



EU eGovERA© - Linking the dots between Enterprise Architecture, Portfolio Management and Digital Transformation Roadmapping.

Dr. Raul Mario Abril Jimenez

EUROPEAN COMMISSION

DIGIT.D2 – Interoperability

Agenda

1. Introduction to EIRA© basics
2. Upscale problem statement
3. eGovERA© overview
4. eGovERA© upscale solution components demo
5. eGovERA© foundation solution components
6. Conclusions

Annex

Introduction to EIRA© basics

Architecture, technologically independent, business agnostic, content metamodel

Unit of analysis: A (one) digital public service

Each ABB models a decoupled L/O/S/T High-Level requirement functionality

Focus: Interoperability (It includes the most salient ABBs of and iop dps)

Reference Model/Ontology: ArchiMate©

Architecture Style: SOA

Solution Architecture Templates (EIRA© extensions) are used to model L/O/S/T Detail-Level requirements (i.e. specifications) both business agnostic and domain specific

Result of a collaborative effort with EU Member States

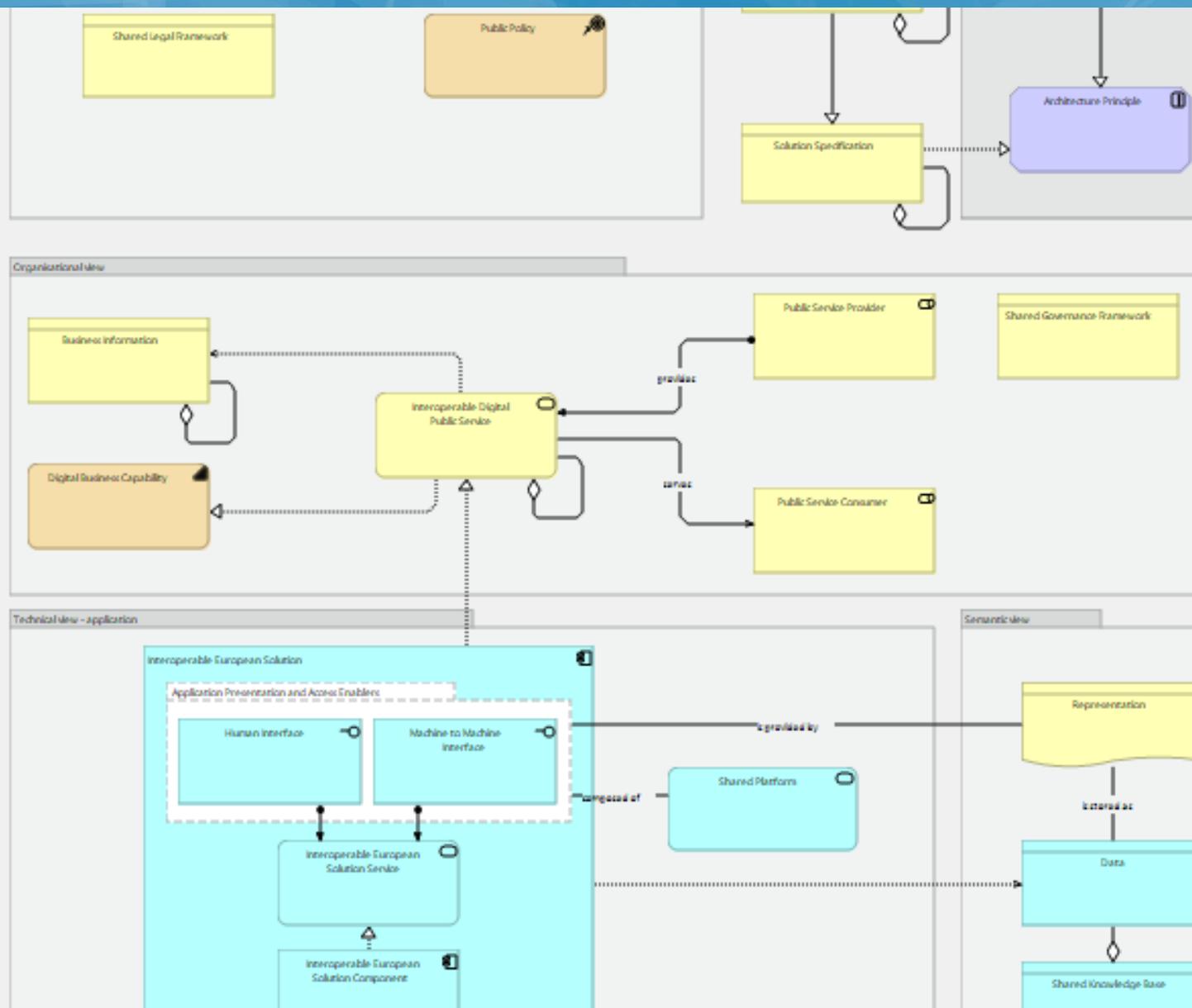


(art 3) "... The ISA²programme shall support and promote:

*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"

EIRA© High-level view (partial)



<https://joinup.ec.europa.eu/collection/european-interoperability-reference-architecture-eira/about>

<https://www.youtube.com/watch?v=RWhoy3iiYEA>

EIRA©. Being unaware of upscale use cases



Architecture-Driven Requirements Engineering



Analysing H-L requirements of a target digital public service



Model-Driven Solution Design



Designing a D-L target digital public service



Discovering and Reusing

Search for interoperability solutions (CarTool & Semantic Web?)

Rationalise portfolio

Documenting, Communicating and Sharing



Document an As-Id digital public service



Controlled vocabulary

Assessing



Gap analysis solution/reference architectures

Impact assessment on ICT support



Upscale problem statement

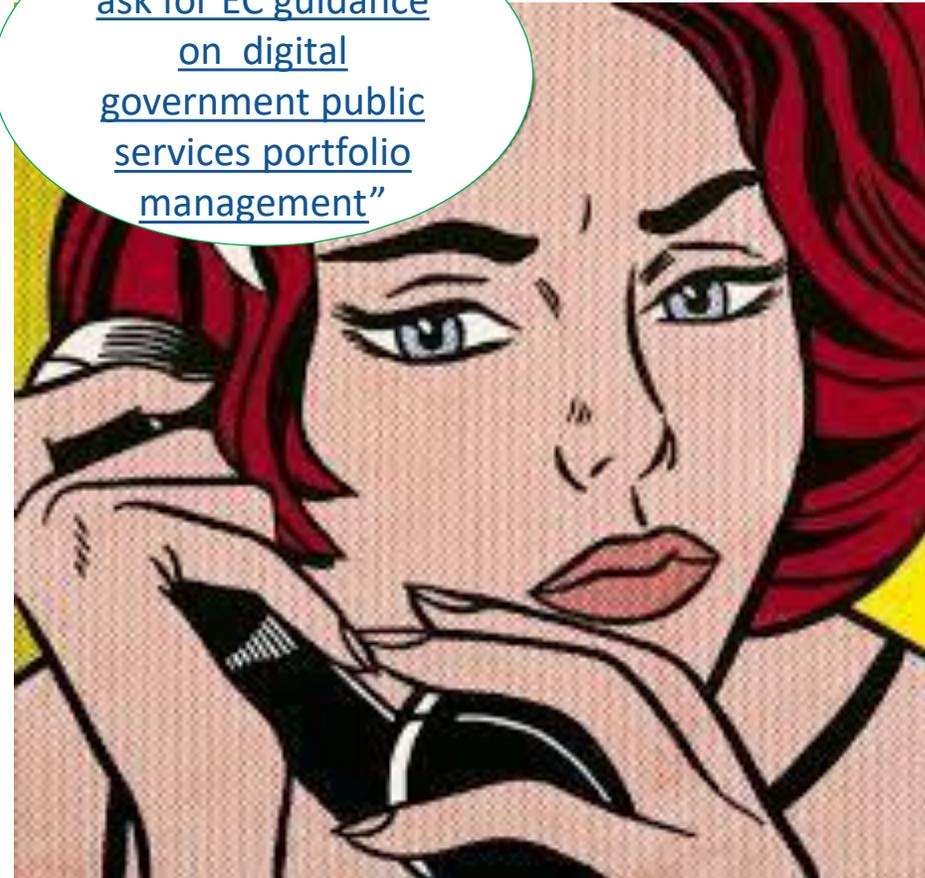
DG DIGIT



“Could you, pls.,
be more specific?
To do what?”

DG REFORM

“Member States
ask for EC guidance
on digital
government public
services portfolio
management”



eGovERA
for
eGovernment
and digital
transformation

DG DIGIT

“I see. A top-down approach?”

DG REFORM

“They need support on formulating their national digital strategies setting their priorities”

“...and frequently bottom-up as they need justifications supporting their applications for funds to modernise specific digital public services”

DG DIGIT

“...and who are the users?”

“So, they would get value if we provide a high level eGovernment architecture for key digital public services and for the big public administration domains, right?”

DG REFORM

“CIOs dreaming for a well-grounded national digital strategy. Portfolio Manager who need to decide priorities in the digitalisations. Architects who need guidance identifying requirements for digital public services....and, all-in-all, in many cases in the not so advanced MS in terms of digitalisation

“Exactly. It should cover the range from Business Agnostic (e.g. network, eiD, base registries, etc...) to the big domains (i.e. Case Management System to support the Courts, Health Record Management, ...).

DG DIGIT

“Pls., describe the value”

“I see,..... let’s call it eGovERA© , for the time being... ummmm, this guidance should consider the specifics of each situation, right?”

DG REFORM

“These users will get a high level eGovernment architecture reference (logical) against which the digitisation efforts could be identified and co-ordinated”.

“Absolutely!!!. It is clear, that the digital transformation would greatly vary from Member State to Member State”.

DG DIGIT

“Therefore, eGovERA© in addition to this high level eGovernment architecture reference it should provide a roadmap suggesting the specifics for their digital transformation considering their particular situation, right?

“So...our champions Member States in eGovernment will not be really interested in eGovERA© ?

DG REFORM

“Absolutely!!!. It is clear, that the digital transformation would greatly vary from Member State to Member State”.

“They will. To focus in their next generation of digital public service

DG DIGIT

“I suggest that we include this in our ISA² WP2019 (Q4) and as a PoC

“We would need to validate the PoC in MS. I’d suggest 3 pilots

“Deal?”

DG REFORM

“Great!!!!

“No problem”

“Deal”

eGovERA© overview

Overview

eGovERA© is a **solution** suite for **eGovernment** and **digital transformation strategic and tactic decision-making support** in European Public administrations

Vision

eGovERA© **will support the next generation** (for 2030) of **European digital public services** enabling **business continuity, transformation, and co-existence** with the current state of affairs.

eGovERA© Users



The **CIO of a Member State** (e.g. Head of MS's Digital Agency), who needs to plan and optimise the investment in e-Government for the following years, to be distributed in different policy areas, while focusing on the modernisation of the MS's digital public services.



The **public administrations' services Portfolio Manager**, working on planning the long-term modernisation programmes of specific digital public services for citizens and businesses or of infrastructure services, who needs to have guidance in identifying the priority actions and their sequence.



The **enterprise or solution architect** working in the implementation of digital public services in a specific policy domain or in cross-domain infrastructure services, who needs to have a European reference model to plan the implementation phases.

Use Cases

Strategic Decision-Making Support

Digital Public Services
Portfolio Management
Decision Support

National Digital
Agenda Support

ICT
Legislation
Impact
Assessment
Support

Tactic Decision-Making Support

Digital Business
Capacity Assessment
and Building Decision
Support

Digital
Transformation
Decision Support

**EU Funds Application
Support for eGovernment
and Digital Transformation**

Analysis H-L
Requirements of a
Digital Public
Service

Design of a
Target Digital
Public Service

1st

Foundation
sol. comp



eGovERA© reference architectures

3 reference architectures, 2 domain specific (Taxation and Health) and the Business Agnostic.

Upscale solution components



eGovERA© eGovernment Digital Business Capabilities Assessment

Survey tool enabling the assessment of the ability to deliver per digital business capability



eGovERA© eGovernment Portfolio Management Decision Support

Quadrant tool enabling identification, analyses, and decision support on dpcs



eGovERA© Digital Transformation roadmap Support

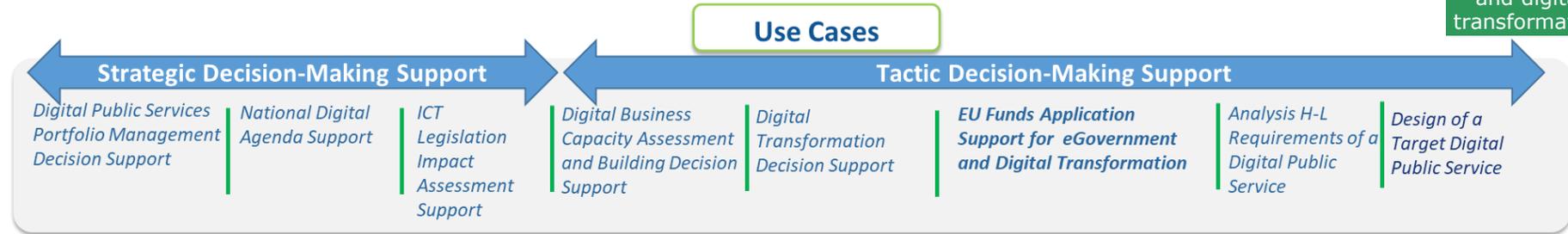
Roadmap tool enabling analyses and decision support on dpcs



eGovERA© portal

Web portal enabling one-stop access to eGovERA© upscale solution components

eGovERA© visible solution components per use case



F. sol. comp



eGovERA© RAs

✓

✓

✓

Upscale solution components



eGovERA© eGov DBCs Cap Assessment

✓

✓

✓

✓

✓



eGovERA© eGov Port Mgmt Decision Support

✓

✓

✓

✓

✓



eGovERA© Digital Trans roadmap Support

✓

✓



eGovERA© portal

✓

✓

✓

✓

✓

eGovERA© (and PoC) high-level requirements

Family	eGovERA© High-Level Requirements
Business first	Business capabilities driven
	eGovernment portfolio management decision support (i.e. not technology)
	Digital transformation support
	Data visualisation (icons, precedence charts, etc.)
User friendly	Simple
	Intuitive
	What-if
User centric	Value proposition per use case
	Co-creation with the users
	Validation by the users
Content	EIRA based RAs (interoperable digital public services by default)
	One RA per domain specific
	Domain specific RAs leverage in Business Agnostic RA
	Open software
	Free license

PoC High-Level Requirements

2 domain specific RAAs + the Business Agnostic RA

Endorsement to the RAs from Member States

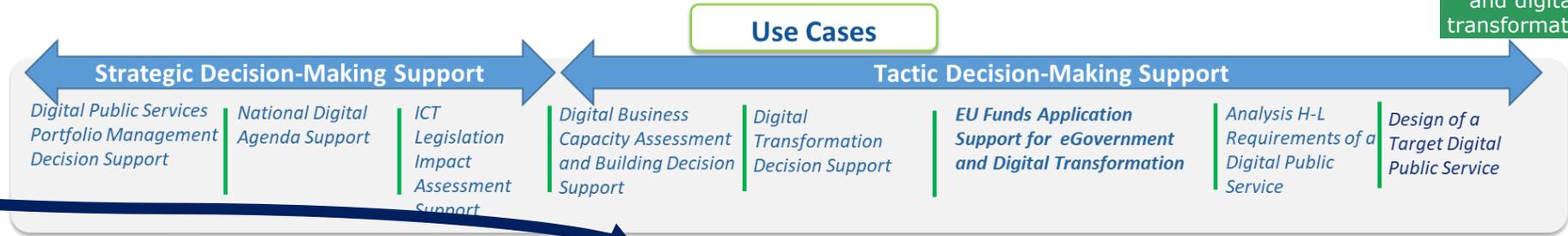
Endorsement from Commission services to the RAs

Focus on the primary use cases

Pilots in EU Member States

eGovERA© “business first” visual implications in upscale solution components

Foundation solution components (i.e. RAs) are invisible to upscale solution components' users



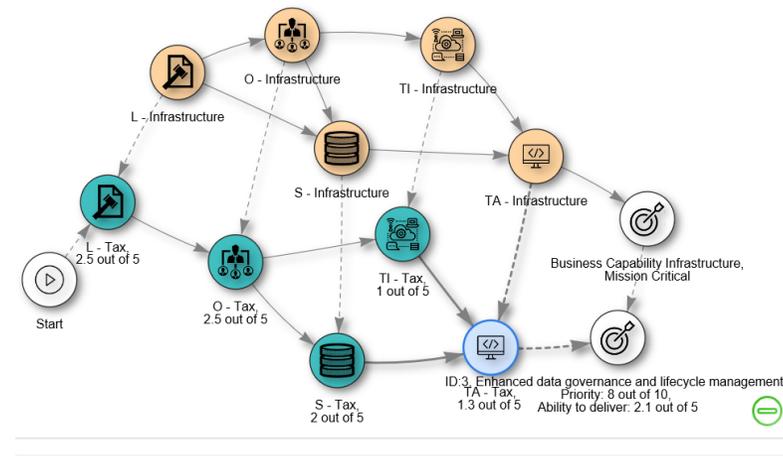
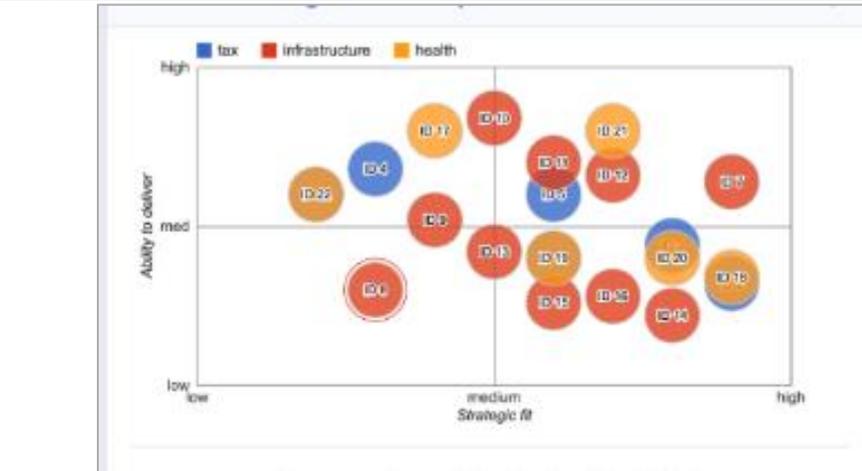
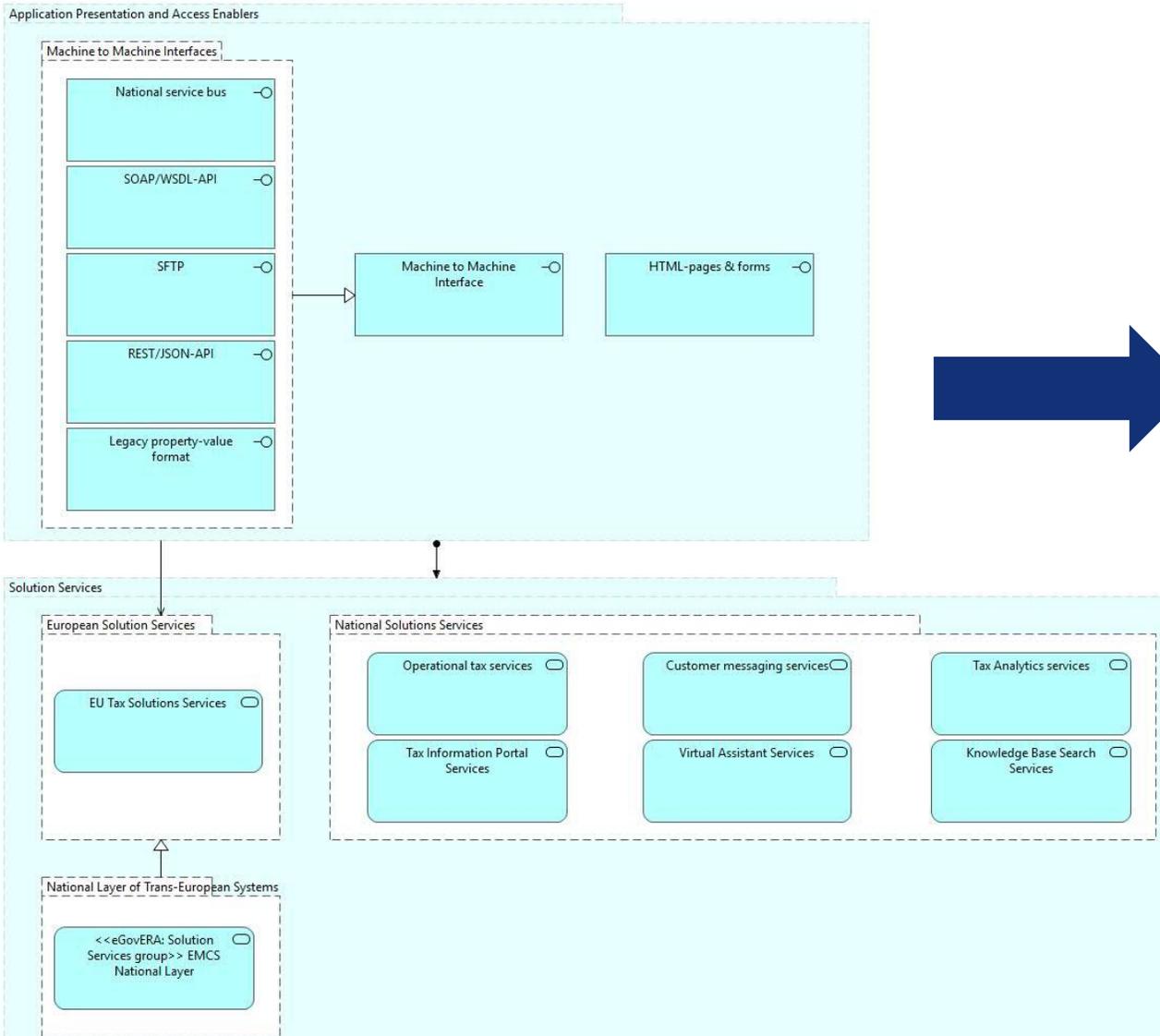
F. sol. comp	Strategic Decision-Making Support	Tactic Decision-Making Support
eGovERA© RAs	✓	✓
eGovERA© eGov DBCs Cap Assessment	✓	✓
eGovERA© eGov Port Mgmt Decision Support	✓	✓
eGovERA© Digital Trans roadmap Support		✓
eGovERA© portal	✓	✓

Upscale solution components

eGovERA@ “business first” visual implications in upscale solution components

ISA²
You click, we link

eGovERA
for
eGovernment
and digital
transformation



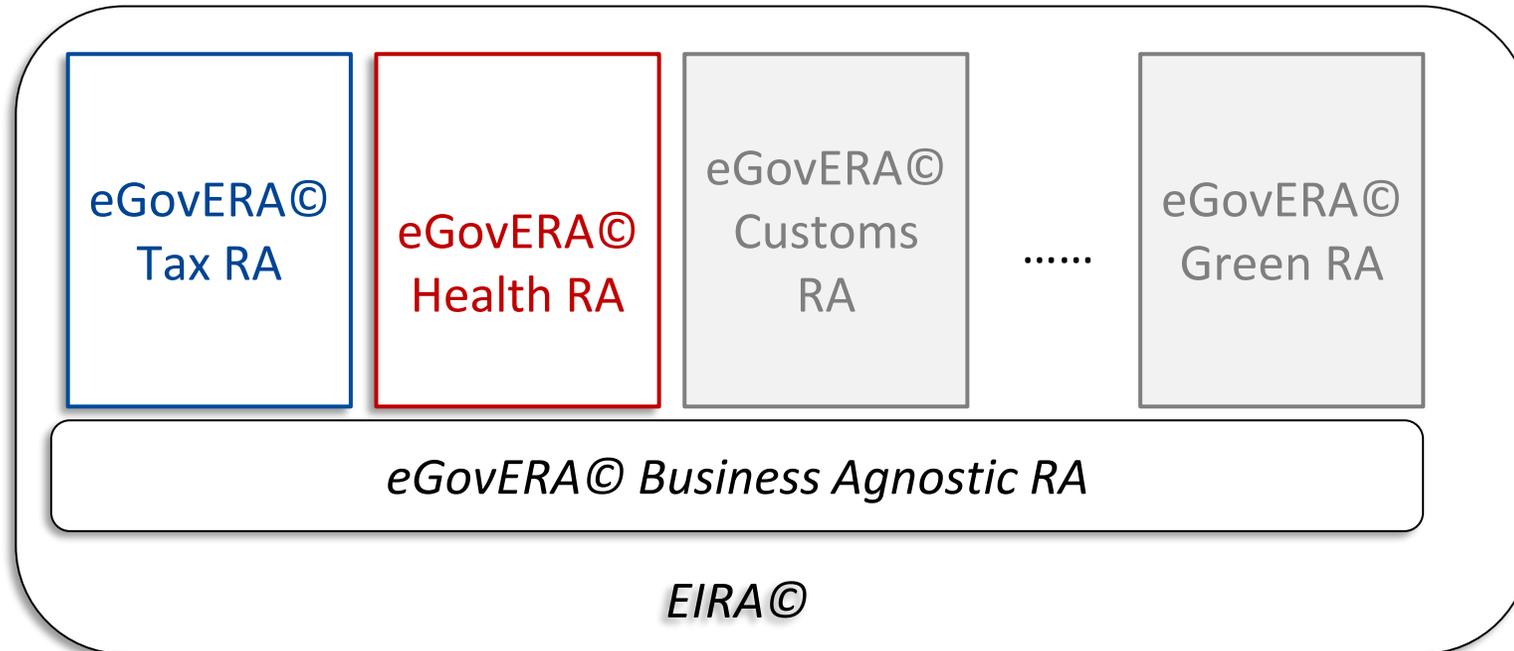
eGovERA© upscale solution components demo

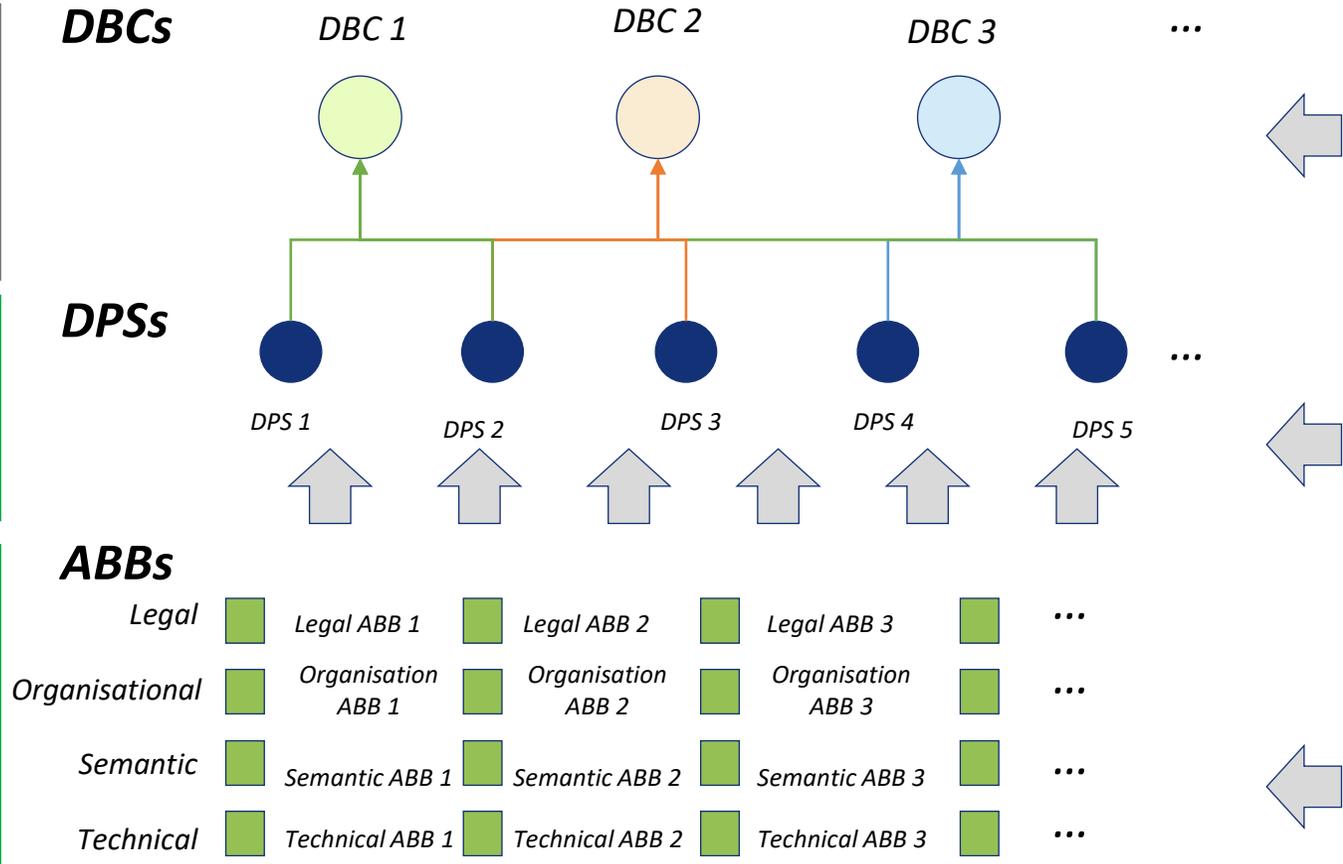
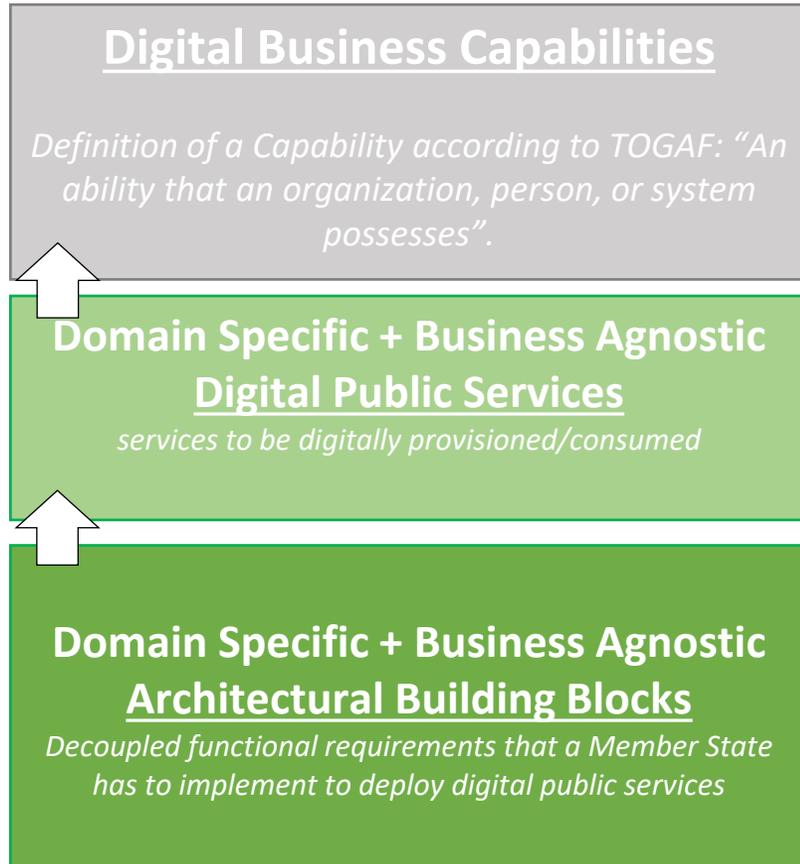
[https://egover-dev.herokuapp.com/
survey_result06APRIL2021.json](https://egover-dev.herokuapp.com/survey_result06APRIL2021.json)

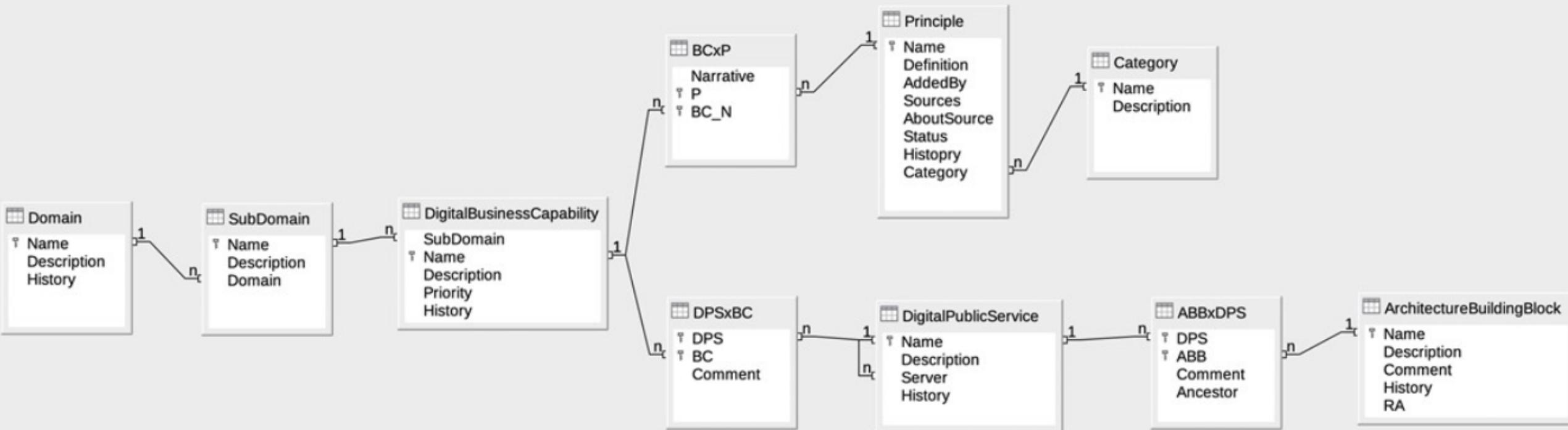
eGovERA© Foundation solution components

eGovERA© “Domain RAs leverage in Business Agnostic RA” implications in foundation solution components (i.e. RAs)

Domain specific silo avoidance: In a domain specific RA there is only domain specific content







The eGovERA team, the Tax Working Group and DG TAXUD, have identified **6 Digital Business Capabilities supporting DG TAXUD Tax Digital Objectives and MSs request for EU Funds** (i.e., Resilience and Recovery Facility funds). They are realized by:

- **27** Digital Public Services, and
- **232** Architecture Building Blocks.

These 6 Digital Business Capabilities are part of the **25 Tax Digital Business Capabilities** identified.

2021 Priority Digital Business Capabilities



6

Tax authorities' registries/catalogues management

Revenue/Fee collection for regular and special cases

Taxpayer tax returns and transaction information collection.

Tax risk management

Tax rules management for processing tax returns

Taxpayers and Stakeholders Relationship Management

Tax Digital Public Services Identified



27

Tax Architecture Building Blocks Identified

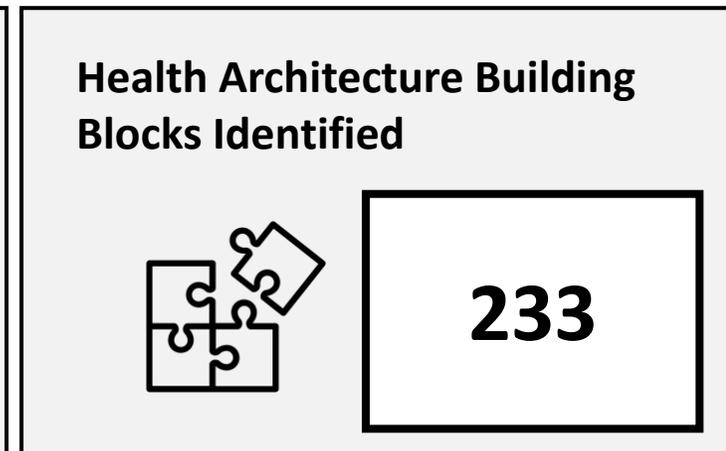
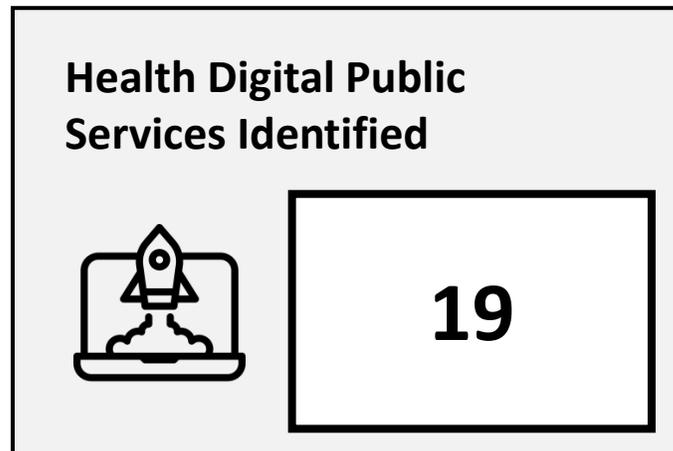
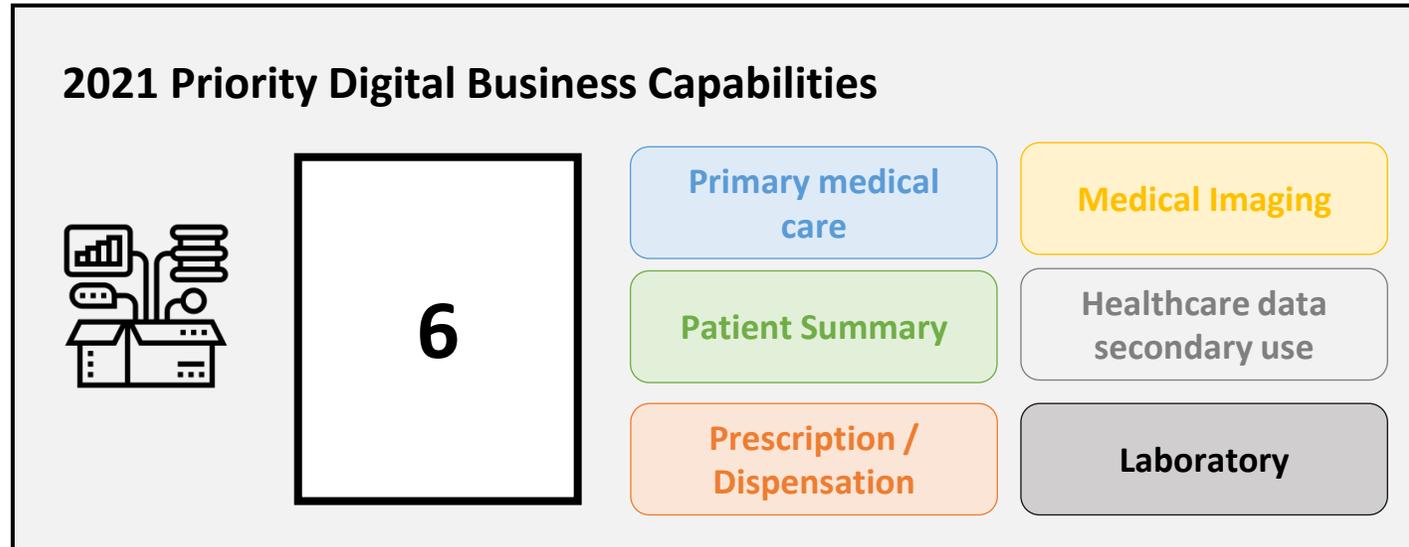


232

The eGovERA team, the Health Working Group and DG SANTE, have identified **6 Digital Business Capabilities supporting DG SANTE Health Digital Objectives and MSs request for EU Funds** (i.e., Resilience and Recovery Facility funds) and that are realized by:

- **19** Digital Public Services, and
- **233** Architecture Building Blocks.

These 6 Digital Business Capabilities are part of the **30 Health Digital Business Capabilities** identified.



2021 Priority Digital Business Capabilities



5

Electronic identification

Qualification management

Digital Payments

Digital Procurement

(Big) Data Analysis

BA Digital Public Services Identified



30

BA Architecture Building Blocks Identified



234

The eGovERA team and DIGIT, have identified, also considering inputs received from domain specific Working Group **5 Digital Business Capabilities supporting** the other domain specific Reference Architecture and **MSS request for EU Funds** and that are realized by:

- 30 Digital Public Services, and
- 234 Architecture Building Blocks.

These 5 Digital Business Capabilities are part of the **17 Business Agnostic Digital Business Capabilities** identified.

Conclusions

Assessing business capacity support toolsask yourself

What are the digital public services supporting a given DBC?

What are the ABBs involved?

...and good luck with the answer 😊

**Domain specific/agnostic RAs are the foundation of upscale use cases portfolio
management decision support and digital transformation roadmapping support**

Look for the continuum RA → capacity maps → portfolio mgmt. → digital transformation

Annex

1 eGovERA© business agnostic RA

L_{agn}

O_{agn}

S_{agn}

TI_{agn}

TA_{agn}

n eGovERA© domain specific RAs (TAX, HEALTH,...)

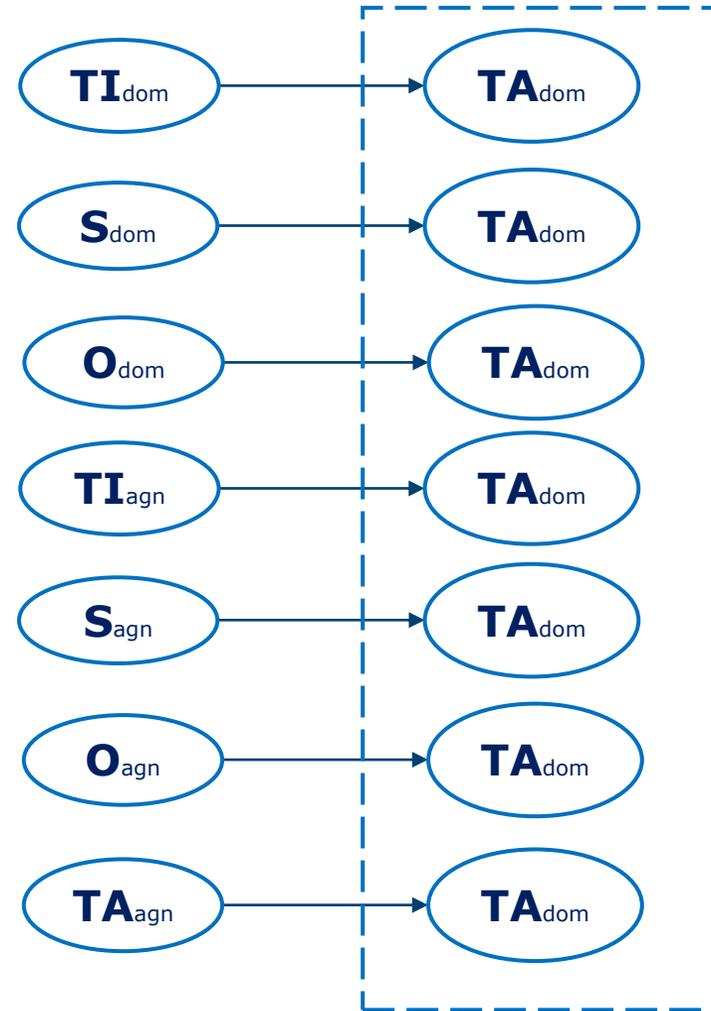
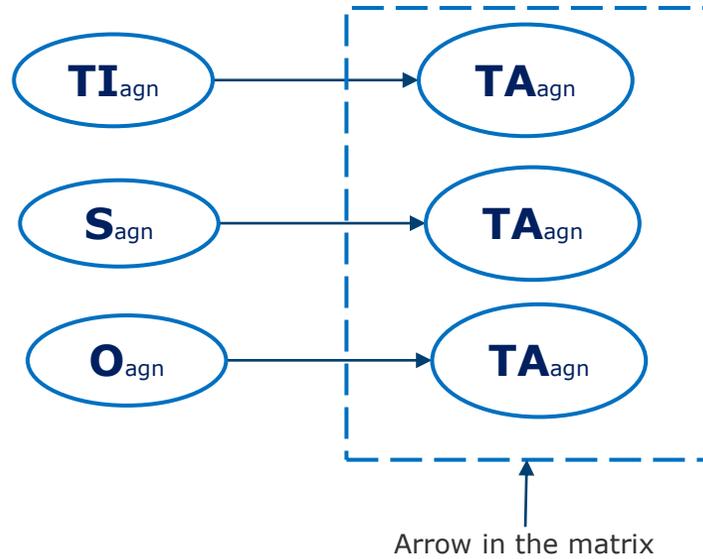
L_{dom}

O_{dom}

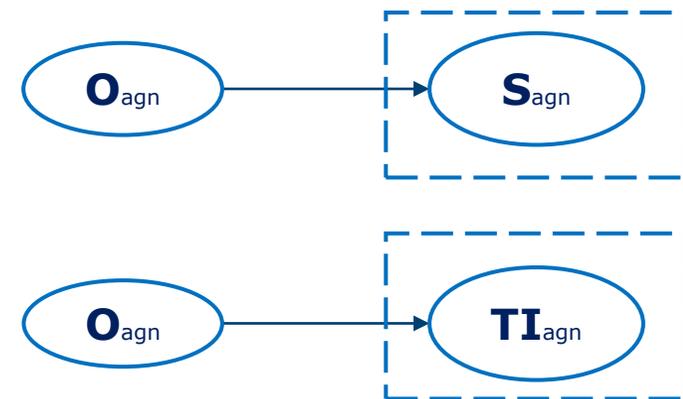
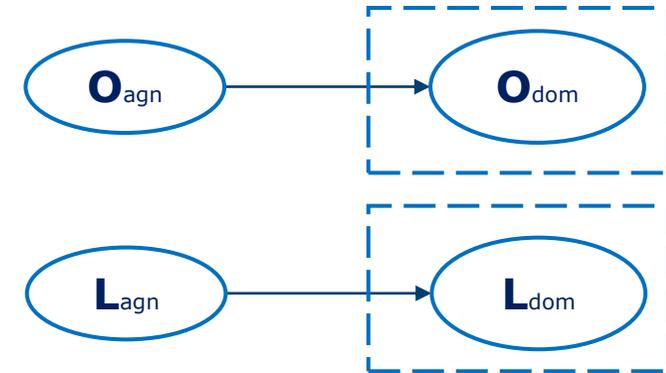
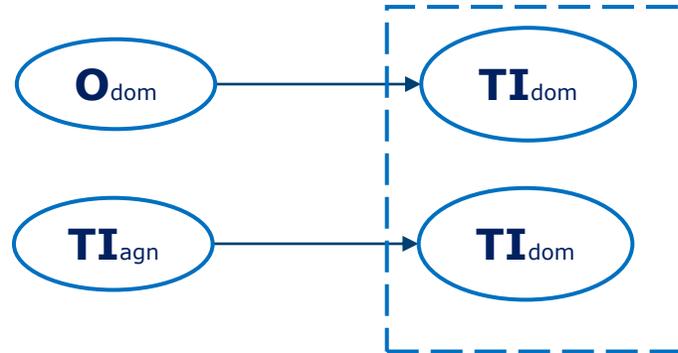
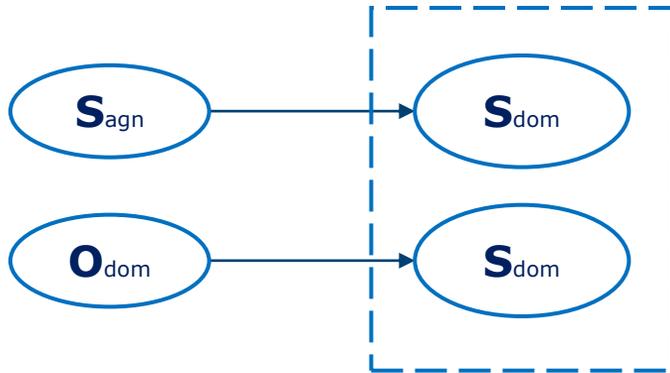
S_{dom}

TI_{dom}

TA_{dom}



	PRECEDENTS									
	Lagn	Oagn	Sagn	Tlagn	TAagn	Ldom	Odom	Sdom	Tldom	TAdom
Lagn										
Oagn										
Sagn		x								
Tlagn		x								
TAagn		x	x	x						
Ldom	x									
Odom		x								
Sdom			x				x			
Tldom				x			x			
TAdom		x	x	x	x		x	x	x	



	PRECEDENTS									
	Lagn	Oagn	Sagn	TIagn	TAagn	Ldom	Odom	Sdom	TI _{dom}	TA _{dom}
Lagn										
Oagn										
Sagn		x								
TIagn		x								
TAagn		x	x	x						
Ldom	x									
Odom		x								
Sdom			x				x			
TI _{dom}				x			x			
TA _{dom}		x	x	x	x		x	x	x	

There are four configurations of digital transformation roadmaps depending on the selected Implementation orientation

1

Legal - First

3

Semantic - First

2

Organisational - First

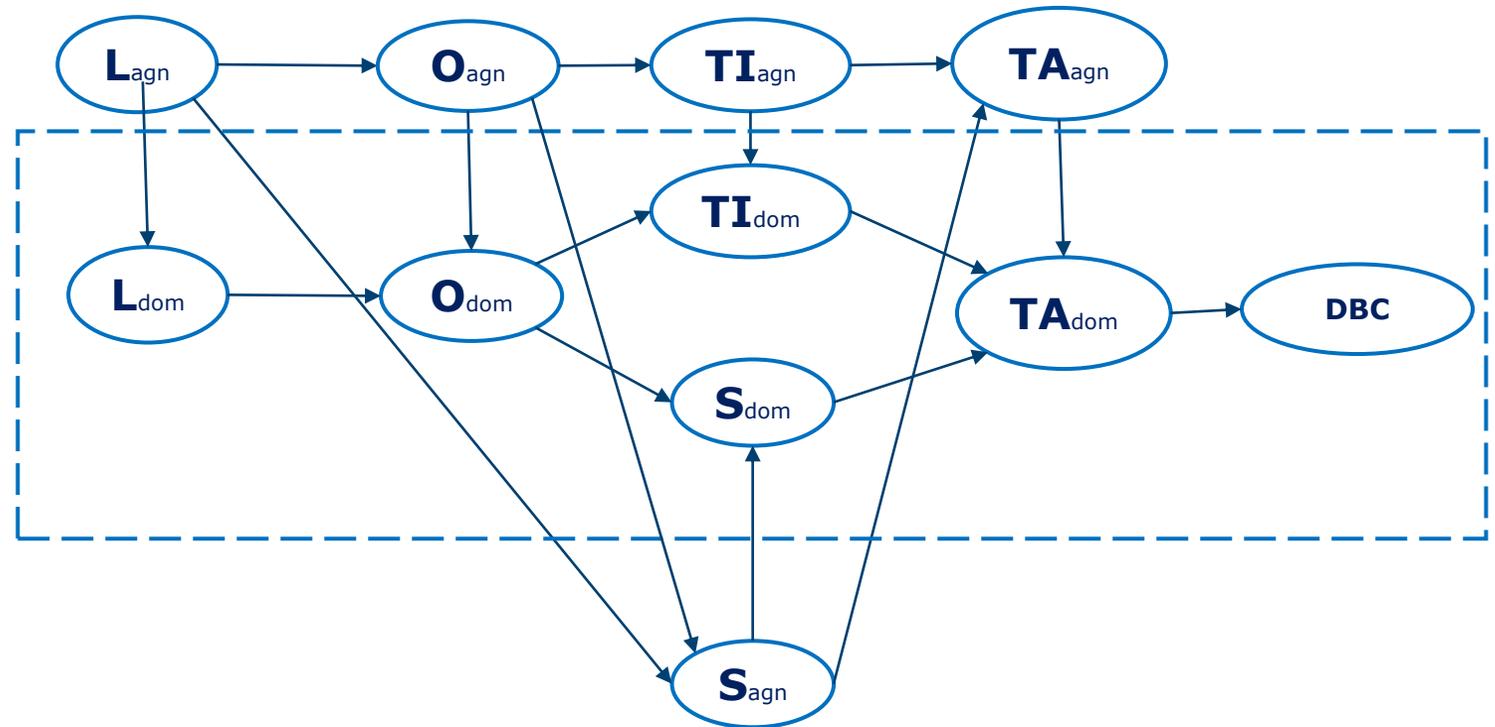
4

Technology - First

PRECEDENCE RULES BETWEEN VIEWS

1

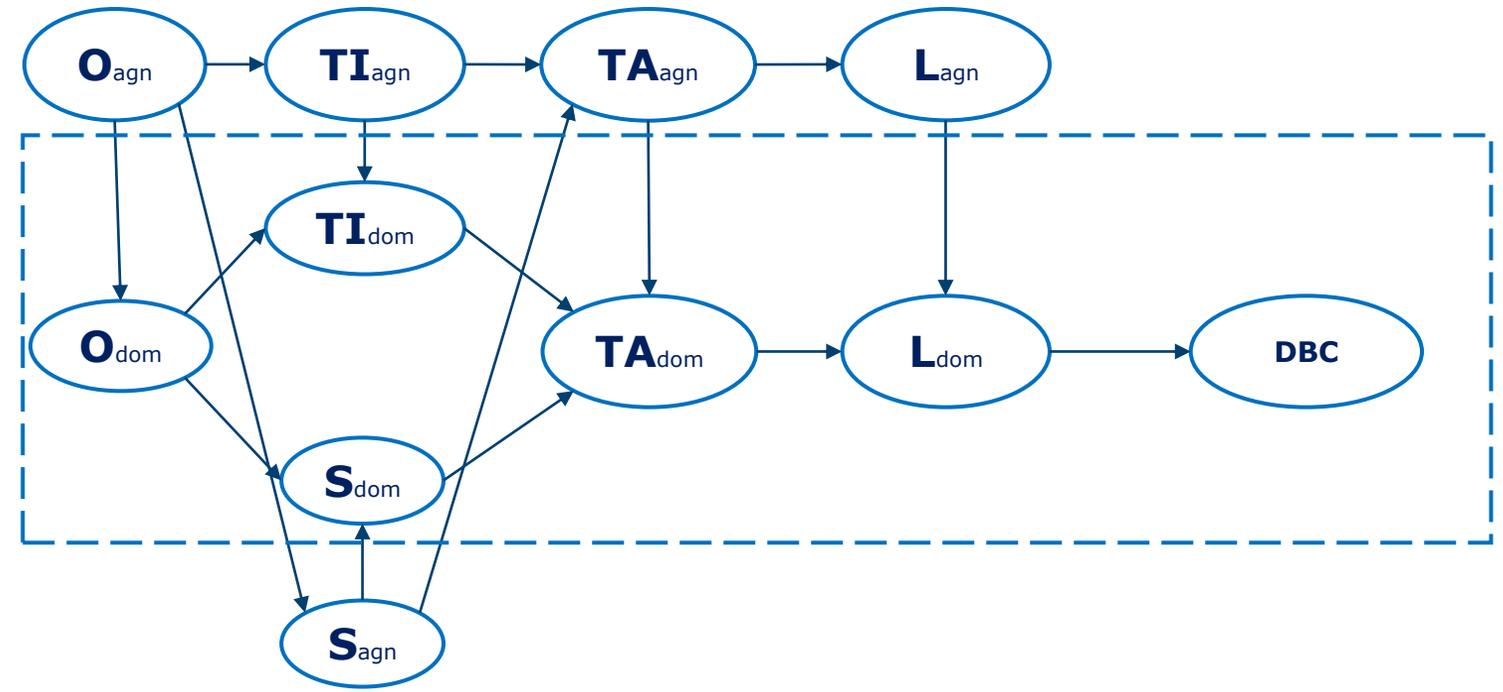
Legal - First



PRECEDENCE RULES BETWEEN VIEWS

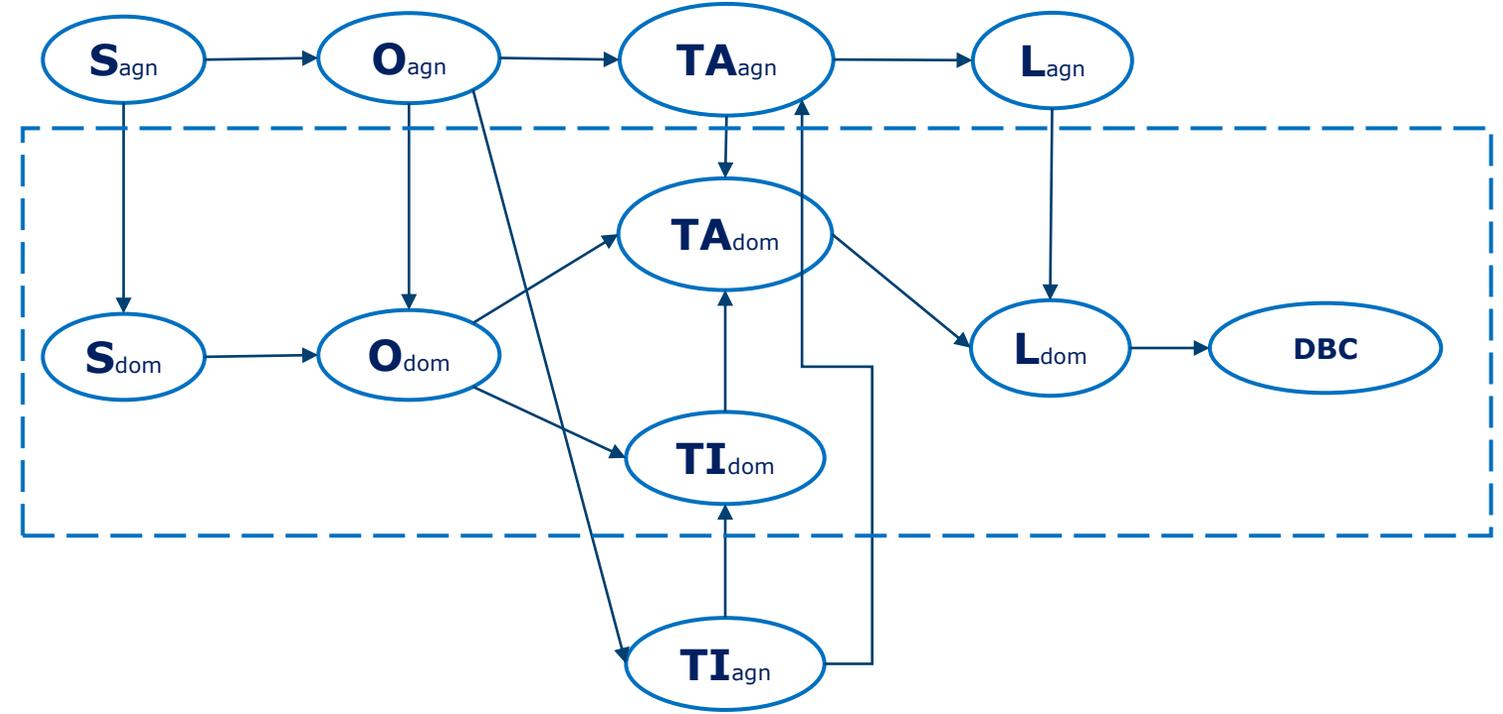
2

Organizational - First



PRECEDENCE RULES BETWEEN VIEWS

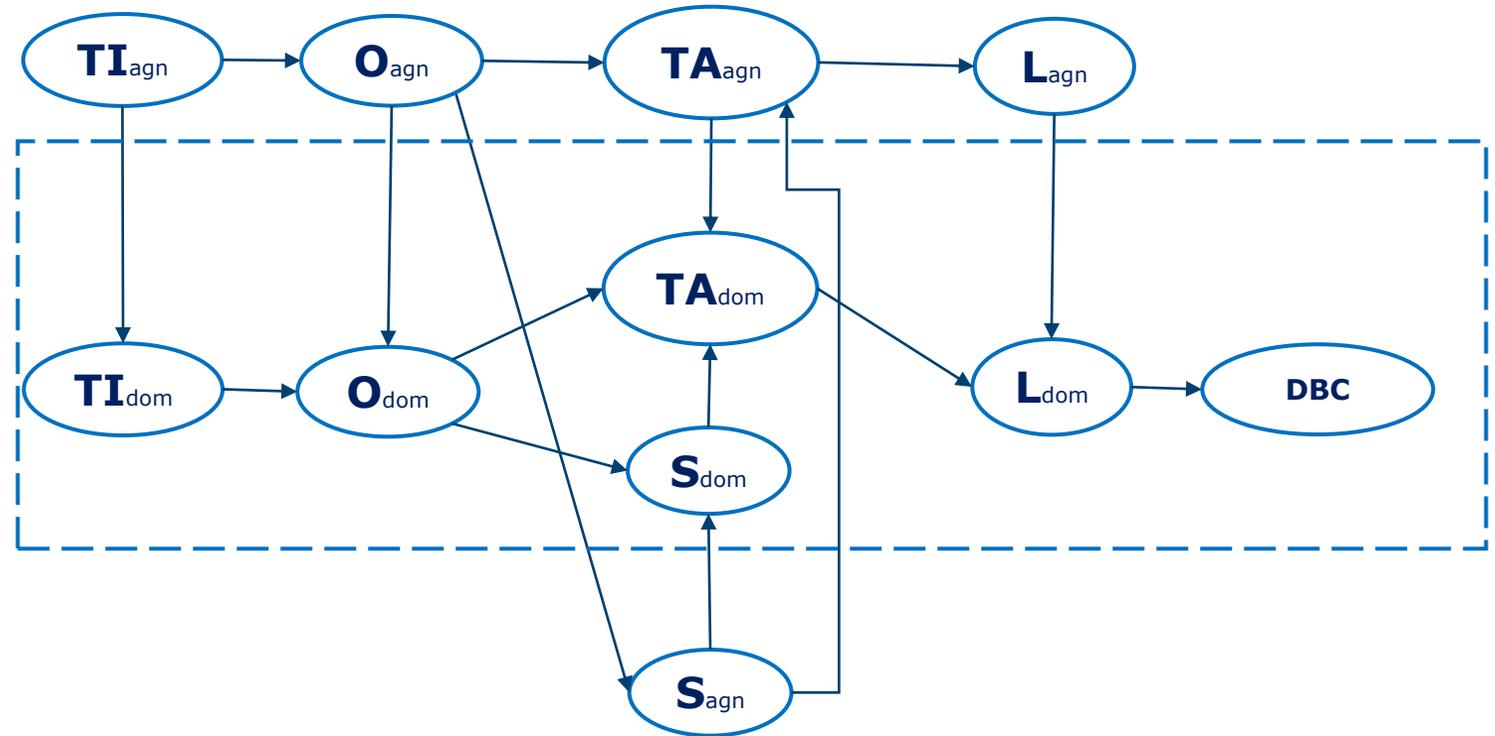
3 Semantic - First



PRECEDENCE RULES BETWEEN VIEWS

4

Technology - First



Benefits of eGovERA© use case n°1 for Member States



Looking at a **real Request for Funds**, the **eGovERA©** can play a **fundamental role** in helping the MS addressing all the points needed for the **EU Funds Request**.

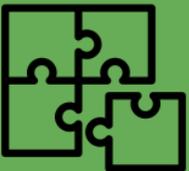
How can the eGovERA© help the MSs?

Request for EC funds



Identification of the Problem

- **Guiding MSs in clearly identify problems and solutions**
- **Evaluate the solution strategic fit in the national digital agenda.**
- **eGovERA will cover all the policy domains (now Tax, Health and Business Agnostic)**



Definition of the Solution

- **Identifying all the needed digital public services**
- **Identifying the building blocks supporting the digital public services to be implemented**
- **Defining a clear step by step guide to the implementation of the needed building blocks**



Identification of the costs and expected benefits

- **Supporting MSs in the identification of the cost items enabling a faster definition of the cost break-down structure**
- **Supporting MSs in the identification of clear benefits and designation of the use of the needed resources**

eGovernment Digital Business Capabilities Assessment

1

2. Please select the estimated ability to deliver each of the following building blocks *

Building Block	Ability to deliver (0-5)
1) [legal:National Legislation] - General Tax Legislation The Code and all federal, state, municipal, foreign, or other statutes imposing a Tax, including all treaties, conventions, rules, regulations, orders, and decrees of any jurisdiction	0 1 2 3 4 5
2) [legal:National Legislation] - VAT Legislation Legislation that regulates the consumption tax assessed on the value added to goods and services	0 1 2 3 4 5
3) [legal:National Legislation] - Income Tax Legislation Legislation that regulates the taxes imposed on individuals or entities that varies respective to the income or profits (taxable income)	0 1 2 3 4 5
4) [legal:National Legislation] - Car Tax Legislation Legislation that regulates the taxes imposed on individuals or entities that own a vehicle	0 1 2 3 4 5
5) [legal:National Legislation] - Social Tax Legislation Legislation that regulates the taxes imposed on taxpayers to obtain revenues required for pension insurance and state health insurance and which is subject to performance pursuant to the procedure, in the amount and during the terms prescribed by the Social Tax Legislation	0 1 2 3 4 5

2

eGovernment Portfolio Management Decision Support

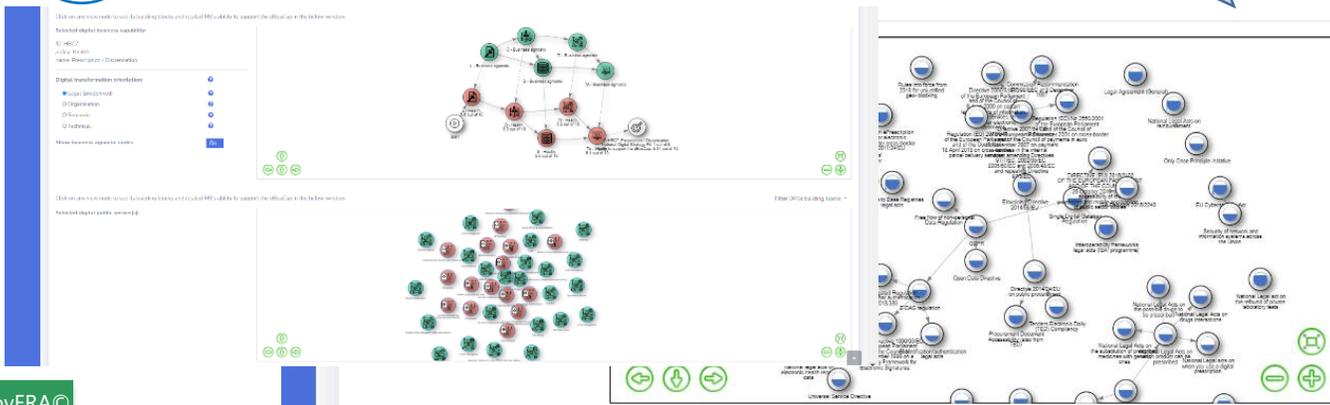
2. eGovernment portfolio management decision support

ID	Policy	Name	Strategic fit
1	tax	Dynamic Customer Understanding and Typing	6
2	tax	Tax risk control (Fraud Detection)	9
3	tax	Enhanced data governance and lifecycle management	8
4	tax	Centralisation of analytical function	3
5	tax	Improved customer experience for digital public services	6
6	tax	International tax cooperation	2
7	infrastructure	Implementation of a Public Administration Digital Transformation Strategy	9
8	infrastructure	Enhance digital collaboration	3
9	infrastructure	Enabling seamless digitalisation of public service delivery	4
10	infrastructure	Digital Interoperable Interaction Between Public Administrations	5
11	infrastructure	Enabling fast creation of new digital Public Services (emergency svcs incl) by aggregating existing ones	6
12	infrastructure	Data Visualisation	7
13	infrastructure	Enabling an ecosystem supporting legal determinacy and juridical certainty (catalogues, legislation, etc.)	5
14	infrastructure	Enabling an ecosystem supporting shared ICT resources (network, hosting, intermediation services, interfaces, svcs, Registry, choreography rules, etc.)	8
15	infrastructure	Enabling an ecosystem supporting a shared governance framework (PS catalogues, governance structures, etc.)	6
16	infrastructure	Enabling an ecosystem supporting common understanding (Data mappings, data visualisation, ontologies, catalogues, etc.)	7
17	health	e-health records & reports for European Reference Networks	4
18	health	Provision of digital emergency services	9
19	health	Provision of non-emergency services	6
20	health	ePrescription	5

Digital business capabilities assessment bubble chart showing Ability to deliver (Y-axis) vs Strategic fit (X-axis). Nodes are color-coded by policy area: tax (blue), infrastructure (orange), health (red).

3

Digital Transformation Roadmap Support



eGovERA® eGovernment digital business capabilities assessment



1. Capability assessment

Business Agnostic | Health | Tax

Digital Business Capabilities Overview | Electronic identification | Qualification management | Digital Payments | Digital Procurement | Big Data Analysis

Please indicate the value for each selected National Digital Strategic Fit for each digital business capability (1 lower, 5 highest)

Selected Digital Business Capabilities	National Digital Strategic Fit
BAAC(1) Electronic identification Electronic identification enables the proof of citizens or organizations (i.e. public administrations and businesses) identity via digital modes, with the goal to access to a wide variety of services (e.g. government authorities services, digital payments services, etc.)	1 2 3 4 5
BAAC(2) Qualification management Qualification management enables the electronic validation and verification of the qualifications (any information linked to an individual with respect to the education and employment status) of the professionals against specific requirements defined by relevant legislations.	1 2 3 4 5
BAAC(3) Digital Payments Digital Payments enables the purchase of goods or services via digital or online modes, without the involvement of physical money exchange. It provides the possibility to perform financial operations using digital payment methods such as, among others, Banking Cards and Point of Sale (PoS) terminals.	1 2 3 4 5

1. Capability assessment

Business Agnostic | Health | Tax

Digital Business Capabilities Overview | Electronic identification | Qualification management | Digital Payments | Digital Procurement | Big Data Analysis

Please click on the arrow to show/hide the questions in each section

Please, indicate to what extent each of the following **Legal requirements** is met by this digital business capability? (1 not at all, 10 full fulfillment)

Requirement
BAARR(6) [Legal European Legal Act] - Directive (EU) 2016/2102 of the European Parliament and of the Council of 26 October 2016 on the accessibility of the websites and mobile applications of public sector bodies.
The Directive lays down the rules requiring Member States to ensure that websites, independently of the device used for access thereto, and mobile applications of public sector bodies meet the accessibility requirements set out by the European Commission.

Extend to which the requirement is met by the As-Is Digital Business Capability
1 2 3 4 5 6 7 8 9 10

Requirement
BAARR(7) [Legal European Legal Act] - Directive (EU) 2016/97 of the European Parliament and of the Council of 20 January 2016 on insurance distribution (recast)
This Directive lays down rules concerning the taking-up and pursuit of the activities of insurance and reinsurance distribution in the Union.

Extend to which the requirement is met by the As-Is Digital Business Capability
1 2 3 4 5 6 7 8 9 10

Requirement
BAARR(25) [Legal Legal Agreement] - Legal Interoperability Agreement
A legal interoperability agreement is legal resource formalizing governance rules enabling collaboration between digital public services.

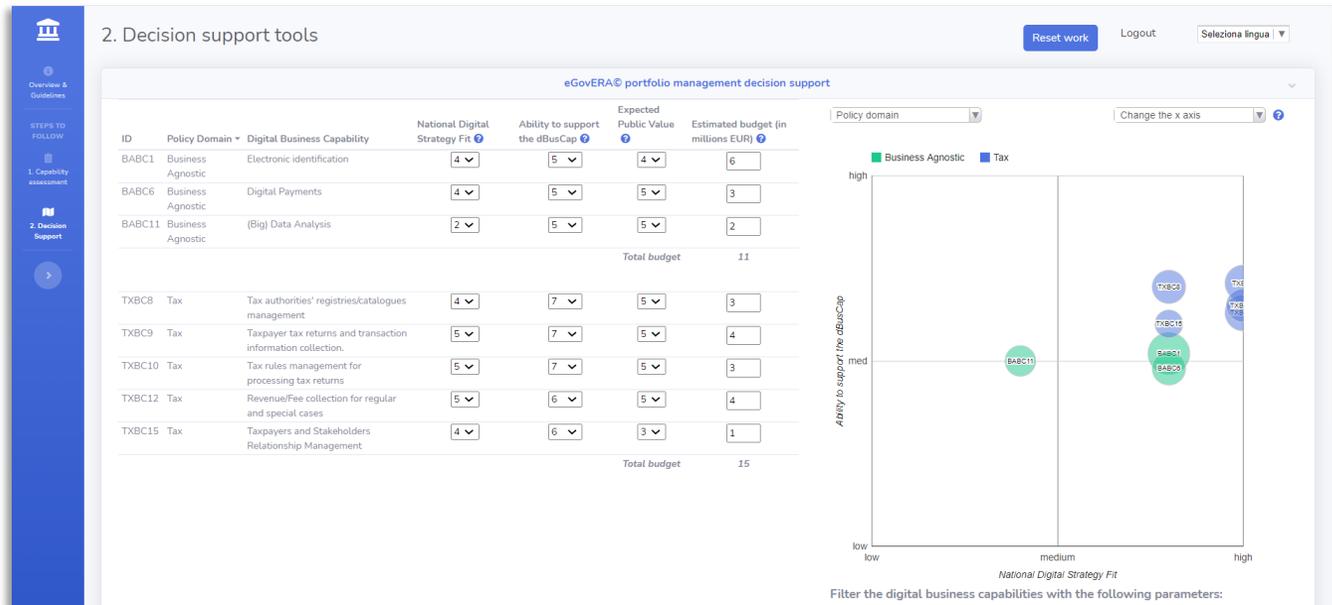
Extend to which the requirement is met by the As-Is Digital Business Capability
1 2 3 4 5 6 7 8 9 10

Requirement
BAARR(30) [Legal Legal Agreement] - Legal Agreement - International Treaty
Under international law, a treaty is any legally binding agreement between states (countries). A treaty can be called a Convention, a Protocol, a Pact, an Accord, etc. It is the content of the agreement, not its name, which makes it a treaty.

Extend to which the requirement is met by the As-Is Digital Business Capability
1 2 3 4 5 6 7 8 9 10

eGovernment Digital Business Capabilities Assessment

The eGovERA® eGovernment Digital Business Capabilities Assessment represents a user friendly and guided survey that help Member States in the prioritisation of the digital business capabilities for the selected policy domains. The survey is composed by different sections, the first section let the user describe each digital business capabilities by the following parameters: **National Digital Strategic Fit, Ability to support the dBusCap, Expected Public Value, Estimated budget (in millions of EUR)**



eGovernment Portfolio Management Decision Support

The eGovERA© eGovernment Portfolio Management Decision Support supports the Member States in the visualisation of the survey results, providing useful features to prioritise the selected digital business capabilities adjusting the National Digital Strategic Fit Expected Public Value and "Ability to support the dBusCap" values for the different policy domains.

eGovERA© digital transformation roadmap decision support

Digital business capability:
ID: TXBC15
Policy: Tax
Name: Taxpayers and Stakeholders Relationship Management
Estimated budget (in millions EUR): 1

Digital public services in scope:

- BADPS4 - eDelivery
- BADPS5 - eQualification
- BADPS9 - Data Analytics
- BADPS14 - eIdentification
- TDPS8 - MyTaxes
- TDPS14 - Economic activity codes registry management
- TDPS15 - Tax calendar
- TDPS17 - Open Tax Data Portal

Selected digital business capability:
ID: TXBC15
Policy: Tax
Name: Taxpayers and Stakeholders Relationship Management
Estimated budget (in millions EUR): 1

Implementation orientation for the digital transformation:

- Legal (predefined)
- Organisational/Governance
- Semantic/Integration
- Technical

For a suggested implementation orientation click here

Show business agnostic nodes On

Digital Transformation Roadmap support

The eGovERA© eGovernment Portfolio Management Decision Support supports the Member States in the visualisation of the survey results, providing useful features to prioritise the selected digital business capabilities adjusting the National Digital Strategic Fit Expected Public Value and "Ability to support the dBusCap" values for the different policy domains.

Three eGovERA pilots have been performed with:



Czech Republic



Ireland



Romania

The eGovERA Health Pilot lasted for 1.5 months

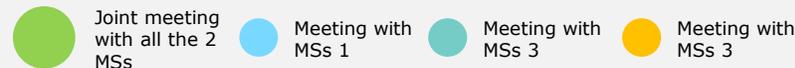
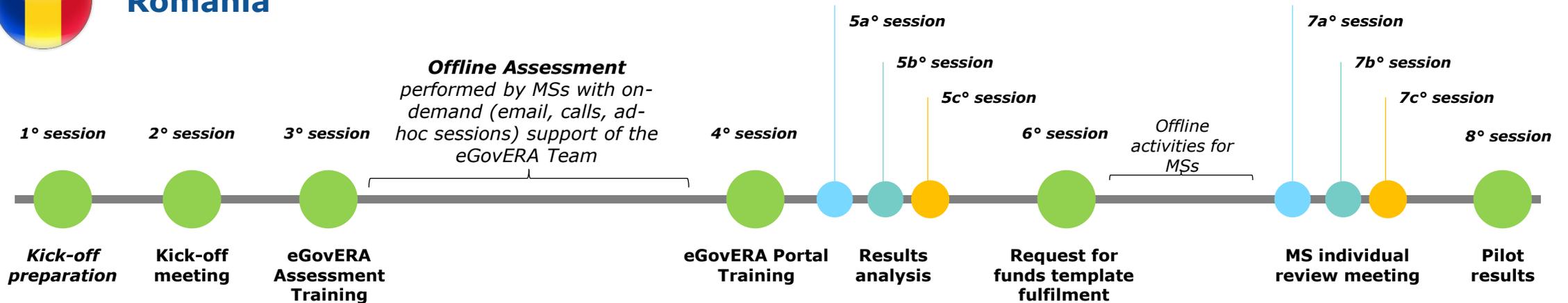
Objectives:



1. Test the value proposition of the eGovERA Initiative



2. Collect useful feedback for the improvement of the eGovERA reference architecture and Portal





MSs feedback about the eGovERA Initiative and tools



Does the eGovERA enable the assessment of the MSs As-Is Digital Capabilities?

*"The tool has **supported** us in **understanding** our **high-level As-Is situation** in terms of digital business capabilities. We believe that the eGovERA tool has a great potential..., we are looking forward for future releases!"*



Does the eGovERA enables the identification of Digital Gaps?

*"The tool clearly **supports** the **identification of gaps and priorities** in terms of digital business capabilities"*

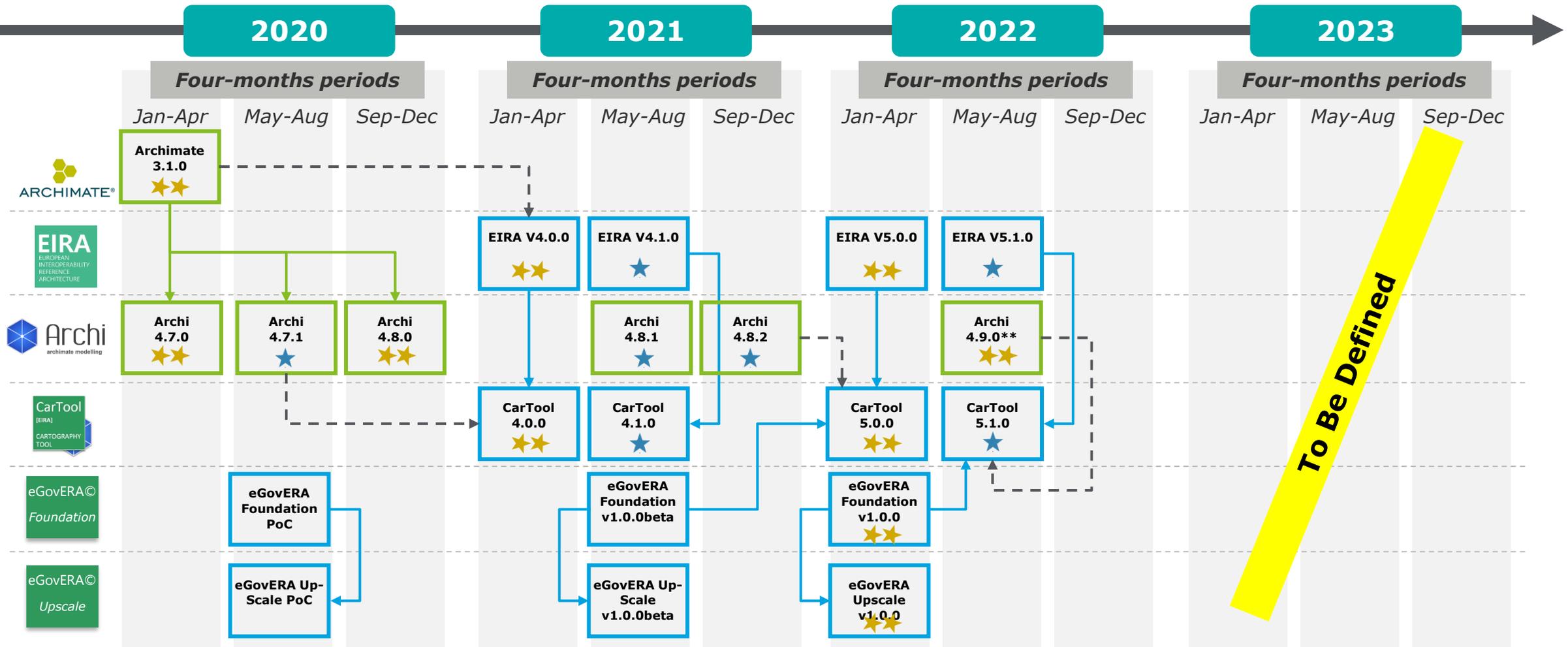


Does the eGovERA Initiative supports MSs Digital Transformation?

*"The eGovERA initiative can strongly **support MSs in their digital transformation** and in particular, in understanding the importance of cross-domain interaction"*

Expected release roadmap for EIRA®, CarTool®, and eGovERA® foundation and upscale

The figure below illustrates the expected releases:



*Upcoming new releases of the EIRA & CarTool; **Expected release

Questions?



ISA² programme

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 ISA² Programme

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