

# Location interoperability – Lessons learnt? Where next?

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**#INSPIRE2021**

27/10/2021 at 13.30 CEST  
*INSPIRE Conference 2021*



European Location Interoperability  
Solutions for e-Government

*Enabling Digital Government through  
Geospatial and Location Intelligence*

## Our presenters



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External Expert  
*Joint Research Centre*



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Senior Consultant in  
*Public Sector Deloitte*



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Project Officer  
*Joint Research Centre*



## Our presenters



**CheeHai Teo**  
Senior Advisor  
*UN-GGIM*



**Miguel Alvarez Rodriguez**  
Programme Manager  
*European Commission, DIGIT*



**Georges Lobo**  
Programme Manager



**Victoria Kalogirou**  
Programme Manager



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Chief Engineer  
*Mapping Authority, Norway*



# What we will cover today

- 1 ELISE impacts in the field of interoperability
- 2 Location interoperability guidance: Evolution of the EULF Blueprint
- 3 Location interoperability monitoring: LIFO lessons learnt
- 4 ELISE knowledge transfer: Enhancing knowledge and skills
- 5 UN-GGIM IGIF: A global integrated geospatial information framework
- 6 EIF lessons learnt and future directions
- 7 Interoperability Academy
- 8 How multinational frameworks and programmes can help public administrations
- 9 Location interoperability: Looking to the future

1

*ELISE impacts in the field of interoperability*

## A BIT OF HISTORY...

2004

IDABC: Interoperable Delivery of European eGovernment Services

2010

ISA: Interoperability solutions for public administrations

Actions:

EULF  
ARE3NA

2016

ISA<sup>2</sup>: Interoperability Solutions for European Public Administrations, Businesses and Citizens

ELISE

2021

DIGITAL: Digital Europe Programme

ELISE builds upon the outcomes of the former ISA actions EULF and ARE3NA. It is the only action of the ISA<sup>2</sup> Programme, aiming to improve Digital Government through Location Interoperability.

European  
Commission

### WHAT?

ELISE stands for **E**uropean **L**ocation **I**nteroperability **S**olutions for e-Government. It is one of the more than 50 actions in the European Interoperability Programme ISA<sup>2</sup>.

### WHAT FOR?

To support Digital Government Transformation by making the best use of location data and technologies in an interoperable manner

### FOR WHOM?

For all: citizens, businesses and public administrations



ISA<sup>2</sup>

## ELISE outputs and topics

## ELISE impact in numbers

More than 10,000  
interactions with ELISE  
over the  
past 6 years



STUDIES

41 Studies



FRAMEWORKS AND SOLUTIONS

1 Framework (Guidance/Monitoring)  
11 Solutions



APPLICATIONS

6 Applications



GEO KNOWLEDGE  
BASE SERVICE

52 Webinars / 22 Workshops

Evolution of Spatial Data  
Infrastructures

Support of data ecosystems

Technologies for location  
-enabled innovation

Collaboration models

Spatial skills for Digital  
Government Transformation

Location data privacy

Improving access to spatial  
datasets

Supporting cross-border  
and cross-sector data sharing

Location intelligence for policy  
and digital public services

Supporting innovation, growth  
and Return of Investment

Managing data quality

Supporting the creation of  
common EU public services



## Some ELISE achievements

- ✓ **Complemented EIF and NIFO** with a location interoperability framework (**EULF Blueprint**) and **state of play assessment (LIFO)**
- ✓ **EULF Blueprint cross-reference with UN-GGIM** Integrated Geospatial Information Framework (IGIF)
- ✓ Helped put the **INSPIRE Directive into practice** with tools for data providers (e.g. **Reference Validator, Re<sup>3</sup>gistry**)
- ✓ Built a **large community of** European and international **stakeholders**
- ✓ Raised awareness on **new approaches to** location-enabled **digital government transformation**
- ✓ **Assessed role of SDIs in** future business models, e.g. **data ecosystems, digital platforms**
- ✓ **Assessed new policies** (e.g. GDPR, European Data Strategy) **and technologies** (e.g. APIs, AI, blockchain)
- ✓ Promoted and facilitated better links on **location data** between **public and private actors**
- ✓ Helped generate value from public sector location data through **assessing barriers and solutions, providing guidance on benefit realisation, and best practice illustrations**



# 2

*Location interoperability guidance:  
Evolution of the EULF Blueprint*

## What is location interoperability?

“Location interoperability is the ability of organisations, systems and devices to exchange and make use of location data with a coherent and consistent approach”





# European Union Location Framework (EULF) Blueprint – What is it?

A **European ‘location interoperability framework’** with **guidance** for the **exchange** and **use** of location information in government policy and digital public services, allied closely to the interoperability principles and scope of the **EIF**



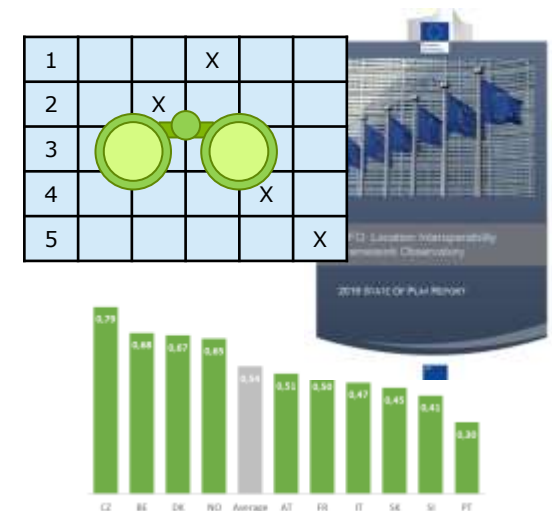
 **5 FOCUS AREAS**

 **19 RECOMMENDATIONS**

 **6 ROLES**

 **2 RELATED FRAMEWORKS**

 **49 BEST PRACTICES**

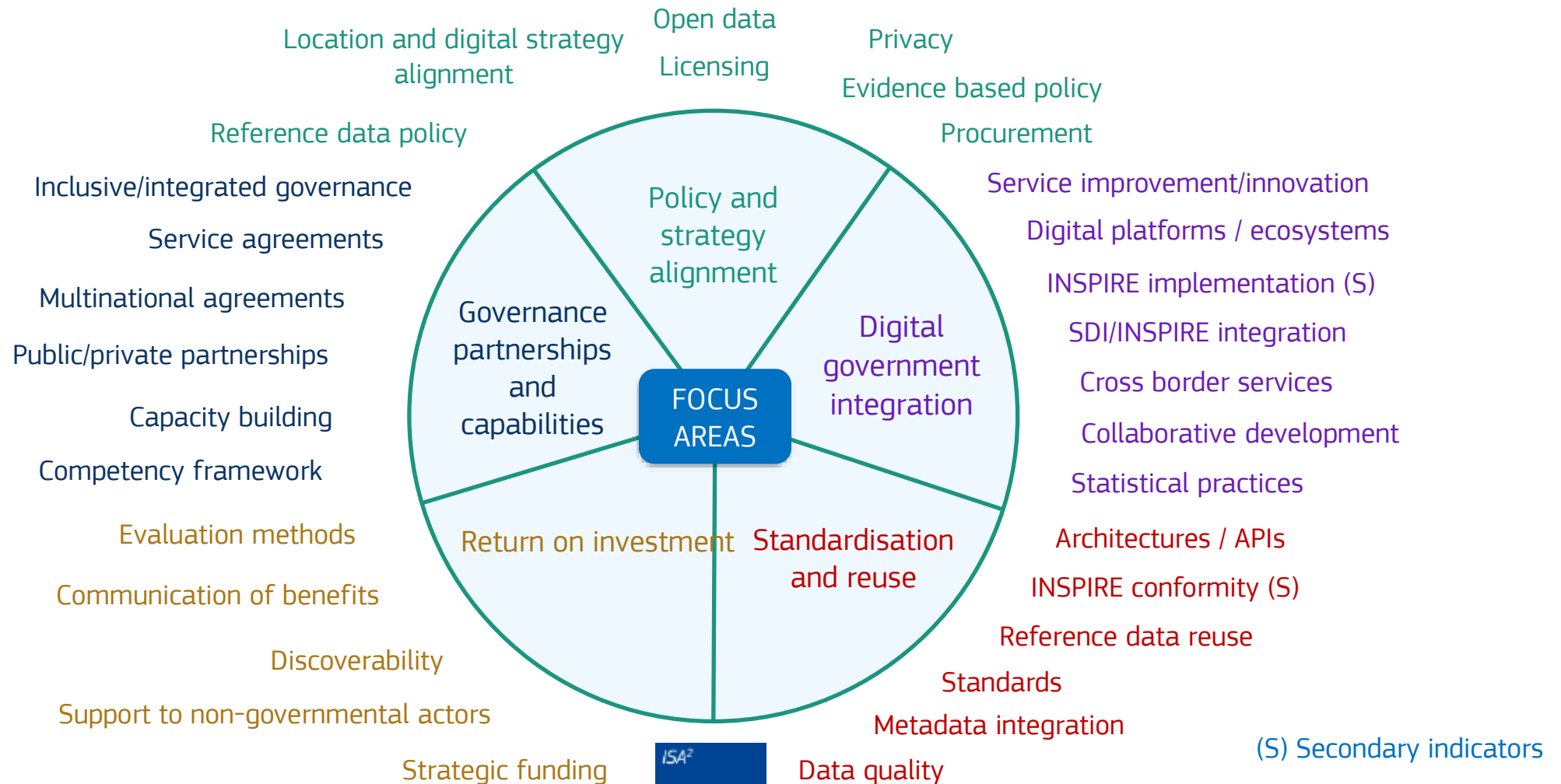


Online and downloadable versions

Adoption monitored through the LIFO



# EULF Blueprint and LIFO indicator topics





# How the EULF Blueprint has evolved

2017 (v1)	2018 (v2)	2019 (v3)	2020 (v4)	2021 (v5)
<ul style="list-style-type: none"><li>• Initial document publication</li></ul>	<ul style="list-style-type: none"><li>• Strategic overview</li><li>• More actionable guidance</li><li>• New data quality recommendation</li><li>• New technical content</li><li>• Additional best practices</li></ul>	<ul style="list-style-type: none"><li>• GDPR revisions</li><li>• API content extended</li><li>• Online version introduced</li><li>• Structural changes in preparation for LIFO 2019</li></ul>	<ul style="list-style-type: none"><li>• New foreword: 'Blueprint for a user-driven SDI'</li><li>• Links with EIF and inclusion in EIF Toolbox</li><li>• New business models and technologies</li><li>• LIFO 2019 input</li><li>• Integration with ELISE glossary</li></ul>	<ul style="list-style-type: none"><li>• Benefits guidance refresh</li><li>• Policy context update</li><li>• EIF links extended</li><li>• UN-GGIM IGIF links</li><li>• LIFO links</li><li>• ELISE resources cross reference</li><li>• LIFO 2020 input</li></ul>



# EULF Blueprint / UN-GGIM IGIF links

*Detailed two way cross references between EULF Blueprint recommendations and IGIF strategic pathways, key elements, actions and tools*

			UN-GGIM IGIF STRATEGIC PATHWAYS								
			Governance and Institutions	Policy and Legal	Financial	Data	Innovation	Standards	Partnerships	Capacity and Education	Communication and Engagement
EULF BLUEPRINT RECOMMENDATION TOPICS	Policy and Strategy Alignment	1. Digital policy alignment	X	X			X				
		2. Data policy alignment		X							
		3. Location data privacy		X							
		4. Location data for policy evidence				X	X				
		5. Standards based procurement				X		X			
	Digital Government Integration	6. Location enabled digital public services					X				
		7. SDI integration	X	X		X	X				
		8. Open and collaborative development							X		X
		9. Location-based statistics				X	X				
	Standardisation and Reuse	10. Common architecture				X	X				
		11. Authentic data reuse				X	X				
		12. Use of standards						X			
		13. Location data quality				X					
	Return on Investment	14. Assessing and monitoring benefits	X	X	X						
		15. Communicating benefits	X	X	X						
		16. Innovation through access to data		X			X				
	Governance, Partnerships and Capabilities	17. Integrated governance	X								
		18. Effective partnerships							X		
		19. Communication and skills			X					X	X

# EULF Blueprint ‘benefits’ guidance

## RECOMMENDATION 14

Apply a systematic approach to assessing and monitoring the benefits and performance of location-based services

- Types of benefit
- Assessment framework
- Policy options
- Benefit realisation
- INSPIRE benefits
- Challenges

## RECOMMENDATION 15

Communicate the benefits of integrating and using location information in digital public services

- Purpose of communication
- Evidence collection techniques
- Communication methods
- Benefits illustrations
- Benefits template
- Challenges

## RECOMMENDATION 16

Facilitate the use of public administrations’ location data by non-governmental actors to stimulate innovation in products and services and enable job creation and growth

- Funding core reference data
- Data policy enablers
- Industry views on EU data policy developments
- Challenges



## EULF Blueprint - Conclusions

- As a location data framework the EULF Blueprint combines a number of elements that make it **unique**
- The guidance can be used to help answer both **strategic** and **tactical** questions
- It provides a **gateway to other information** on relevant topics
- There is no “one size fits all” in using location data in different situations. The guidance is designed as a ‘**toolbox**’ to be used selectively rather than read throughout

*See for yourself what the EULF Blueprint can offer!*

### ***What makes the EULF Blueprint unique?***

*Focus on ‘use’ of location data  
Based on interoperability principles*

*Practical guidance*

*Digital government focus*

*European context*

*Interactive content*

*Regular updates*

*Used for benchmarking*

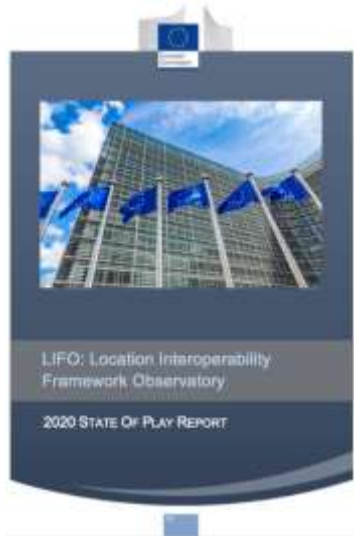


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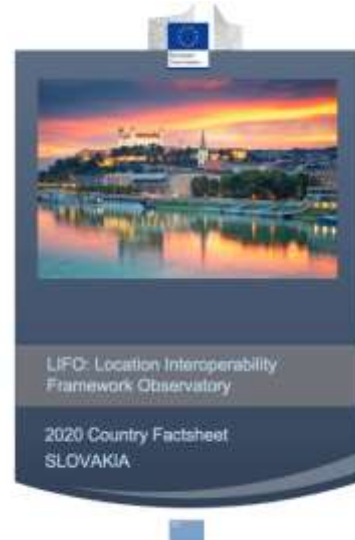
*Location interoperability monitoring:  
LIFO lessons learnt*

# LIFO 2020

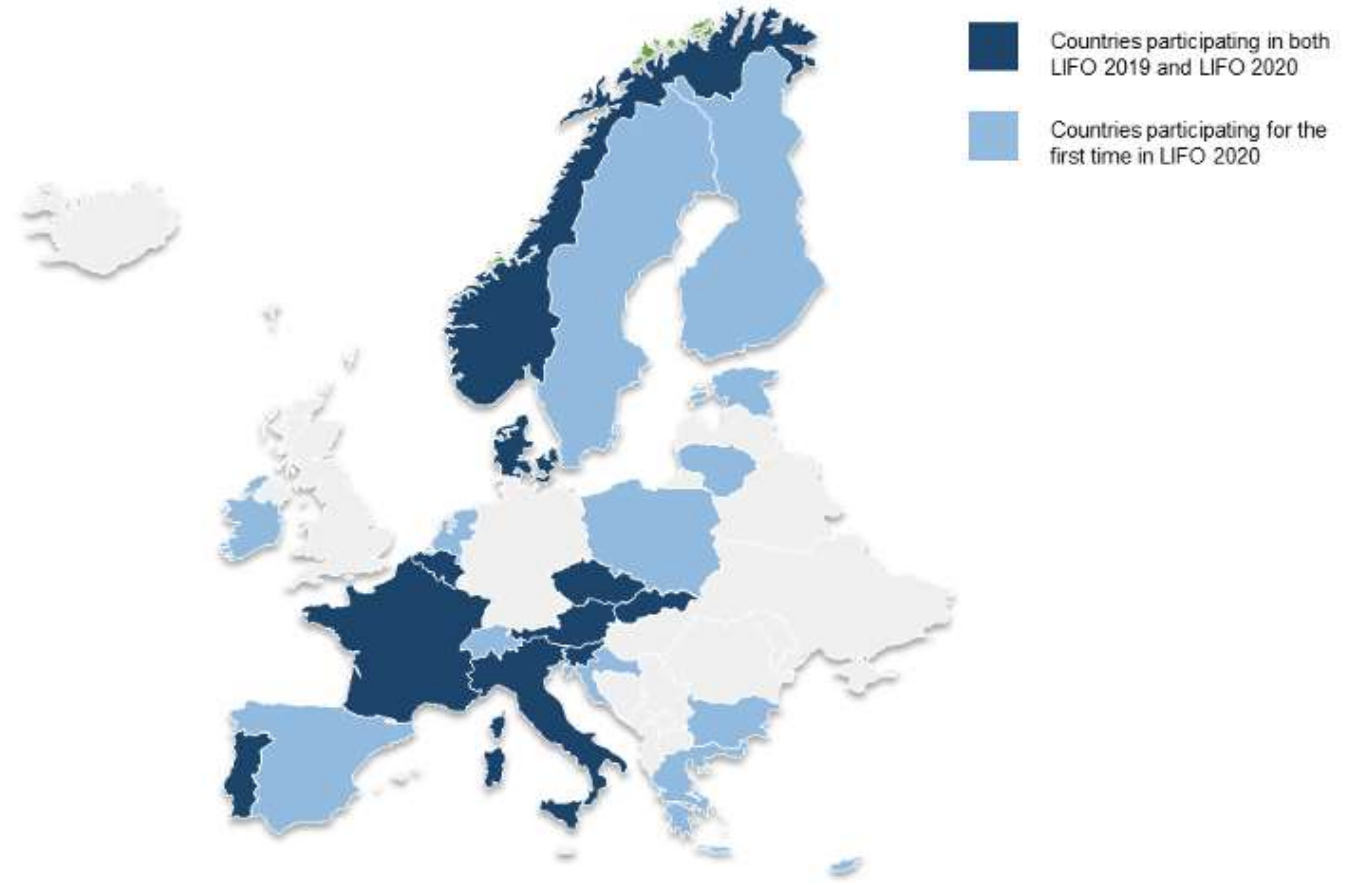
***LIFO monitors adoption of good practices from the EULF Blueprint***

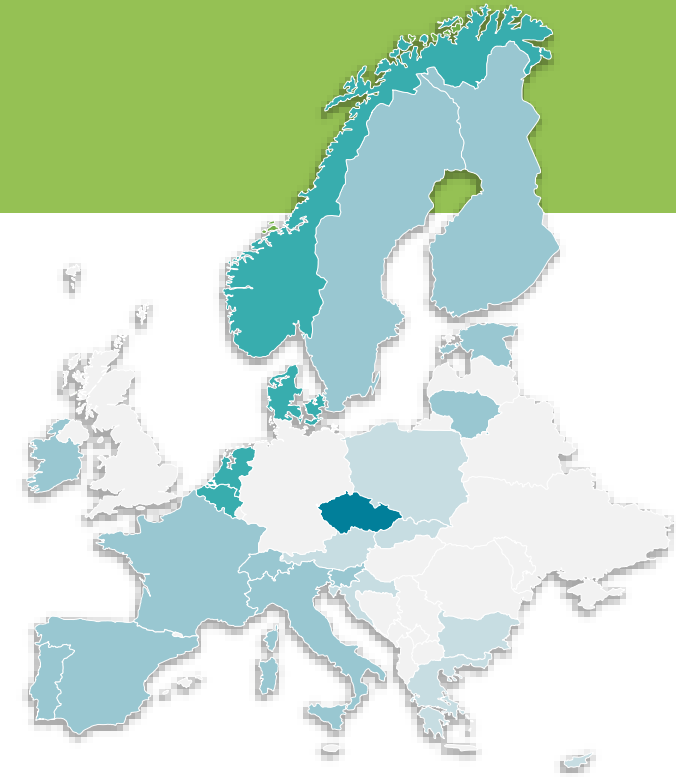


European  
State of Play  
Report



23 Country  
Factsheets





# LIFO 2020 – results summary

**Policy and Strategy Alignment** is the area with the highest scores (0.62)

**Governance, Partnerships and Capabilities** gets the lowest scores (0.44).

**LIFO Index** values are significantly dispersed, ranging from 0.28 to 0.82. However, specific good practices and gaps are present across all surveyed countries.

The average **LIFO Index** is 0.54.

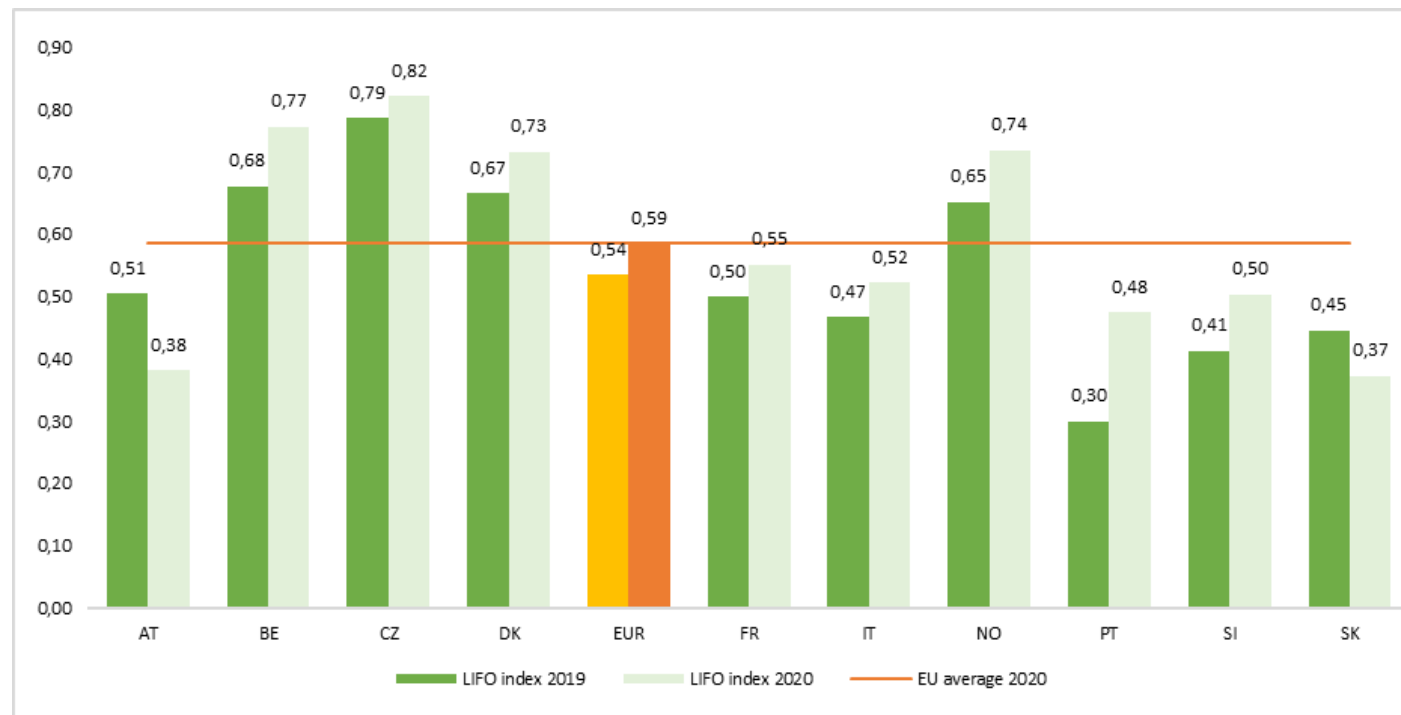


- LIFO Index above 0,20
- LIFO Index above 0,40
- LIFO Index above 0,60
- LIFO Index above 0,80
- EU average 2020



## LIFO 2020 – 2020 vs. 2019

- European average LIFO index has **increased from 0.54 to 0.59**
- Most significant improvement in the **Digital Government Integration focus area**
- **Positive variations** in almost all countries, especially for a group of **outperformers**

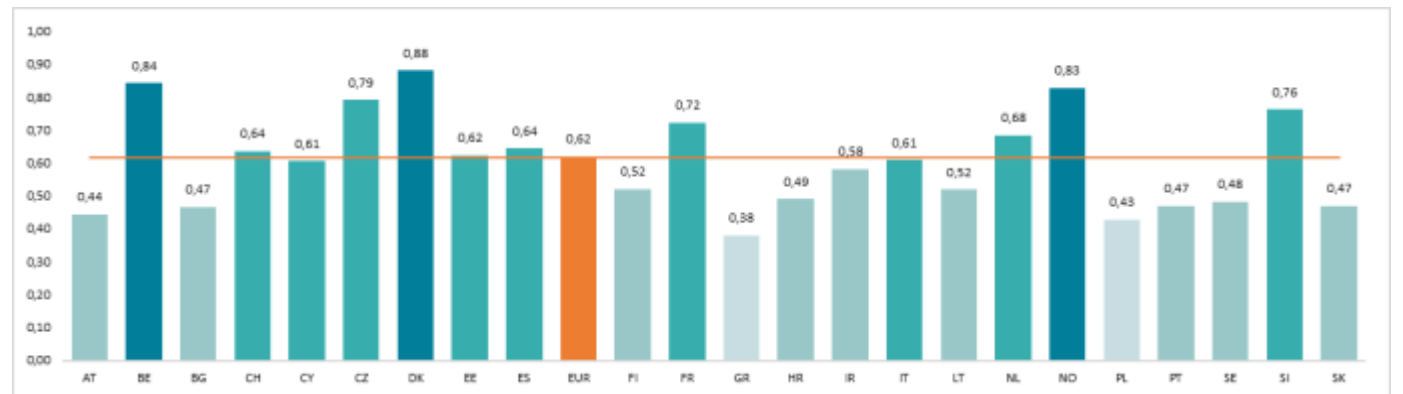
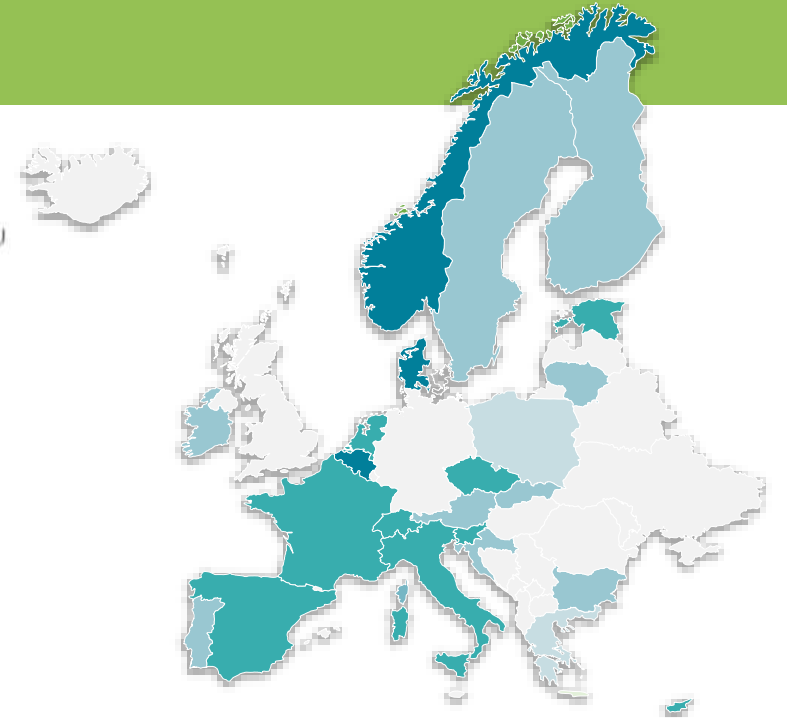
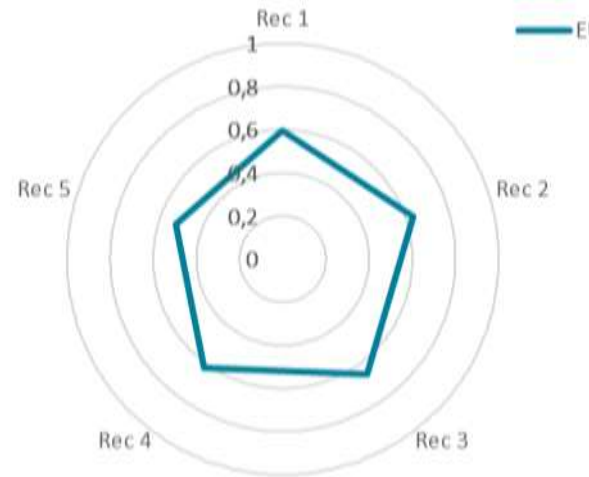




# Focus Area “Policy and strategy alignment” – 2020 results

This is the **focus area with the highest average maturity**, which acknowledges the **attention paid to the strategic dimension of location interoperability**:

- Location aspects often well addressed in **policy and strategic frameworks**
- Most **location data available free of charge or with minimum restrictions**
- Most controllers/processors of public sector location data **fully GDPR-prepared**
- **Location-based evidence and analysis** used in all countries

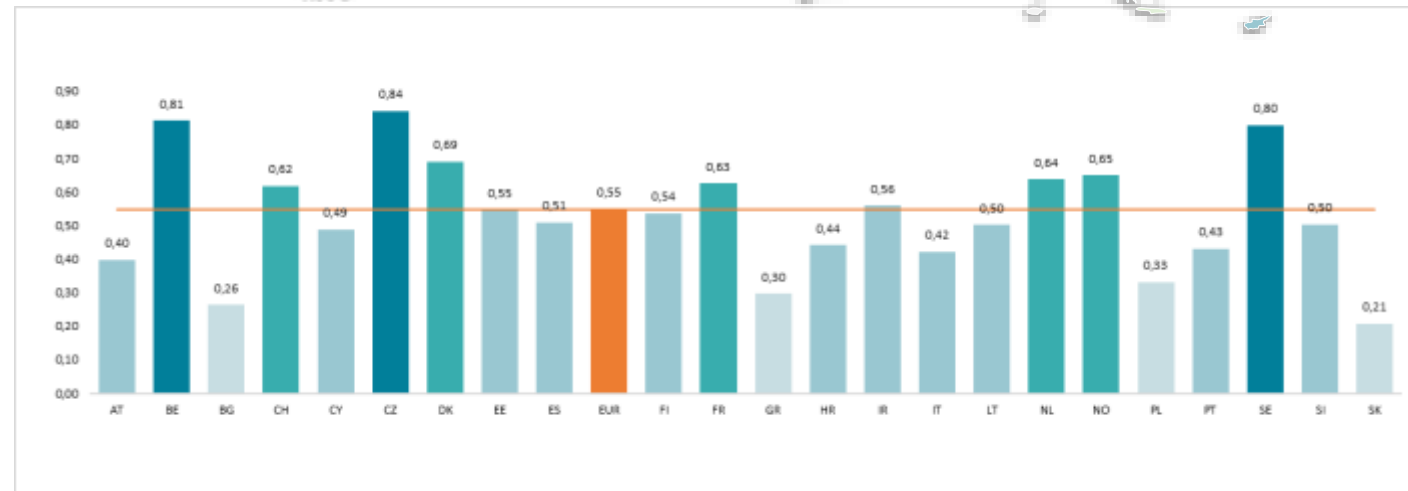
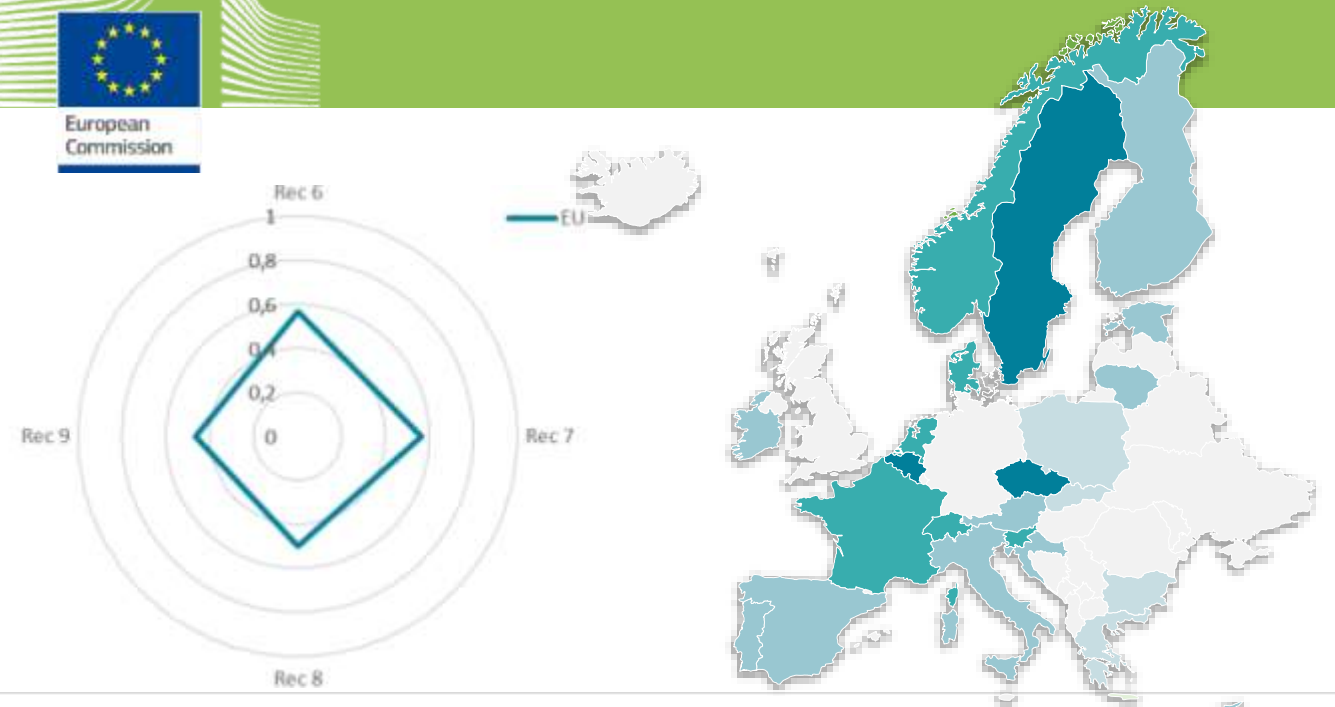




# Focus Area “Digital Government Integration” – 2020 results

**Extensive usage is made of location data and solutions but, in general, without a real breakthrough approach**

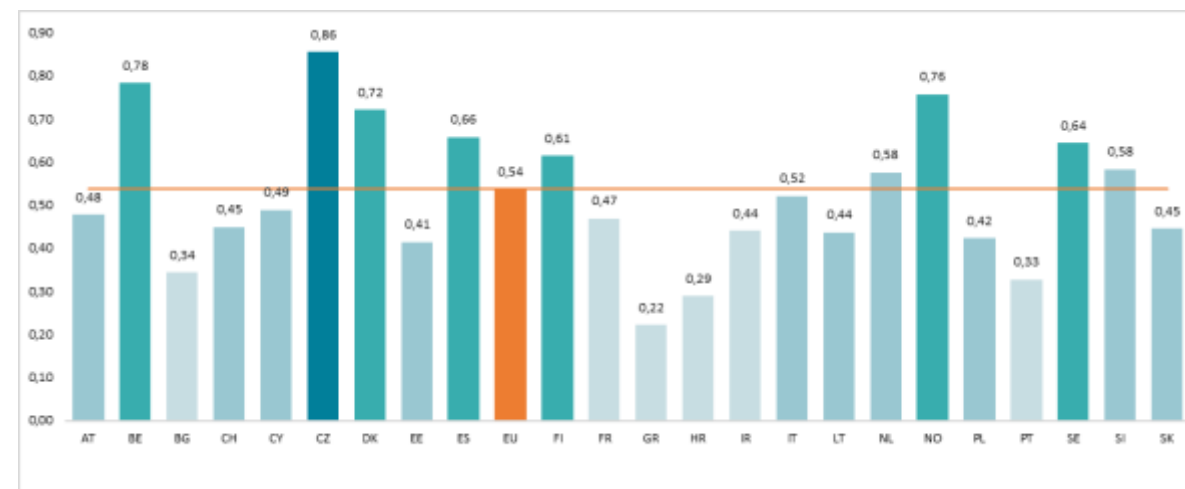
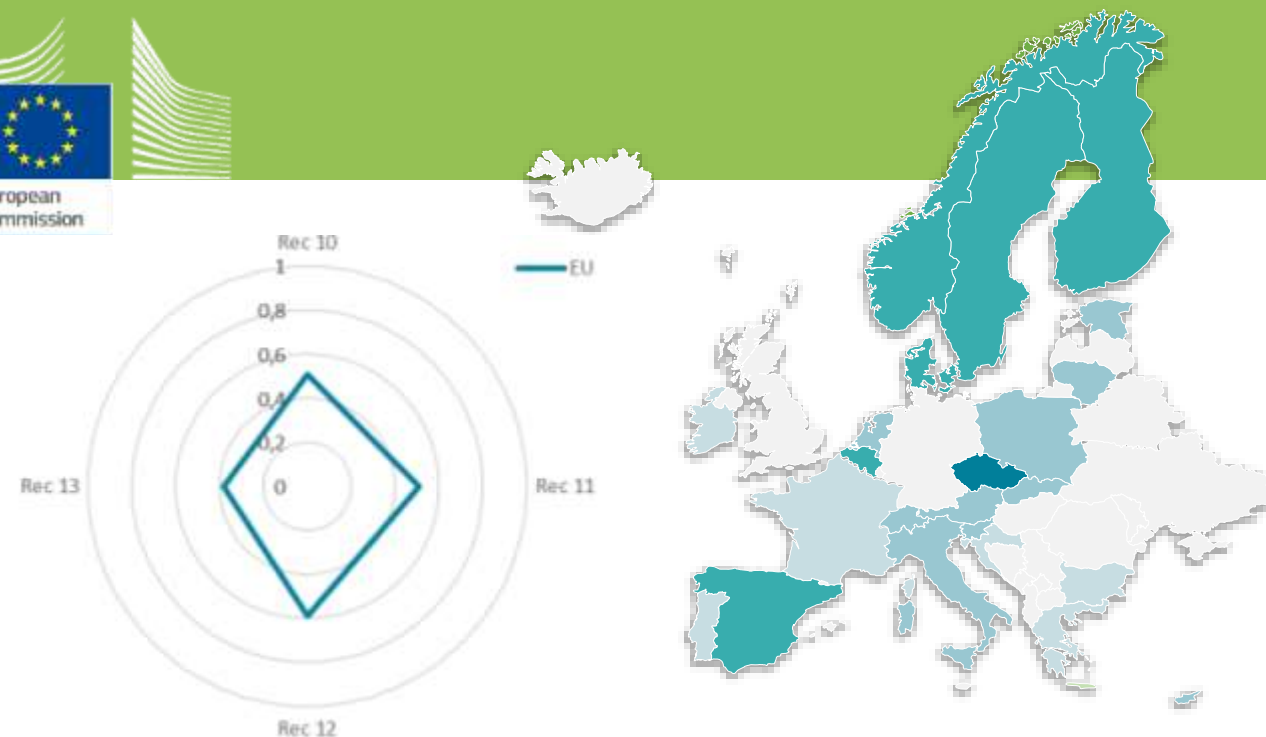
- **Good adoption of service improvement approaches**
- **SDI often used for delivering digital public services across government**
- **INSPIRE is a reference SDI for cross-border services**, rarely for national ones
- **Open and collaborative methodology** to develop location-based services
- Attempts to **fully exploit the integration of location and statistical information**

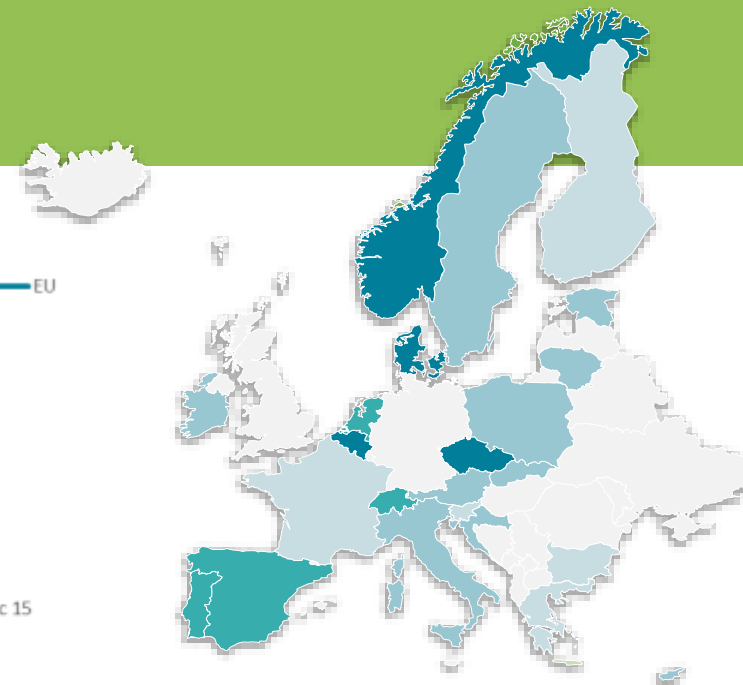


## Focus Area “Standardisation and Reuse” – 2020 results

**Reuse of authentic data, data services and relevant technical solutions is well established and a good array of geospatial domain standards is applied**

- Rather ad-hoc approach **for monitoring new technological developments** adopted in most countries
  - **Reuse practices often adopted**
  - Several **geospatial domain standards** adopted in almost all countries (including adaptations of INSPIRE)
- *Reuse of INSPIRE monitoring indicators on the conformity of datasets and network services*





## Focus Area “Return on Investment” – 2020 results

This area presents the second highest maturity, possibly reflecting the relevance given to the communication of benefits of integrating and using location information in digital public services

- **Systematic approach to communicate** the availability and benefits of location data
- A series of **portals** make **finding and using location data** easy for interested parties
- **Extensive range of elements used to assess the efficiency and effectiveness** of location-based services





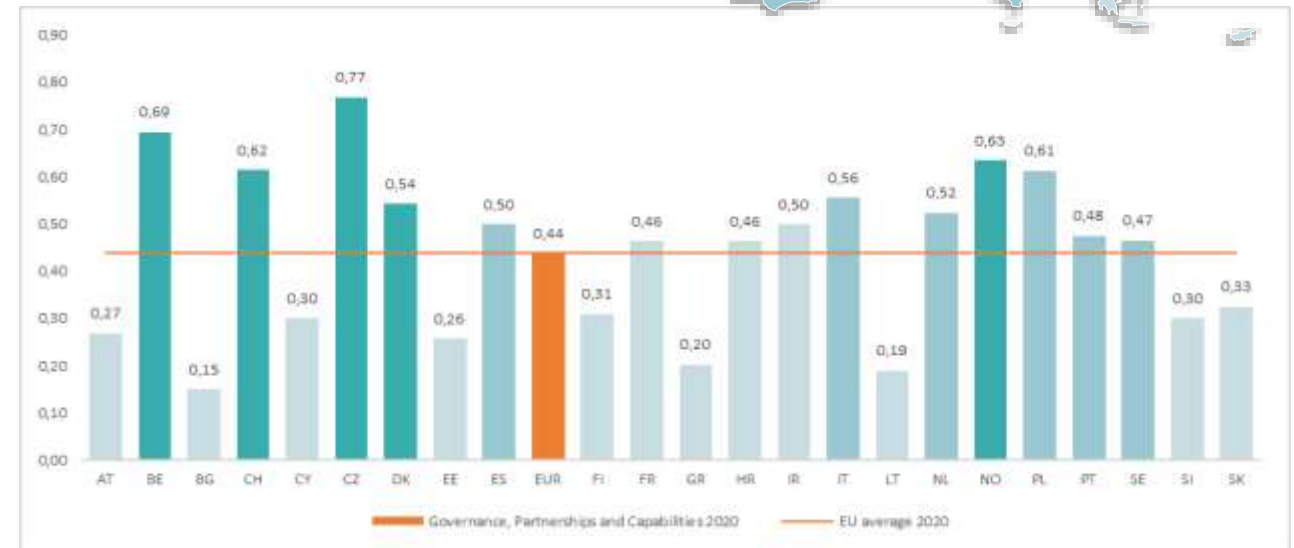
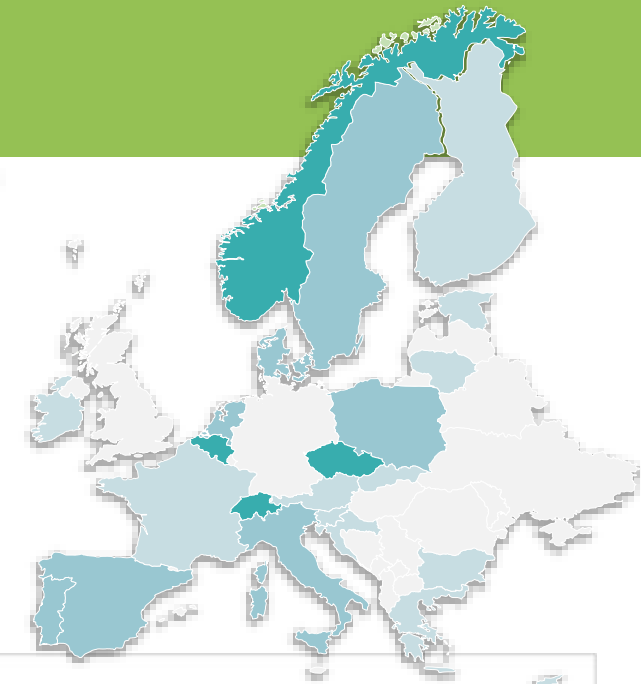
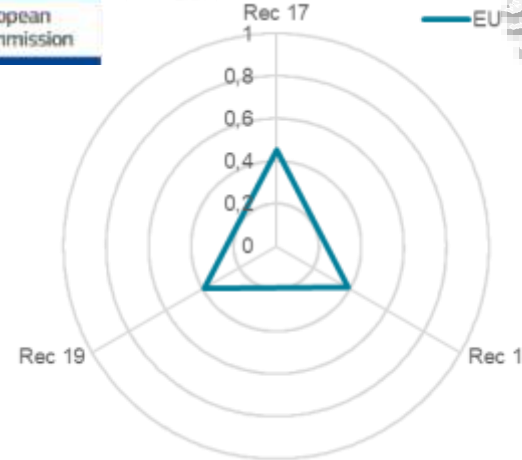


# Focus Area “Governance, Partnerships and Capabilities” – 2020 results

**This area shows the lowest maturity**, possibly reflecting the **limited number of partnerships on SDIs** and **low investments in geospatial awareness raising**

- Processes for the governance of location information effectively involve some of the relevant communities of interest
- Only **few partnership cases** exist between public and private partners or with public administrations of other countries
- Training on **geospatial skills** not delivered as part of a geospatial competency framework

European Commission



# Examples of good practices from LIFO in 2020



## Estonian catalogue of public sector information systems (RIHA)



RIHA is the Estonian catalogue of public sector information systems. RIHA supports interoperability of databases, the life-cycle management of information systems and the re-use of data by providing complete and up-to-date metadata of the Estonian public sector information systems.



## Ruimtelijkeplannen



Ruimtelijkeplannen is the online counter with which the government provides access to digital spatial plans. The spatial plans are displayed as a single image so that it becomes clear at a glance which spatial plans have been implemented for a particular area.



## Forest Data Lab



Forest Data Lab is a new experimental environment of the Swedish University of Agricultural Sciences for making forest data available and ready to be analysed. The university aims at creating a creative meeting place that promotes the use of the latest technology in 3D remote analysis and the data and analysis tools that are managed within SLU's environmental analysis.



## X-Road



X-Road® is open-source software and ecosystem solution that provides unified and secure data exchange between organizations, including geospatial information.



## Geoportti



Geoportti.fi is an open portal that offers researchers, teachers and students geospatial materials, training in geoinformatics and a platform for information sharing.



## System to improve the efficiency and effectiveness of Departmental activities



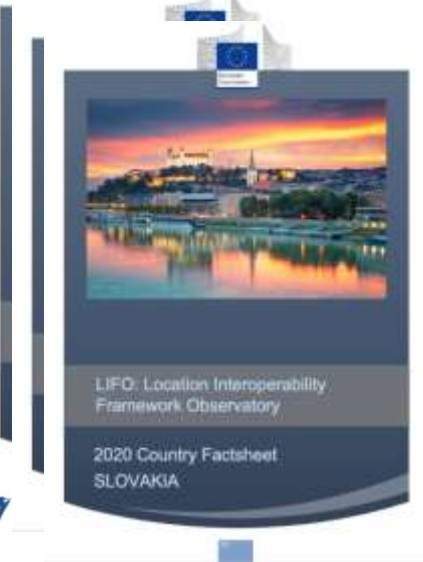
The Government of Cyprus implemented a system to improve the efficiency and effectiveness of the activities of the Department of Land and Surveys. By sharing available geospatial data thanks to the National Land Information System (LIS) with all agencies with land related activities.

# The LIFO process

**EU questionnaire** used for LIFO data collection



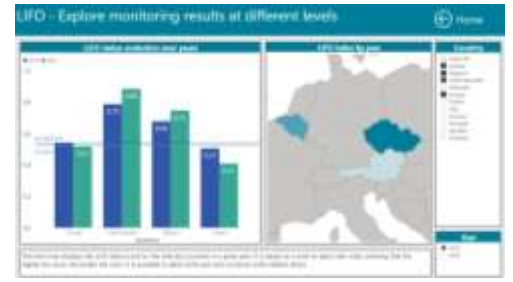
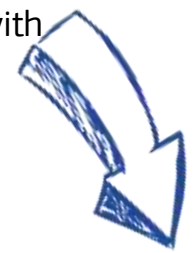

**Respondents contact other stakeholders possessing domain-specific information**



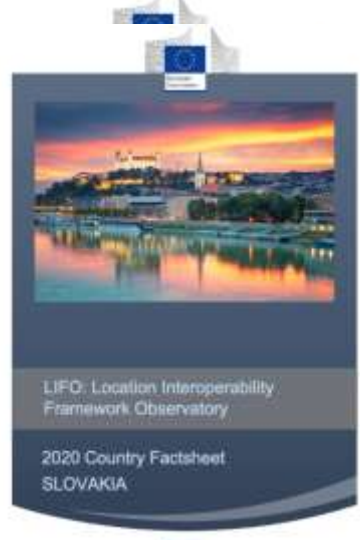
**Data consolidation / Factsheet drafting**



**Factsheet validation with respondents**



Interactive dashboards



Country factsheets / state of play



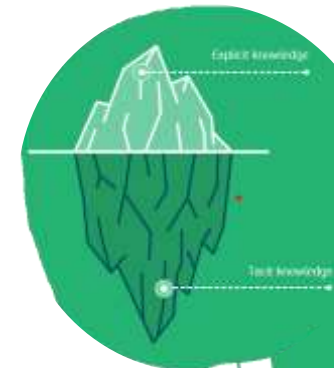
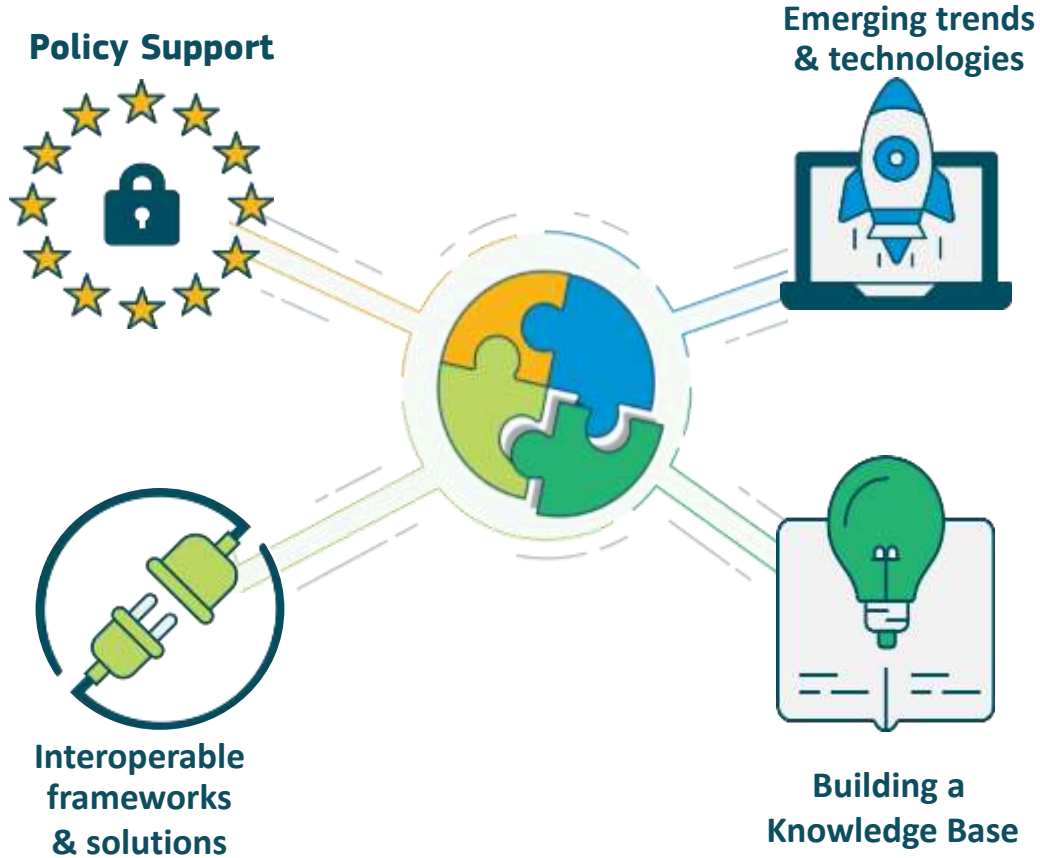
Link with online EULF Blueprint



4

*ELISE knowledge transfer:  
Enhancing location  
interoperability knowledge  
and skills*

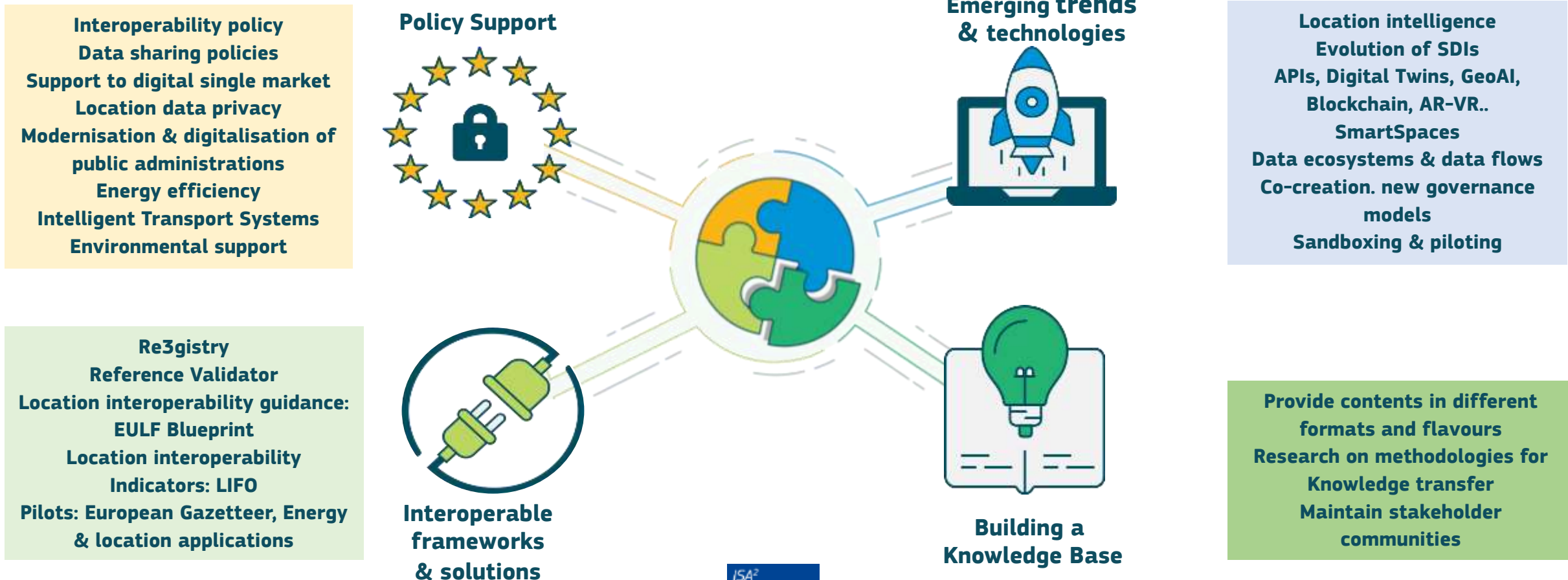
# Knowledge Transfer the “connector” of ELISE Action objectives



## WHAT IS KNOWLEDGE TRANSFER?

Knowledge transfer is the complex process of disseminating knowledge from one individual, team, or organisation to another in order to, for example, solve problems, foster innovation, or increase efficiency.

# A wide range of topics around *location interoperability*



# The format matters - Knowledge transfer artefacts of all types





# For and with a varied stakeholder community







# joinup the place to know all on location interoperability

As an official website of the European Union - how do you know?

joinup

COLLECTIONS SOLUTIONS KEEP UP TO DATE

Advanced search

## ELISE - European Location Interoperability Solutions for e-Government

Last update: 4 days ago

117 Members

4 Solutions

JOIN THIS COLLECTION

JOIN THIS COLLECTION

## About ELISE - European Location Interoperability Solutions for e-Government

Translate

The European Location Interoperability Solutions for e-Government (ELISE) action aims at Enabling Digital Government through Geospatial Data and Location Intelligence.

It is a package of legal/policy, organisational, semantic and technical interoperability solutions that aim to facilitate **more efficient and effective digital cross-border or cross-sector interaction and data re-use**.

### Enabling Digital Government through Geospatial Data and Location Intelligence

- ✓ Interoperability
- ✓ Reusability
- ✓ Openness
- ✓ Guidance & advice
- ✓ Capacity building & Skills
- ✓ Networking & Participation
- ✓ Collaboration & Partnerships
- ✓ Innovation & Experimentation
- ✓ Accessibility
- ✓ Transparency

<https://joinup.ec.europa.eu/collection/elise-european-location-interoperability-solutions-e-government/about>

# 5

*UN-GGIM IGIF: A global  
integrated geospatial  
information framework*



# United Nations Committee of Experts on Global Geospatial Information Management



## UN-GGIM Bureau:

Co-Chairs: Belgium, Mexico, Kingdom of Tonga

Rapporteur: Morocco

## UN-GGIM Regional Committees & Chairs:

- Africa: Senegal
- Americas: Chile (*incoming*)
- Arab States: Saudi Arabia
- Asia-Pacific: Australia
- Europe: Slovenia



***The Committee of Experts, a subsidiary expert body of the Economic and Social Council of the United Nations, is the peak intergovernmental body to liaise and coordinate among Member States, and between Member States, international organizations and stakeholders, to foster better coordination and coherence in geospatial information management***

## UN-GGIM Thematic Networks:

- Academic Network
- Private Sector Network
- Geospatial Societies
- United Nations Geospatial Network

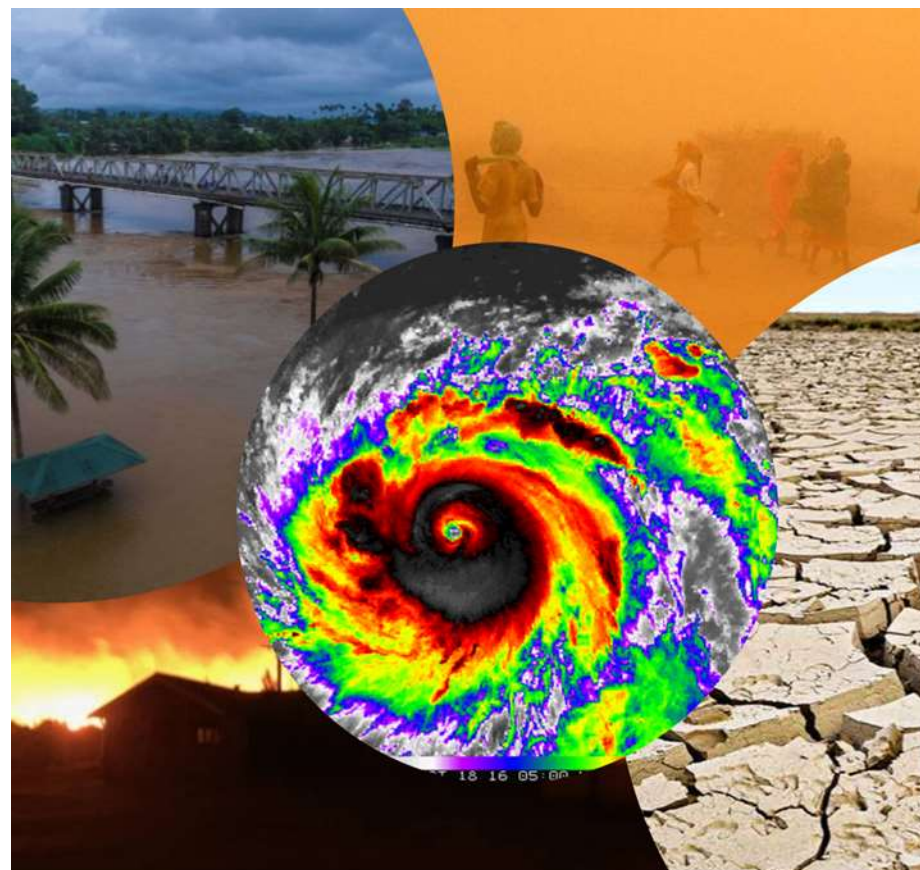
*International Standards Development Organizations*



**Everything happens somewhere** – a well coined phrase. Geospatial Information reflects the physical world in which all human, economic and environmental activity takes place, and provides the digital version of our world.

It is an essential national information resource, critical component of the national information infrastructure and knowledge economy; a blueprint of what happens where, and the means to integrate a wide variety of Government services.

It provides the evidence for sustainable development .. .. measure, monitor and report on progress .. .. assist in response and recovery from disasters and crises .. .. with geography and location .. .. relating people, activities and events to place .. .. informing policy- and decision-making and actions.



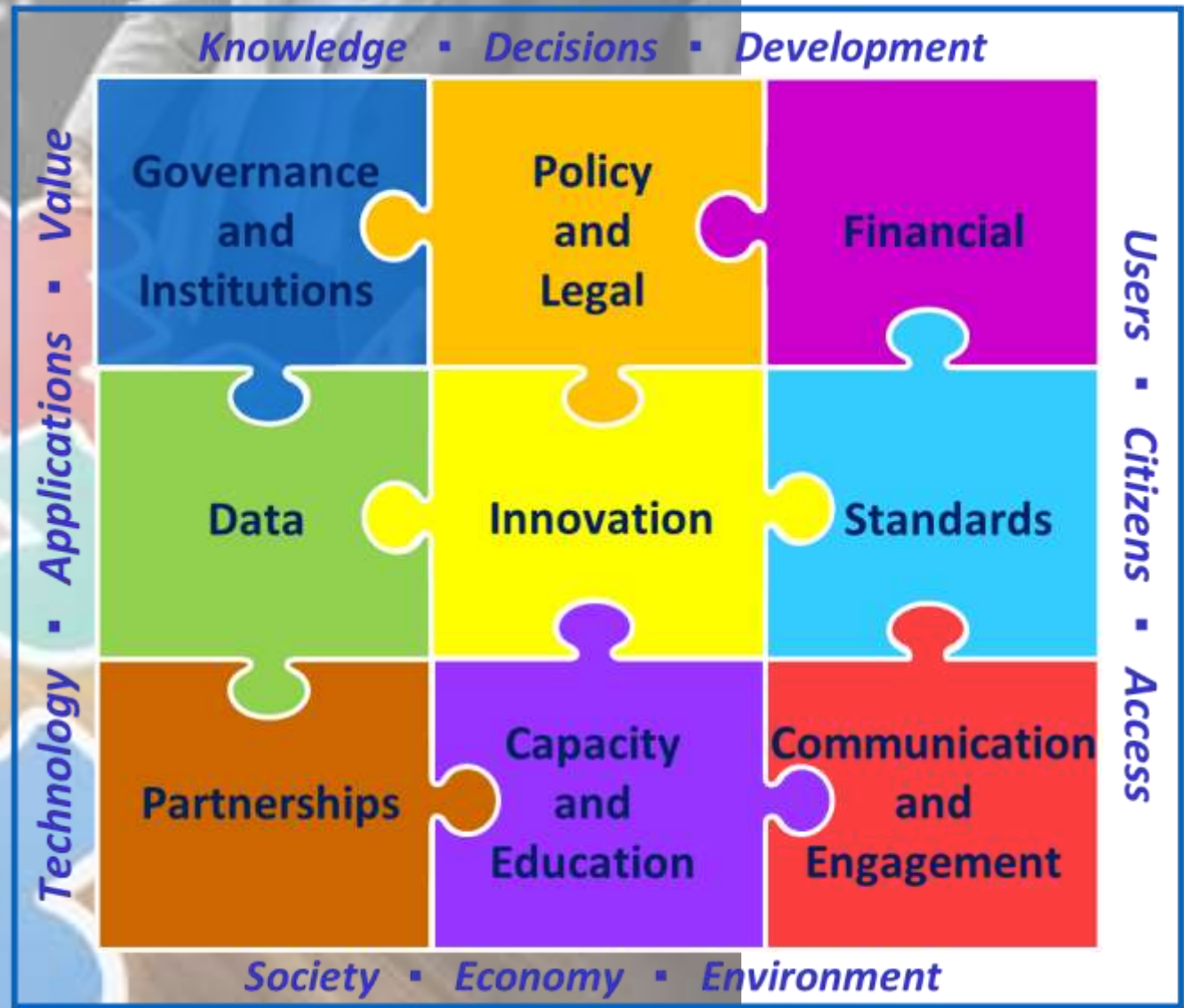
**COVID-19  
RESPONSE**



**DECADE  
OF  
ACTION**



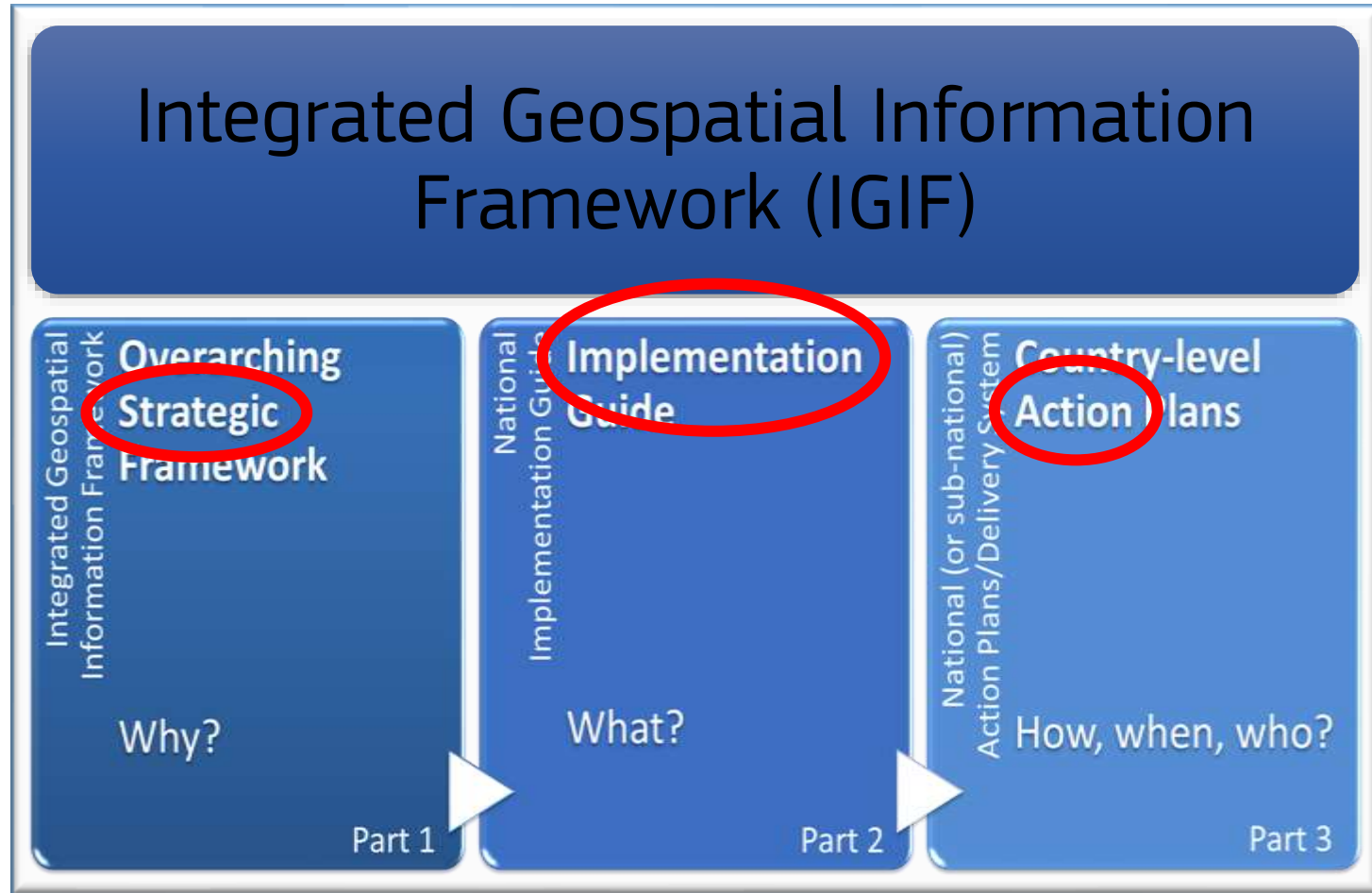
**Anchored by nine Strategic Pathways, the Integrated Geospatial Information Framework is a mechanism for articulating and demonstrating national leadership in geospatial information, and the capacity to take positive steps**



The IGIF is a multi-dimensional Framework that is aimed at strengthening national geospatial information management in countries, developing countries in particular. It comprises an overarching **Strategy** – from local to global, **Implementation** guidance, and **Action** plans at the country level.

With a focus on the ability for geospatial information to be integrated with any other meaningful data to solve societal and environmental problems, the IGIF acts as a catalyst for economic growth and opportunity and stimulates improved understanding and decision-making for national development priorities and the SDGs.

## Global Geospatial Frameworks



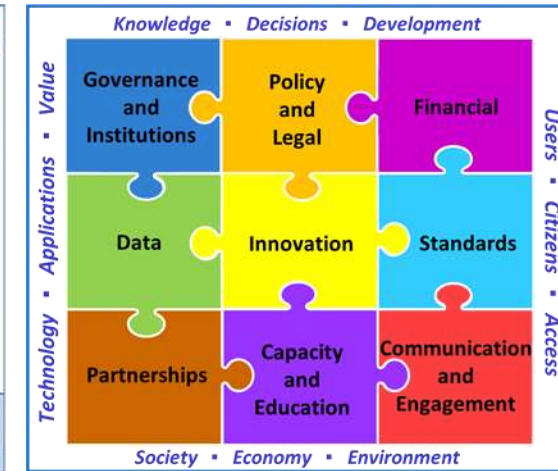
<http://ggim.un.org/IGIF/>

The Overarching Strategic Framework is a mechanism for articulating and demonstrating national leadership, cultivating champions, and developing the capacity to take positive steps.

- Adopted by UN-GGIM in August 2018, the Overarching Strategic Framework sets the context of ‘**why**’ geospatial information management is a critical element of national social and economic development, and ‘**why**’ it needs to be strengthened.
- This is the strategic policy guide to reference when developing and strengthening national and sub-national geospatial information management systems and capabilities. It presents a forward-looking and aspirational geospatial framework built on national needs and circumstances.
- As a ‘strategic’ introduction to the IGIF, the intended audience includes national leaders, political leaders, organizational managers, the business community and academia.
- Comprises a **Vision and Mission, Strategic Drivers, 7 Underpinning Principles, 8 Goals, 9 Strategic Pathways**, and defined **Benefits** that take account of national priorities

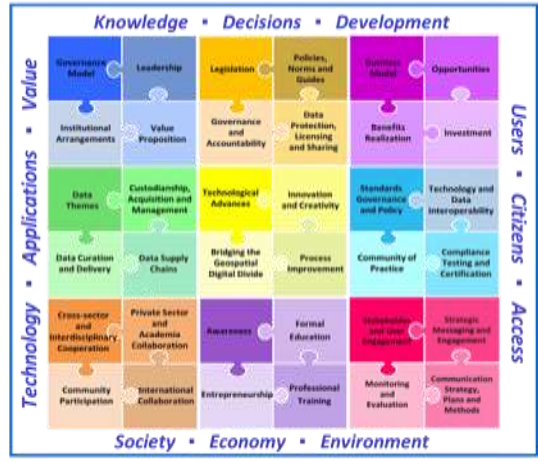
VISION					
The efficient use of geospatial information by all countries to effectively measure, monitor and achieve sustainable social, economic and environmental development – leaving no one behind					
MISSION					
To promote and support innovation and provide the leadership, coordination and standards necessary to deliver integrated geospatial information that can be leveraged to find sustainable solutions for social, economic and environmental development.					
STRATEGIC DRIVERS					
National Development Agenda • National Strategic Priorities • National Transformation Programme • Community Expectations • Multilateral trade agreements • Transforming our World: 2030 Agenda for Sustainable Development • New Urban Agenda • Sendai Framework for Disaster Risk Reduction 2015–2030 • Addis Ababa Action Agenda • Small Island Developing States Accelerated Modalities of Action (SAMOA Pathway) • United Nations Framework Convention on Climate Change (Paris Agreement) • United Nations Ocean Conference: Call for Action					
UNDERPINNING PRINCIPLES					
Strategic Enablement	Transparent and Accountable	Reliable, Accessible and Easily Used	Collaboration and Cooperation	Integrative Solution	Leadership and Commitment
GOALS					
Effective Geospatial Information Management	Increased Capacity, Capability and Knowledge Transfer	Integrated Geospatial Information Systems and Services	Economic Return on Investment		
Sustainable Education and Training Programs	International Cooperation and Partnerships Leveraged	Enhanced National Engagement and Communication	Enriched Societal Value and Benefits		

STRATEGIC PATHWAYS								
Governance and Institutions Value proposition Leadership Institutional arrangements	Policy and Legal Legislation Policies, norms and guides Data protection, licensing and sharing Governance and accountability	Financial Business model Opportunities Investment Benefits realization	Data Data supply chains Data curation and delivery	Innovation Data themes Custodianship, acquisition and management Bridging the geospatial digital divide	Standards Technology and data interoperability Compliance testing and certification Community of Practice	Partnerships Cross-sector and interdisciplinary cooperation International collaboration Community participation	Capacity and Education Awareness Formal education Professional training Entrepreneurship	Communication and Engagement Stakeholder and user engagement Strategic messaging and engagement Communication strategy, plans and methods Monitoring and evaluation
Governance			Technology			People		
<b>BENEFITS</b>								
Knowledge   Decisions   Development   Society   Economy   Environment   Users   Citizens   Access   Technology   Applications   Value								

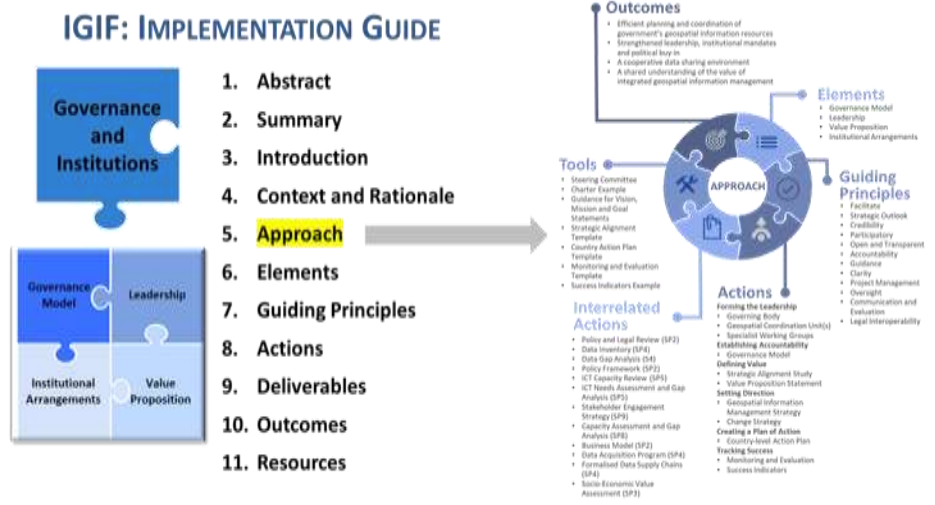


- Adopted by UN-GGIM in September 2020, the Implementation Guide explains **‘what’** specific guidance and options can be taken by countries in implementing the IGIF.
- Expanding on each of the nine Strategic Pathways, the Guide captures strategic to operational needs with references, good practices, guiding principles, actions, deliverables, outcomes and resources for countries to establish ‘nationally’ integrated geospatial information frameworks in such a way that transformational change is enabled, visible and sustainable.
- Recognizing that every country is at different levels of maturity in their geospatial development journey, the guidance is comprehensive, but general enough to be applicable to all countries, and sufficiently flexible so that each country can develop their own plan of actions to meet their national priorities and circumstances.

The Implementation Guide is a reference resource that defines, describes and offers helpful guidance and options on actions to be taken for each of the 9 Strategic Pathways in such a way that transformational change is enabled, visible and sustainable.



- Category of Action: **Managing Data Sustainably**
- Actions:
  - Data Custodianship Policy and Guidelines
  - Data Governance
  - Maintained Metadata
  - Storage and Retrieval Systems
  - Data Release
- Tools:
  - Data Custodianship Policy Example
  - Data Management Plan Elements
  - Metadata Creation Checklist
  - Data Release Guidelines
- Interrelated Actions:
  - Governance Model (SP1)
  - Geospatial Steering Committee (SP1)
  - Geospatial Information Coordination Unit (SP1)
  - Policy Framework (SP2)
  - Data Standards (SP6)
  - Storage Solutions (SP5)





# Current Status, Steps and Actions

- At its tenth session in 2020, UN-GGIM noted that both developed and developing countries were currently implementing the Framework and developing their own Country-level Action Plan (CAP) on an optional and voluntary basis, in accordance with the available guidance and tools.
- CAPs are now being developed by countries, and with support from multiple donors and stakeholders. Multiple requests are being fielded by developing countries. HLG-IGIF is aware of the need for sustainable funding for operationalizing the IGIF at the country

**The United Nations, World Bank and other donors are actively engaged in assisting countries to develop their Country-level Action Plans in accordance with the available guidance and tools.**

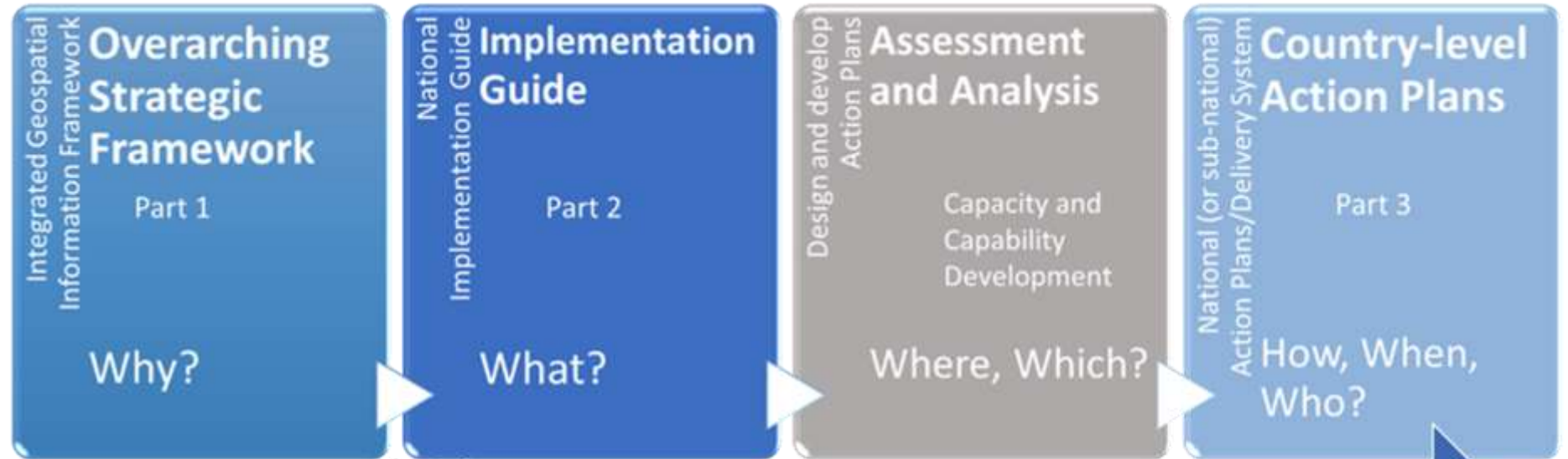
Completed Pilots	In Progress/Planned (with Funding Source)		
Albania (WB) Palestine (WB) Guyana (FAO/WB)	Burkina Faso (UN) Cambodia (WB) Colombia (WB) Egypt (WB)	Kyrgyz Republic (Norway) Lesotho Liberia (WB/Sweden) Moldova (Norway/WB)	Saudi Arabia Senegal (WB) Seychelles (WB)
Municipal Level: Tirana, Albania (WB)	Ethiopia (UN) Fiji (UN) Georgia (Norway) Ghana (WB)	Mongolia (UN/WB) Nepal (UN) Nicaragua (WB) Philippines (WB)	Serbia (FAO/WB) Sierra Leone (WB) Tonga (UN) UAE Ukraine (Norway) Vietnam (WB)

Note on Methodology: Original Source: Kathrine Kelm, World Bank  
 UN supports countries remotely with its self-paced through learning and discovery approach together with capacity and capability development  
 WB, FAO, Norway and Sweden are using World Bank tools and provide in-country support.

# Operationalizing the IGF at the country-level

National (or sub-national)  
Action Plans/Delivery System  
**Country-level  
Action Plans**  
How, when, who?  
Part 3

UN piloted approach:  
Self-paced through  
learning and discovery  
together with capacity  
and capability  
development –  
methodological,  
incremental and  
progressive.  
Remote support  
through access to  
resource materials and  
subject matter  
expertise



**Planning and preparing**

**Assessing and analyzing**

**Designing and developing**

**Plan of Action**

**National Needs Assessment  
and Gap Analysis Report**

**Country-level Action Plan**

# National Priorities, Crises and 2030 Agenda for Sustainable Development



UN-GGIM at its tenth session, in its decision 10/103, “welcomed the Integrated Geospatial Information Framework as a means to **strengthen national geospatial information management arrangements** within and across Member States; and noted the global significance of the IGIF, which forms a **key umbrella** for the many activities under the purview of the Committee of Experts, which can be applied to any country to guide transformational change”

6

*EIF lessons learnt and future directions*

# European Interoperability Framework (EIF)



The EIF is an agreed approach to the delivery of interoperable European digital public services, with a set of interoperability guidelines in the form of common principles, models and recommendations.



## Legal Context

The EIF is promoted and maintained by DIGITAL programme (before the **ISA<sup>2</sup> programme**) in close **cooperation between the Member States and the Commission** calling for the establishment of **interoperable trans-European networks that will enable citizens to derive full benefit from a European internal market.**



## Objectives

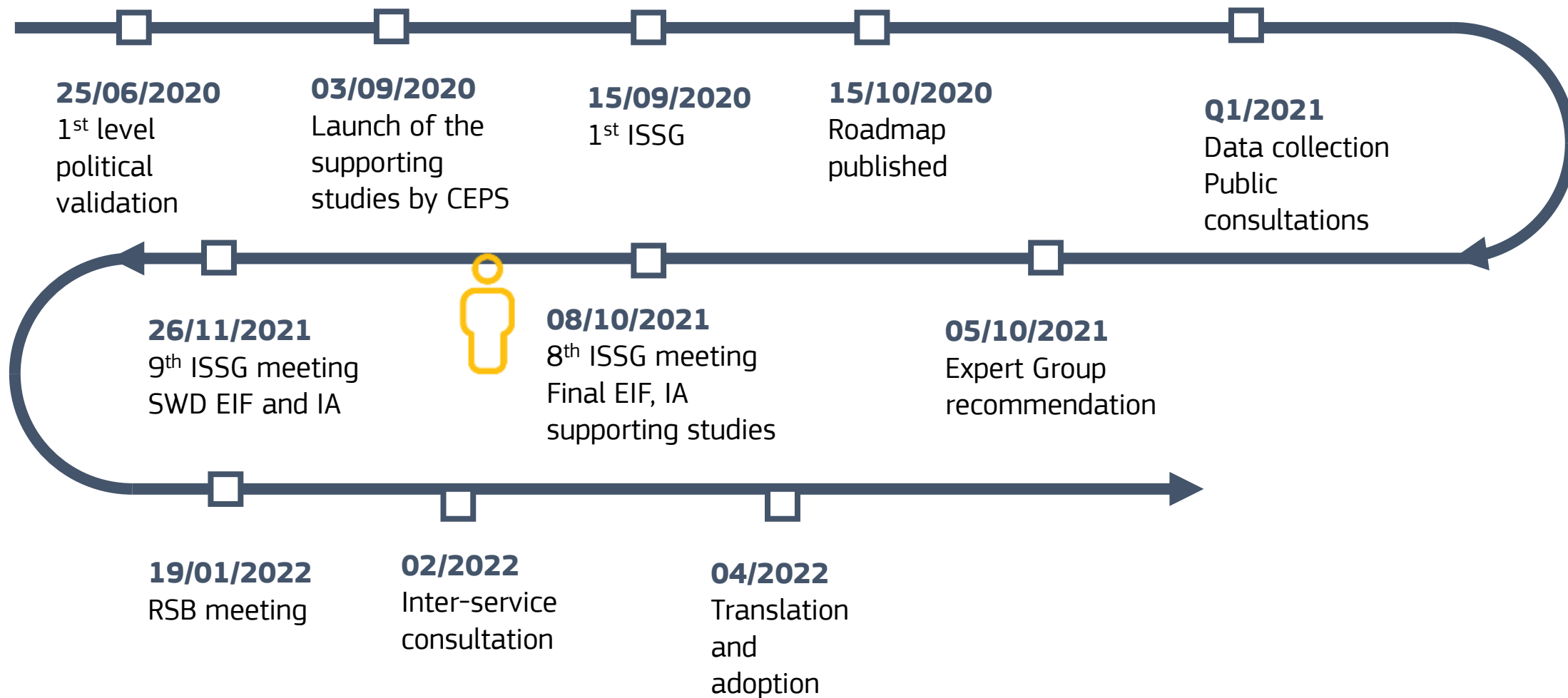
Inspire European public administrations in their efforts to **design and deliver seamless European public services** which are to the extent possible, digital-by-default, cross-border by-default and open-by-default; **fostering cross-border and cross-sectoral interoperability**



## Scope

The EIF is a **generic framework applicable to all public administrations in the EU**, composed of 12 principles, 4 layers, a conceptual model, and 47 recommendations across these 'pillars' of the framework

# Timeline EIF evaluation and Impact assessment for IoP strategy



# Main conclusions: Lessons learnt



**Enhance** the clarity of the recommendations/ Coherence of various elements



**Provide** practical guidance to support the implementation of the EIF



**Promote** the exchange of best practices



**Strengthen** the position of the EIF as a guiding, strategic document



**Enhance** coordination through common rules



**Ensure** monitoring of the progress made in the field of interoperability



**Raise** awareness of the role of interoperability and engage stakeholders

# Next steps



- **Finalise the EIF evaluation/ Impact assessment for a future IA policy**
- **Drafting of legal Proposal for a EU government interoperability strategy (first half of 2022) – Addressing some of the EIF evaluation conclusions eventually**

No.	Title	Simplification objective / potential (short explanation of the burden reduction and simplification objective)
2.	<b>Proposal for an EU governments interoperability strategy</b>	<p>This initiative will evaluate the current European interoperability framework and assess its support in setting up interoperable digital public services. It will also elaborate the proposal on the EU governments interoperability strategy, announced in the Commission's Communication 'Shaping Europe's digital future'. The aim is to establish a common EU level interoperability governance to ensure cross-border coordination, support public sector innovation and define minimum common specifications for secure and borderless public sector data flows and services. It will:</p> <ul style="list-style-type: none"><li>• Set up a shared governance of interoperability with the Member States that will have the mandate to steer the development of interoperability between EU public administrations.</li><li>• Ensure that EU policy proposals are interoperable, digital-ready and designed to be interoperable from the start and foster synergies for their implementation.</li><li>• Deliver minimum common interoperability open specifications and standards for the implementation of EU policies and programmes.</li><li>• Support and promote the development and reuse of common open, human-centric interoperability solutions and specifications by public administrations across the EU.</li><li>• Reinforce innovation and international cooperation by mutual learning and cooperation across public administrations.</li></ul> <p>(legislative, incl. impact assessment, Articles 114, 172, 188 and/or 197 TFEU, Q2 2022)</p>





*Interoperability Academy*



European  
Commission



# Interoperability Academy

by European Commission

Advanced Digital Skills are essential for digital governance services  
Interoperability Academy is an enabler with focus on Interoperability, policy aspects & service delivery.



European  
Commission



Interoperability  
— Academy —  
by European Commission

Interoperability Academy is essential for the support to Public Services part of DEP.  
All relevant actions such as ELISE or ELITE can highly contribute to deliver learning resources.

## Objectives of IOP Academy

Increase the adoption of ISA<sup>2</sup> and CEF solutions.



Support European Digital Government Eco-System (EDGES) in Digital Europe Programme (DEP).



Improve level of advanced digital skills in the public sector.



Interoperability Academy represents an organised **set of learning resources and courses** about Interoperability solutions based on a tailor-made curriculum



Run by Directorate-General for Informatics



## Benefits

eLearning courses, available 24/7 complemented by face-to-face sessions.



Participating in community around advanced digital skills and knowledge exchange.



Award certificate of completion to enhance career opportunities.

# Example of courses



Edit

data, digital & technology

DCAT and DCAT-AP training: Advanced user

★★★★★ (0)



Edit

data, digital & technology

DCAT and DCAT-AP training: Basic user

★★★★★ (0)



Edit

data, digital & technology

DCAT and DCAT-AP training: General introduction

★★★★★ (0)



Edit

public sector leadership, innovation & knowledge sharing

Access to Base Registries

★★★★★ (0)



Edit

public sector leadership, innovation & knowledge sharing

PM C1 - PM<sup>2</sup> Essentials, Project Management Methodology

★★★★★ (11)



Edit

public sector leadership, innovation & knowledge sharing

EIF & EIRA tutorial

★★★★★ (0)



Edit

public sector leadership, innovation & knowledge sharing

Data Visualisation

★★★★★ (0)



Edit

public sector leadership, innovation & knowledge sharing

European Interoperability Framework (EIF) Online Training

★★★★★ (2)

## Interoperability Academy consists of two main activity types

### Live events

- Workshops
- Webinars
- Seasonal schools
- Trainings



Fully animated

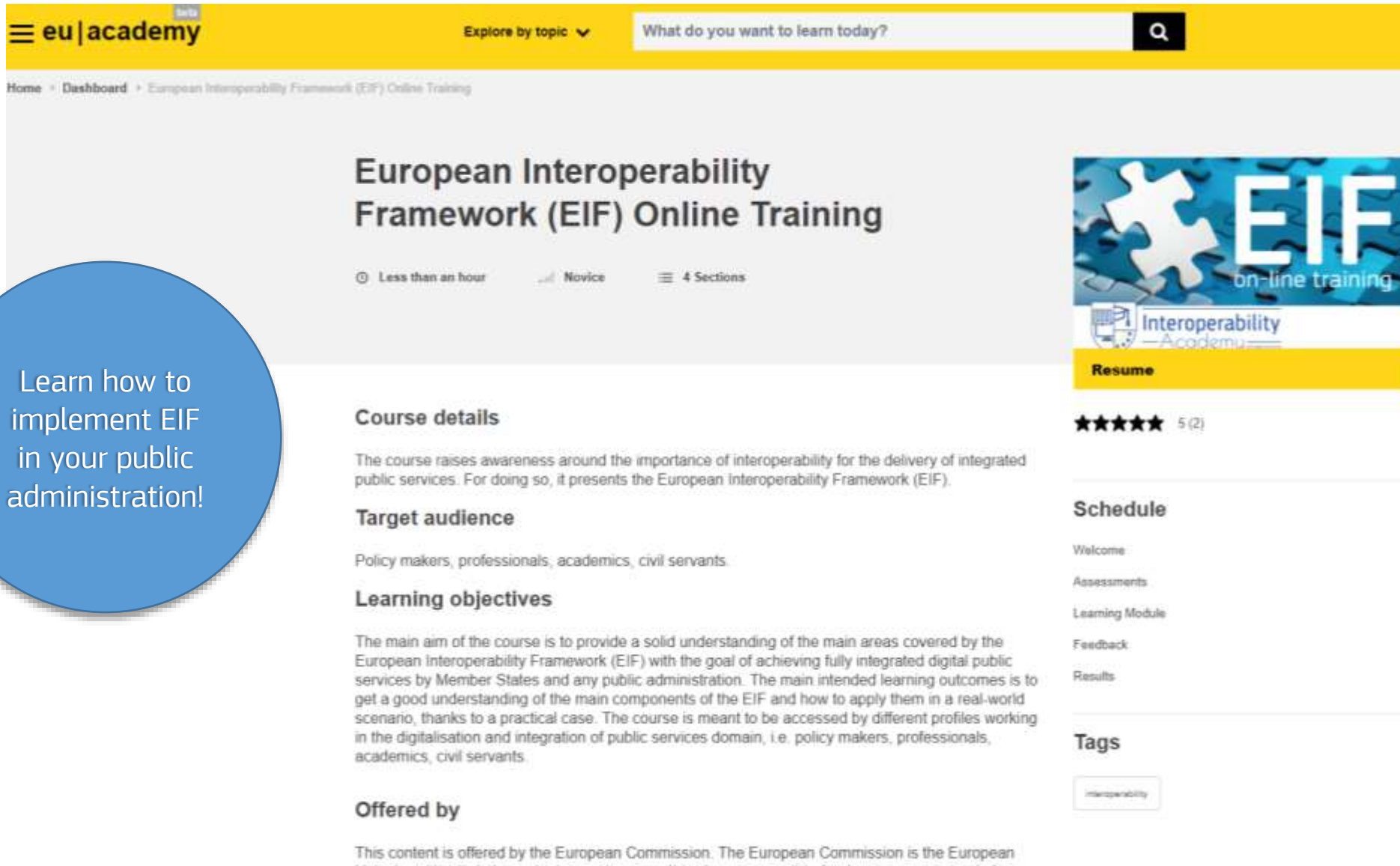
Partly animated: reuse existing materials

Topics format: reuse existing materials

### Self-paced courses

Develop the skills needed to achieve interoperable **cross-border and cross-sector public services**

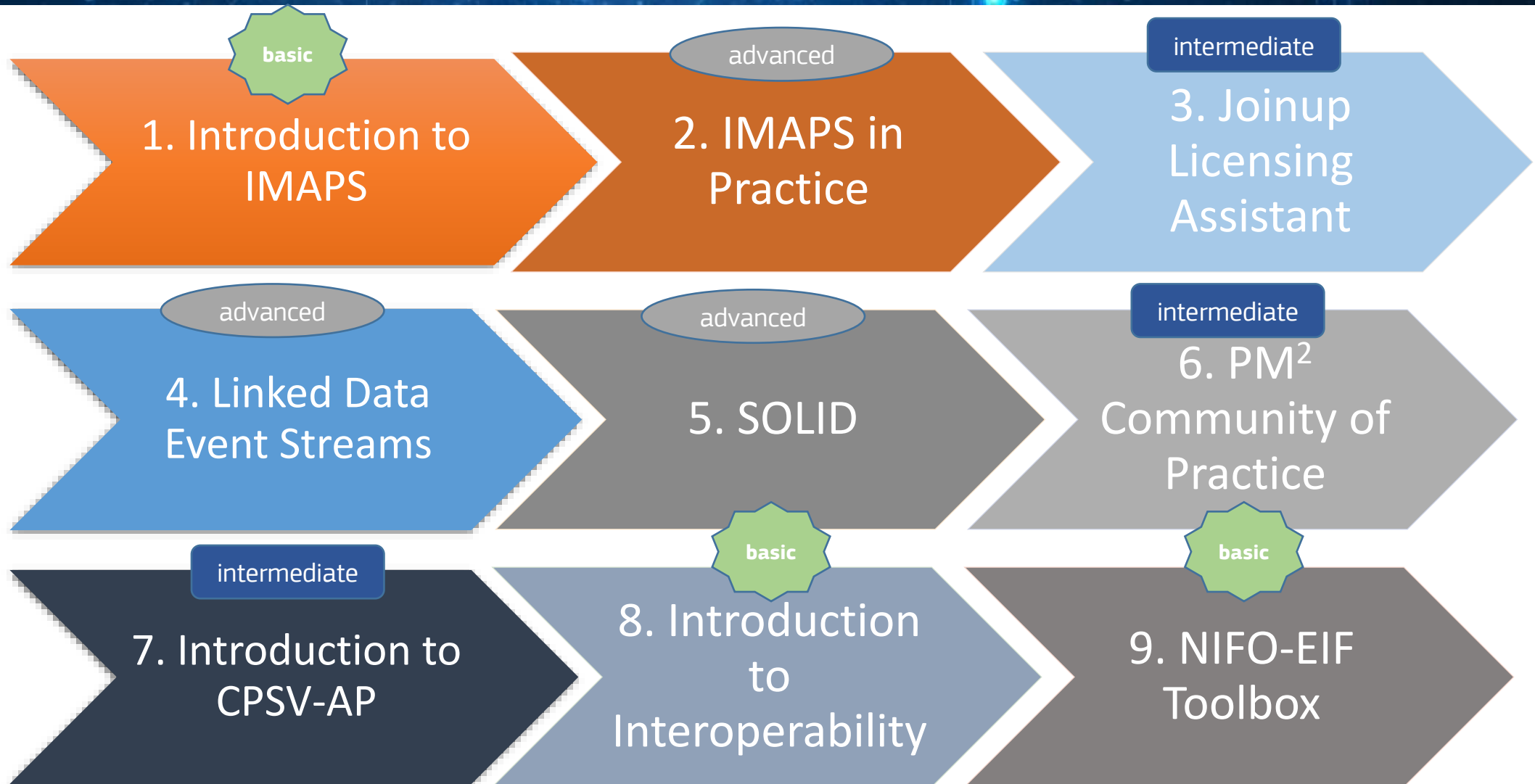
# Example of courses: EIF



The screenshot shows the course page for 'European Interoperability Framework (EIF) Online Training' on the eu|academy platform. The page features a yellow header with the 'eu|academy' logo, a search bar, and a navigation menu. The main content area includes the course title, a duration of 'Less than an hour', a difficulty level of 'Novice', and '4 Sections'. A 'Resume' button is visible. The 'Course details' section describes the course's purpose in raising awareness of interoperability. The 'Target audience' section lists 'Policy makers, professionals, academics, civil servants'. The 'Learning objectives' section states the goal of providing a solid understanding of the EIF. The 'Offered by' section mentions the European Commission. On the right side, there is a 'Resume' button, a 5-star rating with 2 reviews, a 'Schedule' section listing 'Welcome', 'Assessments', 'Learning Module', 'Feedback', and 'Results', and a 'Tags' section with the tag 'Interoperability'.

Learn how to implement EIF in your public administration!

# Upcoming courses





# Roadmap



**August 2019 – December 2020**

- Establishment Interoperability Academy
- First collaborations
- 3 courses



**January 2021 – June 2021**

- 9 courses live
- Skills & Competencies framework study
- Interoperability Academy curriculum
- 9 more courses to come



**2021 – ONWARDS**



- New eLearning courses
- Calendar 2021-2022: live courses, lecture series, seasonal schools...
- Greater community
- Promotion of the Interoperability Academy



☰

Overview

Members

About

About: all policy domains

This collection aims to enhance the collaboration on development of digital skills in the public sector between the European Commission, EU countries, international organisations and any other stakeholders through opening discussion topics and allowing information exchange. [Read more](#)

19 News

12 Events

4 Solutions

MORE ▾

**You can share info, event & start discussion on relevant topics of your interest.**

**Stay up-to-date with events we are organising.**

**You can comment existing material/activities.**

Digital Skills & Jobs Coalition Luxembourg

Members meeting #5 ONLINE 19/11/2020 - 10-11am

Digital Skills and Jobs Coalition Luxembourg: Members Meeting

19/11/2020 event

EIF on-line training

Interoperability Academy

Stay tuned for the updated version of the EIF course!

news

Help us create a positive learning experience on the

Interoperability Academy is soon going live and we need your help to co-create a modern, user-friendly eLearning platform! So far, feedback of our stakeholders

2 discussion

Interoperability Academy

solution

**Share your expertise!**

# How we can support ELISE /ELITE?



## Already available

✓ Guidelines for action owners for material repurposing

✓ Lessons Learned for course development, testing & deployment

✓ Training sessions for Action owners

✓ Fiche (2-page documents) for course creation & deployment

✓ Dedicated meetings with Action owners & their contractors

✓ Interoperability Academy visual elements

✓ Checklist for course testing

 ✓ Full Interoperability Academy branding

8

*How multinational  
frameworks and  
programmes can help public  
administrations*



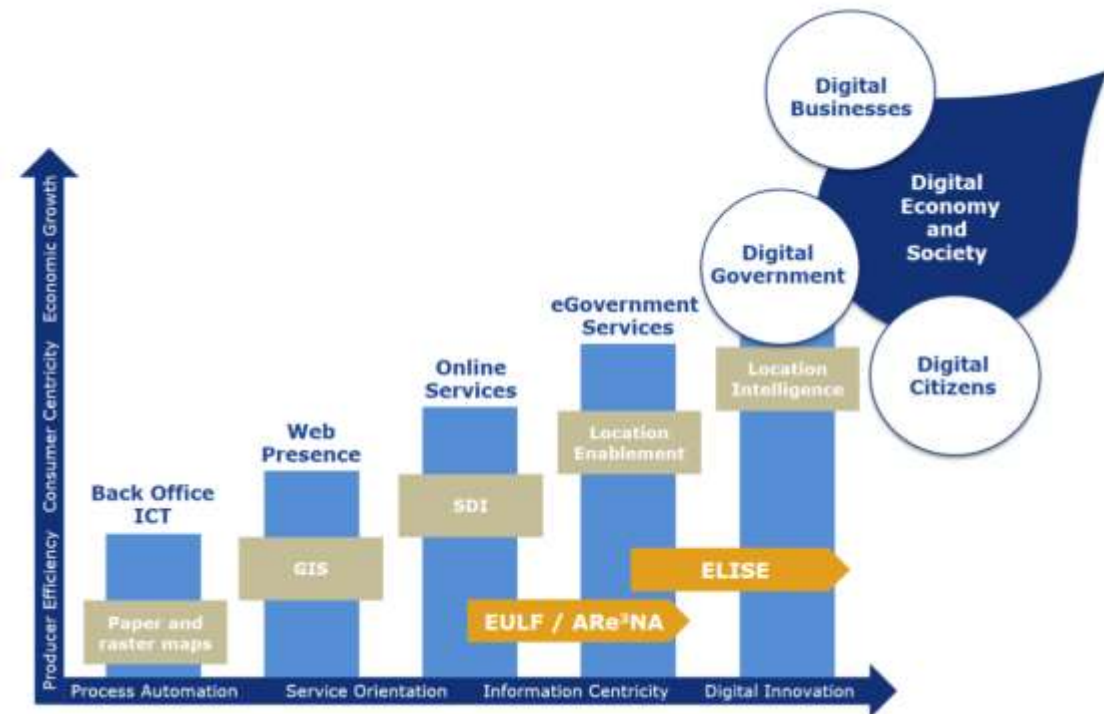
**We are at the genesis of a new age characterized by the “convergence of disruptive” technological, social and regulatory factors.** Source: European Strategy for Data



### **Digital transformation**

*Fundamental changes in the way how public organizations are structured and operate, how public services are delivered, how policies are developed, implemented, and evaluated, as well as how citizens engage in democratic processes resulting from the introduction of technologies (Zhangetal,2014).*

Business models are being redefined to evolve across the increasingly widespread use of Artificial Intelligence (AI), Internet of things (IoT) and 5g for hyper connectivity



**Source: European Location Interoperability Solutions for E-Government (ELISE), an action within Interoperability solutions for public administrations, businesses and citizens (ISA2)**

[EULF Blueprint](#) | [Joinup](#) | [Blueprint for a user driven SDI](#)

# Challenges

**SDIs are at the same time both components and enablers of Digital Government Transformation** which allow fully digitalised governments to be developed and a move towards Governments as Platforms (Loosemore *et al.*, 2018).

In this context, in modernizing the SDI **it is important to look at this from the Digital Government Transformation perspective.**

INSTITUTIONAL SETTING		
<p><b>Governance</b></p> <ul style="list-style-type: none"> <li>Joint decision making</li> <li>Central coordinating organisation</li> </ul>	<p><b>Strategy</b></p> <ul style="list-style-type: none"> <li>Strategy on SDI in Digital Transformation</li> <li>Strategic approach on skills and training</li> </ul>	<p><b>Legal framework</b></p> <ul style="list-style-type: none"> <li>Mandatory use of data</li> <li>Open data policy</li> </ul>
TECHNICAL INFRASTRUCTURE		
<p><b>Extended infrastructure</b></p> <ul style="list-style-type: none"> <li>Additional components</li> <li>API's</li> </ul>	<p><b>Interoperability</b></p> <ul style="list-style-type: none"> <li>Interoperability of data</li> <li>Portals and platforms</li> </ul>	<p><b>Innovation</b></p> <ul style="list-style-type: none"> <li>Generic ICT solutions</li> <li>New technologies</li> </ul>
IMPACT		
<p><b>Usage</b></p> <ul style="list-style-type: none"> <li>Use by public administrations</li> <li>Use by the private sector and other organisations</li> <li>Cross-border use</li> </ul>	<p><b>Benefits</b></p> <ul style="list-style-type: none"> <li>Benefits to public administrations</li> <li>Benefits to businesses, citizens and society</li> </ul>	

Source: Rapid Study: *The role of Spatial Data Infrastructures for Digital Government Transformation (ELISE)*



PWI JTC1-SC41-5 Digital Twin – Reference Architecture

ELISE aims to **break down barriers and promote a coherent and consistent approach to the sharing and reusing of location data across sectors and borders** in the context of the digital transformation of public services

- Knowledge – understanding of / information about a subject that can be achieved by own experience or study
- Skills – ability to use methods, materials, tools and instruments.
- Competency – the proven ability to apply knowledge, skills in your work in an an autonomous and responsible way



119

Documents



65

Events



54

News

ELISE aims to **break down barriers and promote a coherent and consistent approach to the sharing and reusing of location data across sectors and borders** in the context of the digital transformation of public services



The screenshot shows the top section of the ELISE website. At the top left is the 'joinup' logo. To its right are navigation links: 'COLLECTIONS', 'SOLUTIONS', and 'KEEP UP TO DATE'. Further right is a search bar with the text 'Advanced s'. Below the navigation is a large dark blue banner with the text 'ELISE - European Location Interoperability Solutions for e-Government'. To the left of this text is a small globe icon. Below the banner, there are three white boxes: the first says 'Last update about 3 hours ago', the second shows '117 Members' and '4 Solutions' with a person and folder icon, and the third is a blue button that says 'YOU'RE A MEMBER'.



STUDIES



FRAMEWORKS AND SOLUTIONS



APPLICATIONS



GEO KNOWLEDGE  
BASE SERVICE

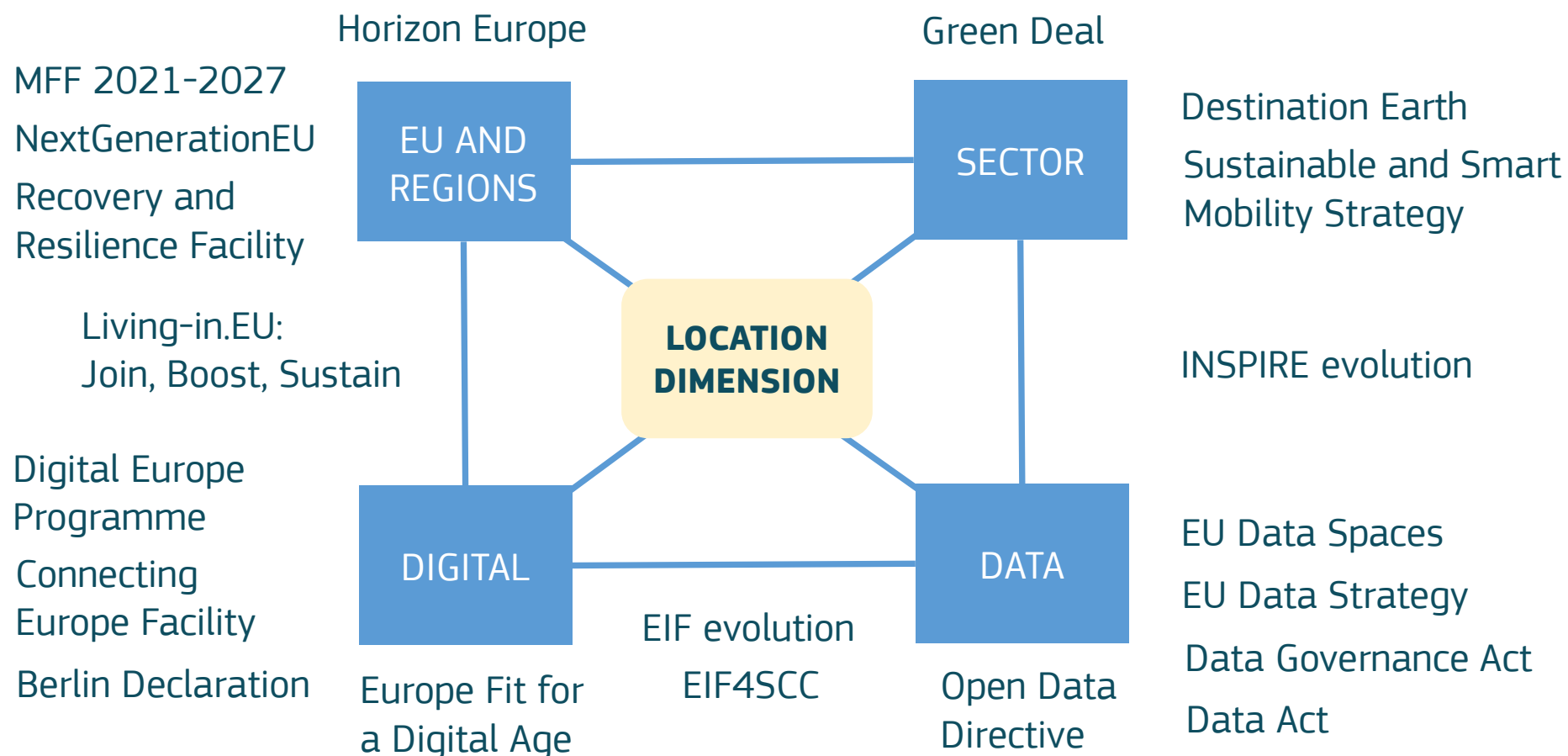


9

*Location interoperability:  
Looking to the future*



# Location interoperability in the future EU policy context





# Building on ELISE for the Digital Europe Programme

## Digital Europe Programme Themes



High performance computing



Cloud, data and AI



Cybersecurity



Advanced digital skills



Accelerating best use of technologies

## European Location Intelligence and Technological Enablers (ELITE)



EULF Blueprint



LIFO



Interoperability Academy



Data Spaces Cookbook



Sandboxing

## Common Services Platform



ETF Validator



Re3gistry



# Thank you



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# Stay tuned



Join the *ELISE* community in [JoinUp](#)

JOIN THIS COLLECTION



[@eu\\_location](#)



[eu-location@ec.europa.eu](mailto:eu-location@ec.europa.eu)



[ELISE channel](#)

SUBSCRIBE