

# Data quality and interoperability

22 November 2019  
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The ISA<sup>2</sup> programme supports the development of **digital solutions** that enable public administrations, businesses and citizens in Europe to benefit from **interoperable** digital public services.

## Goals of the programme

Promote a holistic approach to interoperability

Cross border, cross sector and user centric public administrations

Identify, create and operate interoperability solutions

Facilitate the reuse of interoperability solutions by European public administrations.

## ISA<sup>2</sup> Action 2016.07 SEMIC: Promoting Semantic Interoperability amongst the EU Member States



**Raising awareness** on the importance of metadata management.



**Identifying opportunities for alignment on semantic definitions, metadata and reference data sources** with special focus on identification and definitions of *core concepts/vocabularies*.



**Promoting, share and reuse of** semantic assets, experiences and tools and facilitating agreements in key areas.

## SEMIC specifications

### ADMS



### DCAT-AP



 StatDCAT-AP

 GeoDCAT-AP

### eGov Core Vocabularies



 Person, Business, Location

 Public Service

 Public Organization

 Criterion & Evidence

## SEMIC report on *Data quality management*

This report explores the intersection between data quality management and semantic interoperability: how semantic *assets* support and evolve data quality considerations.

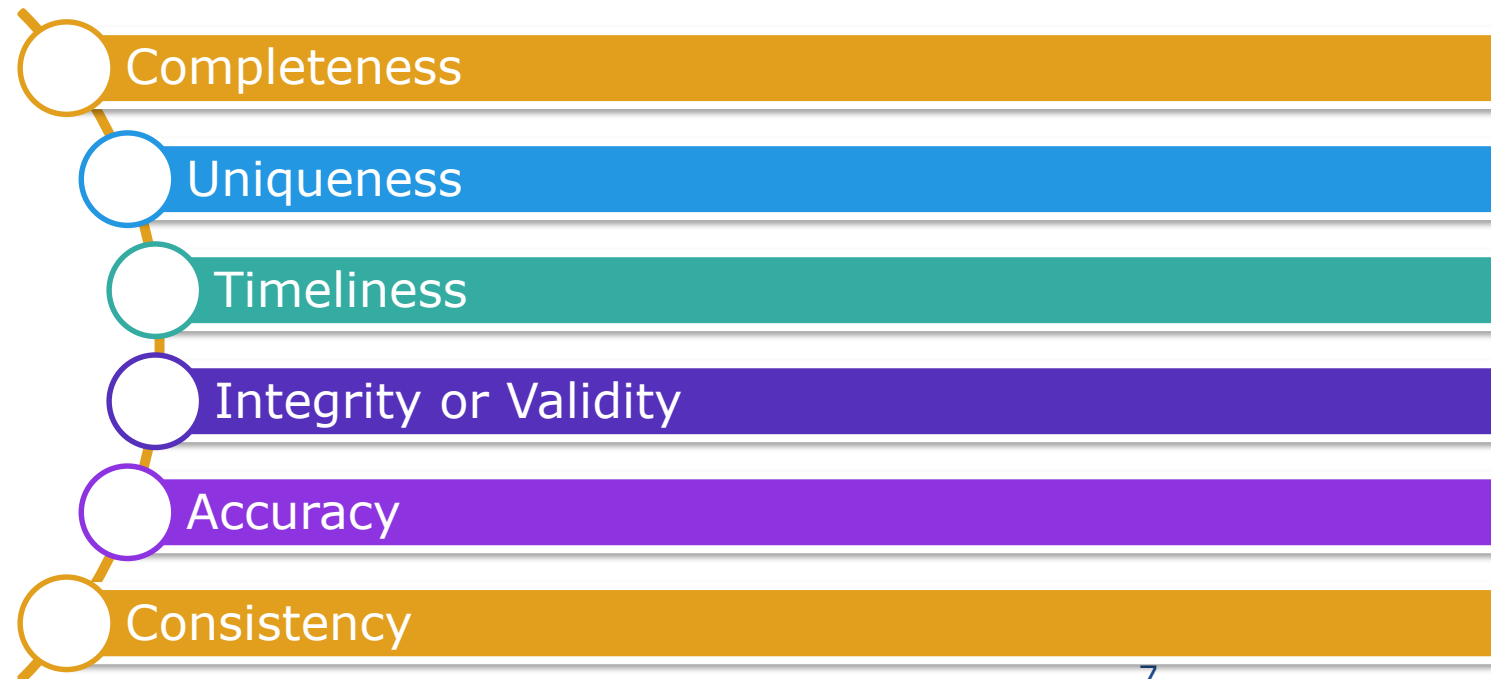
<https://joinup.ec.europa.eu/node/702125>

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## SEMIC report on *Data quality management* - content

### Data quality dimensions\*

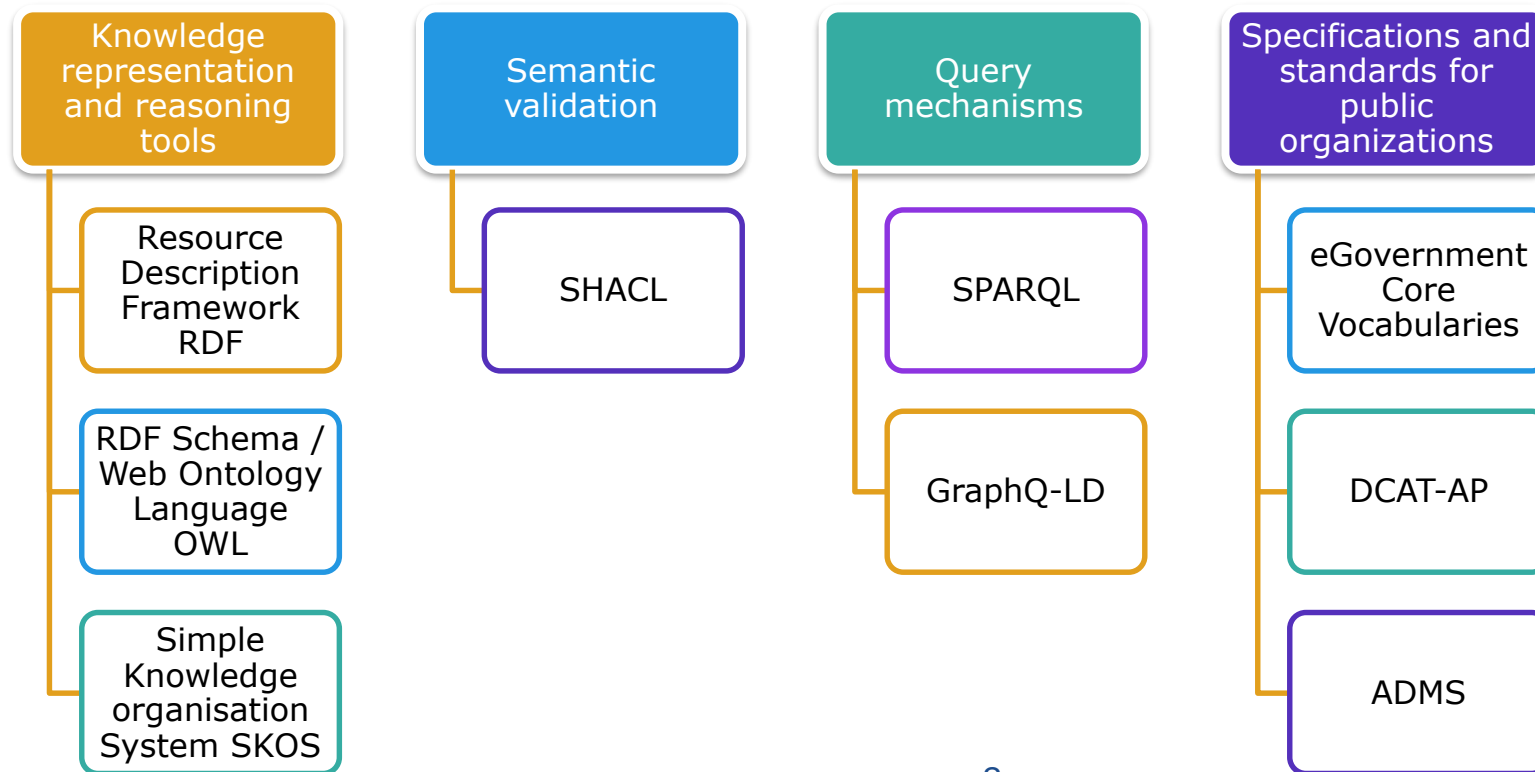


\* DAMA UK working group

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## SEMIC report on *Data quality management* - content

### Semantic web technologies





## SEMIC report on *Data quality management* - conclusions

Knowledge representation technologies (ontologies, thesauri, vocabularies)  
→ improve quality of data and interoperability.

Validation mechanisms improve the integrity and semantic accuracy of data.

Semantic enrichment of metadata → improved data quality.

## The Linked Data Showcase pilot - intro

- Objectives
  - Demonstrate a *linked data environment* with real use cases.
  - To answer the questions on *enterprise linked data*. E.g.: on privacy and security
- *'On a map, show Belgian and Czech companies working in "General public administration activities"'*
- SEMIC 2019 - <https://joinup.ec.europa.eu/node/701973>

## The Linked Data Showcase pilot – data quality

- Linked data and data models not enough.
- Quality of the (linked) data fundamental.
  - Quality/availability of the *technical representation* of the taxonomies and its use.
  - Strict API specifications
  - Validation



# EU Vocabularies

EU Vocabularies

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SPARQL search



EuroVoc

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## Popular assets

**Corporate body**  
Authority table

**EuroVoc**  
Thesaurus

**ELI**  
Ontology



## Metadata Registry

### Controlled vocabularies

Authority tables  
Thesauri  
ATTO tables  
Alignments

### Models

Schemas  
Ontologies  
Presentation style sheets  
Application profiles

### Releases

Previous versions of controlled vocabularies and models



## What's new



### Ordinary publication 20190918-0

The ordinary publication 20190918-0 is available.



## Business collections

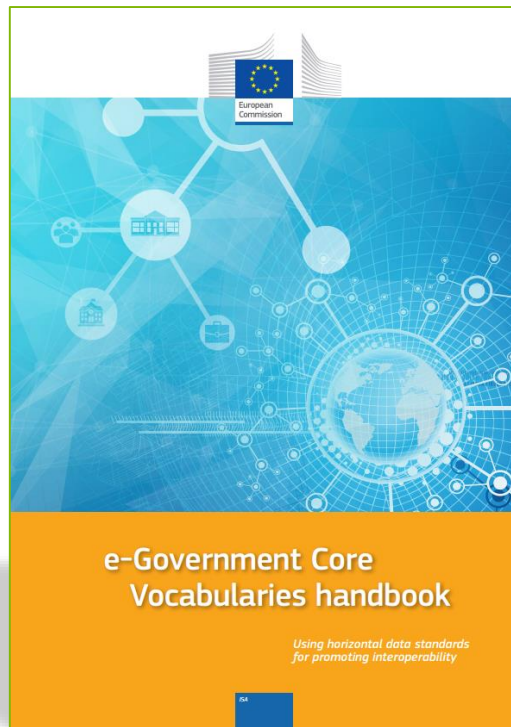
AKN4EU  
BITS (Book Interchange Tag Suite)  
Common Data Model (CDM)  
Core Vocabularies  
DCAT-AP for data portals in Europe  
Digital Europa Thesaurus (DET)  
eProcurement  
European Legislation Identifier (ELI)  
Formex  
IMMC Core metadata exchange protocol  
OJEEP (Official Journal Electronic Exchange Protocol)  
OP Core metadata element set



## About EU Vocabularies

The EU Vocabularies website provides access to vocabularies managed by the EU institutions and bodies. This includes controlled vocabularies, schemas, ontologies, data models, etc. As part of the EU open data initiative, the EU Vocabularies site offers free public access to all of its content. [Read more](#)

## The e-Government Core Vocabularies

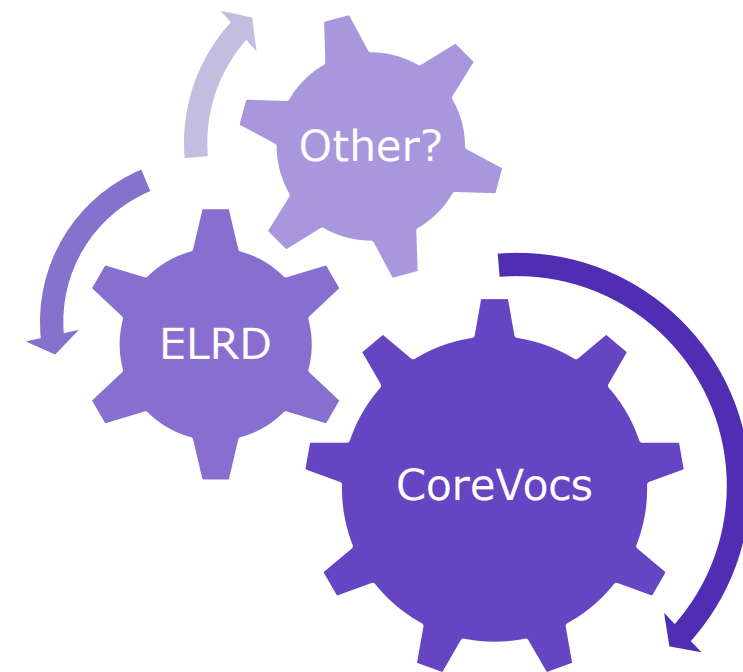


**Simplified, re-usable, and extensible** data models that capture the fundamental characteristics of a data entity in a context-neutral and syntax-neutral fashion



## The e-Government Core Vocabularies & the ELRD

- The e-Government Core Vocabularies, by design, need to be further developed.
- For ELRA → ELRD: building on the e-Government Core Vocabularies, addresses the particular needs of land registries.
- The e-Government Core Vocabularies:
  - facilitate the integration of other domains
  - enrich the information provided for public access.



## ELRD & I-KOS

- IMOLA II main objective: define a common semantic model for land registries interconnection
- The ELRD: harmonized specific context domain
  - *Pivot terms* connect similar legal concepts among national versions using an intermediate container called *pivot*.
  - Pivot terms *linked* to each other: the ELRD *ontology*.
  - Pivot terms, concepts, available to enrich the information provided.
- IMOLA Knowledge Organization System (I-KOS)
  - A multilingual repository of terms AND a thesaurus where concepts are structured and organized according to the semantic web architecture and technologies.
- ➔ Data quality

## Recap

- Linked data and data quality: Report on data quality.
- Data quality and linked data: the LDS pilot.
- e-Government Core Vocabularies → ELRD.
- ELRD and data quality.

## ISA<sup>2</sup> programme

*You click, we link.*

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Run by the Interoperability Unit at DIGIT (European Commission) with 131€M budget, the ISA<sup>2</sup> programme provides public administrations, businesses and citizens with specifications and standards, software and services to reduce administrative burdens.