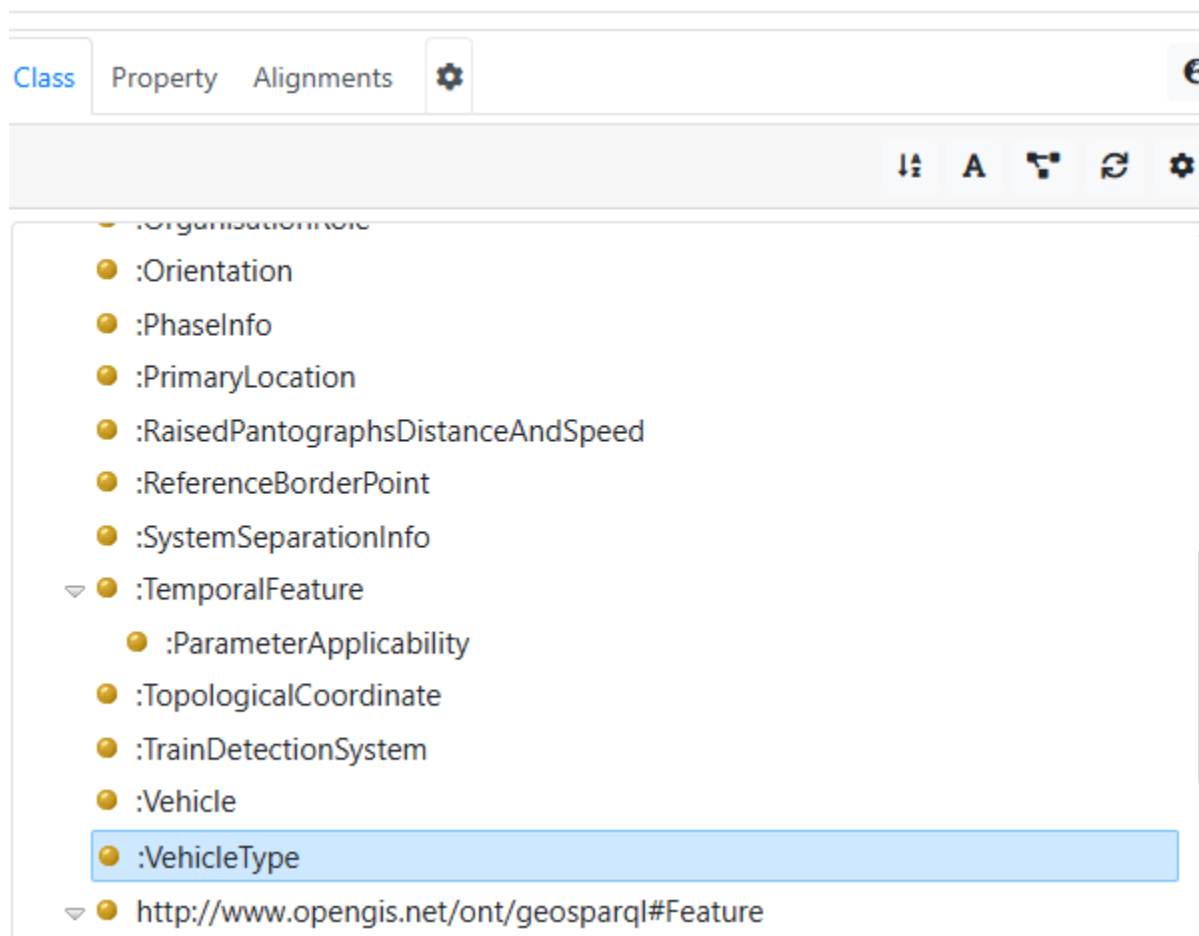
[Compliant Pantograph Heads](#) [Explore in ShowVoc](#)

[Contact Line Systems](#) [Explore in ShowVoc](#)

[Contact Strip Materials](#) [Explore in ShowVoc](#)

[Eddy Current Braking](#) [Explore in ShowVoc](#)

Visualisation in ShowVoc



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

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