



# Remote Kick-off Meeting – Finland workshop

16 September 2019

**EUROPEAN COMMISSION**

**Directorate-General for Informatics (DIGIT)**

## European Interoperability Architecture. Maintenance

ISA<sup>2</sup> action 2016.32

Project Officer: Raul Abril

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**EIRA and CarTool overview**

**Get a clear understanding of your expectations (use cases selection)**

**Agree on the way we will work together**

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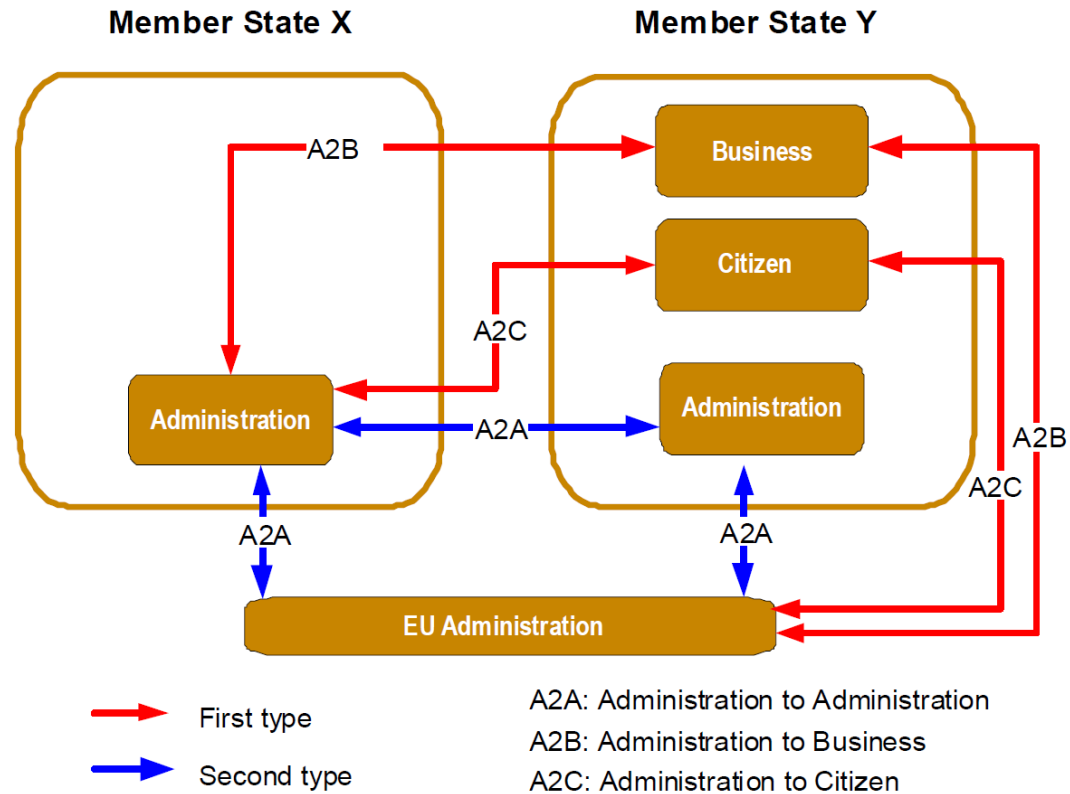
05 Annex

# Introduction on the EIRA© and the CarTool ©



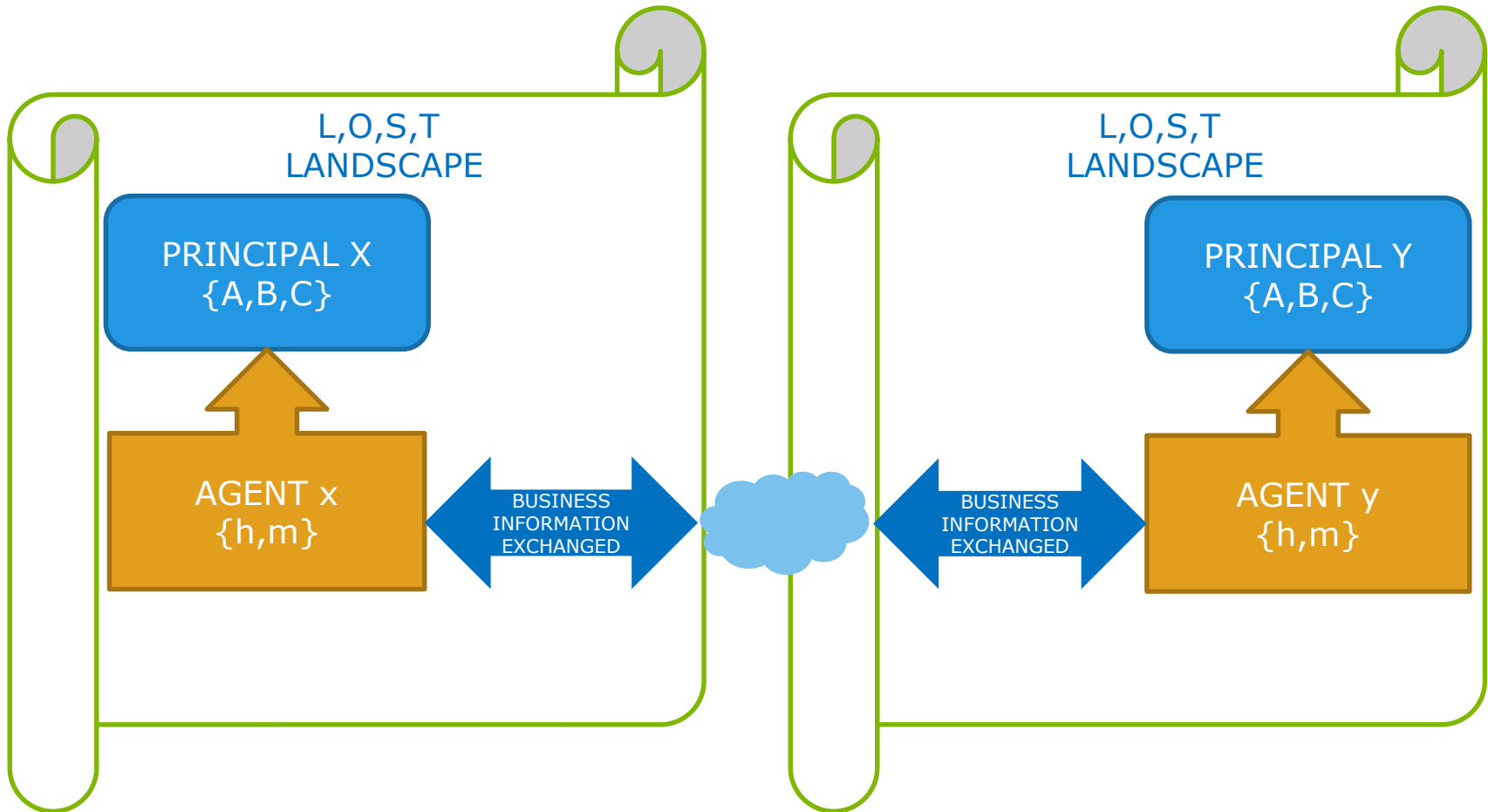
## AGENDA

- Context
- EIRA Value proposition
- EIRA overview
- EIRA use cases
- Potential use cases
- CarTool Overview
- CarTool value proposition
- EIRA & CarTool key areas of support
- How the EIRA© & CarTool© support IoP in e-Government?



# Context

The IOP challenge: lost landscapes of agents



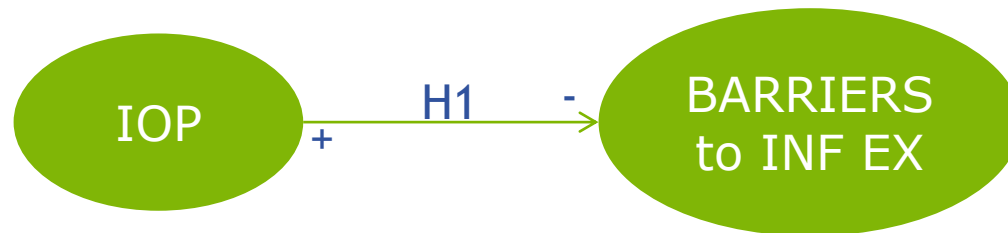
**A: Public Administration (local, regional, national, European); B: Business; C: Citizen**





IOP is a mean to eliminate barriers in business information exchange (it is not the goal)

H1: "There is a negative correlation between IOP and barriers to business information exchange"



# Context

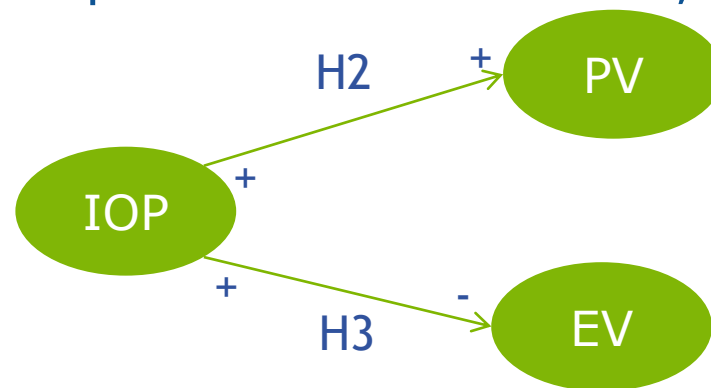
Business case for IOP in  
e-Government



IOP is the independent variable [of performance/economic cost variables]

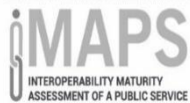
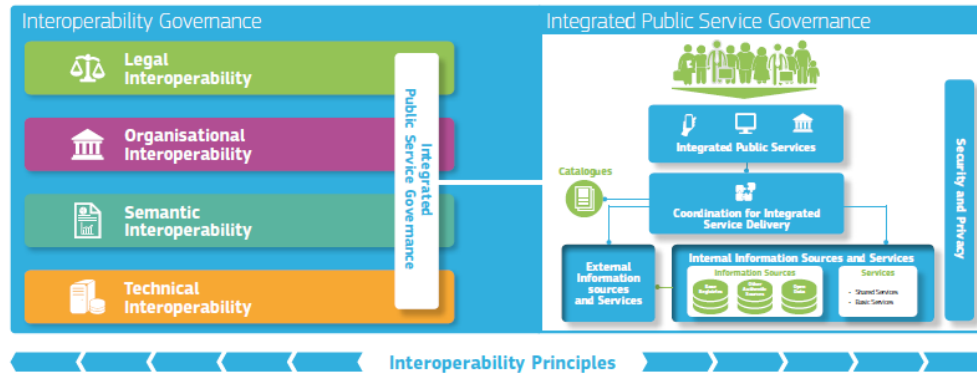
H2: "There is a positive correlation between IOP and [**performance variable**] (i.e. # requests/hr) of public service delivery to public administrations citizens and businesses"

H3: "There is a negative correlation between IOP and [**economic cost variable**] (i.e. # rejection cost) of public service delivery for public administrations, businesses and citizens"





## The revised EIF Conceptual Model



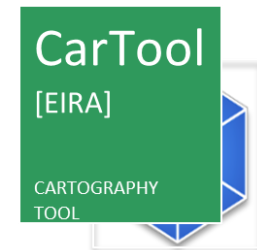
ASSESSING EIF CONFORMANCE IN PUBLIC SERVICE



ASSESSING EIF CONFORMANCE IN SW COMPONENT

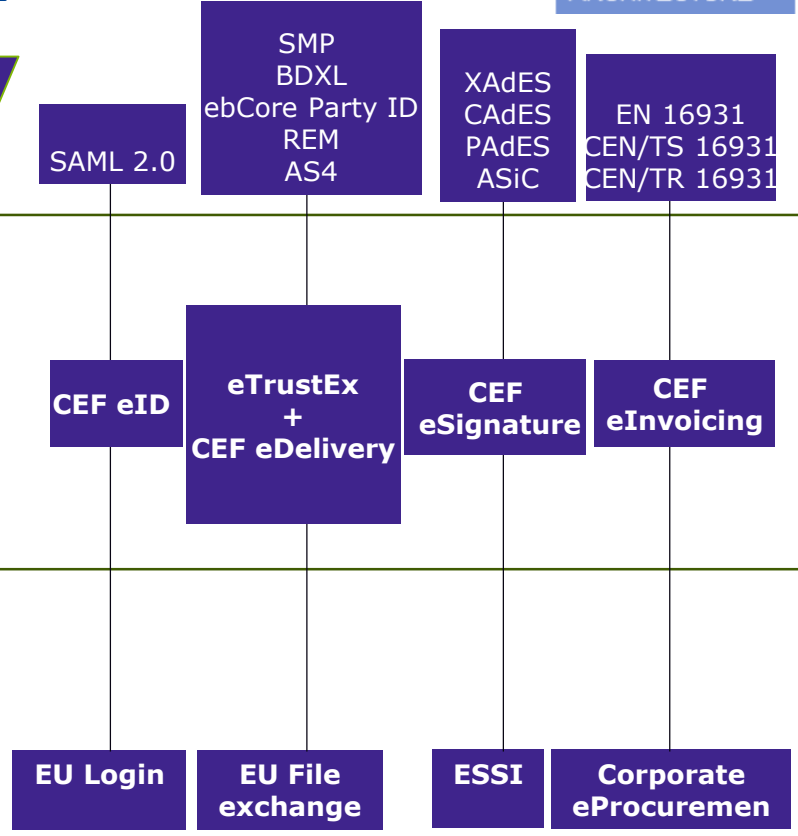
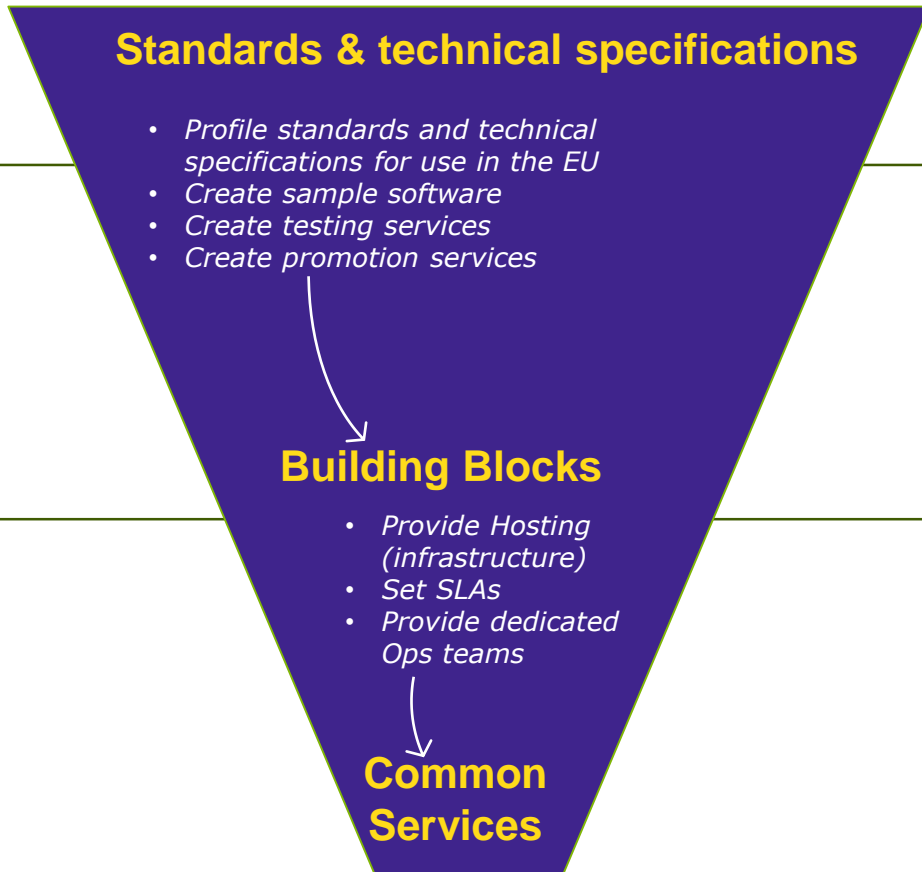


ASSESSING STANDARDS



# EIRA Value proposition

EIRA supports EIF implementation



Available at:  
<https://www.youtube.com/watch?v=RWhoy3ilYEA>  
<https://joinup.ec.europa.eu/collection/european-interoperability-reference-architecture-eira/about>  
(\*) DECISION (EU) 2015/2240 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

# EIRA overview

Why EIRA? ISA<sup>2</sup> legal bases (\*)



EIRA

EUROPEAN  
INTEROPERABILITY  
REFERENCE  
ARCHITECTURE

(art 3)

"... The ISA<sup>2</sup> programme shall support and promote:

f) the mapping and analysis of the overall interoperability landscape in the Union **through the establishment, maintenance and improvement of the EIRA and the EIC as instruments to facilitate the re-use of existing interoperability solutions and to identify the areas where such solutions are still lacking;**

(g) **the maintenance, updating, promotion and monitoring of the implementation of the EIS, the EIF and the EIRA**

(\*) DECISION (EU) 2015/2240 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 25 November 2015





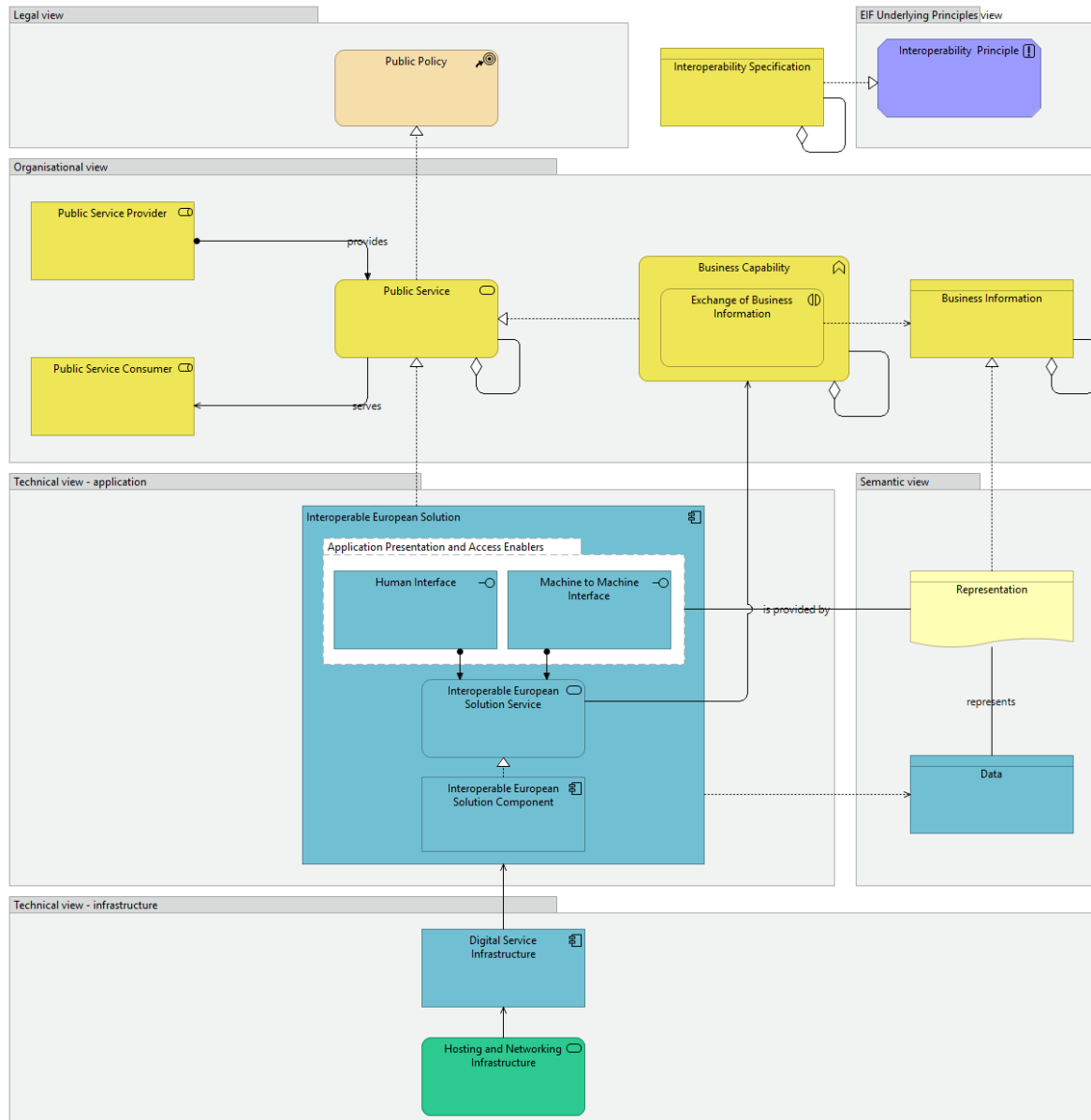
- ✓ **Architecture content metamodel**
- ✓ Defining the most salient **architectural building blocks (ABBs)** needed **to build interoperable solutions** supporting public services
- ✓ Each **ABB models** a decoupled functionality
- ✓ Result of a **collaborative effort of MS**
- ✓ As any RA
  - Has a focus: **Interoperability**
  - Has an Reference Model/Ontology: **ArchiMate ©**
  - Has an Architecture Style: **SOA**

# EIRA v3.0.0

## High-Level viewpoint



European



## EIF

### Framework and principles



Legal  
Interoperability



Organisational  
Interoperability



Semantic  
Interoperability

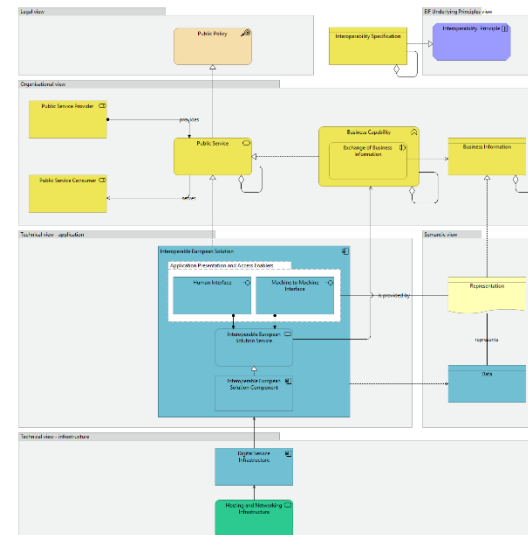


Technical  
Interoperability

Integrated  
Public Service Governance

## EIRA© v3.0.0

### Implementation guidelines and specifications







The European Interoperability Reference Architecture (EIRA) is an architecture content metamodel defining the most salient architectural building blocks (ABBs) needed to build interoperable eGovernment systems. The EIRA provides a common terminology that can be used by people working for public administrations in various architecture and system development tasks.

### EIRA use cases

#### Design

Accelerate the design of systems that support the delivery of interoperable digital public services (across borders and sectors)

#### Assess

Provide a reference model for comparing existing architectures in different policy domains and thematic areas, to identify focal points for convergence and reuse

#### Communicate & Share

Help documenting the most salient interoperability elements of complex systems and facilitate the sharing of reusable solutions

#### Discover & Reuse

Ease the discovery and reuse of interoperability solutions through the TES Cartography using the CarTool

# EIRA use cases

Potential use cases



EIRA 

Cart 



## Designing

- Design solution architectures
- Create portfolio



## Assessing

- Compare solution architectures
- Rationalise portfolio
- Manage portfolio



## Communicating and Sharing

- Support Impact Assessment on ICT
- Document interoperability solutions



## Discovering and Reusing

- Search for interoperability solutions

# CarTool overview (1/2)

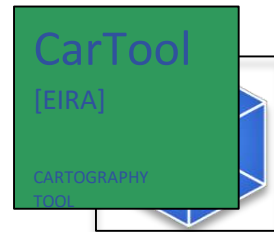


A solution owner or an service acting on his/her behalf uses the CarTool in any of the use cases. He/She might work on the basis on the documentation on an existing solution



The CarTool is the response of the EC to a request of the MS In order to allow them to document solutions in compliance to EIRA lis an open SW pluggin developed for the ARCHI SW

Documentation on a Solution in production



The CarTool supports 1) to design, document and search solutions according to EIRA and 2) to export descriptions of solutions in MEF standard format



Cartography

A cartography is the outcome of mapping/decomposing existing solutions or documenting new ones against a taxonomy (EIRA in our case)

ID	Entity Name	Entity Type	Entity Measurement Component	Entity	Entity Measurement Component
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00001	00001	00001	00001	00001	00001
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# CarTool Overview (2/2)



The screenshot displays the CarTool interface with several key components highlighted by red boxes and numbered callouts:

- 1:** EIRA v3.0.0 Library structure in the left sidebar, including folders for European Interoperability Cartography, Solutions, and My Library.
- 2:** The top menu bar containing File, Edit, View, Tools, Window, Help, and EIRA.
- 3:** The Models tree view on the left, showing a hierarchy under ADNS with categories like Strategy, Business, Application, Technology & Physical, Motivation, Implementation & Migration, Other, Views, and Viewpoints.
- 4:** A central text box containing information about interoperability principles, such as "The interoperability principles are fundamental behavioural aspects to drive interoperability actions..." and a list of twelve principles grouped into four categories.
- 5:** The Palette tool on the right, which provides various icons for creating and editing elements in the diagram.
- 6:** A complex diagram titled "Legal interoperability content" showing relationships between entities like Public Policy Implementation Approach, Public Policy Cycle, Public Policy, Binding Instrument, Legal Act, Public Service, Interoperable European Solution, and Representation across different views (Organisational, Technical, Semantic).
- 7:** The Query Items panel on the right, which includes sections for Building Blocks and Attributes.
- 8:** The "Link to EIRA" panel at the bottom right, which provides search and navigation options for the EIRA database.

# Navigation online of EIRA ABBs description using Persistent URIs (PURIs)

European  
Commission



ABB URL

DR8

EU PO  
persistent URIs



ABB  
documentation

Public Policy

- Documentation
- Add to Model
- Add to Model as ABB
- View Available Public Policy
- Add to Query
- Add Attributes
- Consult Ontology

DESCRIPTION:  
Action taken by a public authority to bring about social change in the medium and long term. It is based on certain values and objectives and is implemented using a variety of methods. It applies on the territory within which the authority is authorised to act. Based on EuroVoc <http://eurovoc.europa.eu/drupal/?q=request&concepturi=http%3A%2F%2Feurovoc.europa.eu%2F8466&termuri=http%3A%2F>

joinup

COLLECTIONS SOLUTIONS KEEP UP TO DATE

## Public Policy

[Public Policy](#)

DESCRIPTION:  
Action taken by a public authority to bring about social change in the medium and long term. It is based on certain values and objectives and is implemented using a variety of methods. It applies on the territory within which the authority is authorised to act.

Based on EuroVoc  
<http://eurovoc.europa.eu/drupal/?q=request&concepturi=http%3A%2F%2Feurovoc.europa.eu%2F8466&termuri=http%3A%2F>

The policies; overview of EU activities in all areas, from agriculture to transport:  
[http://ec.europa.eu/policies/index\\_en.htm](http://ec.europa.eu/policies/index_en.htm)

Syn. Policy Action

INTEROPERABILITY SALIENCY:  
The Public Policy ABB is salient for legal interoperability because it drives the production and formulation of legislation, and it is one of the main context elements to be taken into account when organisation need to work together, as stated

The **Cartography Tool (CarTool)** brings together high level support for the EIRA as a **plug-in** for the popular **ArchiMate modelling tool Archi®**. It includes both editing features, to model solutions using the EIRA, and querying features to query an **EIRA-based Cartography of solutions**.

## CarTool use cases

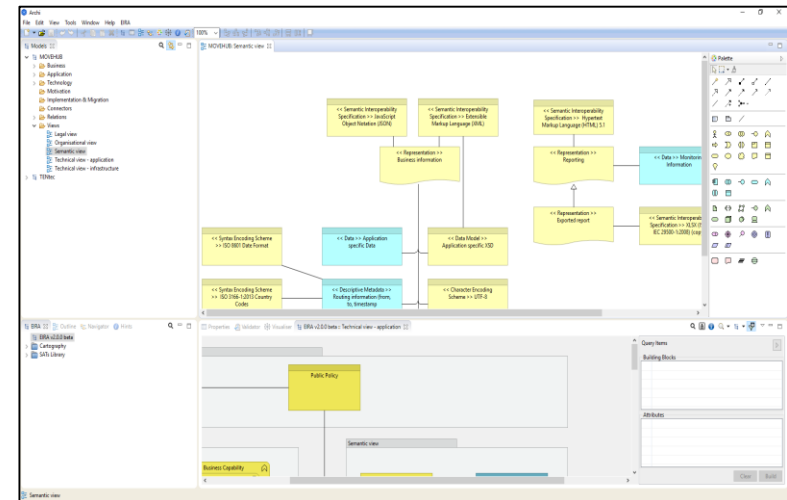
### Search

- Query Cartographies, such as the EIC and the TESCART for used solutions
- Consult a list of proposed IoP Specifications

### Model

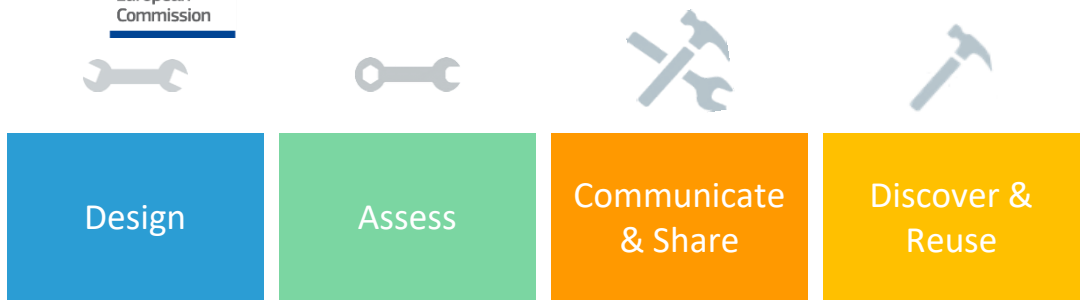
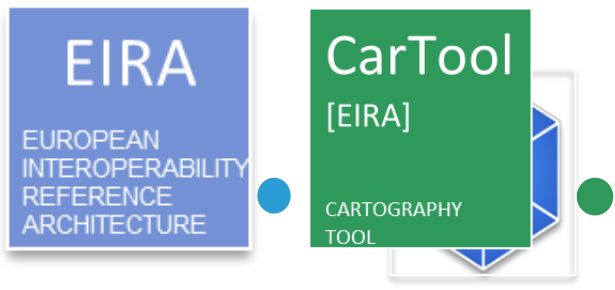
- Model new solutions based on either the EIRA, SATs or existing TES
- Model SATs based on the EIRA

## CarTool view



Available at: <https://joinup.ec.europa.eu/solution/cartography-tool/about>

# EIRA & CarTool key areas of support

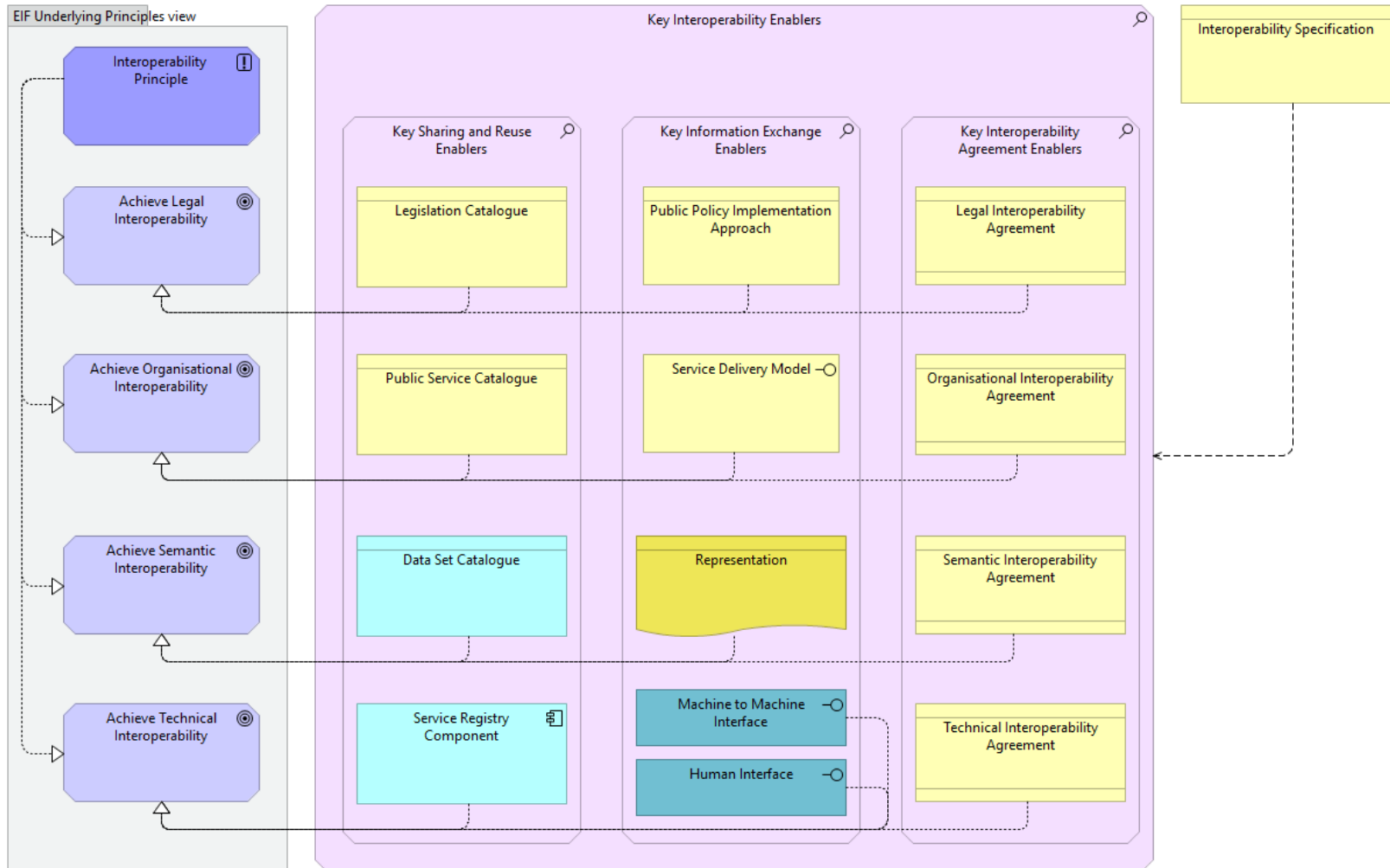


- Providing a controlled vocabulary
- Decoupling functionalities in Architectural Building Blocks
- Facilitating the identification of IOP specifications
- Providing the key Interoperability enablers ABBs
- Accelerating development cycle
- Enabling cartographies
- Promoting discovery/reusability
- Supporting Portfolio Mgmt Decision Making
- Supporting Public Policy formulation

	Design	Assess	Communicate & Share	Discover & Reuse
Providing a controlled vocabulary	● ●	● ●	● ●	● ●
Decoupling functionalities in Architectural Building Blocks	● ●	● ●	● ●	● ●
Facilitating the identification of IOP specifications	● ●	● ●	● ●	● ●
Providing the key Interoperability enablers ABBs	● ●	● ●	● ●	● ●
Accelerating development cycle	● ●	○ ○	○ ○	● ●
Enabling cartographies	○ ●	○ ●	○ ●	○ ●
Promoting discovery/reusability	● ●	● ●	● ●	● ●
Supporting Portfolio Mgmt Decision Making	○ ●	○ ●	○ ●	○ ●
Supporting Public Policy formulation	○ ●	○ ●	○ ●	○ ●

# How the EIRA© & CarTool© support IoP in e-Government?

Key Interoperability enablers ABBs





# How EIRA supports IOP in e-Government?

## LOST IOP support



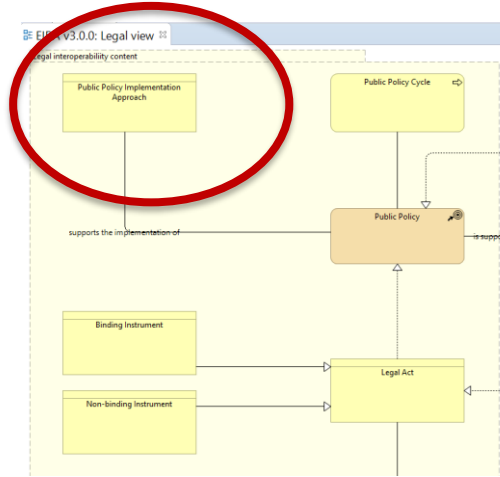
"Public Policy Implementation Approach ABB is influenced by the regulatory state and the delegation of powers"

**Example: Focus on the public policy implementation approach of a national PA including references to TOGAF v 9.1**

**PUB POLICY IMPL REGULATORY STATE**  
**STRONGLY/**  
**LOW LEVEL**  
**REGULATED**  
  
**SOFTLY/HIGHL**  
**LEVEL**  
**REGULATED**

<p><b>THE CONTROLLED SCENARIO</b></p> <p>FOCUS ON SEMANTIC INTEROPERABILITY (i.e. data architecture, base registries)</p>	<p><b>THE NORMATIVE SCENARIO</b></p> <p>FOCUS ON TECHNOLOGY INTEROPERABILITY (i.e. interoperability specifications)</p>
<p><b>THE FEDERATED SCENARIO</b></p> <p>FOCUS ON ORGANIZATIONAL INTEROPERABILITY (i.e. interoperability governance)</p>	<p><b>THE SUBSIDIARITY SCENARIO</b></p> <p>FOCUS ON LEGAL INTEROPERABILITY (i.e. interoperability frameworks, interoperability reference architecture)</p>

**TOP/CENTRALISED PUBLIC POLICY IMPL**      **DOWN/DELEGATED DELEGATION OF POWERS**



**Do you have an understanding of EIRA<sup>©</sup> and its benefits?**

**Do you understand the use of the CarTool<sup>©</sup>?**

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## **AGENDA**

- Potential use cases
- Use case design solution architecture
- Next steps
- Proposed approach for the technical work on the use case in scope

# Potential use cases



User's Needs



Use Cases



Design Solution architectures (*HL-SAT*)



Document interoperability solutions



Compare solution architectures

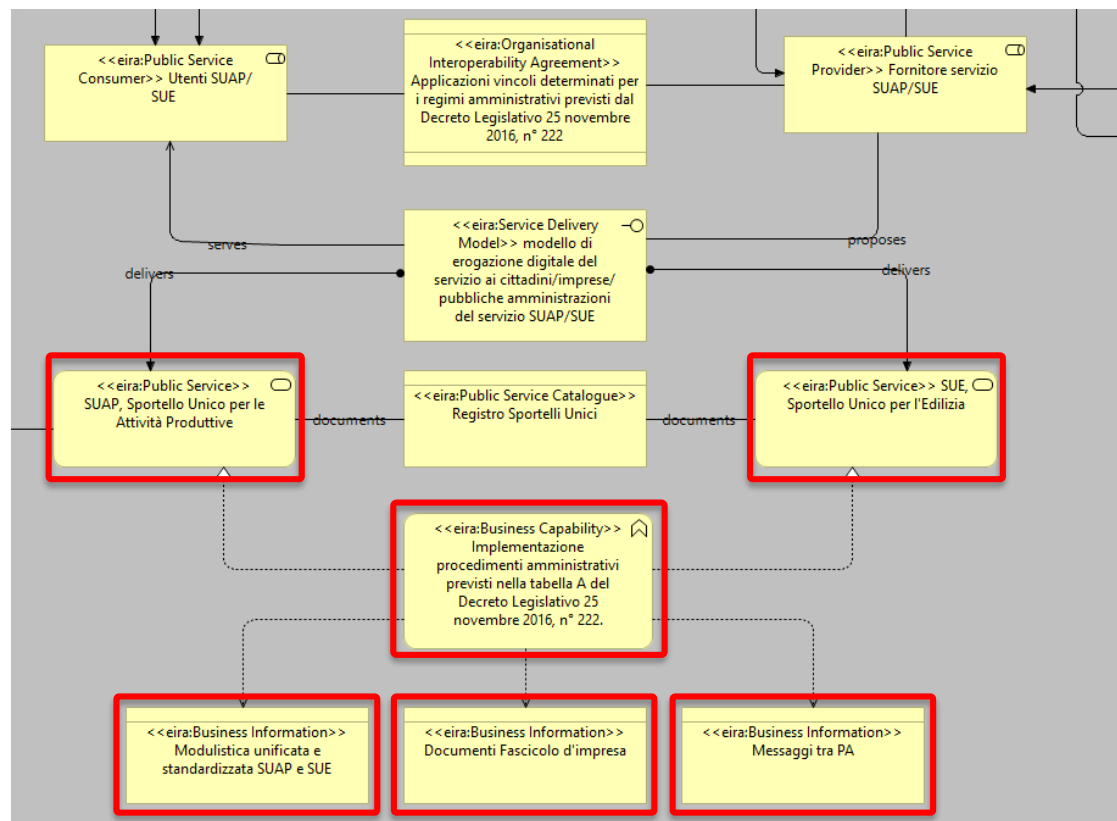


# Use case design solution architecture

Example of AgID SUAP/SUE



- **Objective:** Design Detail-Level interoperability requirements of a target solution supporting a/one public service
- **Unit of Analysis:** Public Service
- **Output:** identification of the interoperability requirements for the evolution the target solution supporting Public Service;

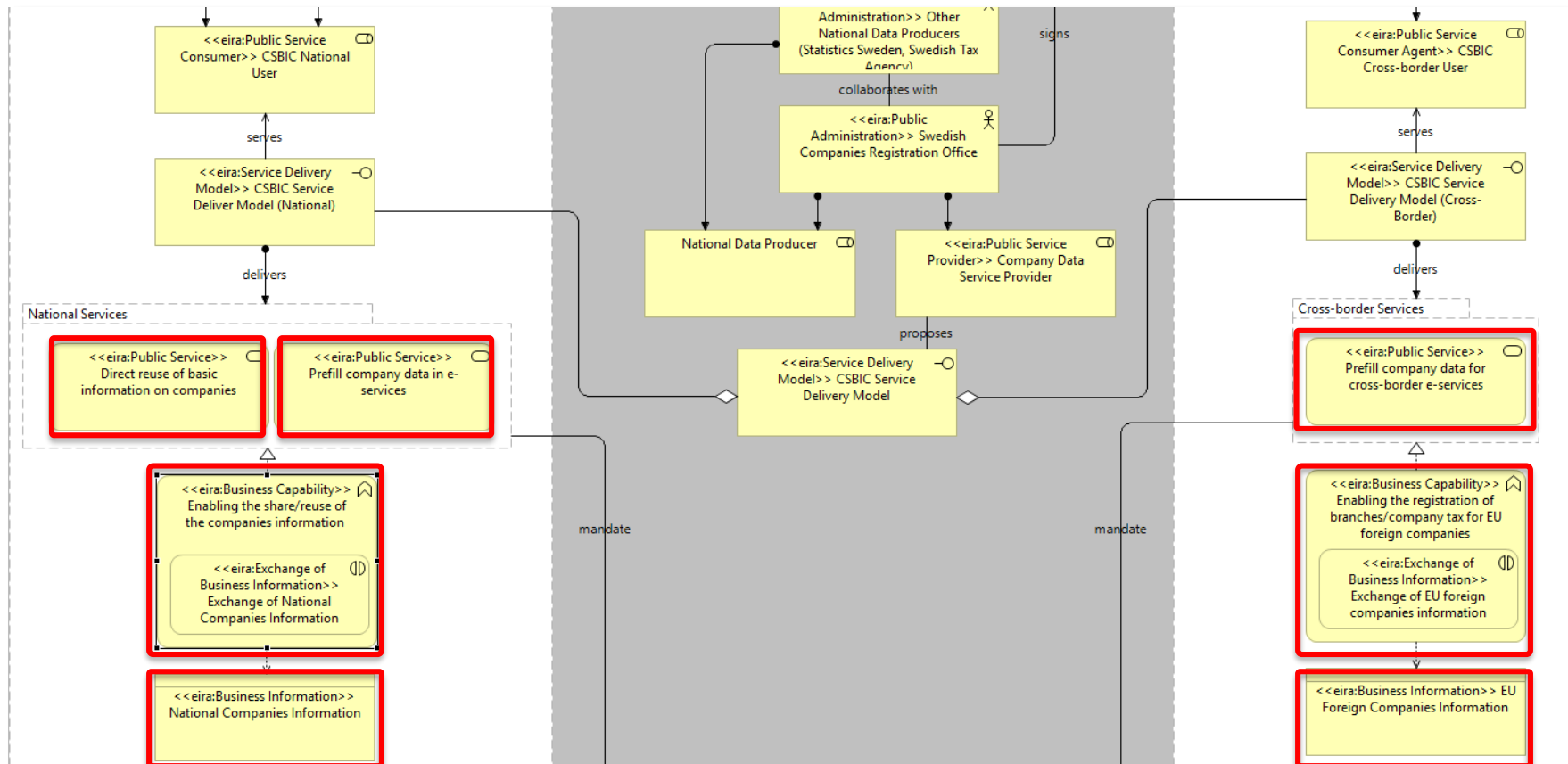


# Use case document interoperability solutions

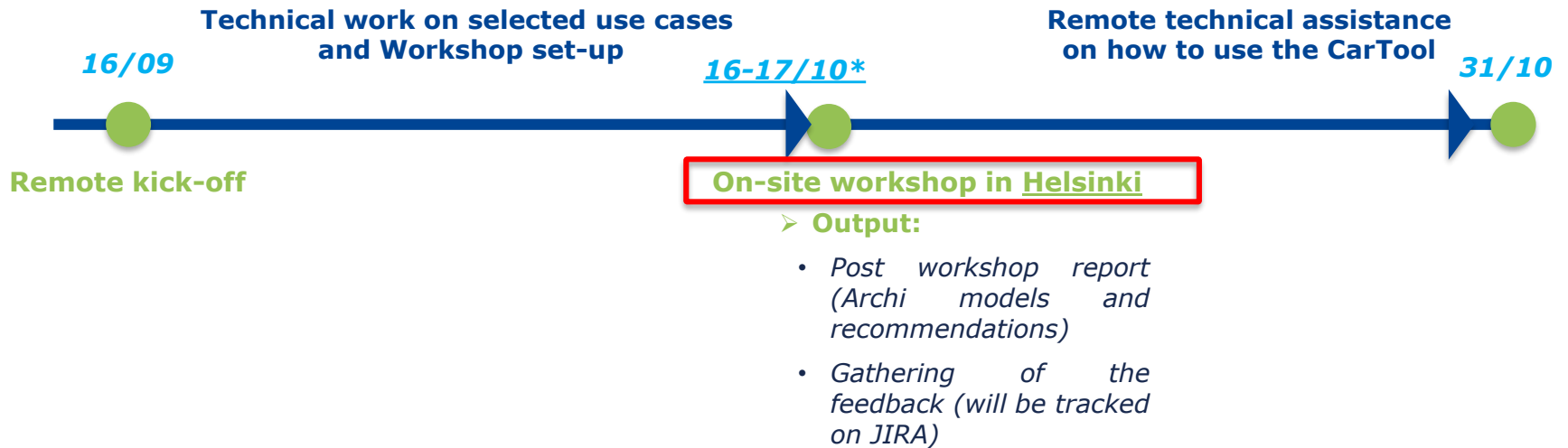
Example of DIGG CSBIC



- **Objective:** Document/model the architecture of an existing solution with the objective to identify interoperability gaps at legal, organisational, semantic and technical levels
- **Unit of Analysis:** Public Service
- **Output:** identification of potential interoperability gaps of the existing solution



# Next steps



(\*) (*workshop duration: one day and a half*).



# Proposed approach for the technical work



Milestone	Activity	Notes
<i>after 16/09</i>	Provisioning of <i>upfront documentation</i> , related to the use case in scope, to help us support the technical work	<i>We used to receive info in English and starts working requesting clarifications by email.</i>
<i>23-24/09</i> <i>(tentative date)</i>	Mapping of the <i>Architecture Building Blocks</i> related to the Legal and Organisational views of the EIRA	<i>We used to start identifying and tracking all the relevant “architectural building blocks” through an Excel file and then jointly discussing and consolidating it through remote sessions (via Webex, Skype, etc.).</i>  <i>Tools: Excel</i>
<i>30/09 – 01/10</i> <i>(tentative date)</i>	Mapping of the <i>Architecture Building Blocks</i> related to the Semantic and Technical view of the EIRA	<i>We used to start identifying and tracking all the relevant “architectural building blocks” through an Excel file and then discussing and consolidating it through remote sessions (via Webex, Skype, etc.).</i>  <i>Tools: Excel</i>
<i>7-8/10</i> <i>(tentative date)</i>	Modelling of the identified <i>Architecture Building Blocks</i> , using an ARCHI model through the CarTool.	<i>We used to draft the identified Architecture Building Blocks using an Archi model through the CarTool and then then jointly discussing and consolidating it through remote sessions (via Webex, Skype, etc.).</i>  <i>Tools: CarTool v3.0.0</i>
<i>16-17/10</i>	1,5 days’ workshop of Illustration of the main achievements.	<ul style="list-style-type: none"> <li><i>Interactive session: proactive participation of your domain-experts to work with us on the pilot;</i></li> <li><i>Consolidation of the model with the experts.</i></li> </ul> <i>Tools: Workshop</i>

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**Is the way of collaboration (kick-off, workshop, final presentation) acceptable?**

**Do we agree on the expected outcome and deliverables?**



## Questions?

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# EIRA Metamodel

