

16 May  
2024

**DG DIGIT**

# **Development of SEMIC Registry**

## **2nd workshop – Technical Requirements**

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DIGIT.B2 - Interoperability.

**interoperable**  
europe





# **Chapter 1: Objectives of this workshop**

# Agenda

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01

## Objectives of the workshop

- Introduction
- Recap 1st workshop – Adoption Requirements

02

## Metadata

- Adopted metadata models
- Minimum common metadata

03

## Architecture

- Architectural components
- Connection between the registry & repositories

04

## Summary & next steps



# Objectives

*Recap 1st workshop – Adoption  
Requirements*

# Recap 1st workshop



Registry vs. repositories



User categories



Use cases

# Captured requirements



- 1 Domain-specific filtering
- 2 European Commission models findability
- 3 Comparable with previous version(s)
- 4 Publishable in 2 ways
- 5 Prioritization on filtering & searching
- 6 Model creators' contact available
- 7 Possible to determine access rights

# Future pilot participants

Already two Member States gave notice to participate in this future pilot:

**Lithuania**



**Germany**



If you also want to participate in the pilot, please reach out to us.





## Chapter 2: Metadata



The slide features several abstract, rounded shapes in the corners, each containing a different data visualization. Top-left: A green and blue network graph with many nodes and edges. Top-center: A red and orange network graph with a central cluster. Top-right: A blue and orange network graph with a central cluster. Middle-right: A blue concentric circle pattern. Bottom-left: A blue and orange network graph with a central cluster. Bottom-center: A blue and orange network graph with a central cluster. Bottom-right: A blue and orange network graph with a central cluster.

# Metadata

*Adopted metadata models*

# Analysis approach

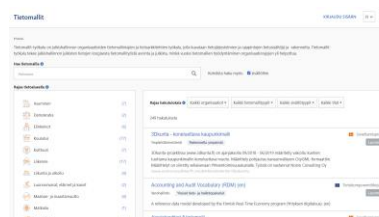
Six repositories were utilized to analyse elements such as model reuses, file formats, and metadata file formats

➡ This is done to facilitate the decision-making for the registry metadata during the future pilot phase

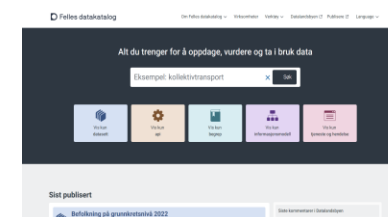
## SGT (Italy)



## DVT (Finland)



## DNN (Norway)



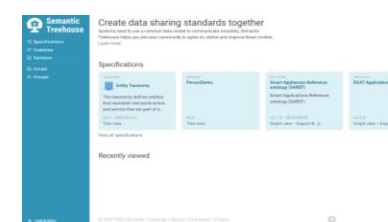
## SGF (France)



## LOV



## TNO



# Adopted metadata models

Portal	Metadata file format
<a href="#">SGT</a> (Italy)	RDF
<a href="#">DNN</a> (Norway)	RDF
<a href="#">DVT</a> (Finland)	RDF
<a href="#">SGF</a> (France)	YAML + metadata per file format
<a href="#">LOV</a>	RDF + metadata per ontology
<a href="#">TNO</a> (Netherlands)	RDF

There is some use of **DCAT**  
**RDF** is the way to go



# Question



*"Are there any questions or remarks about the repositories chosen for the analysis? "*

The slide features several abstract, rounded-corner square graphics in dark blue and black. These contain various patterns: green and yellow fiber-like lines, red and orange mesh-like structures, concentric blue circles, a blue grid pattern, and yellow branching structures. 

# Metadata

*Minimum common metadata*

# Common & uncommon metadata

Some metadata is used by every repository analysed, while other components are only found in some.

Common	Less common	Suggested
<ul style="list-style-type: none"><li>• Name</li><li>• Description</li></ul>	<ul style="list-style-type: none"><li>• Version_info</li><li>• Creation date</li><li>• Publication date</li><li>• Modified date</li><li>• Languages</li><li>• URI identifier</li><li>• Contributor</li></ul>	<ul style="list-style-type: none"><li>• License</li></ul>



# Your opinion on the registry metadata



For every metadata component, are they mandatory or optional?  
Are there metadata components that have been forgotten?

[Slido](#)



## Chapter 3: Architecture

The image features a central text block on a white background. The text 'Architecture' is in a large, bold, black sans-serif font, and 'Architectural components' is in a smaller, italicized, black sans-serif font below it. Surrounding the text are six decorative circular elements with rounded corners, each containing a different abstract pattern. The top-left circle shows green and yellow lines on a dark blue background. The top-center circle shows a red and orange wireframe structure. The top-right circle shows blue and yellow lines on a dark blue background. The middle-right circle shows concentric blue circles on a black background. The bottom-center circle shows a blue and white striped pattern. The bottom-right circle shows green and yellow lines on a dark blue background. The bottom-left circle shows a yellow and blue pattern on a dark blue background.

# Architecture

*Architectural components*



# Components

Repositories	Internal Database	SPARQL endpoint	API	Validation service
SGIT	MySQL (configuration only / optional)	<b>X</b> ( <i>public, based on Virtuoso</i> )	<b>X</b> ( <i>aggregated &amp; REST based on OpenAPI</i> )	
NDD		<b>X</b> ( <i>public, based on Fuseki</i> )		
DVT	PostgreSQL	<b>X</b> ( <i>private, based on Fuseki, behind API</i> )	<b>X</b> ( <i>REST based on OpenAPI</i> )	
LOV	MongoDB	<b>X</b> ( <i>public, based on Fuseki</i> )	<b>X</b> ( <i>REST</i> )	
SGF				<b>X</b> ( <i>for the 3 supposed schemas</i> )
TNO	MySQL		<b>X</b> ( <i>REST for validation</i> )	<b>X</b> ( <i>for XML schema</i> )



# Architecture

*Connection between the registry &  
repositories*

# Upstream and downstream scenario's

In both scenario a transformation process is needed to homogenize the metadata !

Questions	Scenario 1: registry harvesting (upstream)	Scenario 2: repository uploading (downstream)
Where is the metadata stored and where can it be accessed?	<ul style="list-style-type: none"><li>• SPARQL</li><li>• REST API</li></ul>	<ul style="list-style-type: none"><li>• SPARQL</li><li>• REST API</li></ul>
Which format to extract ?	<ul style="list-style-type: none"><li>• RDF (Turtle / JSON-LD)</li><li>• JSON</li><li>• XML</li></ul>	<ul style="list-style-type: none"><li>• RDF (Turtle / JSON-LD)</li><li>• JSON</li><li>• XML</li></ul>
Are there security mechanisms in place?	<ul style="list-style-type: none"><li>• HTTPS</li><li>• REST API key</li><li>• OAuth</li></ul>	<ul style="list-style-type: none"><li>• HTTPS</li><li>• REST API key</li><li>• OAuth</li></ul>
Is traffic limited ?	<ul style="list-style-type: none"><li>• Request per minute</li><li>• Availability time</li></ul>	<ul style="list-style-type: none"><li>• Request per minute</li><li>• Availability time</li></ul>
Are operations limited ?	<ul style="list-style-type: none"><li>• GET / SELECT</li><li>• POST / CONSTRUCT</li></ul>	<ul style="list-style-type: none"><li>• GET / SELECT</li><li>• POST / CONSTRUCT</li></ul>





## Chapter 4: Summary & next steps

# Roadmap until June 2024



## Meetings

## Description

- |   |                                    |   |
|---|------------------------------------|---|
| ✓ | <b>Kick-off meeting</b>            | <ul style="list-style-type: none"><li>• Explanation of the <b>roadmap</b> during the trajectory</li><li>• How the meetings explained in the roadmap will be executed</li></ul>                            |
| ✓ | <b>First workshop – March 2024</b> | <ul style="list-style-type: none"><li>• User profiles and use cases for a future registry</li><li>• Determining the requirements for the <b>adoption</b></li><li>• Registry versus repositories</li></ul> |
| ➔ | <b>Second workshop – May 2024</b>  | <ul style="list-style-type: none"><li>• <b>Validation</b> of <b>technical requirements</b></li><li>• <b>Recommendations</b> for <b>implementations</b> (i.e. which existing technology, etc)</li></ul>    |
|   | <b>Closing meeting – June 2024</b> | <ul style="list-style-type: none"><li>• <b>Summary</b> of the outcome of the working groups</li><li>• Discussing potential <b>next steps</b></li></ul>  |
|   | <b>Results</b>                     | <ul style="list-style-type: none"><li>• Validated proposal and working group to conduct a <b>future pilot</b> (Q3-Q4 2024)</li></ul>  |

# Next meeting



Which requirements, final remarks, ... do you still have?



Overview of requirements the registry should have

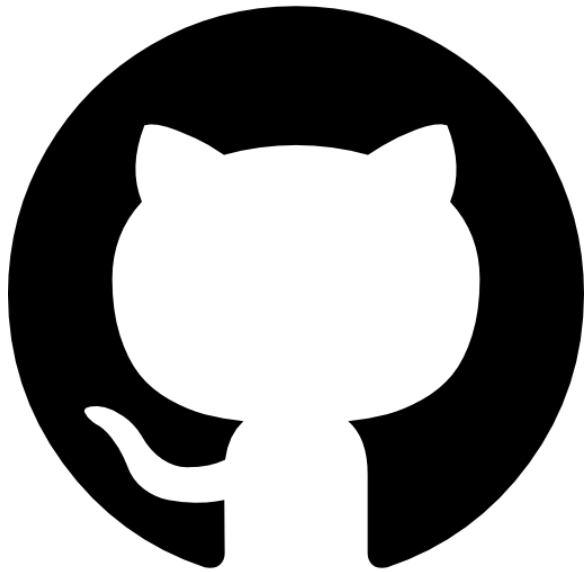


General feedback



Discussion on the future pilot and any other interested participant

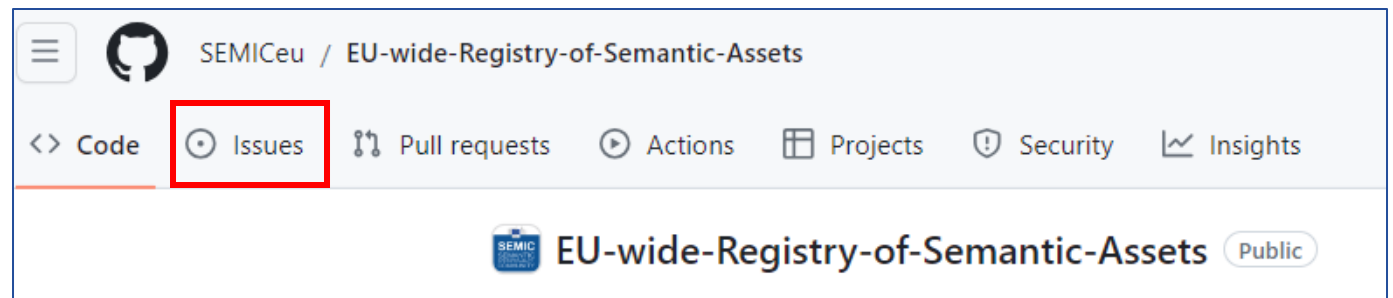
# Feedback



**GitHub**



- Overview of materials and proposition documents
- Feedback mechanism: 'GitHub issues' to submit feedback
- Open discussion by the working group







**Thank  
you**



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