CAMSS webinar

ELAP: The European Library of Architecture Principles

Wednesday, February 07, 2024

09:30 – 10:45 CET (Brussels time)

interoperable europe

European Commission

Agenda

09:30 – 09:35	**1. Motivation**
09:35 – 09:50	**2. ELAP environment**
09:50 – 10:05	**3. What is ELAP?**
10:05 – 10:15	**4. Use Case: Solution Architect (ELAP via CarTool©)**
10:15 – 10:25	**5. The ELAP Validator**
10:25 – 10:30	**6. Use Case: Solution Architect (ELAP Validator via ITB)**
10:30 – 10:40	**7. Q & A**
10:40 – 10:45	**8. What's next?**

1. Motivation

Motivation - *Webinar purpose*

1. Introducing the context of the European Library of Architecture Principles (ELAP)
2. Comprehensively explaining ELAP and its components (characteristics, metadata, use cases etc.)
3. Showing ELAP in practice (demo via the CarTool©)
4. Presenting the ELAP Validator, explanation and practice (demo via the Interoperability Test Bed)

Motivation - *Webinar proposal*

Proposed schedule of events

01

First session 09 Nov

Introducing CAMSS

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

02

Second session 13 Dec

ELIS

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

03

Third session

ELAP and its Validator

NOW

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

04

Fourth session

CAMSS Assessment Scenarios

COMING SOON

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

05

Fifth session

CAMSS Vocabularies

COMING SOON

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

2. ELAP environment

ELAP 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.
Architecture Building Block	An ABB is a requirement with an intermediate level of granularity, in alignment with at least one EIF principle, formulated as an agreed normative statement in functional terms of legal, organisational, semantic, or technical attributes of a To-Be European Public Service.
Solution Building Block	An SBB corresponds to a piece of data, produced software or deployment/operation of IT system that permits to implement one or more Architecture Building Blocks of a European Public Service.
Architecture Principle	Architecture Principles provide a highly abstracted view driving the specification of interoperability requirements.
European Library of Architecture Principles	ELAP establishes the principles and framework to ensure interoperability at the European level. This library also establishes requirements and business processes to enable interoperability between public services.

ELAP environment – *The European Interoperability Framework (EIF)*

European Interoperability Framework (EIF)

Gives specific **guidance** on how to set up **interoperable digital public services**. The EIF **provides 47 recommendations**, which are organised around three main pillars:

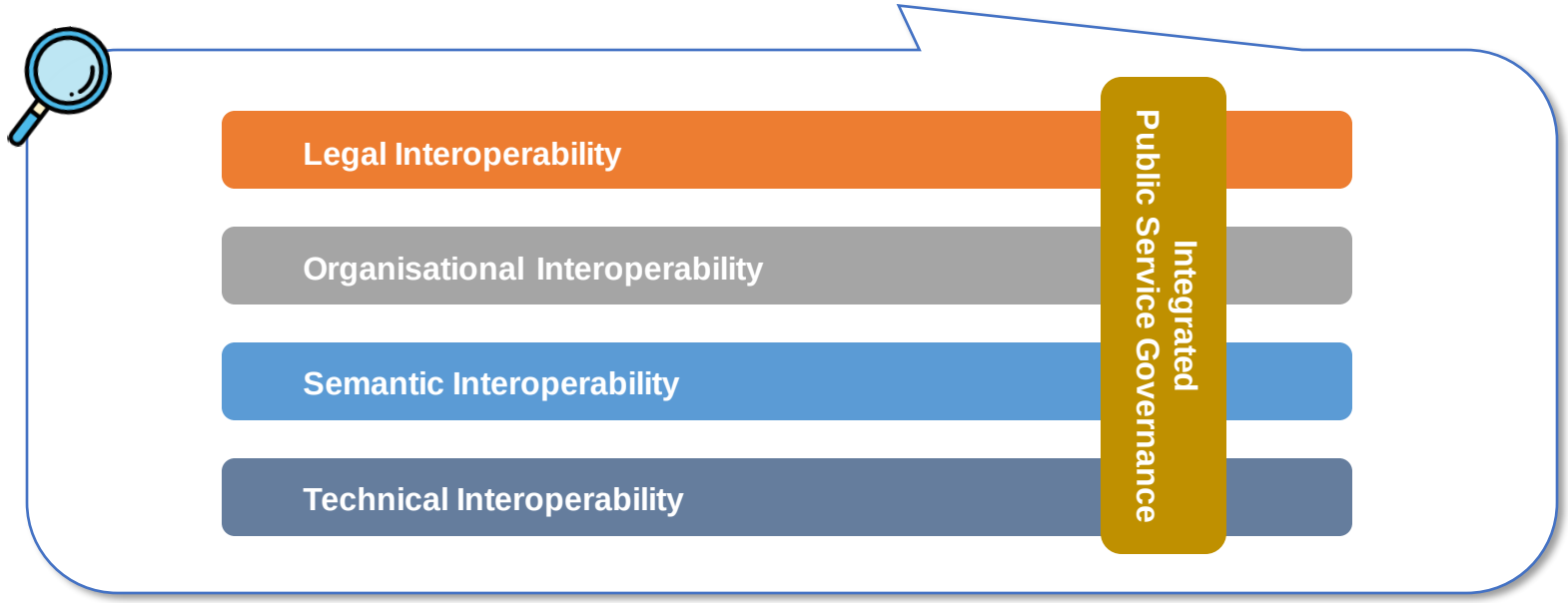
12 Principles
to guide policy-makers in their pursuit of interoperability

4 Interoperability layers
that present different aspects of interoperability that should be addressed

1 Conceptual model
that aims at designing and delivering integrated public services

ELAP SOLUTION
CAMSS

The **European Library of Architecture Principles (ELAP)** defines the principles that need to be considered to achieve interoperability, including the 12 principles of EIF.

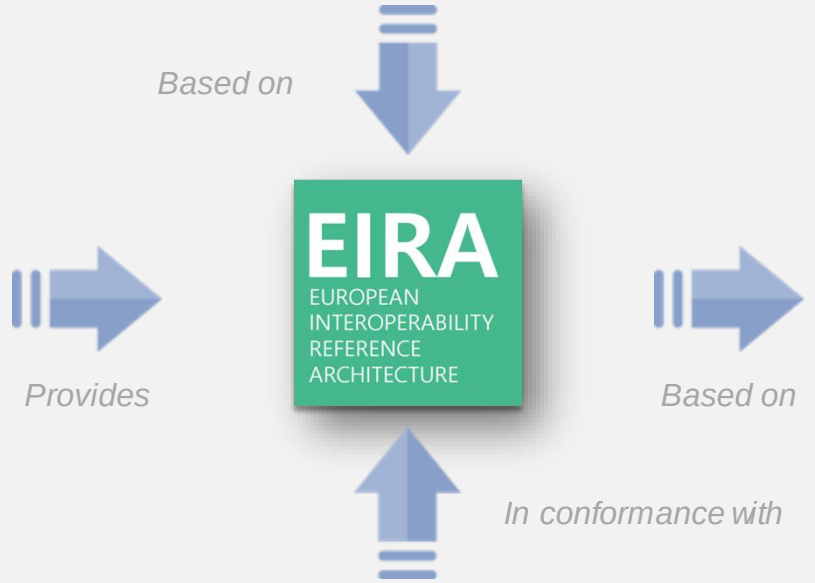


ELAP environment – *EIRA© and its support to Interoperability*

How is the EIRA© supporting interoperability?

The European Interoperability Reference Architecture (EIRA©)
guides 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



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

CAMSS solutions (i.e., ELAP and ELIS) are conceptualized in EIRA and support its environment

ELAP environment – *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?

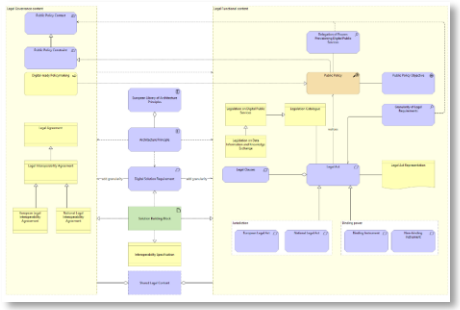
Blueprint/template that provides a **recommended framework** for designing and implementing systems.

- **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**

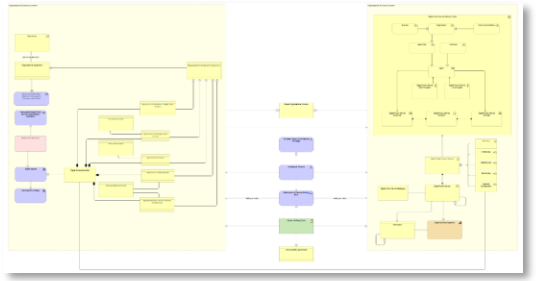
*EIRA© operates as a checklist for **Quality Assurance**: it ensures quality during the analysis and solution design stages.*

EIRA© views and building blocks (LOST views)

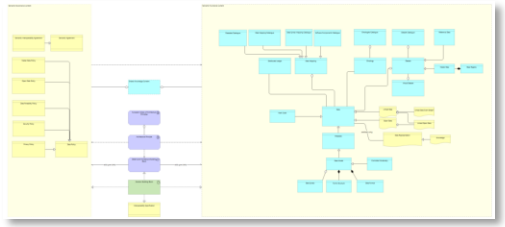
Legal view
Defines the legal governance and functional content



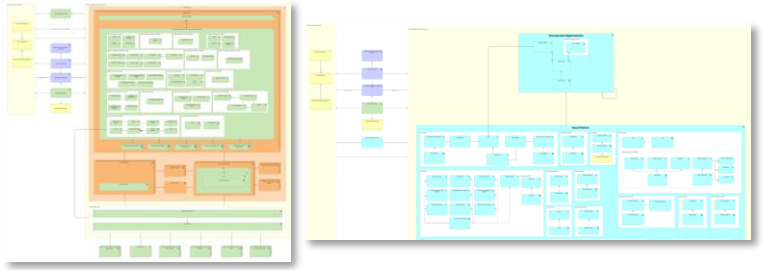
Organisational view
Defines the organisational governance and functional content



Semantic view
Defines the semantic governance and functional content



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



More information here

ELAP environment – *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

3. What is ELAP?

What is ELAP? – *Starting Point*

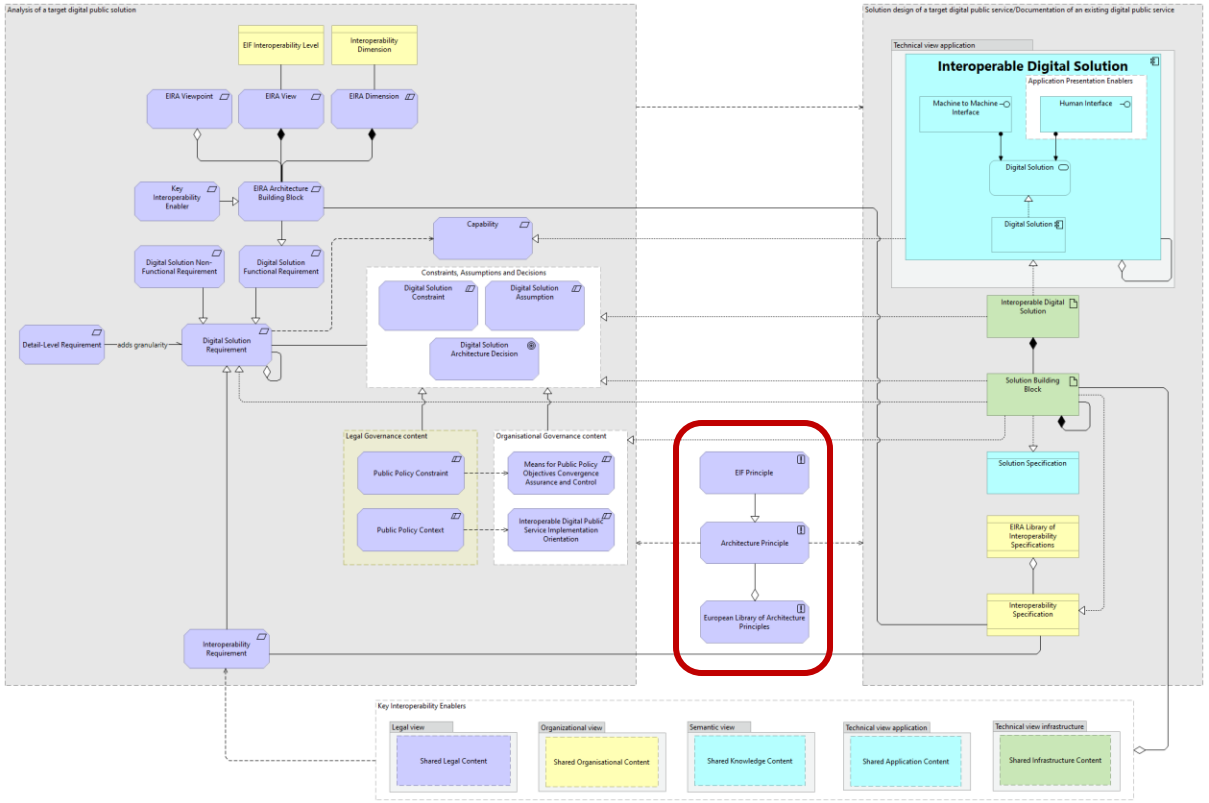
ELAP is contextualised on EIRA© as its **architecture reference**. **ELAP principles** influence both the Analysis of target digital public solution and the Solution design analysis of a target digital public service.

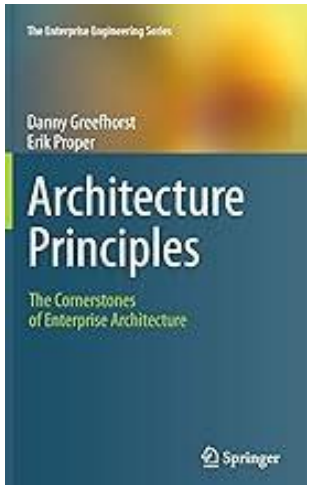
How an Architecture Principle relates to the analysis and design of a solution?

Principles define the underlying general rules and guidelines for the use and deployment of all IT resources and assets across the organisation.

- A highly abstract view of the **interoperability requirements**.
- A specific **Architecture Building Block (ABB)** can be instantiated as a **Solution Building Block (SBB)**.
- Achievement of goals of the interoperability programs within public institutions in Europe.

EIRA Ontology Viewpoint





GREEFHORST, Danny. PROPER, Erik. *Architecture Principles: The Cornerstones of Enterprise Architecture*. 3rd ed. Springer Science & Business Media, 2016.

What is ELAP? – *Characteristics and benefits*

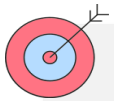
European Library of Architecture Principles (ELAP) provides guidance for making correct analysis and design decisions.

Main characteristics of ELAP

- It is intended to **direct government organisations in initiating changes and implementing IT projects**.
- It is a solution that helps **modelling infrastructures and designs** based on architectural principles.
- It follows **goals of the interoperability programs within public institutions in Europe**, notably the EIF.
- It efficiently **provides means to visualize solutions and their compliance with recommended frameworks**.
- It supports service providers in their participation in tender processes, allowing them to **support with the right services to public institutions.**

Benefits of ELAP

1. **Development of more interoperable e-Government solutions**
2. **Effective and efficient use of resources**
3. **Machine readable**
4. **Easy validation of models by using a TestBed-based validator**
5. **Integration with ELIS and CarTool©, meaning easy modelling of specifications and standards following architectural principles.**



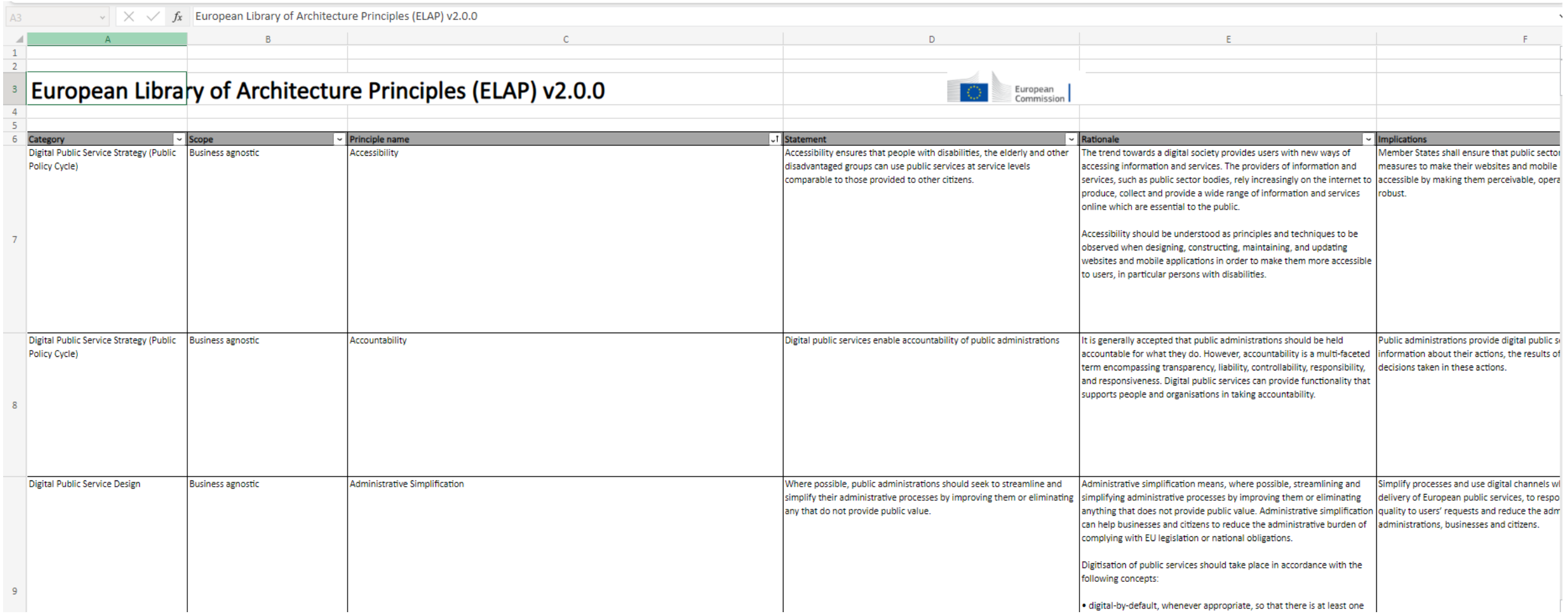
Which target users will benefit from using ELAP?

Policy makers	Enterprise/ solution architects	Technology companies	Public procurers

What is ELAP? – *Metadata description*

Metadata Element	Metadata Description	Data Type
PURI	Unique indication of the AP	PURI: A European Commission designated unique value formatted as a persistent URI
Category	One of the enumerated values, defined as digital public services, conforming to ITIL	Enumeration: DPS Strategy (Public Policy Cycle), Design, Operation
Scope	Description of the extent, to what the principle should be regarded valid	Free text
Principle	Short text to identify the principle in wording	Free text
Statement	A brief statement that helps to detect and identify the purpose of the principle	Free text
Rationale	Text describing the business benefits of adhering to the principle	Free text
Implications	Text describing the requirements for both business and technical aspects	Free text
IoP Layer	One of the enumerated values, defined as the different views from EIRA (LOST)	Enumeration: Legal IoP, Organisational IoP, Semantic IoP, Technical IoP
Principle Source	Preferably the European legal framework must be the source of the Architecture Principle or additional frameworks such as EIF or FAIR	Free text
URL	Access URL for the principle source	URL
About source	References, examples, descriptions to clarify the meaning of the sources	Free text

What is ELAP? – *Excel version*



A3 | European Library of Architecture Principles (ELAP) v2.0.0

European Library of Architecture Principles (ELAP) v2.0.0

European Commission

Category	Scope	Principle name	Statement	Rationale	Implications
Digital Public Service Strategy (Public Policy Cycle)	Business agnostic	Accessibility	Accessibility ensures that people with disabilities, the elderly and other disadvantaged groups can use public services at service levels comparable to those provided to other citizens.	The trend towards a digital society provides users with new ways of accessing information and services. The providers of information and services, such as public sector bodies, rely increasingly on the internet to produce, collect and provide a wide range of information and services online which are essential to the public. Accessibility should be understood as principles and techniques to be observed when designing, constructing, maintaining, and updating websites and mobile applications in order to make them more accessible to users, in particular persons with disabilities.	Member States shall ensure that public sector measures to make their websites and mobile accessible by making them perceivable, opera robust.
Digital Public Service Strategy (Public Policy Cycle)	Business agnostic	Accountability	Digital public services enable accountability of public administrations	It is generally accepted that public administrations should be held accountable for what they do. However, accountability is a multi-faceted term encompassing transparency, liability, controllability, responsibility, and responsiveness. Digital public services can provide functionality that supports people and organisations in taking accountability.	Public administrations provide digital public s information about their actions, the results of decisions taken in these actions.
Digital Public Service Design	Business agnostic	Administrative Simplification	Where possible, public administrations should seek to streamline and simplify their administrative processes by improving them or eliminating any that do not provide public value.	Administrative simplification means, where possible, streamlining and simplifying administrative processes by improving them or eliminating anything that does not provide public value. Administrative simplification can help businesses and citizens to reduce the administrative burden of complying with EU legislation or national obligations. Digitisation of public services should take place in accordance with the following concepts: • digital-by-default, whenever appropriate, so that there is at least one	Simplify processes and use digital channels wl delivery of European public services, to respo quality to users' requests and reduce the adm administrations, businesses and citizens.

More information here

4. Use Case: Solution Architect (ELAP via CarTool©)

Use Case: Solution Architect (ELAP via CarTool©) – *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

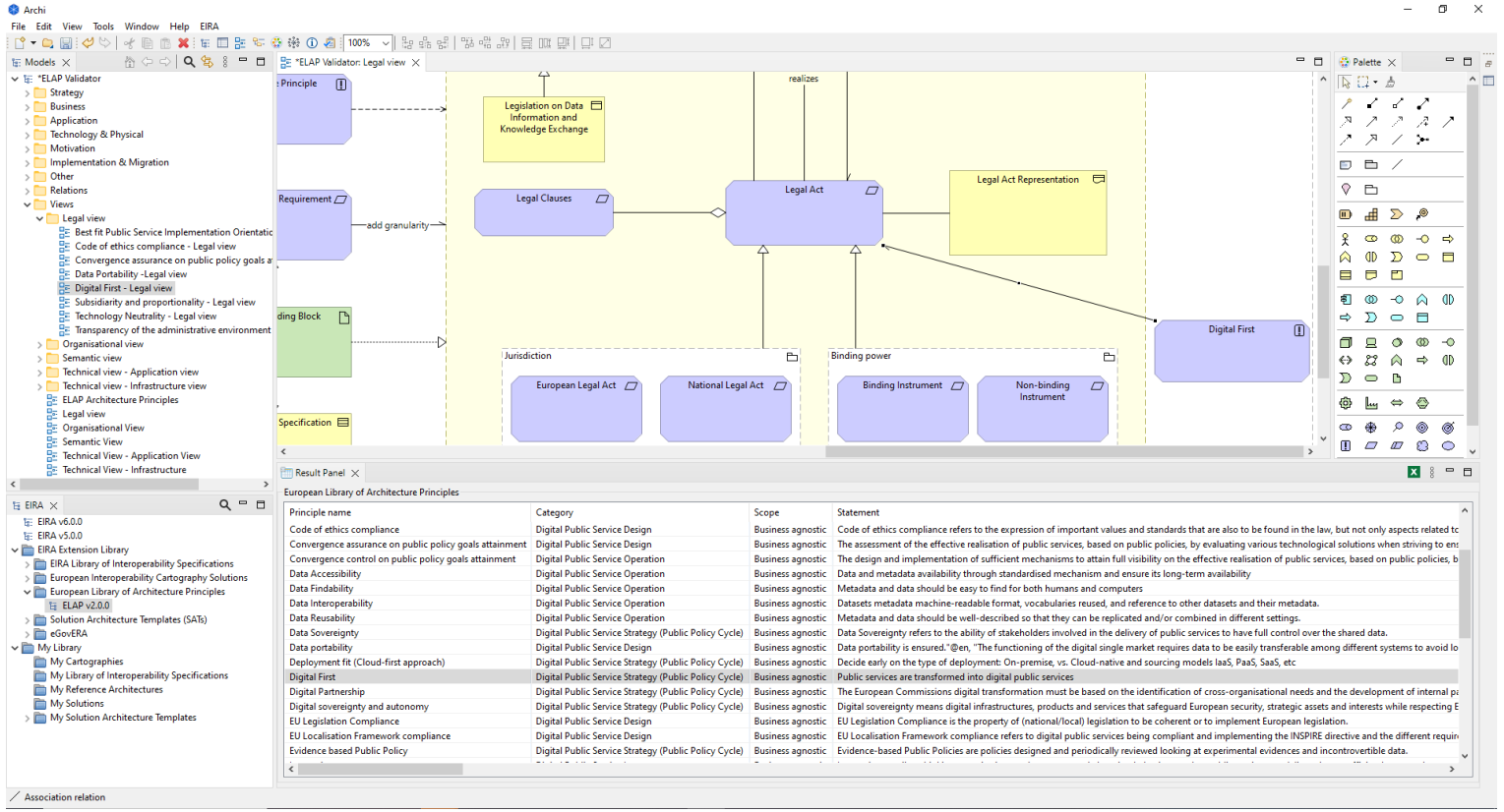
Portfolio management
To assist in managing and rationalising a solution portfolio and comparing its solutions' architectures

Use Case: Solution Architect (ELAP via CarTool©) – *Demo*

Solution Architect

As a Solution Architect, I want to model a **detailed-level architecture for a national solution**, by looking up and reusing best-in-class technical specifications and/or architecture principles that facilitate **cross-border and cross-domain interoperability**

Identification of architecture principles for the analysis and design of the solution



More information [here]

5. The ELAP Validator

The ELAP Validator

The **ELAP Validator** is a comprehensive tool developed to **address a variety of needs in the design and implementation of interoperability solutions** within public institutions in Europe.

Key purposes of the ELAP Validator:

- **Quality Control**
- **Guidance and Decision Support**
- **Policy Compliance and Endorsement**
- **Automation and Efficiency**
- **Support for Interoperability**
- **Implementation through ITestBed**

More information here

The ELAP Validator – *Validation Rules*

Rule ID	Principles	Applies To (SATs, Solutions, All)	Severity	Message
ELAP-000	ArhiMate syntax validation (XSD).	All	Error	XSD validation errors.
ELAP-001	Completeness principle	All	Error	[ELAP-001] Architecture principle 'XYZ' must be defined in the model.
ELAP-002	Archi notation compliance principle	All	Warning	[ELAP-002] Element 'XYZ' must be defined as an ArchiMate 'Principle' (actual is 'ABC').
ELAP-003	No-orphan elements principle, Comply or explain principle	All	Error	[ELAP-003] 'XYZ' must be associated with at least one element in the model, not being a 'principle'. If the principle is not used, associate it to a note (Archi "note" element).
ELAP-004	Salient alignment principle	SAT	Warning	[ELAP-004] Architecture Principle 'XYZ' must be modelled and related to the correct ABB. (List ABBs mapped)
ELAP-005	Specific implementation solution	All	Warning	[ELAP-005] Architecture Principle 'XYZ' must be modelled and related to the correct SBBs. (List ABBs mapped)

6. Use Case: Solution Architect (ELAP Validator via ITB)

Use Case: Solution Architect (ELAP Validator via ITB) – *The Interoperability Test Bed (ITB)*

ITB
Interoperability Test Bed

The **Interoperability Test Bed** is an online, intuitive and self-service platform for **conformance testing of IT systems against semantic and technical specifications**.

The ITB is a configuration driven tool used for **specifications conformance tests, data validation and quality control**. Additionally, it can simulate APIs and protocols, and verify message exchanges.

Interoperability Test Bed Use cases

A **conformance testing platform** for IT systems to test for semantic and technical interoperability

A **suite of validation services and components** for popular syntaxes and specifications. All such services are usable "as-a-service" using shared cloud-based instances, as well as in the form of open-source software components for custom extensions and on-premise installations

ITB functionalities

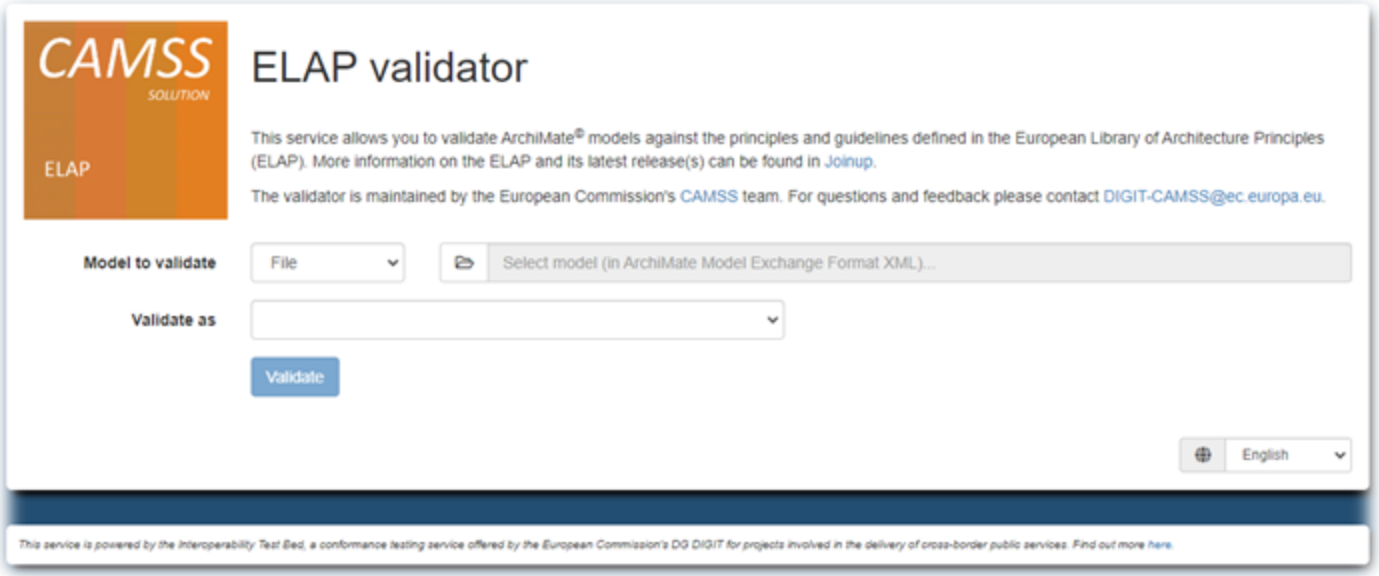
- Self-service usage
- Rich reporting of test results
- Progress overview and monitoring
- Conformance certificates
- Multiple input channels
- Anonymous and stateless
- Extensible capabilities
- Scenario-based access

More information here

Use Case: Solution Architect (ELAP Validator via ITB) – *Demo*

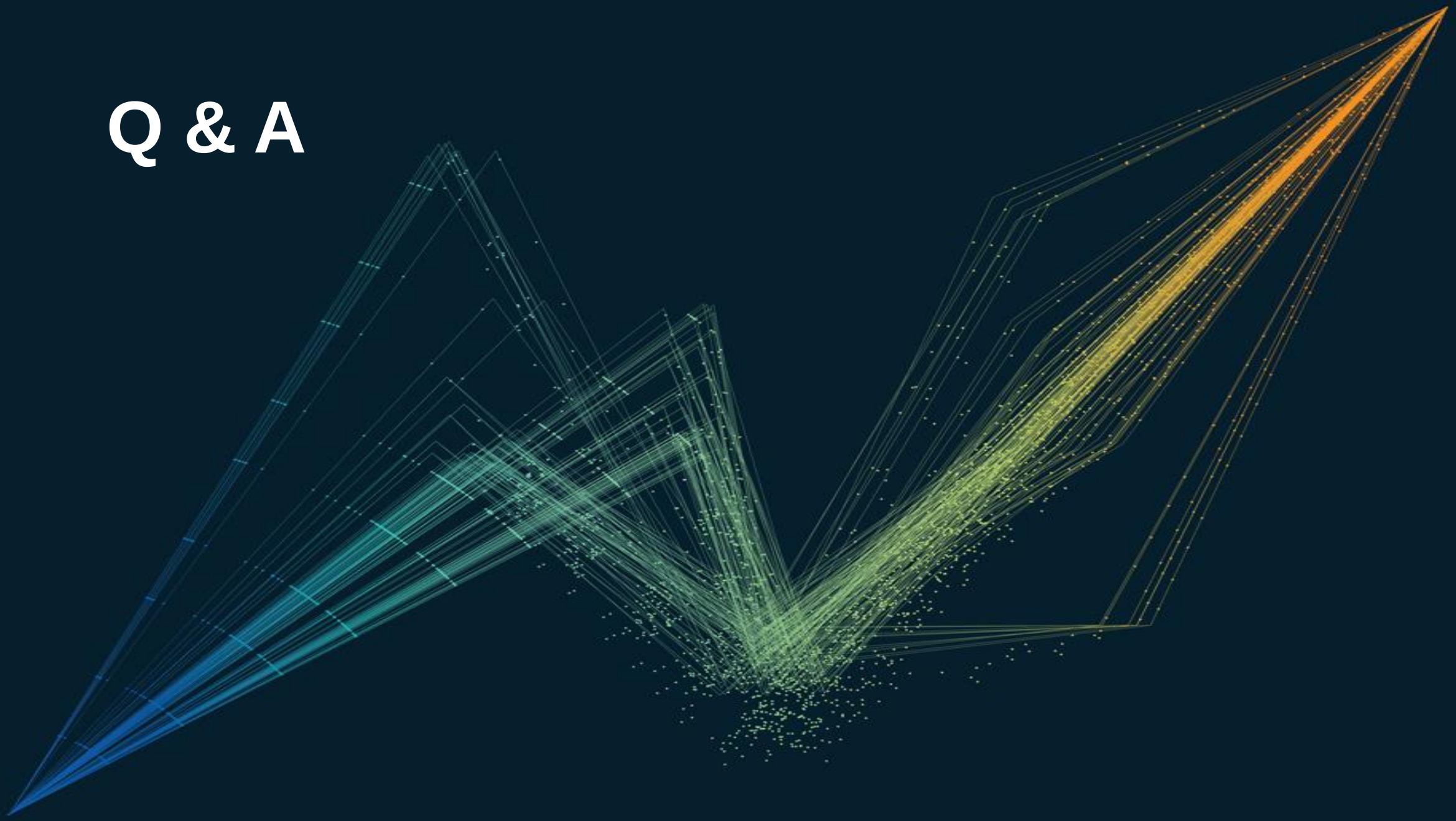
Solution Architect

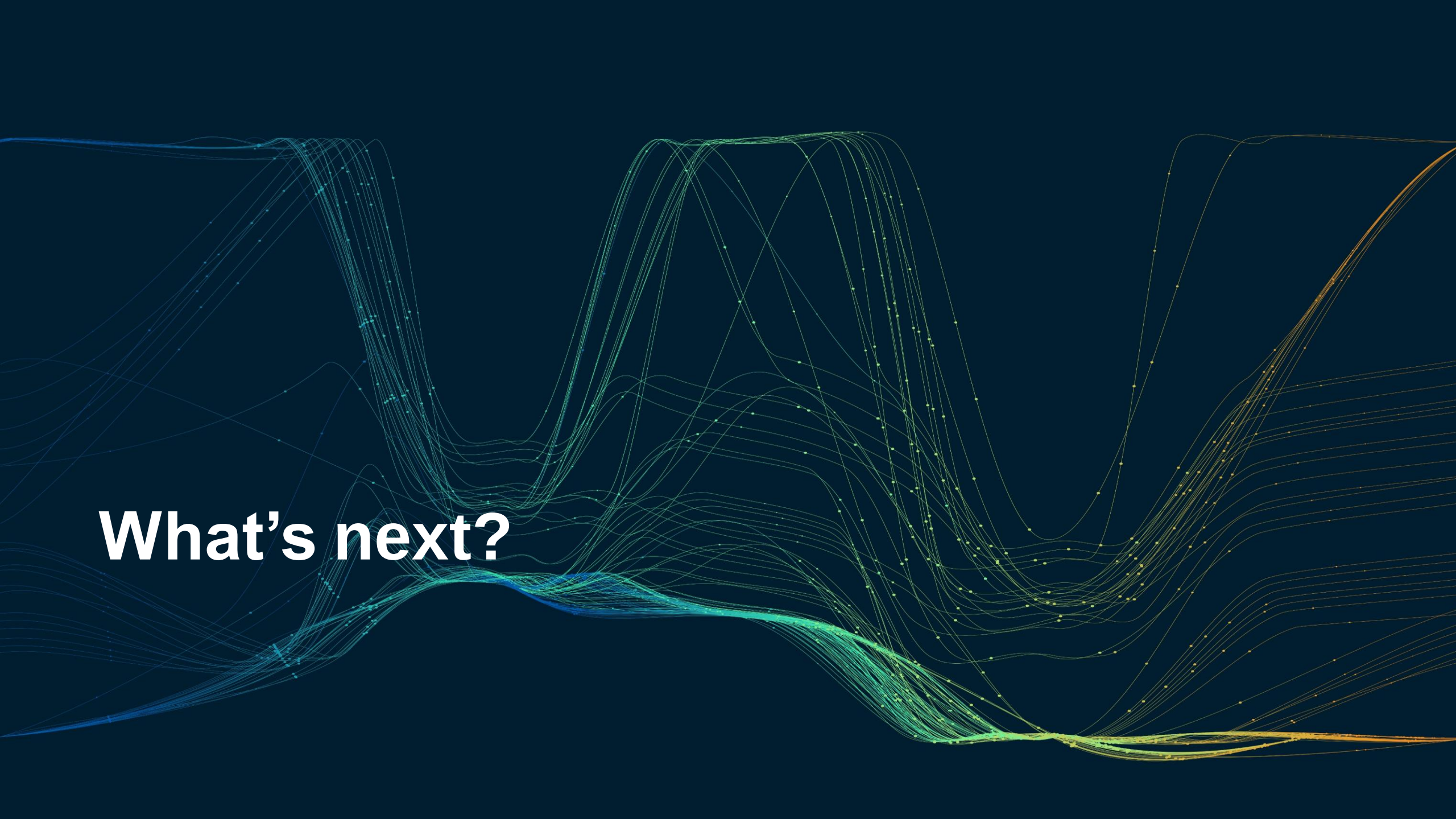
Conformance testing of a designed solution against the principles and guidelines of ELAP



https://www.itb.ec.europa.eu/elap/upload

Q & A




What’s next?

What's next?

4th Session
CAMSS Assessment Scenarios

For the next session, we would like to present:

- The CAMSS Assessment Scenarios
- The CAMSS European Interoperability Framework (EIF) Scenario and its methodology
- The demo of an interoperability Specification


Thank you

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