CAMSS webinar

ELIS: The EIRA Library of Interoperability Specifications

Wednesday, December 13, 2023

09:00 – 10:00 CET (Brussels time)

interoperable europe

European Commission

Agenda

09:00 – 09:05	**1. Motivation**
09:05 – 09:25	**2. ELIS environment & solutions**
09:25 – 09:35	**3. How to use ELIS**
09:35 – 09:45	**4. Use Case Software Architect – ELIS via the CarTool©**
09:45 – 09:50	**5. Use case of Procurer – ELIS in CELLAR**
09:50 – 09:55	**6. Q & A**
09:55 – 10:00	**7. Let's hear from you**

1. Motivation

Motivation - *Webinar purpose*

1. Introducing the context of the EIRA Library of Interoperability Specifications (ELIS)
2. Comprehensively explain what is ELIS and how it works
3. Showing ELIS in support to interoperability (CarTool© demo)
4. ELIS in CELLAR

Motivation - *Webinar proposal*

Proposed schedule of events

01

First session 09 Nov

Introducing CAMSS
(1h)

Presenting the CAMSS action, its solutions and the following events to be held

02

Second session NOW

ELIS
(1h)

- Presenting the ELIS and its solutions (EIRA, CSSV, CAV)
- Demo

03

Third session

CAMSS Assessment Scenarios
(1h ½)

- Presenting the CAMSS Assessment Scenarios
- Presenting the CAMSS European Interoperability Framework (EIF) Scenario and its methodology
- Demo of an interoperability Specification

04

Fourth session

ELAP and ELAP Validator
(1h)

- Presenting the European Library of Architecture Principles (ELAP), the ELAP Validator and link to EIRA and EIF
- Demo of a use case for the execution of the ELAP Validator

05

Fifth session

CAMSS Vocabularies
(1h)

Presenting the Core Standards and Specifications Vocabulary (CSSV) and the Core Assessment Vocabulary (CAV)

Topics will be decided upon your choice during the session before

2. ELIS environment and solutions

ELIS environment – *key concepts*

Interoperability

Interoperability is the ability of two or more systems or applications to **exchange information** and to **mutually use the information** that has been exchanged.

Solution

In the context of cross-border ICT interoperability, a "**solution**" refers to **any framework, software tool, service**, or **eLearning course** that equips you with **essential knowledge and resources**, foundational elements and guiding structures necessary to establish or improve interoperability strategies.

Standards and specifications

A specification is the **documentation of a precise requirement or set of requirements** that are needed for the implementation of a solution. **A specification is not necessarily a standard**.

A standard is a specification that has reached a certain **maturity** and a **widespread adoption**, is recognized as the **most appropriate current specification**, and is agreed upon by a **recognized authority**.

ELIS environment and solutions – *EIRA support to Interoperability*

How is the EIRA© supporting interoperability?

European Interoperability Reference Architecture
To guide public administrations in their work to provide **interoperable** European public services to businesses and citizens

Interoperable Europe
Initiative of the European Commission to promote interoperability solutions for public administrations, businesses and citizens

Based on

Users' input (requirements/architecture decisions)

Provides

EIRA
EUROPEAN INTEROPERABILITY REFERENCE ARCHITECTURE

Based on

Requirements (High-Level, Detailed-Level), Solution Model

In conformance with

European Interoperability Framework (EIF)
Defines basic interoperability guidelines in the form of common principles, models and recommendations.

ELIS environment and solutions - *The European Interoperability Reference Architecture (EIRA©) 1/2*

EIRA© is a **reference architecture** for 1) analysis of requirements and 2) design of a target solution use cases across borders and sectors. It defines the **required capabilities for promoting interoperability** as a set of **architecture building blocks (ABBs).**

What is a reference architecture?

Blueprint/template that provides a **recommended framework** for designing and implementing systems

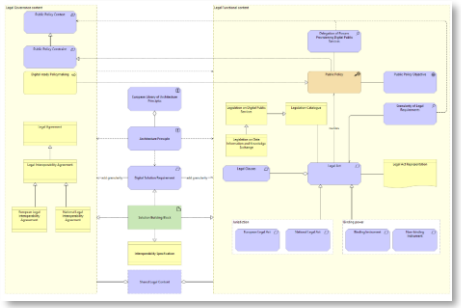
- **Guide** for creating solutions that meet specific needs or objectives
- **Best practices, standards, and guidelines** to create systems that are efficient, scalable, and interoperable
- A common language and approach for technology development and deployment that **reduces complexity and costs**

*EIRA© operates as a checklist for **Quality Assurance**: Ensuring quality during the analysis and solution design stages.*

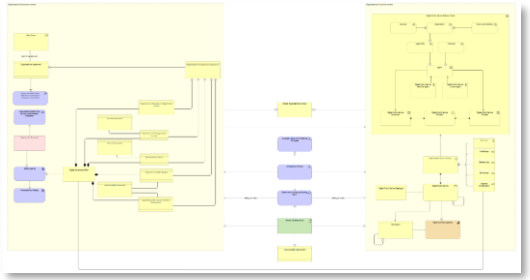
EIRA© views and building blocks

LOST viewpoints

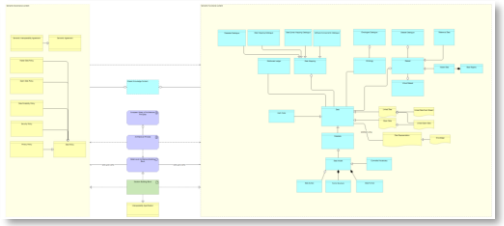
Legal view
Defines the legal governance and functional content



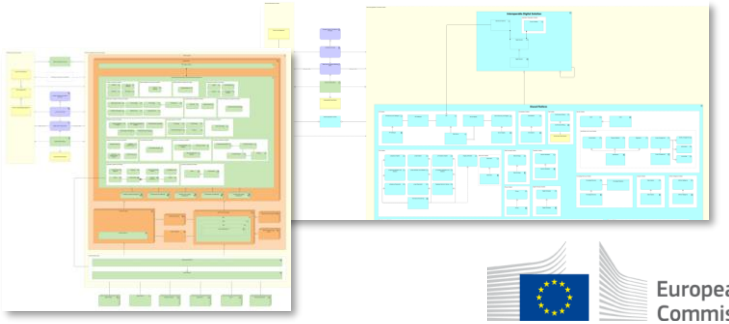
Organisational view
Defines the organisational governance and functional content



Semantic view
Defines the semantic governance and functional content



Technical view (Application & Infrastructure)
Defines the technical governance and functional content



https://joinup.ec.europa.eu/collection/european-interoperability-reference-architecture-eira/solution/eira/eira-v600-online-documentation

ELIS environment and solutions – *The European Interoperability Reference Architecture (EIRA©) 2/2*

EIRA© helps public institutions to obtain **certain benefits** when implementing Digital Public Services:

Main characteristics of EIRA©

Common terminology to achieve coordination
Common understanding of the most salient ABBs needed to build interoperable public services

Reference architecture for delivering digital public services
Framework to categorise (re)usable Solution Building Blocks (SBBs) of an eGovernment solution

Technology- and product-neutral and service-oriented architecture (SOA) style
Service-oriented architecture style and promotes ArchiMate® as a modelling notation

Alignment with EIF and TOGAF
The views correspond to the interoperability levels in the EIF. It reuses terminology and paradigms from TOGAF® (i.e., architecture patterns, building blocks and views)

Benefits of EIRA©

1. **Development of more interoperable e-Government solutions**
2. **Cost-savings due to better assessment of solution portfolios**
3. **Cost-savings via increased findability**
4. **Machine readable**
5. **Facilitates validation using EIRA and eGovERA validator**
6. **Integration with ELAP and ELIS**

Which target users will benefit from using EIRA?"

- **Policy makers**
- **Enterprise/ solution architects**
- **Business analysts**
- **Portfolio managers**

ELIS environment and solutions – *The CarTool©*

The CarTool© is an open platform that brings high level support to **design, document** and **search solutions** according to EIRA©.
It brings together high-level support as a **plug-in for the popular tool Archi®.** It includes both editing features to model solutions using the EIRA©, and querying features to query an EIRA-based Cartography of solutions.

Main characteristics of CarTool©

1. **Free of charge plug-in**
2. **Does not require special permissions or prerequisites**
3. **Supports and simplifies the EIRA©'s use**
4. **Promotes reuse**
5. **Enhances data quality**
6. **Allows offline use**

Who is CarTool© for?

Enterprise/solution architects | **Business analysts** | **Portfolio managers**

Main uses of CarTool©

ICT solution development
To design new solutions based on the EIRA©, making use of existing, reusable solutions and proposed interoperability standards

New legislative proposals
To assess ICT implications of policy changes by searching related solutions in the solutions' Cartography

Public procurement
To define tender specifications based on proposed standards, and use of specific building blocks

Portfolio management
To assist in managing and rationalising a solution portfolio and comparing its solutions' architectures

ELIS environment and solutions - *CSSV*

CSSV
(Core Standards and Specification Vocabulary)

- Vocabulary used for the **information exchange** related to standards and specifications **amongst software solutions**, and for the description of themselves (e.g., EIRA) **amongst other specifications**.
- **Key element** for the development of the ELIS.

ELIS environment and solutions - *CAV*

CAV
(Common Assessment Vocabulary)

- Represents and defines **what an "assessment" of "asset" is** and **how to perform the assessment** based on "Criteria".
- CAV is **a domain-agnostic vocabulary**, meaning that it can be used to assess any type of vocabulary.

ELIS environment and solutions - *CAMSS Assessments*

CAMSS Assessment is a **solution** which corresponds to **the output of an assessment** of a standard or technical specification using the CAMSS Assessment EIF Scenario

Outcome of the assessment resulting in a **score** based on the alignment of the specification with the EIF Core principles.

Produces

Any **approved assessment** is published by the CAMSS Team and publicly available within the [CAMSS Assessment Library] asset.

3. ASSESSMENT RESULTS

This section presents an overview of the results of the CAMSS assessments for **XML**. The CAMSS "Strength" indicator measures the reliability of the assessment by calculating the number of answered (applicable) criteria. On the other hand, the number of favourable answers and the number of unfavourable ones is used to calculate the "Automated Score" per category and an "Overall Score".

Category	Automated Score	Assessment Strength	Compliance Level
Principle setting the context for EU actions on interoperability	80/100 (80%)	100%	Sustainable
Core interoperability principles	1360/1700 (80%)	100%	Sustainable
Principles related to generic user needs and expectations	1120/1200 (93%)	33%	Seamless
Foundation principles for cooperation among public administrations	500/500 (100%)	80%	Seamless
Interoperability layers*	980/1000 (98%)	90%	Seamless
Overall Score	3040/3500 (87%)[15]	78%	

**The technical interoperability layer is covered by the criteria corresponding to the core interoperability principle "Openness".*

With an 78% of assessment strength, this assessment can be considered representative of the specification compliance with the EIF principles and recommendations.

The Overall Automated Score of 87% (3040/3500) demonstrates that the specification supports the European Interoperability Framework in the domains where it applies.

CAMSS Assessments Library

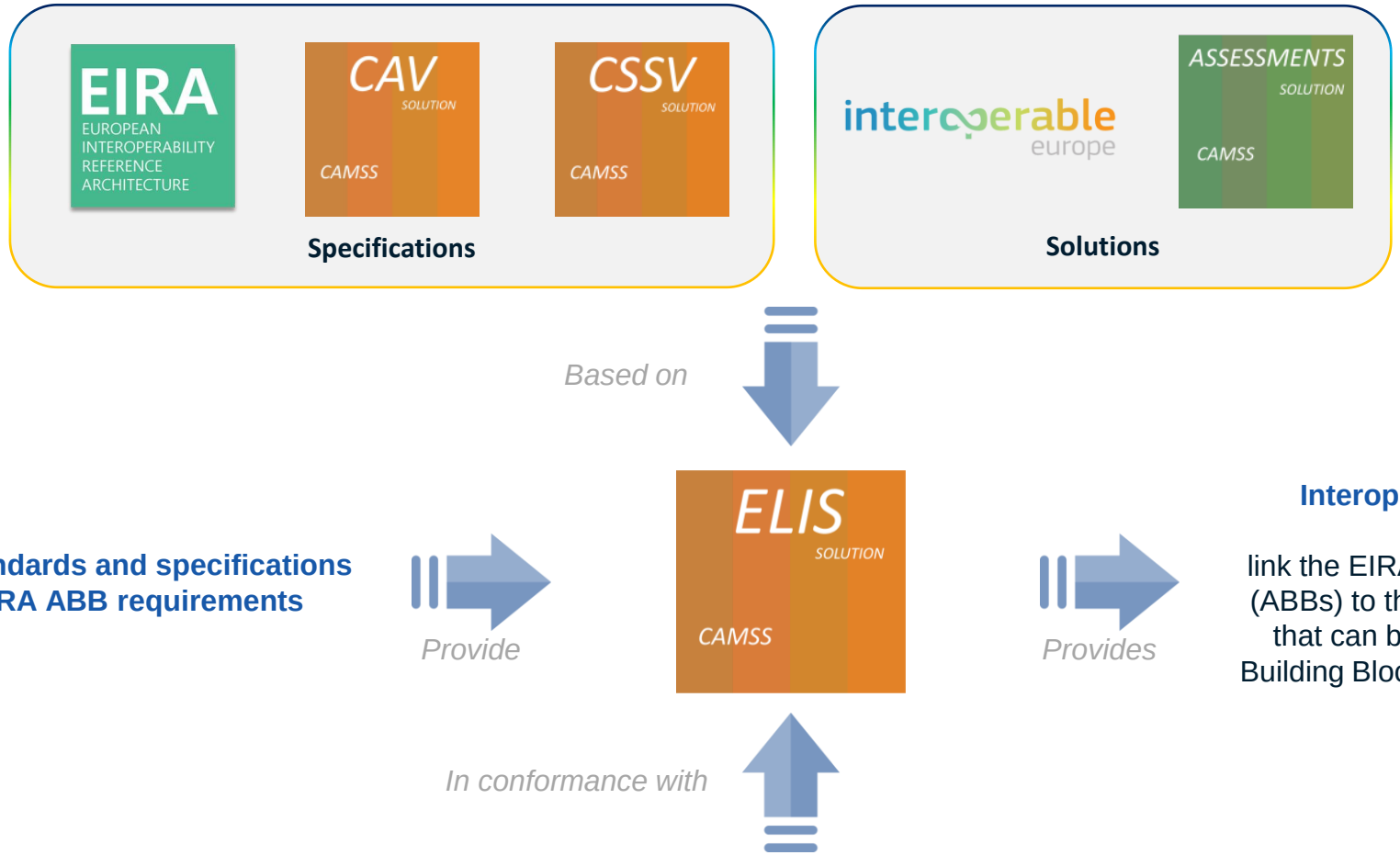
Like (0) Translate

The CAMSS Assessments Library is a catalogue of the assessments produced through the use of the CAMSS Assessment scenarios (EIF, MSP and TS). Each assessment constitutes a CAMSS solution and is fully reusable.

The CAMSS Assessments can be found below:

Technical specification	Author	CAMSS Tools / CAMSS Assessment Scenario	Version		Assessment Score	Assesment strenth
ADMS	CAMSS Team	CAMSS Tools - EIF Scenario	v3.1.0	Download	80%	90%
		Camss Assessment - EIF Scenario	v6.0.0	Download	84%	83%
ASiC Baseline Profile	CAMSS Team	CAMSS Tools - EIF Scenario	v3.0.0	Download	97%	86%
Better Regulation Toolbox	CAMSS Team	CAMSS Tools - EIF Scenario	v3.1.0	Download	88%	82%
CAdES	CAMSS Team	CAMSS Tools - EIF Scenario	v3.1.0	Download	46%	72%
CAdES Baseline Profile	CAMSS Team	CAMSS Tools - EIF Scenario	v3.0.0	Download	93%	78%
CCCEV	CAMSS Team	CAMSS Tools - EIF Scenario	v3.1.0	Download	82%	87%
	CAMSS Team	CAMSS Assessment - EIF Scenario	v6.0.0	Download	84%	82%
CLV	CAMSS Team	CAMSS Tools - EIF Scenario	v3.1.0	Download	76%	85%
CPOV	CAMSS Team	CAMSS Tools - EIF Scenario	v3.1.0	Download	74%	90%
CPSV-AP	CAMSS Team	CAMSS Tools - EIF Scenario	v3.1.0	Download	82%	87%
CSS 2.1	CAMSS Team	CAMSS Tools - EIF	v3.1.0	Download	71%	79%

ELIS environment and solutions - *ELIS environment at a glance*



ELIS environment and solutions – *ELIS in Excel format*

The ELIS in Excel format allows users to visualize all specifications associated to specific EIRA ABBs, and its related CAMSS Assessment.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	View	ABB	Model Concep	ABB Description	Associated Interoperability Specification	Creator	Specification Type	Specification Description	Association rationale	TOGAF Domain	ELIS version	Version	CAMSS Assessment Name	Assessment Definition	Assessment Automated Score	Assessment Strength scor	Assessment PURI	Link
44								logs, traces, and baggage are examples of signals.										
45	Technical Infrastructure	API Gateway	Technology Service	API Gateway ABB is a Technology Service that implements the behaviour of acting as a single entry point for multiple APIs (Application Programming Interfaces).	MyData Authorisation Specification	Helsinki Institute for Information Technology (HIIT)	Specification	MyData Authorisation allows users to grant consent to transfer data for its processing in a third-party system, and authorises the service to process it under rules and restrictions set by the data owner.	MyData Authorisation serves as a single point to prove that the data owner has provided permission for their data to be processed in a given service.	Technology Architecture	v6.0.0	1.2.1	N/A	N/A			N/A	https://github.com/HIIT/mydata-stack/blob/v1.2.1/mydata-data-authz.pdf
46	Technical Infrastructure	API Manager	Technology Service	API Manager ABB is a Technology Service that implements the behaviour of safely and securely publish APIs, either internally or externally	OpenAPI Specification	OpenAPI Initiative	Specification	OpenAPI Specification (OAS) defines a standardised, programming language-independent interface description for HTTP APIs.	OpenAPI Specification (OAS) allows both humans and computers to discover and understand the capabilities of a service application; the specification utilises	Technology Architecture	v5.0.1	3.1.0	CAMSS Assessment of OpenAPI EIF Scenario v1.0.0	Assessment of OpenAPI with the Common Assesssment Method for Standards and Specifications (CAMSS)	89%	93%	https://joinup.ec.europa.eu/collection/common-assessment-method-standards-and-specifications-camss/solution/camss-assessment-oas-eif-scenario	https://spec.openapis.org/oas/v3.1.0
47	Technical Infrastructure	Application Server	Technology Service	Application Server ABB is a Technology Service that implements the behaviour of system softw are that resides between the operating system (OS) on one side, the external resources (such as a database management system [DBMS], communications and Internet services) on another side and the users' applications on the third side.	EDAMIS Web Application (EWA)	European Commission	Specification	The EDAMIS (Electronic Data files Administration and Management Information System) web application (EWA) provides a standarised solution for the collection of data files in the European Statistical System. EDAMIS implements Eurostat's Single Entry Point policy.	EWA manages the statistical data transfer to Eurostat, which works as a "mini web server" and is to be installed on a dedicated computer (PC or Unix) in the national organisation.	Technology Architecture	v6.0.0	3.1.8	N/A	N/A			N/A	https://webgate.ec.europa.eu/edamis/helpcenter/website/tools/ewa/downloads.htm
48	Technical Infrastructure	Application Server	Technology Service	Application Server ABB is a Technology Service that implements the behaviour of system softw are that resides between the operating system (OS) on one side, the external resources (such as a database management system [DBMS], communications and Internet services) on another side and the users' applications on the third side.	Domain Name System (DNS)	IETF	Specification	The goal of domain names is to provide a mechanism for naming resources in such a way that the names are usable in different hosts, networks, protocol families, internets, and administrative organizations.	Hierarchical decentralized naming system for computers, services, or othre resources connected to a network, such as an application server.	Technology Architecture	v1.0.0 (BETA)	14.0.0	CAMSS Assessment of DNS EIF Scenario v2.0.0	Assessment of DNS with the Common Assesssment Method for Standards and Specifications (CAMSS)	86%	94%	https://joinup.ec.europa.eu/collection/common-assessment-method-standards-and-specifications-camss/solution/camss-assessment-domain-name-system-dns-eif-	https://www.ietf.org/rfc/rfc1035.txt
49	Technical Infrastructure	Application Server	Technology Service	Application Server ABB is a Technology Service that implements the behaviour of system softw are that resides between the operating system (OS) on one side, the external resources (such as a database management system [DBMS], communications and Internet services) on another side and the users' applications on the third side.	Distributed Relational Database Architecture (DRDA)	The Open Group	Specification	Distributed Relational Database Architecture (DRDA) enables connectivity between a relational database management system and application programs to access distributed relational data. The specification is not a distributed database management API.	Distributed Relational Database Architecture (DRDA) works in a distributed environment and defines the data flow and the formats and protocols required for distributed database management system processing.	Technology Architecture	v5.0.1	5.0.0	N/A	N/A			N/A	https://publications.opengroup.org/c112

3. How to use ELIS

How to use ELIS – *Main characteristics and assessment criteria*

Main characteristics of ELIS

- It aims to **support architects in the modelling of solutions based on EIRA©.**
- It includes specifications and standards **evaluated with the CAMSS Assessment** EIF Scenario.
- It is also available via a SPARQL endpoint, from where to launch the query and retrieve the data.
- It contains and extensively documents each standards and specification by **describing their interoperability requirements** associated to the different EIRA© architecture building blocks.
- The main criterion to include a specification and consequently its assessment in ELIS is that **the score range of the assessment results (%) is higher than 75%.**

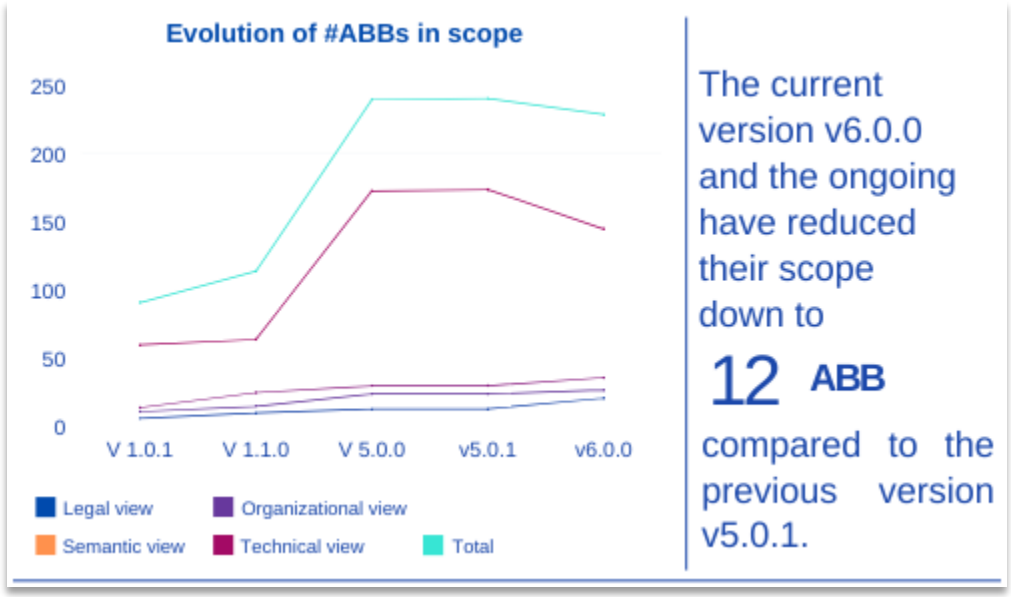
Some figures

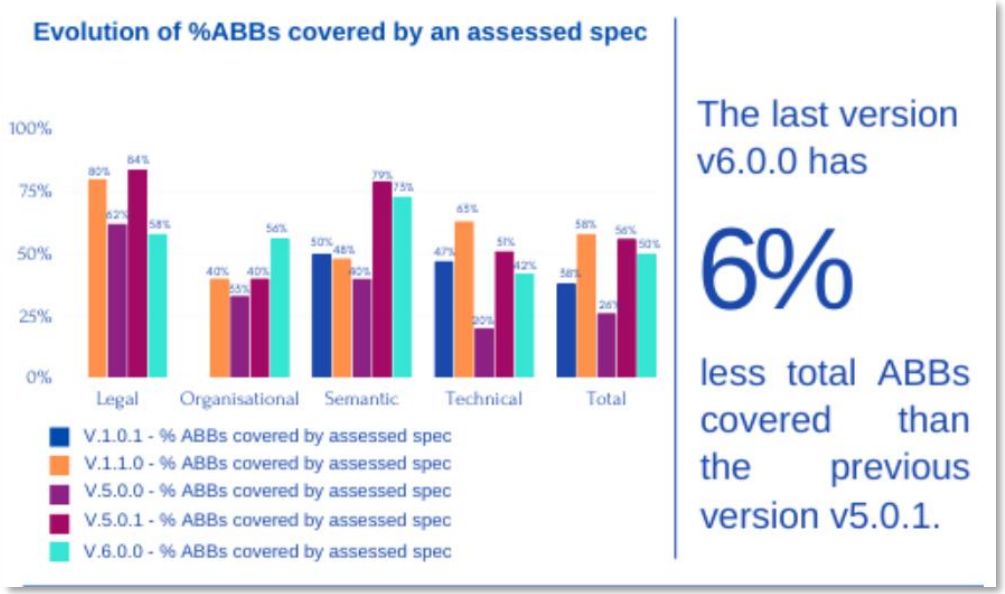
Metrics/view	Total
Total number of Specification in ELIS	337
Total number of specifications assessed in ELIS	68
Assessments Score average in EIF scenario (v5.1.0) assessments	86%
Strength of assessments score average in EIF scenario (v5.1.0) assessments	86%

- *0-64% → Not acceptable fit for purpose*
- *65-74% → Minimal acceptable fit for purpose. Candidate to be deprecated by a better alternative*
- *75-89% → Strong fit for purpose*
- *90-100% → Full fit for purpose*

How to use ELIS – *Online Dashboard (1/2)*

This statistical analysis for each of the ELIS versions is responsible for representing the Legal, Organizational, Semantic and Technical (LOST) views of interoperability as a result of the implementation of the European Interoperability Framework (EIF) through EIRA.





The graphs describe the evolution of the ELIS population process for its different versions, from version 1.0.0 to the on-going version which will be released in the following months.

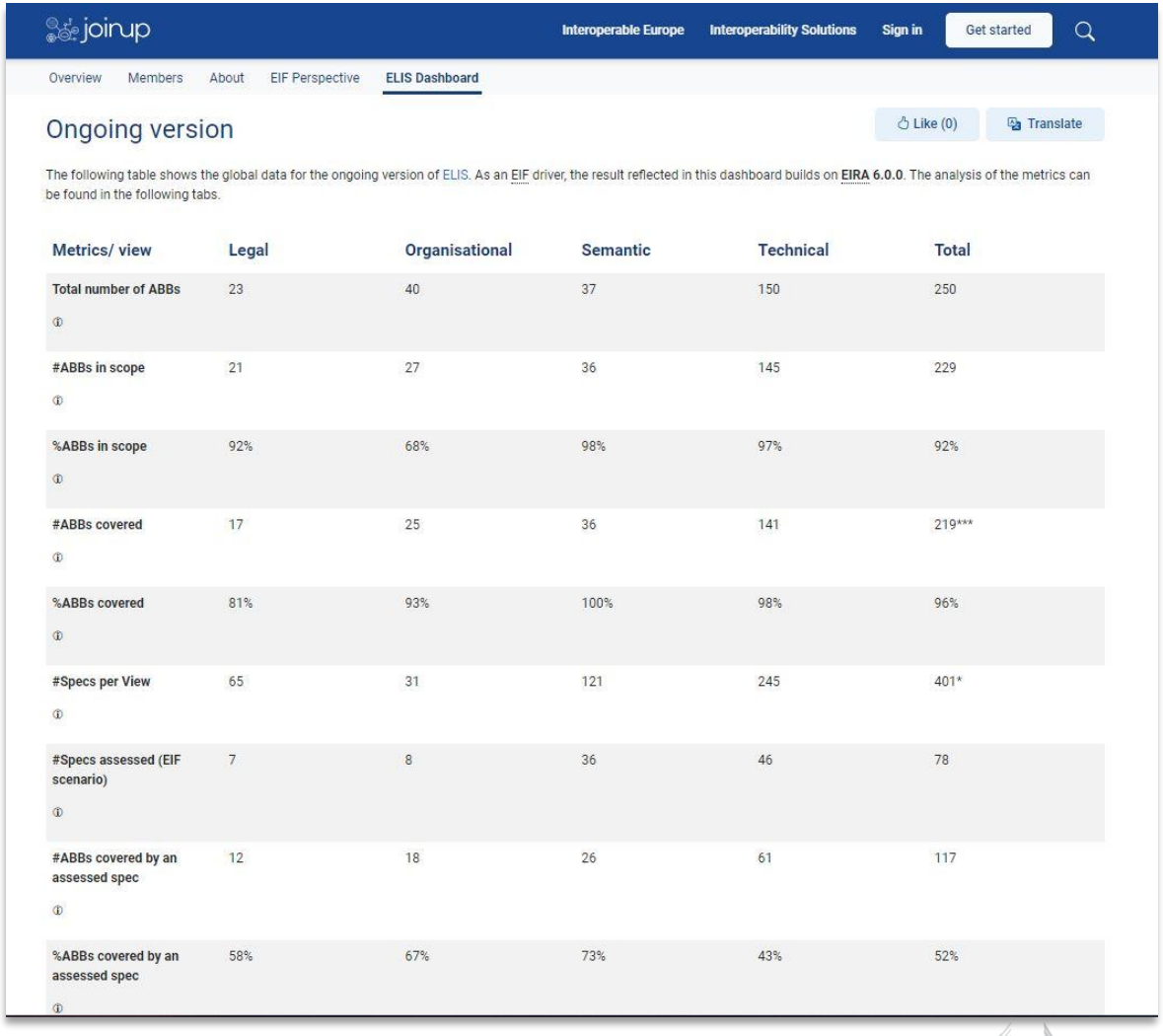
How to use ELIS – *Online Dashboard (2/2)*

The sections for specific versions of the ELIS are all structured in the same way:

General table containing ELIS metrics. this table includes the following information:

- Number of EIRA ABBs.
- Number and percentage of ABBs in Scope.
- Number and percentage of ABBs covered.
- Number of specifications per view.
- Number of specifications assessed (EIF Scenario).
- Number and percentage of ABBs covered by an assessed specification.

The following image shows an example of the table, specifically for version 6.0.0:



Metrics/ view	Legal	Organisational	Semantic	Technical	Total
Total number of ABBs	23	40	37	150	250
#ABBs in scope	21	27	36	145	229
%ABBs in scope	92%	68%	98%	97%	92%
#ABBs covered	17	25	36	141	219***
%ABBs covered	81%	93%	100%	98%	96%
#Specs per View	65	31	121	245	401*
#Specs assessed (EIF scenario)	7	8	36	46	78
#ABBs covered by an assessed spec	12	18	26	61	117
%ABBs covered by an assessed spec	58%	67%	73%	43%	52%

https://joinup.ec.europa.eu/collection/common-assessment-method-standards-and-specifications-camss/solution/elis/elis-dashboard

4. Use Case Software Architect – ELIS via the CarTool©

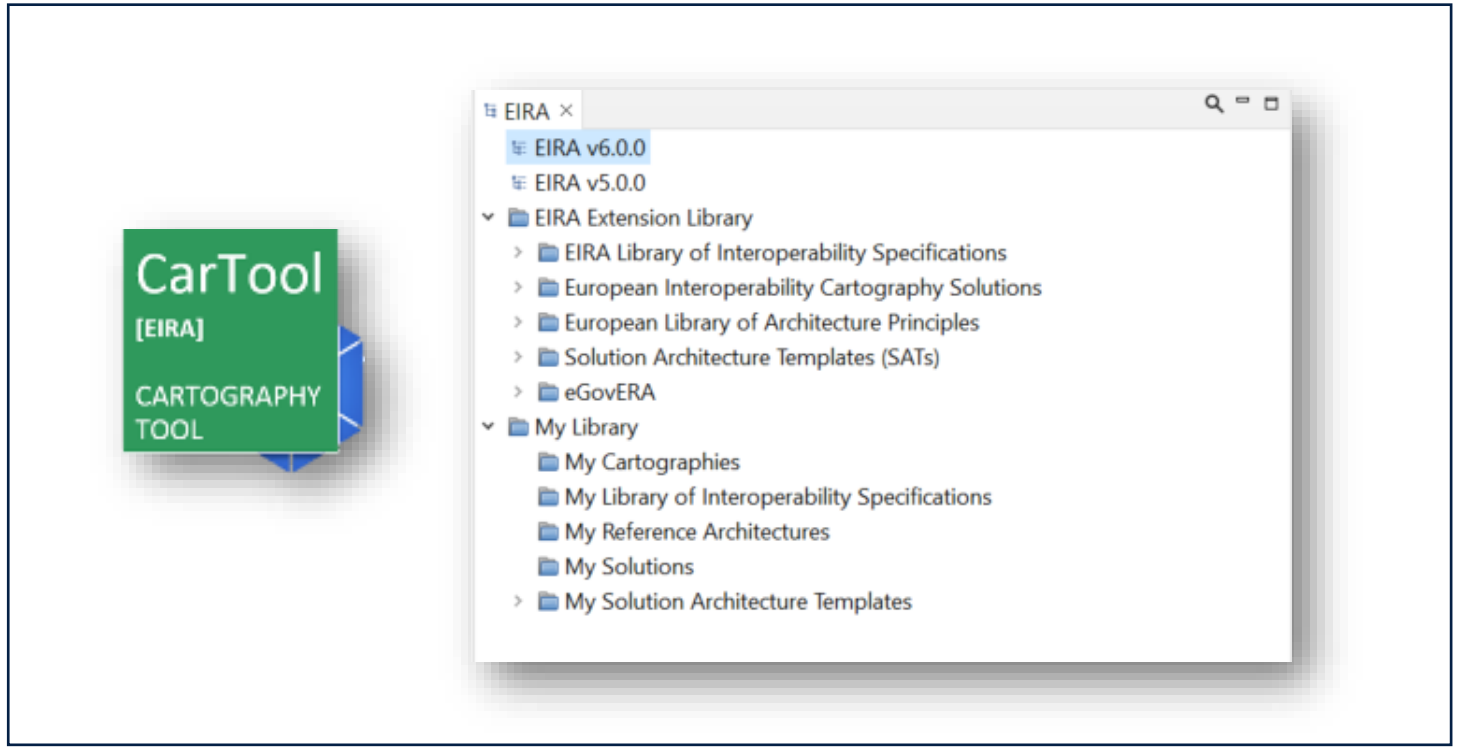
ELIS via the CarTool© – *Demo*

Designed to provide support in using the European Interoperability Reference Architecture (EIRA) and accessing a portfolio (Cartography) of solutions that are documented using the EIRA.

Use Case:

Software Architect:

Identification of specifications for the solution model being developed.



https://joinup.ec.europa.eu/collection/european-interoperability-reference-architecture-eira/solution/cartography-tool/release/600

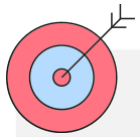
5. Use case of Procurer – ELIS in CELLAR

ELIS in CELLAR – *CELLAR*

CELLAR is the central content and metadata repository of the Publications Office of the European Union.
It makes available **at a single place** all the metadata and digital content managed by the Publications Office in a **harmonized and standardized way**.

Main objectives of CELLAR

1. **Guarantee to citizens better access to EU publications**
2. **Encourage and facilitate reuse of content and metadata**
3. **Preserve and access to content and metadata over time**



Who is CELLAR for?

Citizens

Professionals/ experts

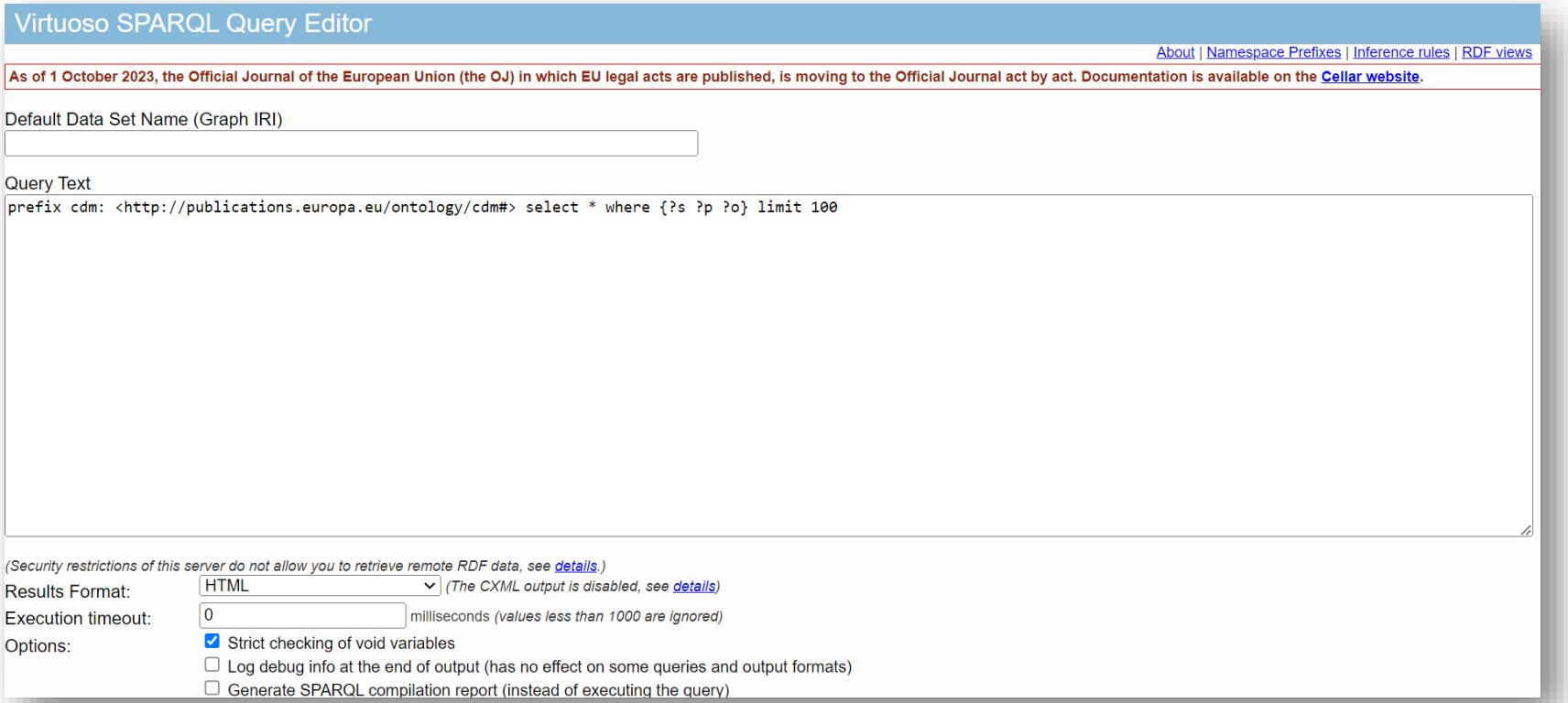
ELIS in CELLAR – *Demo*

https://publications.europa.eu/webapi/rdf/sparql

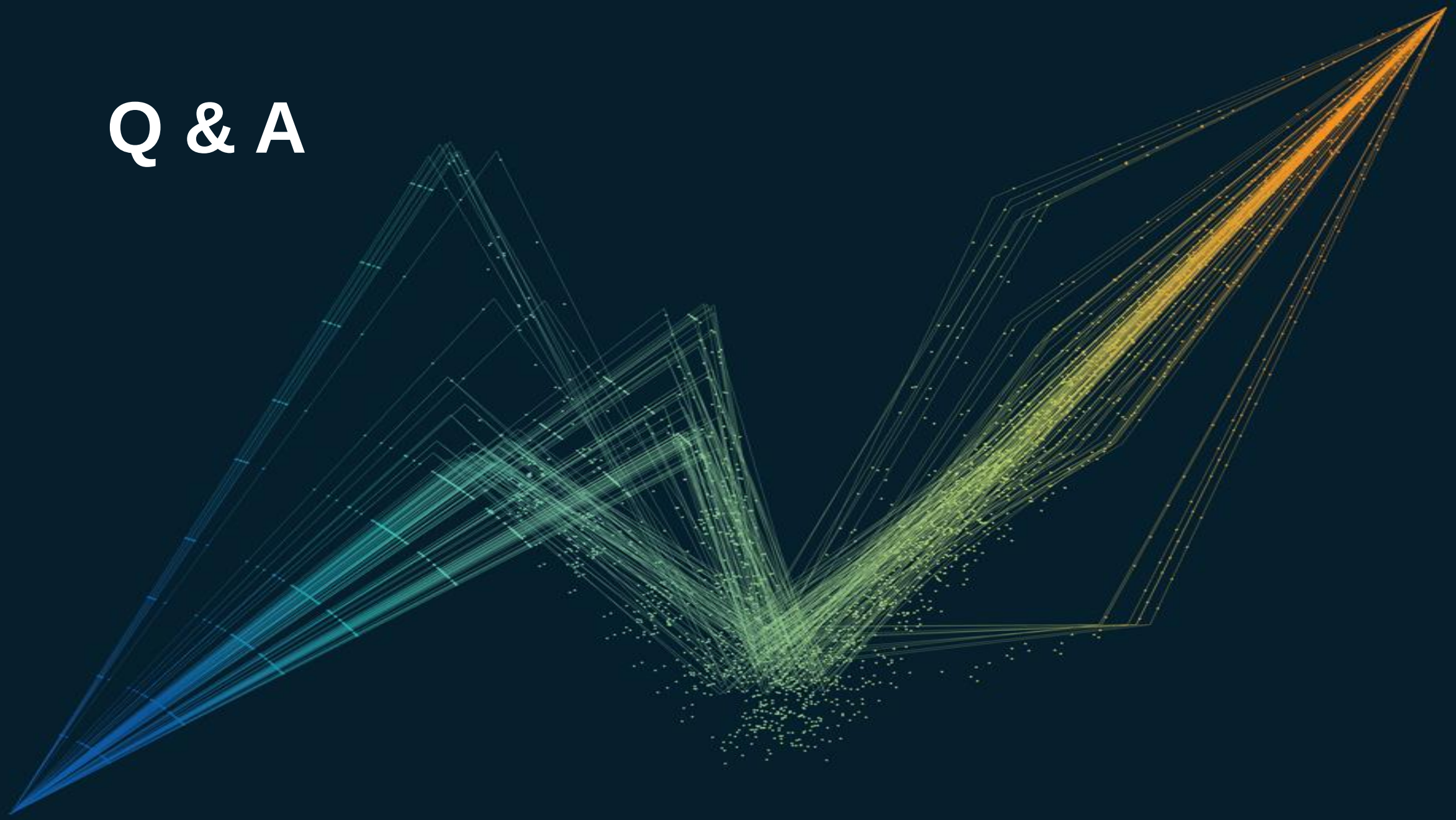
Use Case:

Public Procurer:

Identification of specifications and their assessments for reference in public procurement processes.



Q & A



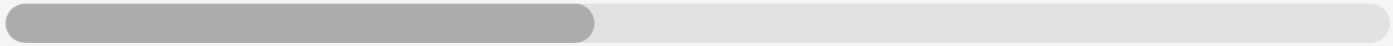

Let’s hear from you!

Which solution would you like to be the next?

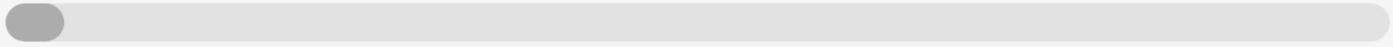
Which solution would you like to be the next?

1. European Libray of Architecture Principles (ELAP): Architecture principles provide a highly abstract view of the interoperability requirements, which are implemented by its interoperability specifications.

2. CAMSS Assessment EIF Scenario: The common method to assess ICT specifications against the European Interoperability Framework (EIF)



3. CAMSS Vocabularies: core vocabularies used to describe and define assessments, standards and specifications.




Thank you

interoperable europe

innovation ∞ govtech ∞ community

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DIGIT-INTEROPERABILITY@ec.europa.eu

https://joinup.ec.europa.eu/collection/interoperable-europe/interoperable-europe