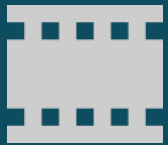


Thank you for joining us!

We will start shortly.



**The presentation
will be recorded**



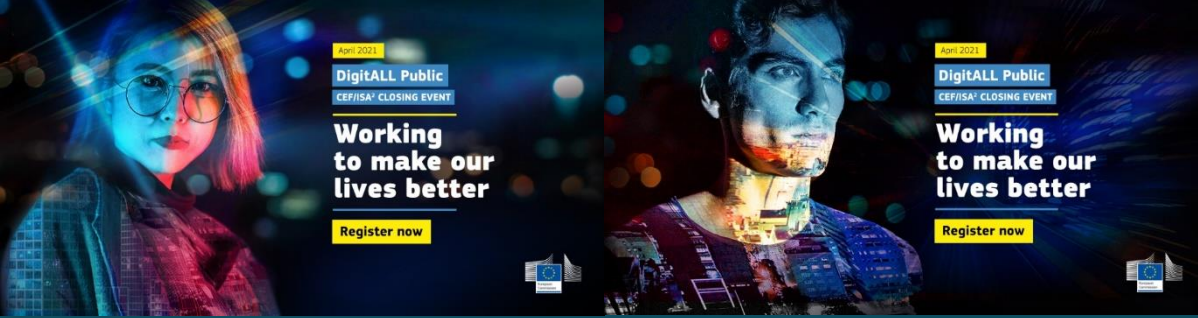
**Mute your
microphone**



**Turn off your
camera**



**Use the chatbox to
ask or comment**



ELISE enabling the interoperability of digital government from a location perspective

22/04/2021 at 12:30 CEST (UTC+2)



European Location Interoperability
Solutions for e-Government

*Enabling Digital Government through
Geospatial and Location Intelligence*



Our moderators



Simon Vrečar
External Consultant
Joint Research Centre



Ray Boguslawski
External Expert
Joint Research Centre



Giacomo Martirano
External Consultant
Joint Research Centre



Lorena Hernandez
Project Officer
Joint Research Centre



Francesco Pignatelli
Programme Manager
European Commission, JRC

What we will cover today

1. Introduction (5')

2. Location Interoperability Framework (15')

3. Reusable tools for interoperable location data and reporting (15')

4. Reuse of location data interoperability principles and methodologies in different sectors (15')

5. Following a user-driven approach (15')

6. Panel (15')

7. Conclusion

1

Introduction

A BIT OF HISTORY...

2004

IDABC: Interoperable Delivery of European eGovernment Services

2010

ISA: Interoperability solutions for public administrations

Actions:

EULF
ARE3NA

2016

ISA²: 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 ISA² Programme, aiming to improve Digital Government through Location Interoperability.



WHAT?

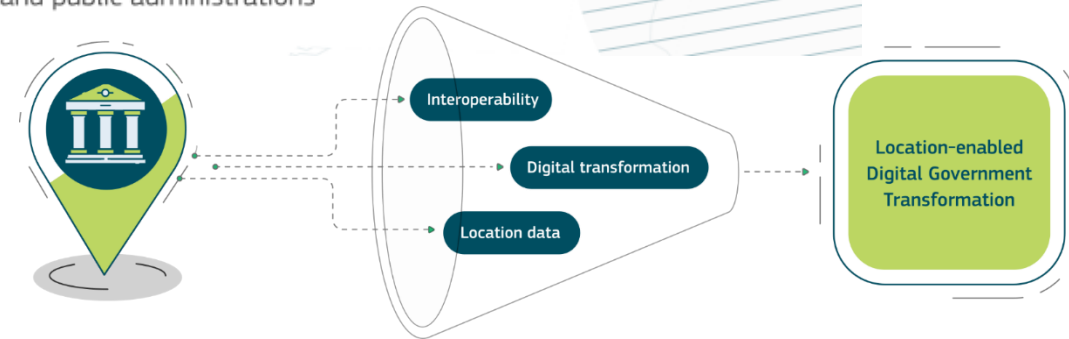
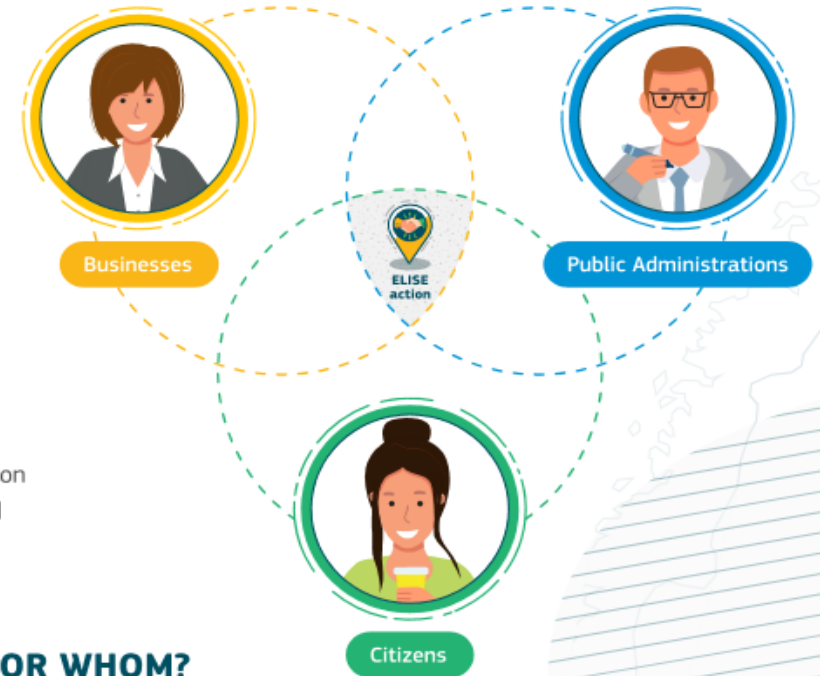
ELISE stands for **E**uropean **L**ocation **I**nteroperability **S**olutions for e-Government. It is one of the more than 50 actions in the European Interoperability Programme ISA².

WHAT FOR?

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

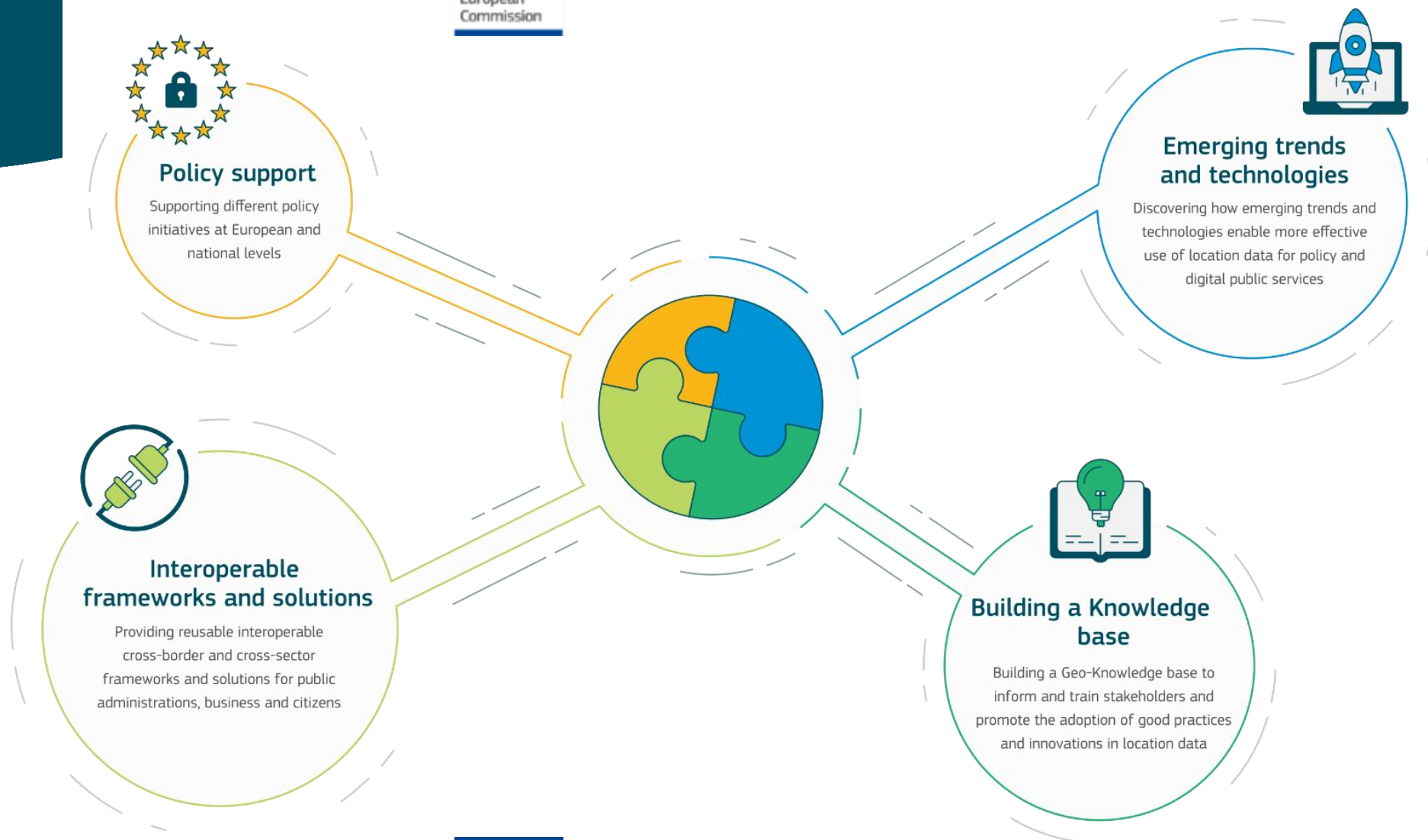
FOR WHOM?

For all: citizens, businesses and public administrations



ISA²

Objectives



TOPICS

Evolution of Spatial Data
Infrastructures

Support of data ecosystems

Location intelligence for policy
and digital public services

Technologies for location
-enabled innovation

Collaboration models

Managing data quality

Spatial skills for Digital
Government Transformation

Location data privacy

Supporting innovation, growth
and Return of Investment

Improving access to spatial
datasets

Supporting cross-border
and cross-sector data sharing

Supporting the creation of
common EU public services



STUDIES



APPLICATIONS



FRAMEWORKS AND SOLUTIONS



GEO KNOWLEDGE
BASE SERVICE

5 Years

SOME ACHIEVEMENTS

Active
engagement of
ISA² Member
States

- ✓ Complemented the EIF and NIFO with an extensive location interoperability framework and state of play assessments
- ✓ Helped put the INSPIRE Directive into practice with tools for data providers and a strong focus on use cases
- ✓ Built an extensive community of European and international stakeholders
- ✓ Raised awareness on new approaches to location-enabled digital transformation
- ✓ Helped to assess the role of SDIs in evolving business models, e.g. data ecosystems, digital platforms.
- ✓ Assessed new policies (e.g. GDPR, European Data Strategy) and technologies (e.g. Artificial Intelligence, Blockchain, API...)
- ✓ Promoted and facilitated better links on location data between public and private actors
- ✓ Provided guidance on improving spatial awareness and analytical skills for best use of data

3 EIF
Toolbox
solutions

2

Location Interoperability Framework



Our speakers and panellists



Miguel Alvarez Rodriguez
Programme Manager
European Commission, DIGIT



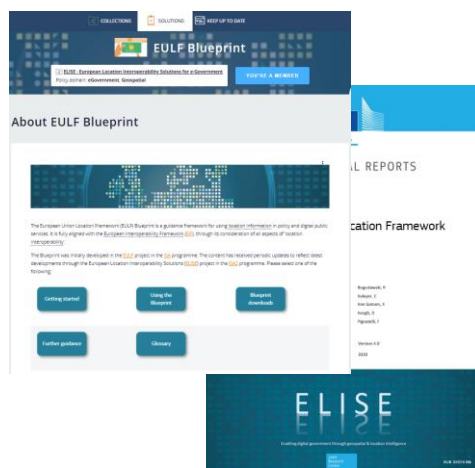
Andrea Halmos
Policy Officer
European Commission, CONNECT



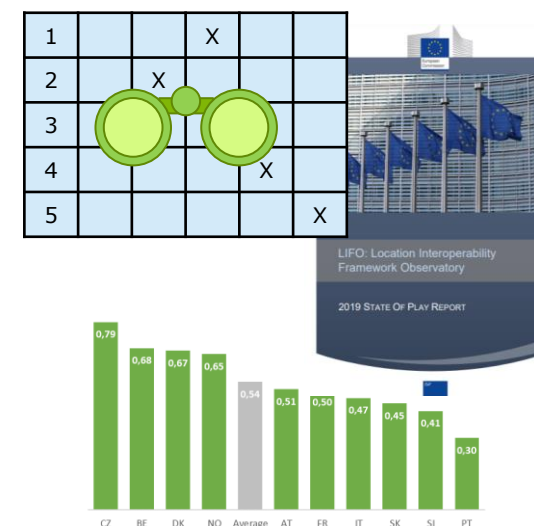
Tomaž Petek
Director General
*Surveying and Mapping Authority,
Slovenia*

EULF Blueprint – What is it?

A European ‘location interoperability framework’ with recommendations and 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



Online and downloadable versions



Adoption monitored through the LIFO

EULF Blueprint – comprehensive and actionable guidance

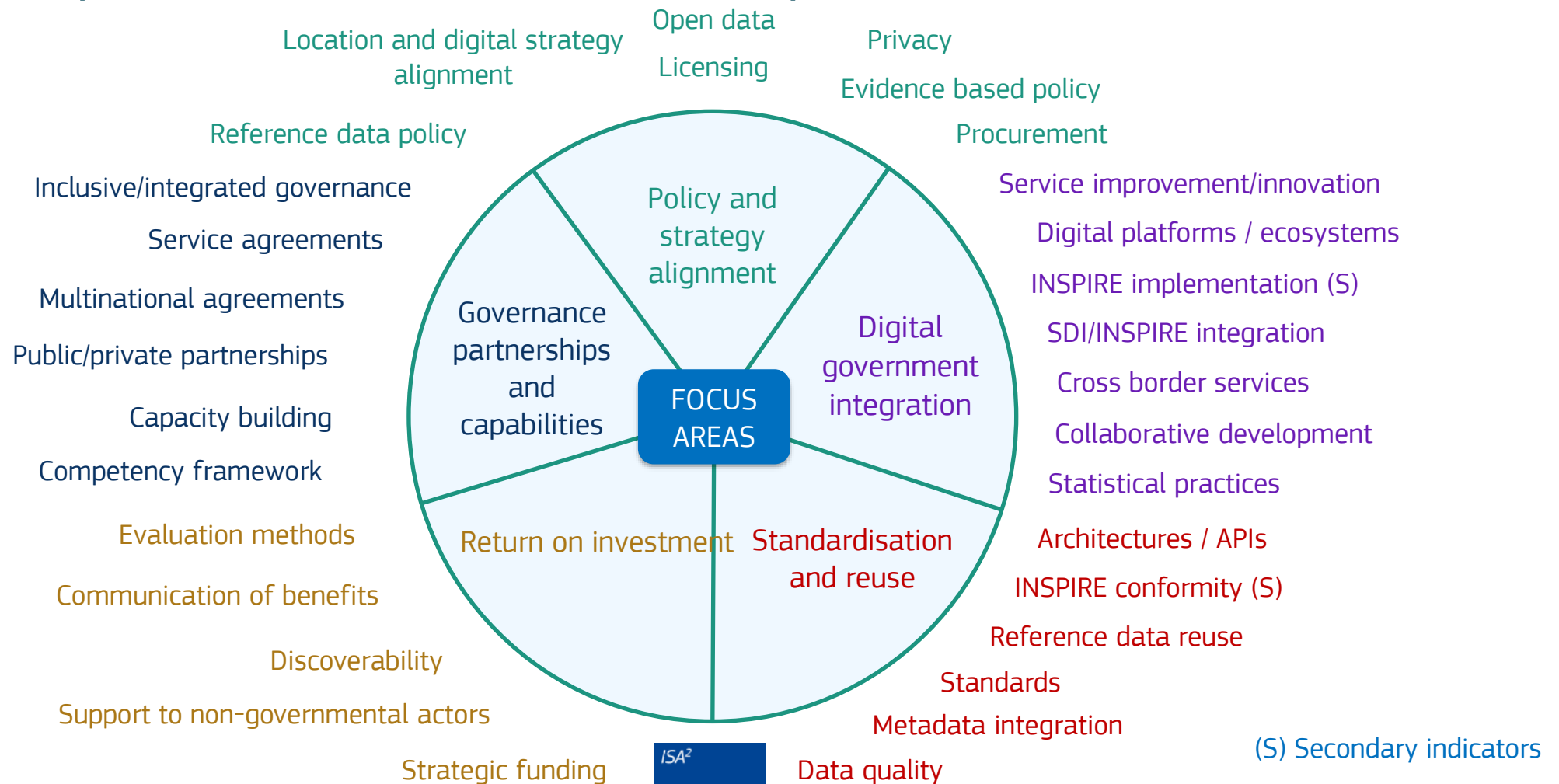


✓ Recommendation 1: Connect location information ...
Why: Core location information ...
How: ICT strategies ... Find detailed guidance on ... in Guidelines for...
Challenges: Lack of understanding by policy makers...
Best Practices: #1: A generic GIS ...
Related EIF Recommendations: Recommendation 1:
Further Reading: EU Better Regulation Toolbox

Focus area	
 Current State Location aspects within existing policy ...	Recommendation 1
 Vision An aligned and coordinated policy ...	Recommendation 2

Further information and tools	
 Best Practices	 EIF / EULF Blueprint cross-reference
 Role-based methodologies	 Further guidance on selected topics

EULF Blueprint and LIFO indicator topics



EULF Blueprint - Summary

- 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
- It complements the **EIF** and the **NIFO** as a domain interoperability framework
- 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

What makes the EULF Blueprint unique?

User driven

Benefits focus

Based on interoperability principles

Practical guidance

Digital government focus

European context

Interactive content

Regular updates

Used for benchmarking



European Interoperability Framework (EIF)

Overarching and hosting domain frameworks such as location (EULF Blueprint)

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 the **ISA² 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

EULF BLUEPRINT

Promotes policy alignment in use of location data

Addresses these objectives in the context of location data

Linked to the EIF recommendations and illustrated with best practices from all levels of government

INSPIRE: Inspiration for EIF

ISA²



2.3 Underlying principle 2: openness

In the context of interoperable public services, the concept of **openness** mainly relates to data, specifications and software.

Open government data (here simply referred 'open data') refers to the idea that all public data should be freely available for use and reuse by others, unless restrictions apply e.g. for protection of personal data, confidentiality, or intellectual property rights. Public administrations collect and generate huge amounts of data. The [Directive](#) on the reuse of public sector information (PSI) [\[7\]](#) encourages Member States to make public information available for access and reuse as open data. The [INSPIRE Directive](#) [\[8\]](#) requires, in addition, sharing of spatial datasets and services between public authorities with no restrictions or practical obstacles to its reuse. This



The National Interoperability Framework Observatory (NIFO)



NIFO publishes the most up-to-date information on the state-of-play of digital public administration and interoperability (LIFO is a complementary observatory on location interoperability).



NIFO provides support and guidance to European national administrations to facilitate the alignment of their National Interoperability Framework (NIF) with the European one (EIF).



NIFO fosters engagement activities with European public administrations such as workshops and webinars, so as to create a community of practice.

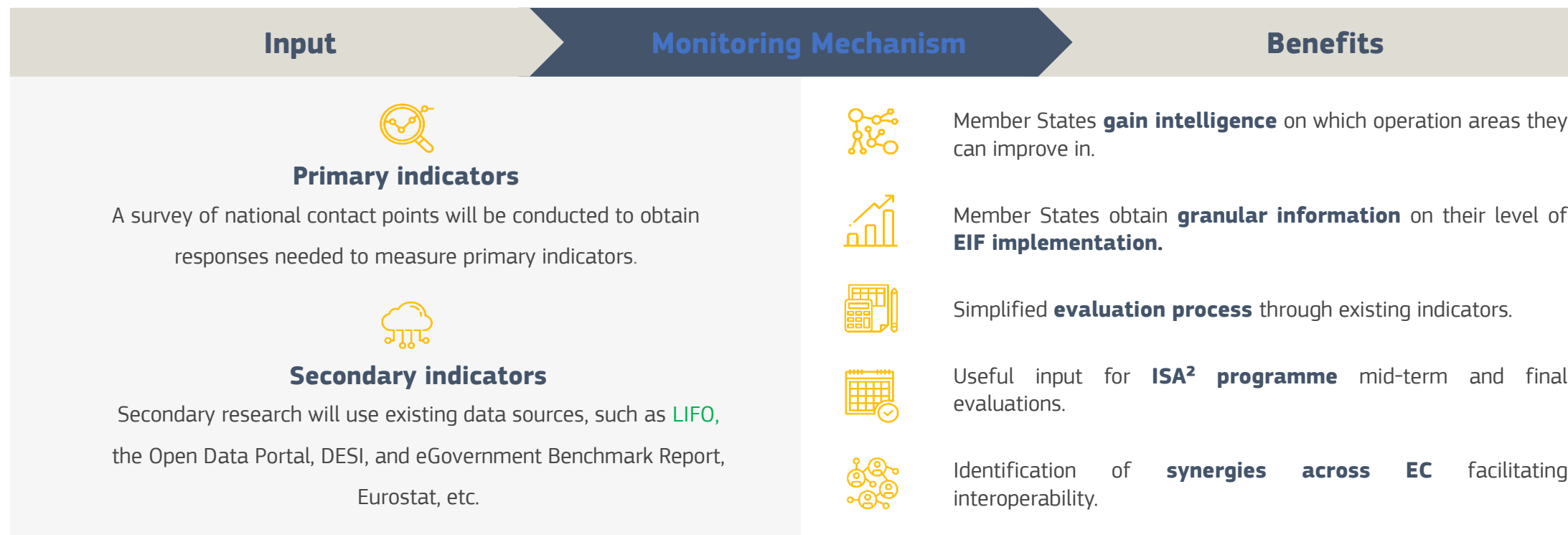
NIFO

NATIONAL
INTEROPERABILITY
FRAMEWORK
OBSERVATORY

*The main mission of NIFO is to monitor the implementation of the revised version of the **European Interoperability Framework** (EIF) and to help foster the capacity building policy and **modernisation of public administrations**. By doing so, it aims at becoming an online community of practice and the prime source of information regarding digital public administration and interoperability matters within Europe.*

Introduction to the EIF Monitoring Mechanism: Linking LIFO KPIs

The EIF Monitoring Mechanism's (EIF MM) goal is to provide each Member State with its level of implementation of the EIF based on a recommendation-by-recommendation measurement as defined by the Article 1.2 of the ISA² Decision stating that "the Commission, through the ISA² programme, shall monitor the implementation of the EIF".



The EIF Toolbox: Linked to EULF Blueprint



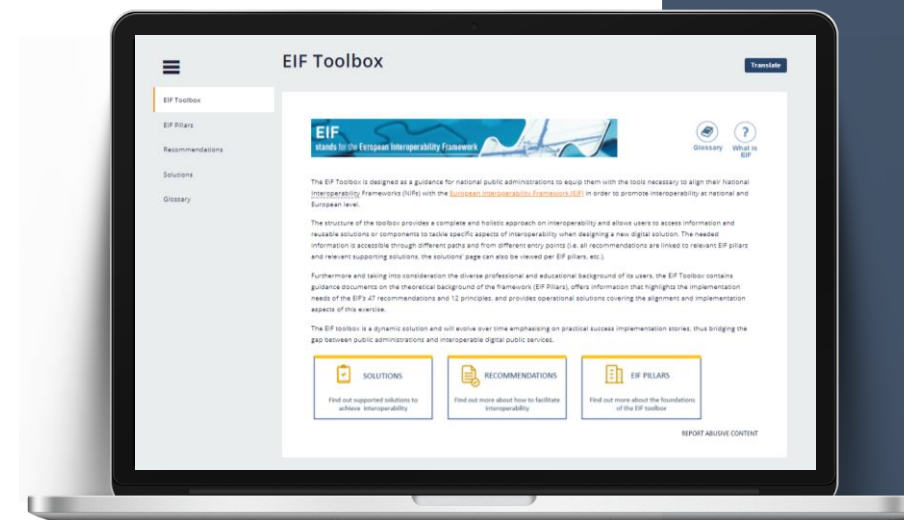
Objectives

The European Interoperability Framework (EIF) Toolbox is an **online tool designed to provide guidance to national public administrations and equip them with the tools necessary to implement the EIF**. The main purpose of the EIF Toolbox is to provide a comprehensive approach on interoperability and allow its users to access information and reusable solutions when tackling specific aspects of interoperability or when designing a new digital service.



Scope

The EIF Toolbox provides a mapping of the **main components of the EIF** such as recommendations on how to facilitate interoperability and the key pillars of the framework. It also encompasses solutions that can help European countries foster interoperability.



Types of solutions: Assessment tools | **Common frameworks** | Common services |
Generic tools | Legal interoperability tools | Semantic assets

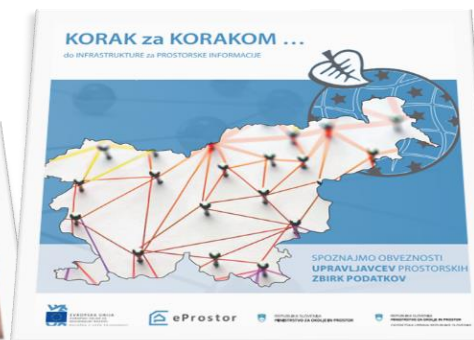


European Union
Location Framework Blueprint

Recommendations 11 of the EULF Blueprint encourages the reuse of relevant technical solutions where possible. **Recommendation 8** of the EULF Blueprint recommends the use of an open and *collaborative* methodology for the design and improvement of location enabled public services. It recommends designing for reuse by future collaborators. **Recommendation 19** of the EULF Blueprint on effective partnering includes partnership agreements for joint developments.



Using the EULF Blueprint in Slovenia



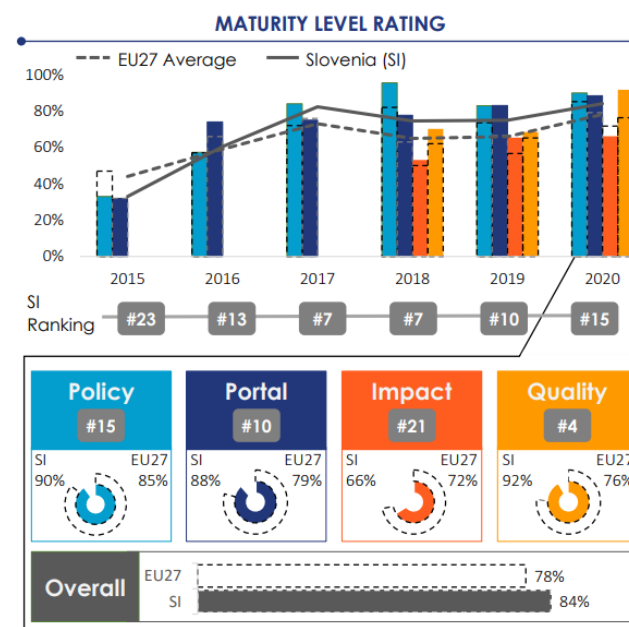
The value of the LIFO as a monitoring tool



Governance,
Partnership and
Capabilities

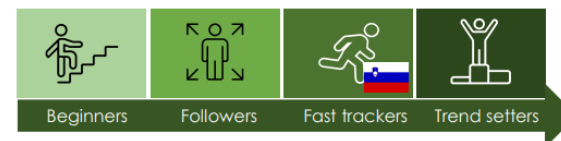
Return on Investment

State-of-Play on open data - 2020



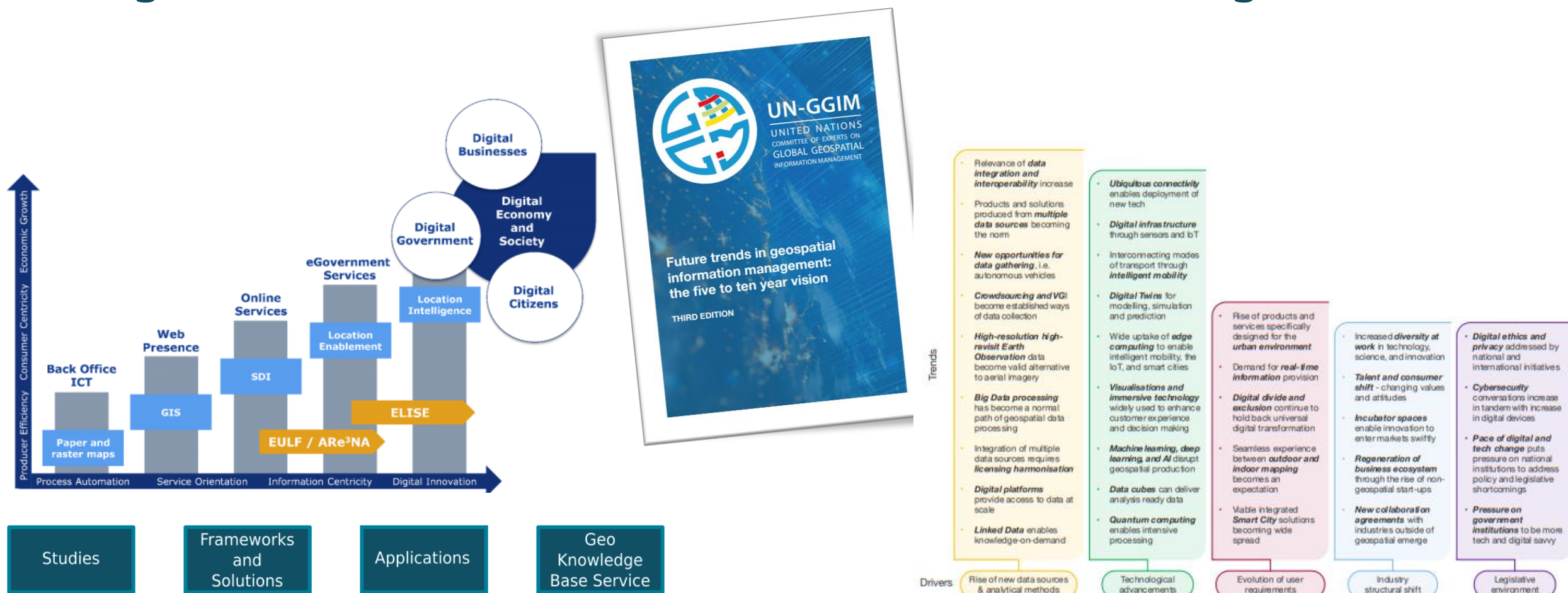
Slovenia

OVERALL MATURITY LEVEL SEGMENTATION

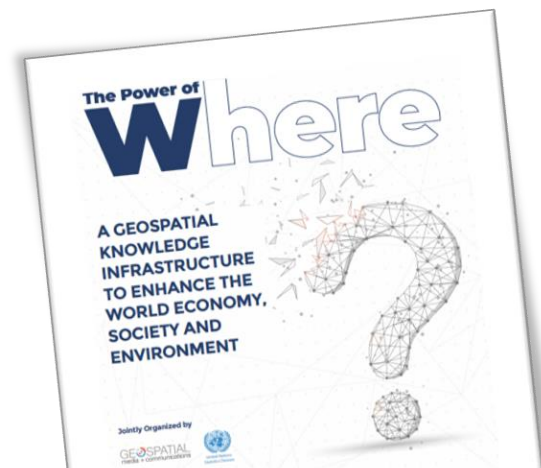
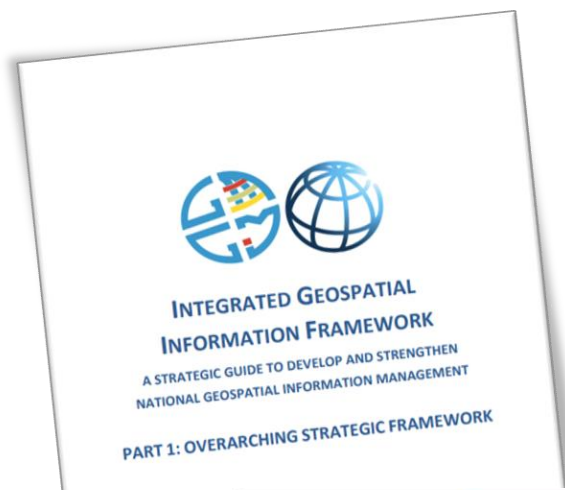


— Slovenia — — — Europe

Fitting ELISE activities within the broader national and global context



Fitting EULF Blueprint within the broader national and global context



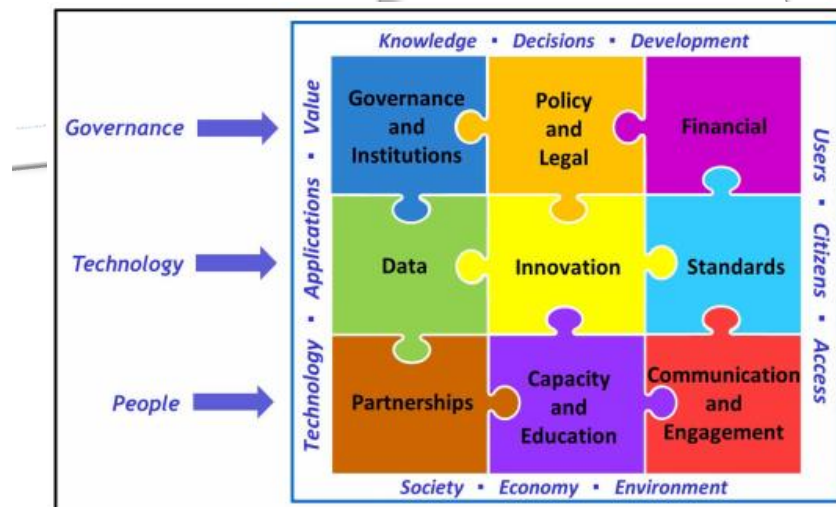
Policy and strategy alignment
a consistent EU and Member State policy and legislative approach where location information plays a significant role

Standardisation and reuse
adoption of recognised geospatial and location-based standards and technologies, enabling interoperability and reuse

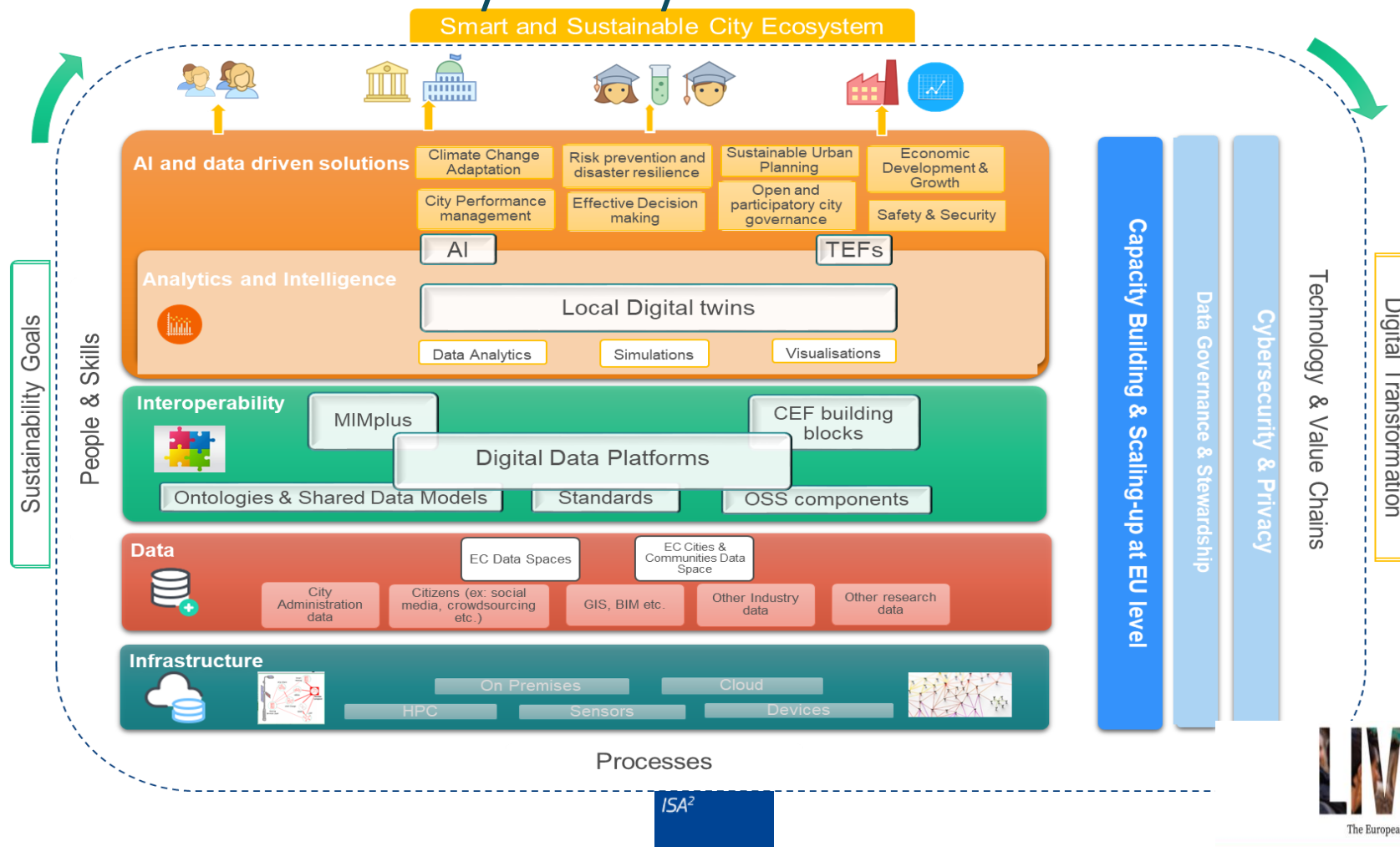
Digital government integration
making location a key enabler in G2B, G2C and G2G digital government processes and systems

Return on investment
ensuring funding of activities involving location information is value for money, and taking action to stimulate innovation and growth

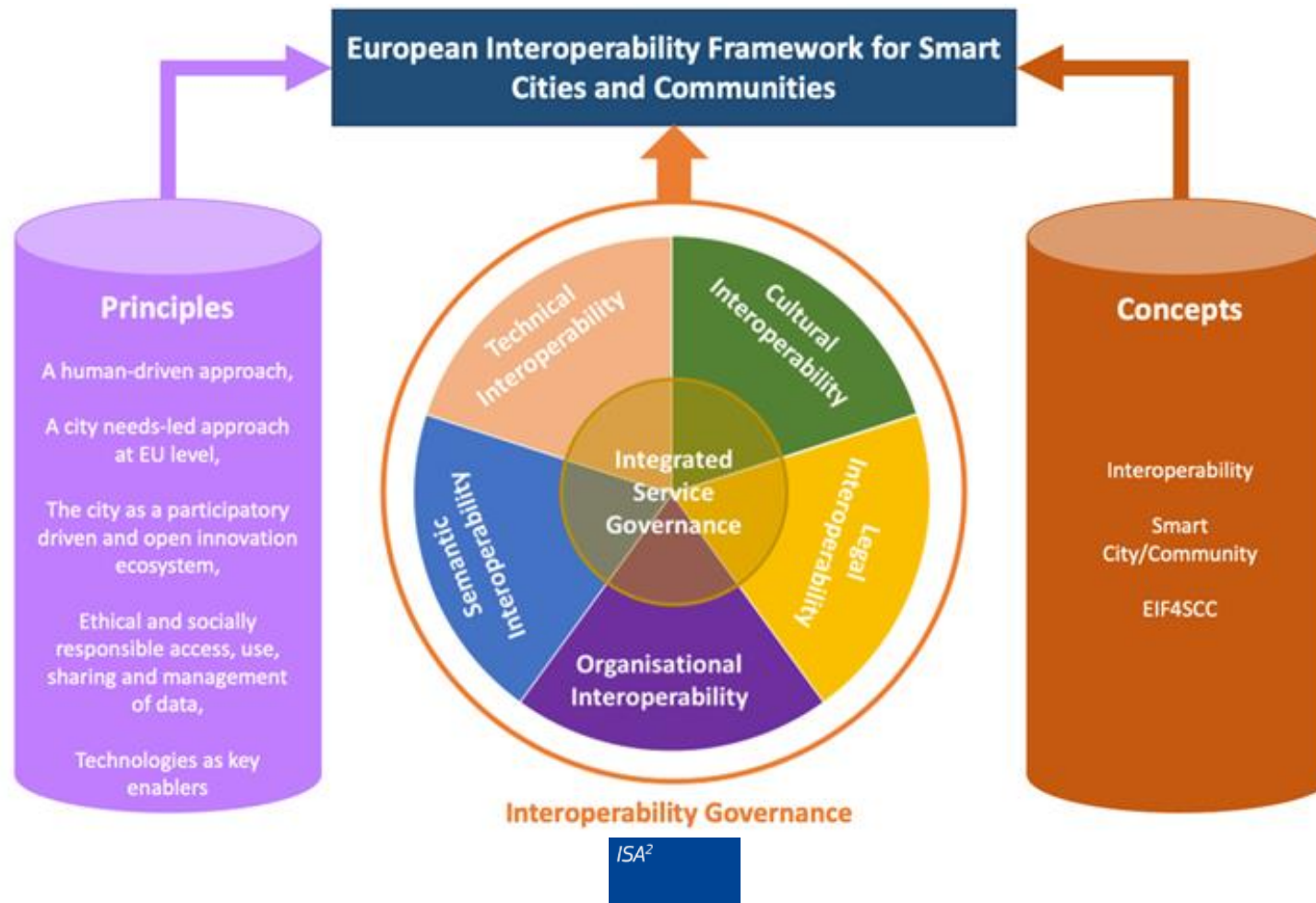
Governance, partnerships and capabilities
effective decision making, collaboration, knowledge and skills related to the provision and use of location information in the context of digital government



Smart and Sustainable City Ecosystem



European Interoperability Framework for Smart Cities and Communities





From your experience with interoperability frameworks, what do they need to provide to be of greatest value?

3

*Reusable tools for interoperable
location data and reporting*

Our speakers and panellists



Joeri Robbrecht
Policy Analyst
European Commission, ENV



Ine De Visser
Standards Advisor
Geonovum, Netherlands



Gobe Hobona
Director of Product Management,
Standards
Open Geospatial Consortium



Development of interoperable & reusable tools

- ELISE has funded the development of several interoperability tools
- The two ELISE flagship solutions are:
 - **Re³gistry** & **INSPIRE Reference Validator**
- Licensed under **EUPL 1.2**
- Developed in a **context neutral** way to be deployed in any sector.
- From open source software to **open source projects**
- Moved to GitHub to improving **collaboration** with respective **communities**
- Recognised in the **EIF toolbox**
- **Reusers** in public administrations but also in the private sector
- Everything documented in **Joinup**
- Continued support under the **Digital Europe Programme**

Re³gistry



ISA²



INSPIRE reference validator

- Open source tool to **automatically check the correctness of data files based on predefined rules** based on the ETF open-source testing framework
- In the INSPIRE context, it allows data providers, solution providers to check whether metadata, data sets and network services meet the **INSPIRE requirements**.

INSPIRE Reference Validator

Start test Status Test reports About Help

Executable Test Suites Start

To start a Test Run, select one or multiple Test Suites with a click on the flip switches on the right-hand side ("use") and press the "Start" button that appears once at least one Test Suite is selected. Please note that the Test Suites are only applicable to certain Test Object types and therefore not all Test Suites are combinable for a Test Run. Additional information about a Test Suite will be shown with a click on the plus button.

Filter items...

View Services - WMS and WMTS (TG version 3.11)

Conformance Class: View Service - WMS Use

Conformance Class: View Service - WMTS Use

Description:
This test suite examines a WMTS View Service against the implementation of INSPIRE View Services.
This is a draft version. It has limitations and is not for production use.
Known limitations are documented in the description.
Source: [Conformance Class View Service WMTS](#)
Tags:

- View Services - WMS and WMTS (TG version 3.11)

Applicable to Test Object Types:

- OGC Web Map Tile Service 1.0

General: ETF WebApp 2.0.0-beta1

ETF Web API
This is an interactive documentation and a web user interface for interacting with the Web API version 2 of the test framework ETF. This semi-automatic generated documentation covers basic functionality, but consulting the [API Documentation](#) may be required to get a deeper understanding of the ETF model and further procedures. Issues can be reported in [GitHub](#).
Content negotiation is not supported and therefore JSON is always returned for endpoints without file extension. For most operations, a link to the XML response schema is provided in the implementation nodes. JSON responses are derived from XML the response schema, based on this [stylesheet](#).
[Back to user interface](#)
Created by ETF Team
See more at <http://www.etf-validator.net>
[Contact the developer](#)
[European Public License 1.2](#)

1. Service Status : Monitor service workload and health Show/Hide List Operations Expand Operations

2. Service Capabilities : Retrieve test framework metadata Show/Hide List Operations Expand Operations

3. Manage Test Objects : Define Test Objects and upload test data Show/Hide List Operations Expand Operations

GET	/v2/TestObjects	Get multiple Test Objects as JSON
POST	/v2/TestObjects	Upload a file for the Test Object using a MULTIPART upload request
GET	/v2/TestObjects.json	Get multiple Test Objects as JSON
GET	/v2/TestObjects.xml	Get multiple Test Objects as XML
DELETE	/v2/TestObjects/{id}	Delete Test Object
GET	/v2/TestObjects/{id}	Get Test Object as JSON
HEAD	/v2/TestObjects/{id}	Check if Test Object exists

Some reusers of the solution

148 Open 356 Closed

Author Label Projects Milestones Assignee Sort

- ACMF dataset receives schema validation error in Conformance class: INSPIRE GML application schemas, General requirements under analysis #539 opened 5 days ago by Kate-Lydegaard
- WFS Direct Access Test not available on staging under analysis #538 opened 7 days ago by Kate-Lydegaard
- Certification path errors with WMS services with the URL .bayern.de under development #535 opened 13 days ago by gdi-by
- Application schema conformance class tests (here: Planned Land Use) not accepting feature GML under analysis #534 opened 21 days ago by kvlahrogut
- Validator reports response because issue for WFS service under analysis

Reuser	Instance (if public)
European Commission	[Production] https://inspire.ec.europa.eu/validator/ [Staging] http://staging-inspire-validator.eu-west-1.elasticbeanstalk.com/etf-web...
The Netherlands - Geonovum	https://validate.geostandaarden.nl/
Germany - Federal state Baden-Württemberg (BW)	
Denmark - Danish Map Supply	
Romania - National Meteorological Administration of Romania (ANM)	
Germany, BKG (on behalf of GDI-DE)	
GeoNetwork	
Esri	

INSPIRE Validator - Test reports

Home Test selection Test reports Get support More on the INSPIRE Reference Validator

Test run on 07:16 - 19.04.2021 with test suite Annex III - Environmental monitoring Facilities (EF)

Status	Passed, manual checks required	Total Count	Skipped	Failed	Warnings	Manual	Show	Level of detail
Started	19/04/2021 05:17:53 GMT	10	0	0	0	2	All	All details
Duration	25 s	Test suites	15	0	0	0	Only failed	Less information
		Test cases	62	0	0	0	Only manual	Simplified
		Assertions						

- Conformance class: INSPIRE GML encoding 1
- Conformance class: Reference systems, General requirements 2
- Conformance class: Reference systems, Environmental Monitoring Facilities 1
- Conformance class: Information accessibility, General requirements 1

Via the schema plugin form configuration it is an option to configure a thesaurus to be used for a specific Anchor element. The thesaurus concepts are used to populate an auto complete text field for that element.

INSPIRE validation

INSPIRE validation of metadata records is available at the [INSPIRE Validator](#). It is using ETF which is an open source testing framework for spatial data and services. GeoNetwork is able to remote validate any record using a service provided by an Instance of ETF. To configure remote validation, go to Admin console > Settings and set the URL of the [validator](#). The url of the main INSPIRE [validator](#) is <http://inspire.ec.europa.eu/validator/>.

Filter settings: INSPIRE Is Test suite: Production

Settings

System settings

INSPIRE Directive configuration

INSPIRE

INSPIRE remote validation URL

Use INSPIRE validator

Dutch validation approach

As standardisation organisation;



- We don't develop standards without validation tools
- Validation helps to improve implementations
 - In NL from approximately 2009, we developed our own validators.
 - We moved to ETF (ESDIN Test Framework) in 2012
 - and developed INSPIRE test rules for metadata, ATOM, WFS and WMS.

Although we have our own INSPIRE test rules;



We promoted and supported the development **of a common** EU validator,

Why?

We have the same requirements in all EU countries!

- From users perspective
 - To improve interoperability and
 - Common understanding of the Technical specifications.
 - Same validation results across the EU
- From management perspective
 - Saves time and resources
 - Share knowledge
 - As a member state it is not possible to do everything yourself



Build only once



Re-Use

- Don't just use it for INSPIRE metadata, data and services
- Can also be used for other domains
- Add tests to comply with national data requirements
 - Information models (IMGEO)
 - National profile on metadata
 - National profile on WMS, WFS,...

-> Share and re-use!

- <https://validatie.geostandaarden.nl>



Online validator Geonovum

Start test Test reports Status Help

Test projects

Filter items...

GML	
GML-2D Geometrie	+
GML3.2 SF2	+
IMGeo GML	
IMGeo 2.1.1 GML Application Schema	+
INSPIRE	
(VERVALLEN) INSPIRE Download Service Atom TG 3_1	+
(VERVALLEN) INSPIRE View Service WMS 1_3_0 TG 3_11	+
INSPIRE Download Service WFS 2_0_0 ISO19142 TG 3_1	+
Metadata	
Nederlands profiel op ISO 19115 v21 2020	+
Nederlands profiel op ISO 19119 v21 2020	+
Nederlandse profielen services	
Nederlandse WFS profiel WFS 2_0_0 ISO19142	+

etf WebApp 1.0.13 © 2013-2016 interactive instruments

INSPIRE Monitoring and Reporting

Directive 2007/02/EC: create a European Union spatial data infrastructure to enable the sharing of environmental spatial information among public sector organisations, facilitate public access to spatial information across Europe and assist in policy-making across boundaries.



In May 2015 the Commission launched a package on Better Regulation DG Environment had a REFIT evaluation commitment:

Environmental Liability Directive, INSPIRE evaluations in 2015
Fitness checks on Nature and EMAS and Ecolabel in 2016 plus Evaluations on Noise, VOCs, EPRT
Continued in the future to cover the DG ENV acquis

Fitness Check on Environmental Monitoring and Reporting: New, horizontal review of reporting

Focus on reducing regulatory burdens

- Fitness Check on Monitoring and Reporting (including the INSPIRE Directive)
- Monitoring and reporting as important use case for INSPIRE
- Directive 2007/2/EC (INSPIRE) as common process to streamline the eReporting process



A new INSPIRE Monitoring and Reporting Decision



- **Annual monitoring based on indicators**
 - more than 40 indicators, some with limited relevance for implementation
 - manual or semi-automated gathering of monitoring data
 - limited validation of compliance (only metadata)
- **National reports every 3 years**
 - mainly text
 - some quantitative information but inconsistent with monitoring indicators
 - a lot of static information repeated in every reporting cycle
- **Several processes**
 - MS provide data to EU geoportal and EEA dashboard
 - National reports are analysed by externals (JRC) to extract relevant information and make comparative assessment
 - time consuming and inefficient

2019

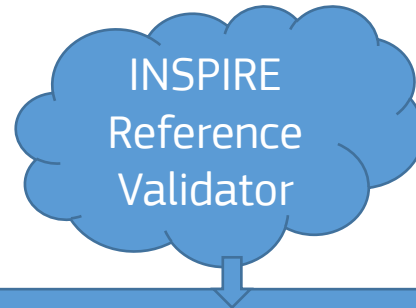
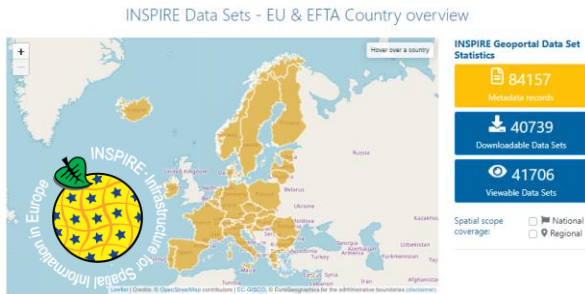
Reporting Decision review

Fully satisfy monitoring obligations through **harvesting metadata** published in the national discovery services

Introduced the **automated calculation of 19** existing and new **indicators through** the direct use of the INSPIRE Geoportal and **the INSPIRE Reference Validator**.

Replaced the 3 year implementation report by a **yearly updated country fiche** upon changes in the previously reported information

Limiting administrative burden through a fully automated monitoring system



- ETS for compliance of
- Metadata
 - Network Services
 - Data interoperability



European Commission | INSPIRE | Validator | Test selection

INSPIRE Validator - Test selection

Home Test selection Test reports Get support More on the INSPIRE Reference Validator

Configure your test

Select the INSPIRE resource you would like to test

- ☒ Metadata
- ☐ View Service
- ☐ Download Service
- ☐ Discovery Service
- ☐ Data set

Select the Technical Guidelines version

- ☐ Version 1.3 - DEPRECATED
- ☒ Version 2.0

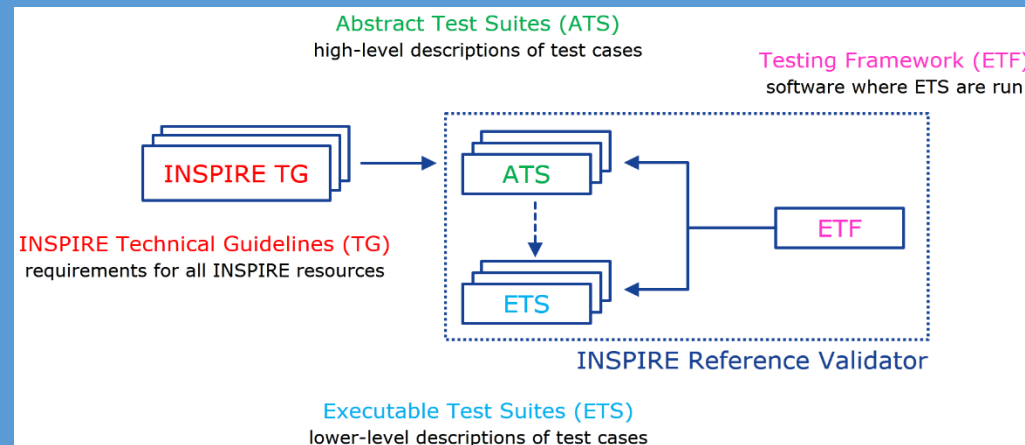
Select the type of metadata record(s) to be tested

- ☒ Data info and data set series
- ☐ Network Service
- ☐ Spatial Data Service

Advanced options

Antisnap: Select the number 28 or 33 by moving the slider. Your selected answer is: 0

Verify



European Commission | INSPIRE | Validator | Test reports

INSPIRE Reference Validator - Test reports

Home Test selection Test reports Get support More on the INSPIRE Reference Validator

Search options

Combine search terms with: ☒ AND ☐ OR

Relevant type:

Refine results

Clear all

Search results (15)

Showing results 1 to 15

Test run on	Test suite	Common conformance classes	Test Run
10-07-15.04.2021	with test suite	Common conformance classes test MM	MM
10-04-15.04.2021	with test suite	Common conformance classes test MM	MM
10-07-15.04.2021	with test suite	Common conformance classes test MM	MM
10-07-15.04.2021	with test suite	Common conformance classes test MM	MM
10-09-15.04.2021	with test suite	Common conformance classes test MM	MM
10-07-15.04.2021	with test suite	Common conformance classes test MM	MM
10-07-15.04.2021	with test suite	Common conformance classes test MM	MM
10-07-15.04.2021	with test suite	Common conformance classes test MM	MM
10-07-15.04.2021	with test suite	Common conformance classes test MM	MM
10-07-15.04.2021	with test suite	Common conformance classes test MM	MM
10-07-15.04.2021	with test suite	Common conformance classes test MM	MM
10-07-15.04.2021	with test suite	Common conformance classes test MM	MM
10-07-15.04.2021	with test suite	Common conformance classes test MM	MM
10-07-15.04.2021	with test suite	Common conformance classes test MM	MM
10-07-15.04.2021	with test suite	Common conformance classes test MM	MM

Previous Next



Added-value of the reference validator

- **Ground-truth:** Monitoring is now based on harvested real-time data.
- **Comparability & transparency:** Compliance is automatically validated on common business rules, business rules are based on legal provisions and documented.
- **Reuse:** The reference validator component supports standalone deployment allowing reuse at national and regional level and for other policy domains.
- **Interoperability:**
 - The reference validator supports validation rules on common service interfaces (ETS for OGC API – Features under development) and common data models.
 - Open source software available on GitHub <https://github.com/INSPIRE-MIF/helpdesk-validator>
 - Could be reused a corporate component for streamlining of reporting and compliance assessment e.g. by promoting the use of data services and automated validation.
 - Fully reusable for compliance/interoperability testing of future High Value Datasets and data services under Common European data spaces.
- **Time-saving and resources:** A lengthy, resource-intensive process (both at MS and EC level was substantially rationalised.

If the INSPIRE Reference Validator was not available, what would have been the impact on interoperability?

4

Reuse of location data interoperability principles and methodologies in different sectors



Our speakers and panellists



Gabriele Ciasullo

“Database and Open Data” Service
Responsible
Agency for Digital Italy - AgID, Italy



Gema Hernández Moral

Project manager and researcher
CARTIF, Spain



Prof. Dr. Volker Coors

Scientific Director Institute of
Applied Research
HFT Stuttgart, Germany

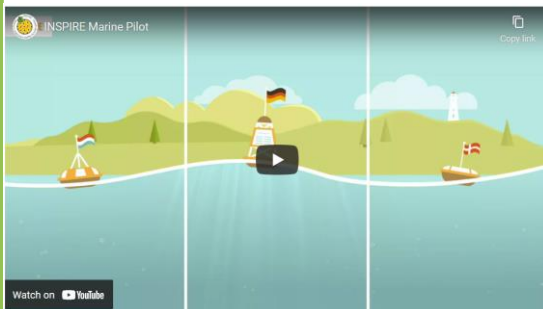


APPLICATIONS

ELISE has developed cross-border pilots and applications to test location data interoperability principles in the following sectors:

MARINE

Supporting Member States in the management of Marine Strategy Framework Directive (MSFD) related spatial information



<https://youtu.be/ROJqljr8aDU>

TRANSPORT

Developing and sharing best practices for the implementation of the Intelligent Transport Systems (ITS) Directive



<https://www.youtube.com/watch?v=jnny5ATwTYE>

ENERGY EFFICIENCY

Supporting public administrations, businesses and citizens engaged in energy policies' cycle



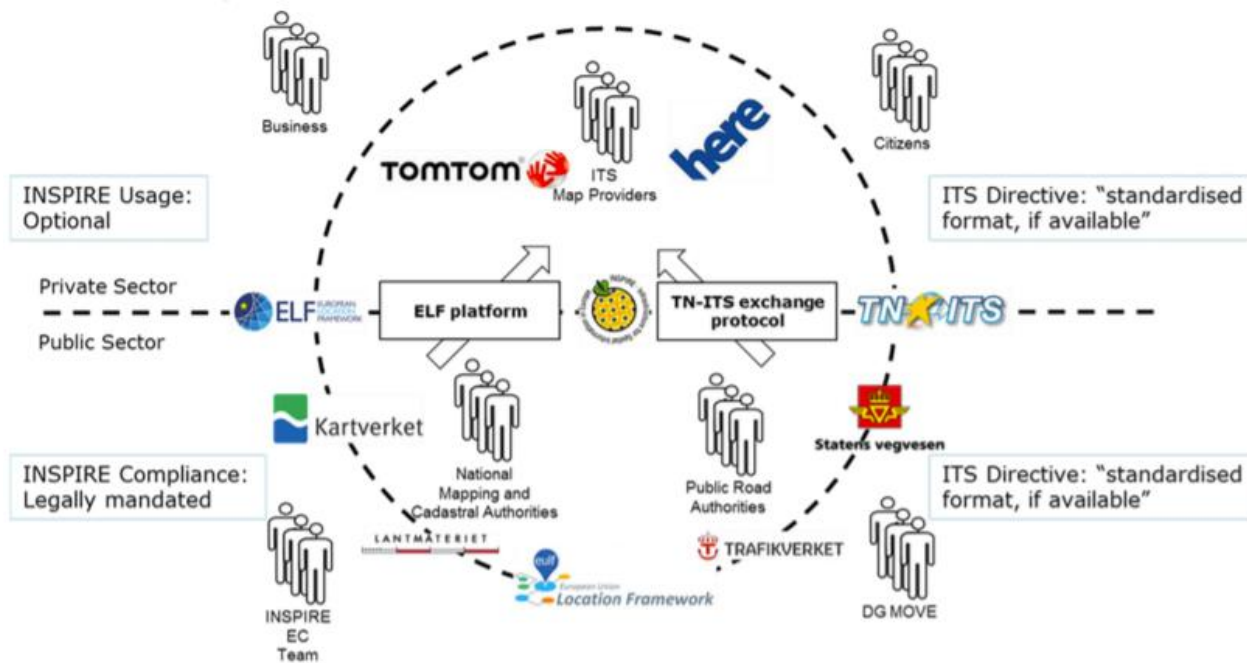
<https://www.youtube.com/watch?v=Ftgy8uU9y2A>

CULTURAL HERITAGE

Exploiting a pan-European gazetteer service

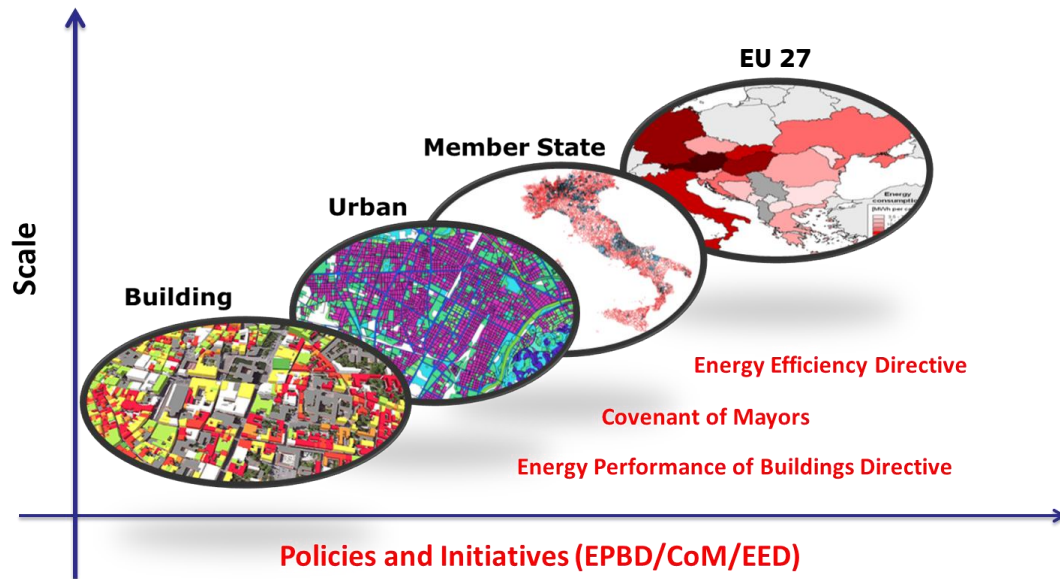


Location data interoperability principles and methodologies applied in the Transport sector



- Road safety data exchange (e.g. speed limits) between national road authorities (in SE and NO) and private sector map providers (TomTom and HERE)
- Road authorities upgraded from quarterly to daily updates to map providers
- Significantly reduced error rates in data from 25% to 7%
- Pilot now being rolled out across Europe under CEF – Transport (14 countries)

Location data interoperability principles and methodologies applied in the Energy Efficiency sector (1/3)



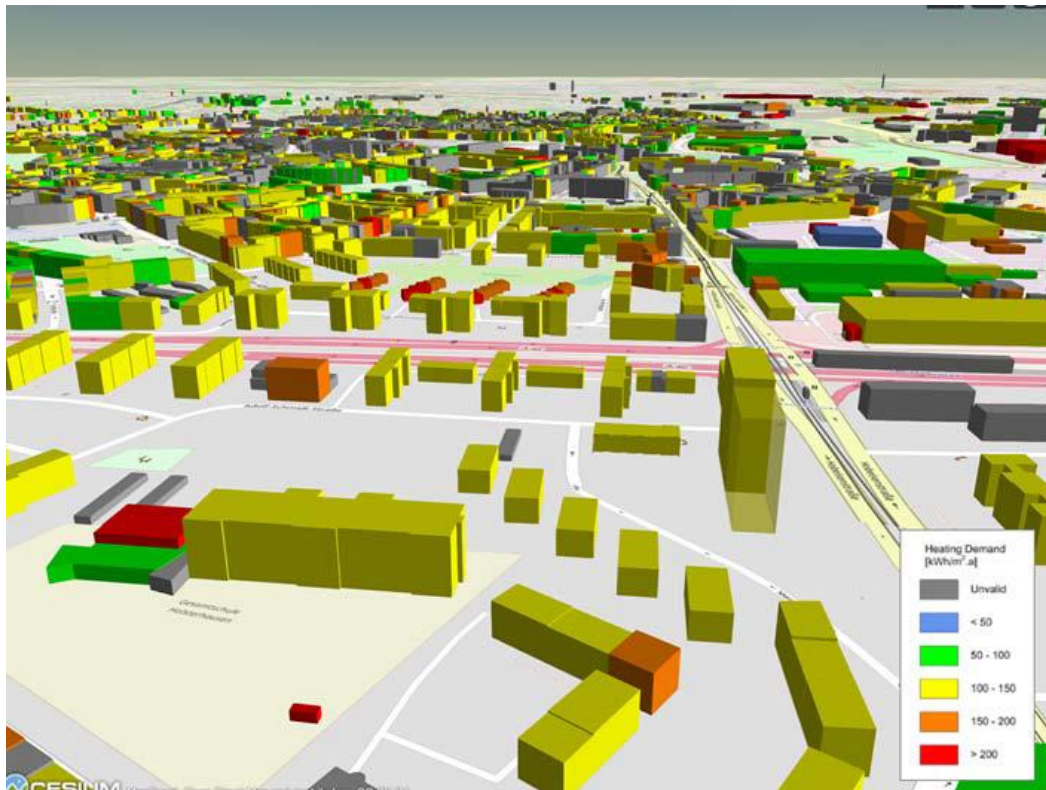
- Leveraging location data at building level as an enabling factor to scale-up the methodologies to assess energy consumption and performance from local to district/city level and beyond.

Location data interoperability principles and methodologies applied in the Energy Efficiency sector (2/3)



- Buildings are responsible for the 40% of final energy consumption
- Over 75% of building stock is older than 25 years
- Averaged final energy consumption data: 185 kWh/m² for residential buildings and 280 kWh/m² for non-residential buildings
- Extensive renovation of buildings could cut 36% of their energy consumption by 2030

Location data interoperability principles and methodologies applied in the Energy Efficiency sector – use cases (3/3)



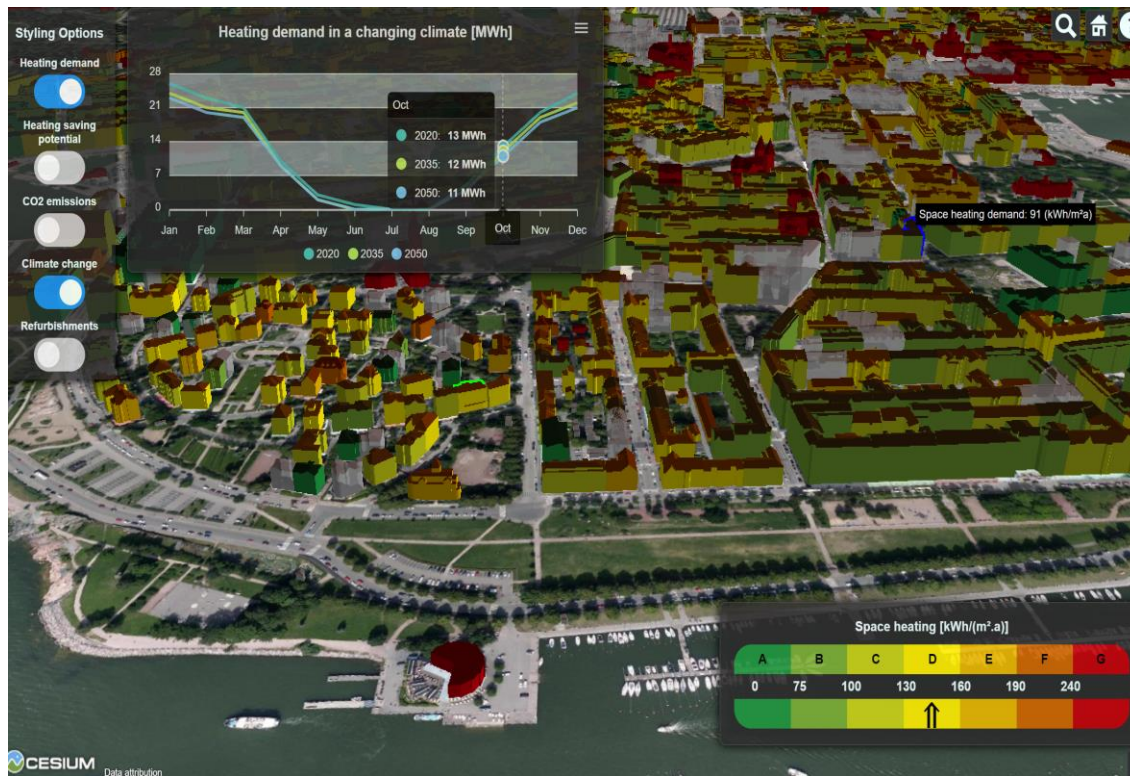
- Generalisation at EU level of a digital platform for public lighting implemented in Italy in 8.000+ Municipalities
- Energy Performance Certificates (EPC) of Buildings harmonisation
- Harmonisation of SECAP (Sustainable Energy and Climate Action Plans), to support smart communities made by 100+ municipalities of the same Province, CoM signatories
- Harmonisation of energy simulations to assess the energy heat demand of buildings
- Assessment of energy performance of buildings using energy consumption data from smart meters.
- Role of geospatial information in in a regional energy strategy

A digital platform for public lighting (PELL-IP)



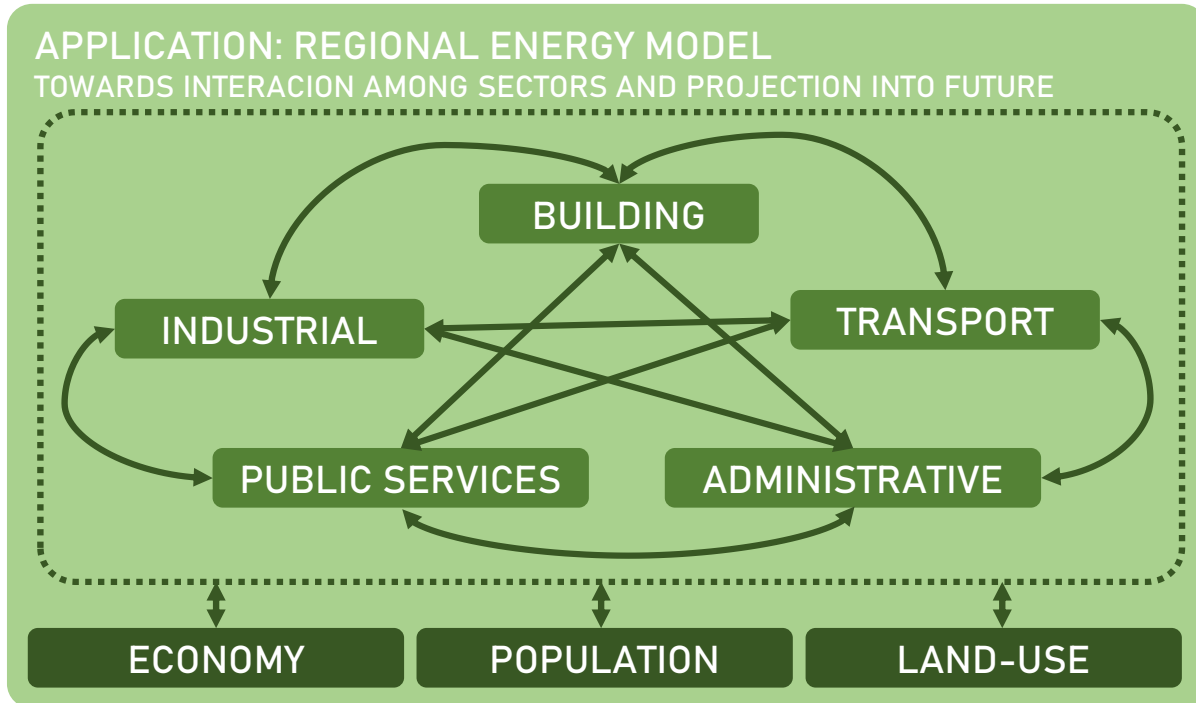
- Interoperability solution for Digital Transformation
- A common structured data model compliant to the Once-only principle
- Efficiency in the Public Lighting sector, both from an energy saving and an operational management point-of-view.
- Next steps: school buildings and hospitals
- A reusable solution at EU level

Assessing energy heat demand of buildings



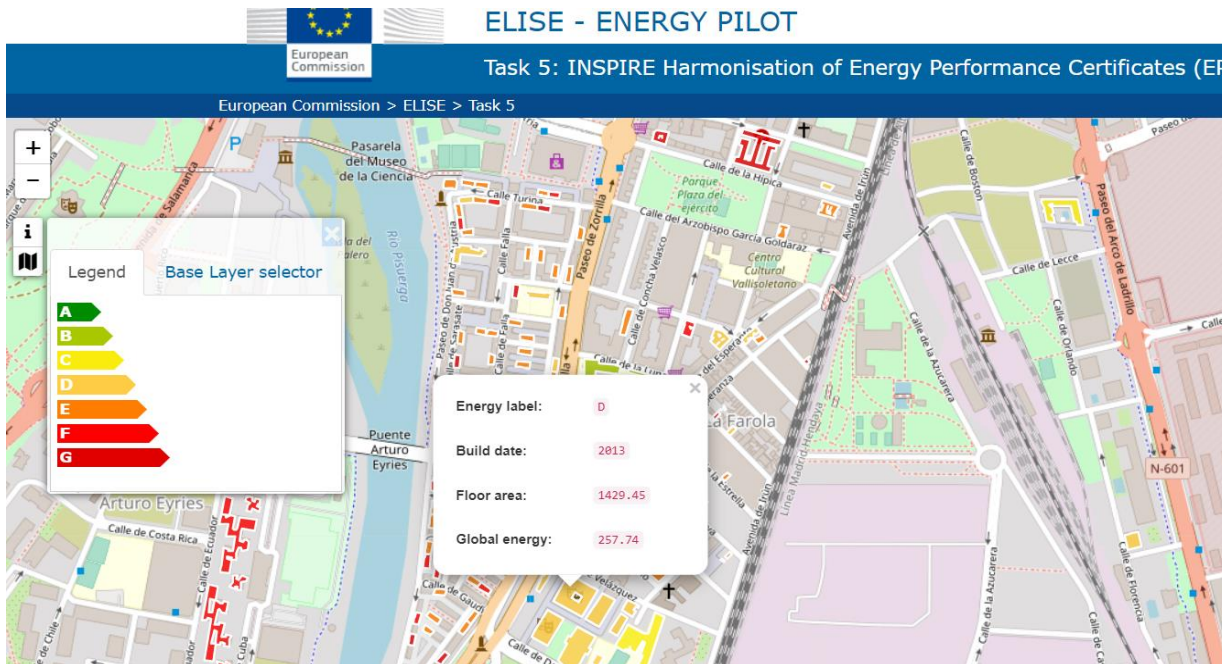
- SimStadt open-source simulation software using CityGML input data with different Level of Details (LoD)
- Simulations performed in 4 test areas at district/city level in 3 Member States
- Compared accuracy of the results vs. accuracy of input data
- Harmonised simulations input and output data to improve their interoperability
- Focused on the re-usability of the methodology in other cities/regions

Geospatial information for a regional energy strategy



- Provided an overview of:
 - the territorial competences (national vs regional) in the field of energy in the EU Member States
 - the public data sources potentially relevant to a regional energy strategy
- Analysed a real case in Spain, represented by the Regional Energy Efficiency Strategy of Castilla y León (EEE-CyL-2020)
- Explored the potential of harmonised and interoperable geospatial data to support regional energy policy cycle in the EU

Harmonisation of Energy Performance Certificates (EPC) of Buildings



- Developed a data model to overcome the lack of comparability of EPCs across regions / countries
- Harmonised real EPC datasets in 2 different local areas of 2 Member States
- Prototyped a web application to make EPC harmonised data accessible to non-GIS experts
- Entire methodology easily re-usable in other regions / countries



“RENOVATE – Energy efficiency of buildings” is a flagship area for investments and reforms of the Recovery and Resilience Facility. To what extent can the applications developed by ELISE in the energy efficiency sector support the implementation of the Recovery and Resilience National Plans?

5

Following a user-driven approach

Our speakers and panellists



Morten Borrabaek

Chief Engineer
Mapping Authority, Norway



Eva Pauknerova

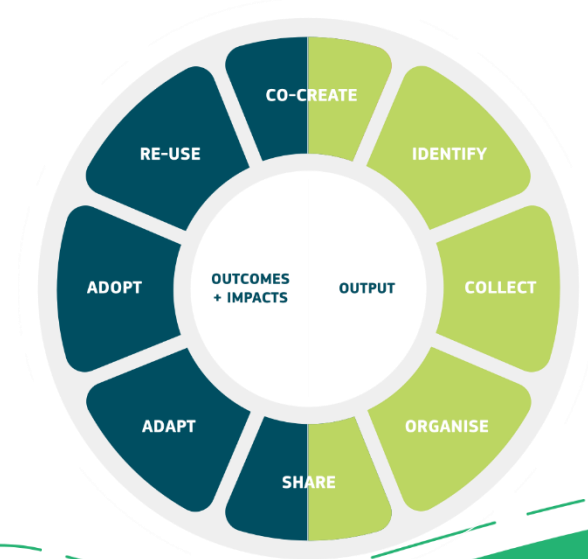
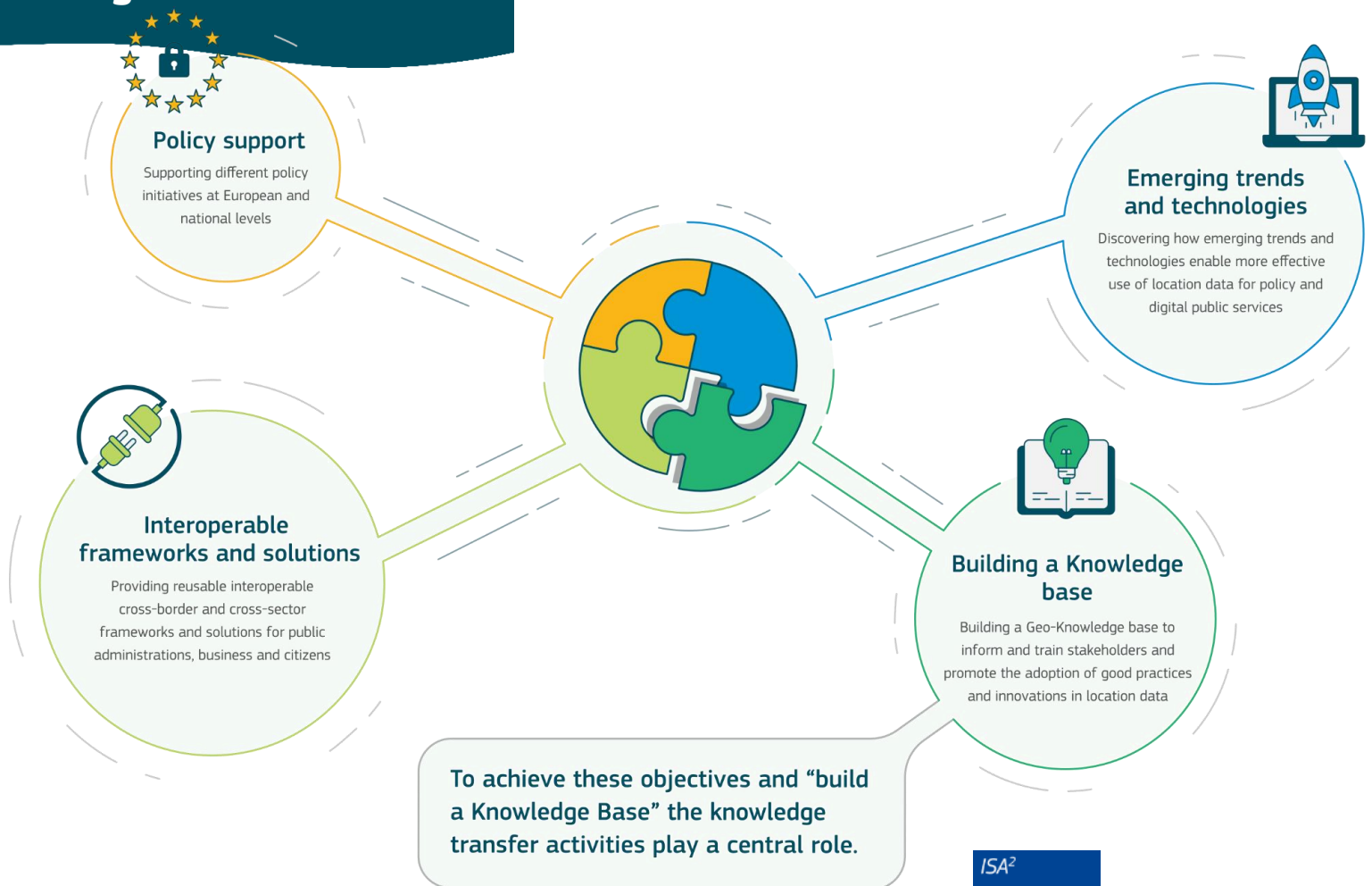
Senior Consultant
*Czech Office for Surveying,
Mapping and Cadastre, Czechia*



Ricardo Vitorino

Smart Cities R&I Manager
Ubiwhere, Portugal

The role of Knowledge Transfer

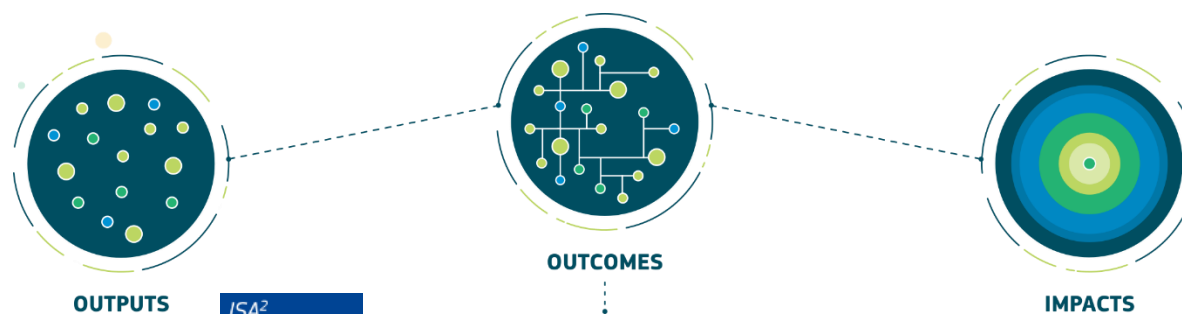


WHAT IS KNOWLEDGE TRANSFER?

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.

Aims of Knowledge Transfer

ELISE ACTION STAKEHOLDERS COMMUNITY



ELISE KNOWLEDGE TRANSFER GUIDING PRINCIPLES

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



A few facts...

ELISE Knowledge Transfer

>50 events,
>3000 participants

Knowledge exchange, inputs and experience by internal staff, pools of experts,...

...and stakeholders from G, B, C sector on local/regional/national/EU/international level

ELISE joinup collection (2019-21 statistics)

>100 members of collection

>18 000 visits

>3 500 downloads

>2 000 hours spent (7min visit) on the website

>140 countries

ISA² Working Group on Geospatial Solutions

8 WG meetings

Discussion of 5 yearly WP

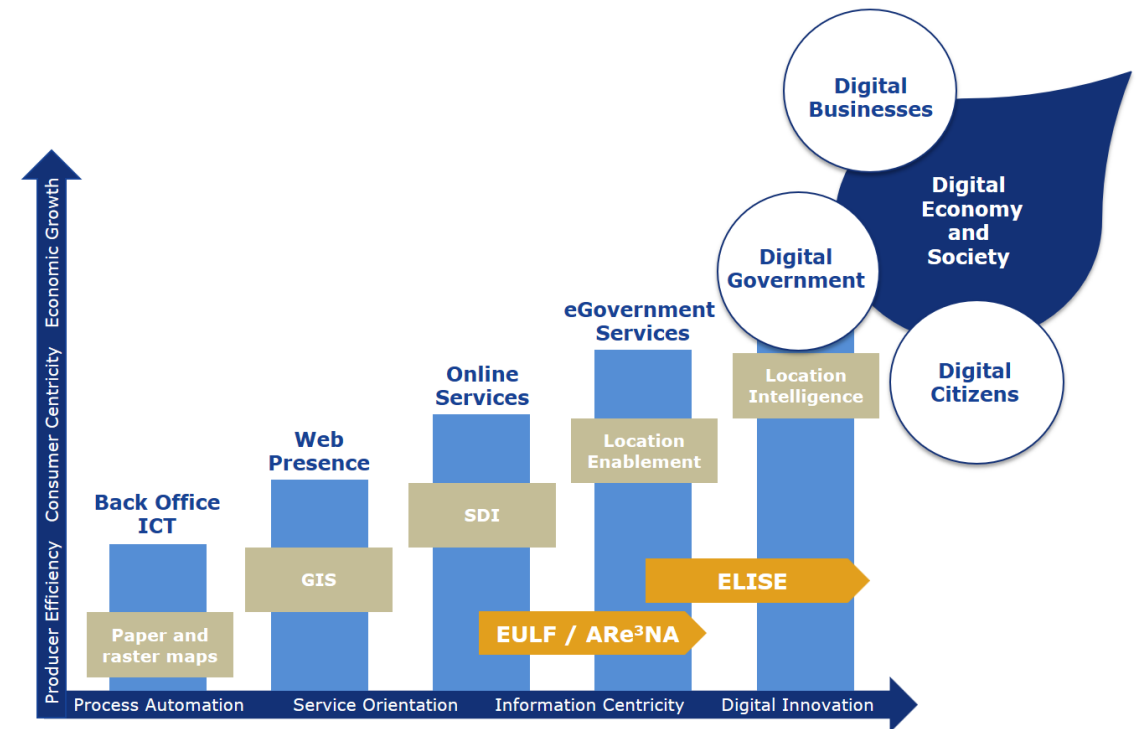
5 User panels

Bilateral meetings

Largest on LIFO with 23 MS

Modernising the SDI

- Moving from the traditional SDI to one that is part of a digital economy and society has the potential to transform decision-making, the way governments operate and the services to citizens.
- Geospatial literacy is the key to enable this to happen. The SDI community must understand the needs of public administrations and public administrations need to understand how to exploit the value of geospatial data in their applications.

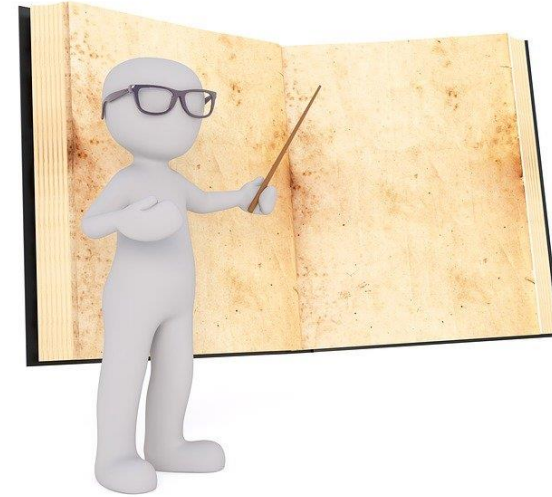


Knowledge transfer is key to make this happen

Body of knowledge

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

These are all essential to understand the needs, challenges and technologies related to geospatial information and services in the context of digital transformation.



ELISE has delivered many studies, webinars and articles, comprising a huge body of knowledge on the different aspects of location-enabled digital transformation, freely available and open for discussion and improvement.



95

Documents



54

Events



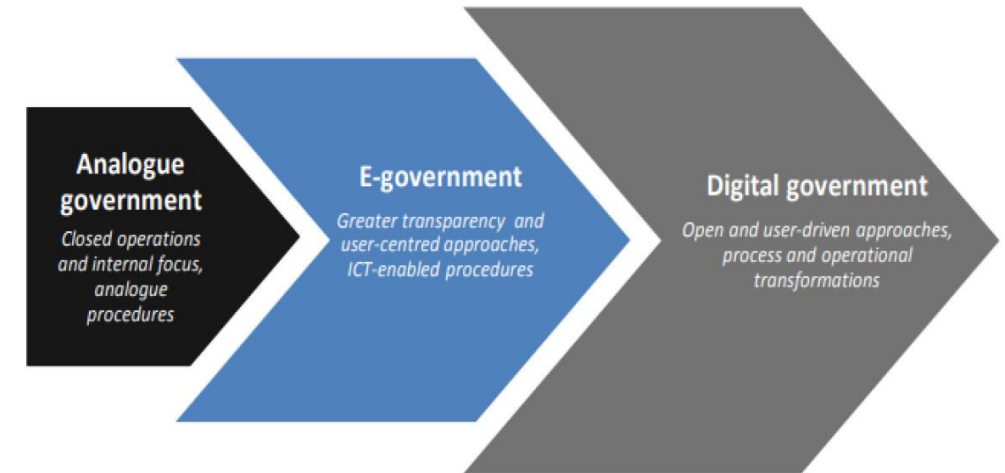
43

News

What is the role of ‘geospatial’ (data, information, solutions, technology, thinking...) in the digital transformation of government?

Examples of ELISE reports/studies

- The Role of Geospatial for Digital Government Transformation
- Governance models, ecosystems and benefits of API's for public sector organisations.
- The role of Spatial Data Infrastructures for Digital Government Transformation
- Geospatial Technology and Public Participation.



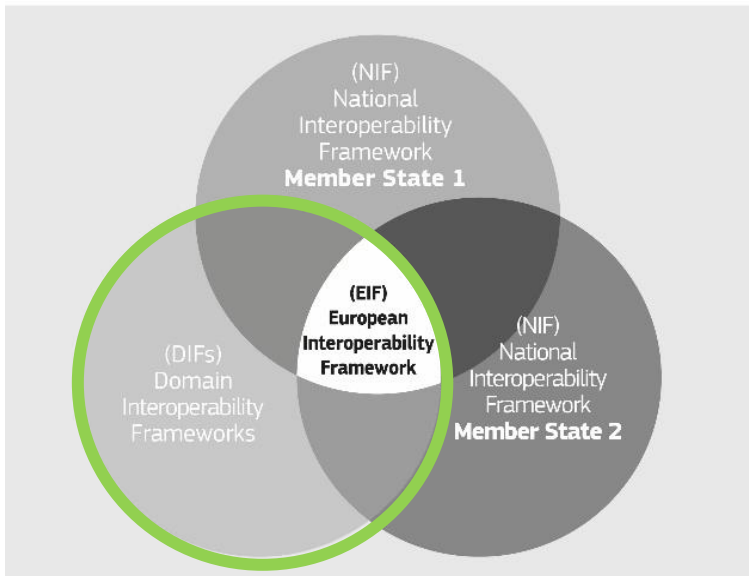
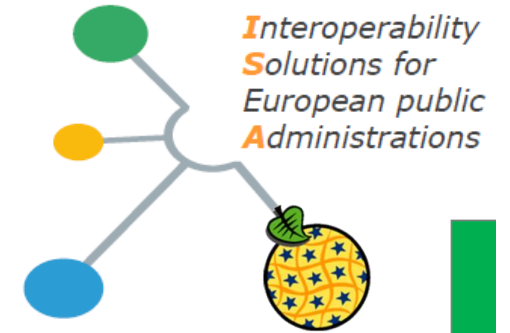
From a government-led to a user-driven administration, that is, one that is focused on user needs and citizens' expectations.

Source - ELISE Knowledge Transfer:
Location Interoperability for Digital Transformation

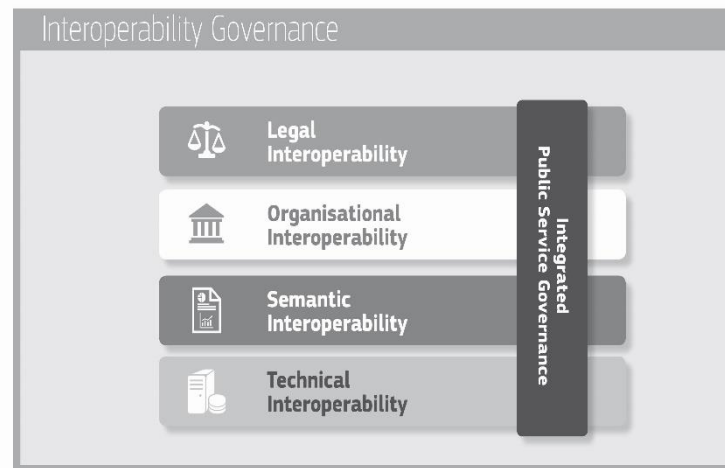
Location Interoperability Framework

bridging between interoperability of Spatial Data
Infrastructures (SDIs) and digital Governments in Member
States and at the EU+

- Relationship between EIF, NIFs and LIF



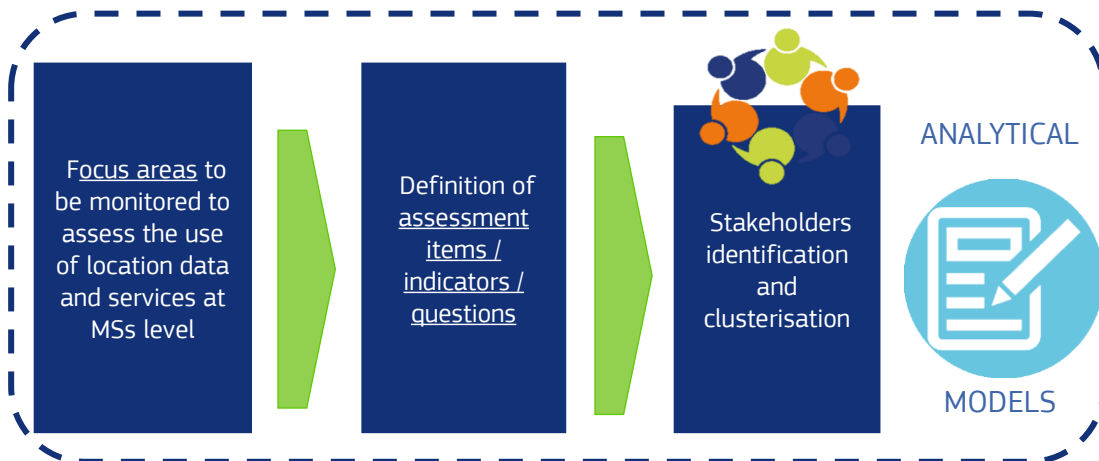
<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2017:134:FIN>



Jointly from EULF to analytical models, LIFO Pilot and LIFO 2020

EULF Blueprint provided an implementation framework of the EULF Vision through 18 recommendations in five focus areas in **2016**

2017




Location Interoperability Observatory

2018:

- To improve the observatory indicators taking into consideration the MS feedback.
- NIFO collaboration: continue the good relationship with NIFO to use the observatory as secondary data source to their observatory and State of Play reports.

2019:

- Engage the WG on feedback for the new observatory and request volunteer MS for piloting. **5 MSs**
- Be ready in Q1 2019 when NIFO launch their new observatory to also begin our observatory
- Align technically to the new NIFO collection methodology.
- Engage with WG and potential Expert Network in disseminating and completing the new observatory. (Q3/Q4)
- 1st Location Interoperability State of Play 2018 fact sheet from piloted countries. **10**

2020:

- Fully functional, value-added observatory as a useful secondary data source for NIFO.
- 2nd Location Interoperability State of Play 2019 fact sheet from all MS. **24**

Sharing Good Practices



LIFO 2019: LIFO index scores



Policy and Strategy Alignment



Digital Government Integration



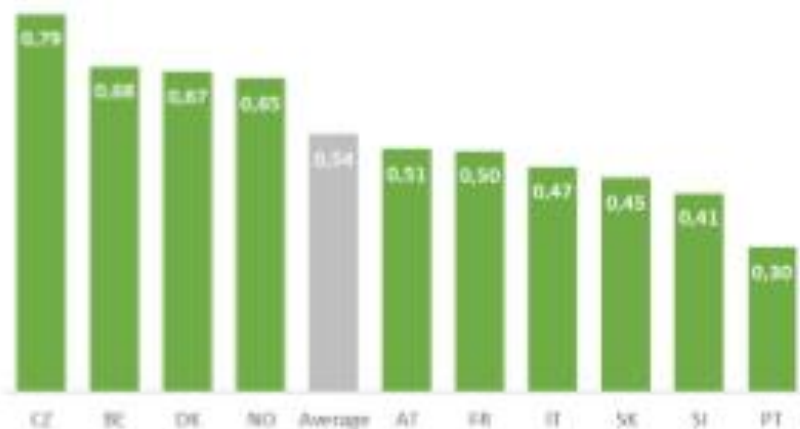
Standardisation and Reuse

Return on Investment

Governance, Partnership and Capabilities



Return on Investment



■ LIFO Index equal to or above 0,5

■ LIFO Index below 0,5

ISA



RÚIAN

The Register of Territorial Identification, Addresses and Real Estates is an integral part of the whole system of public administration base registries. The main benefit of the system of basic registers is the creation of a set of reference data, which are binding for the performance of agendas in public administration.



eportugal.gov.pt

Citizen Map offers information on all points of assistance of Public Administration, namely hospitals, police stations, tax offices... with: location, service terms, service reservations, waiting time...



BRUGSTEDET.dk

A common communication platform for the entire Danish geodata domain. It serves as a communication and marketing platform and is everyone's access to ideas, solutions and ready-made examples.



An initiative aimed at designing a strategy for the implementation of flexible geographical public e-services, via a baseline measurement, an analysis of the stakeholder's requirements, case studies and impact assessments.



STAGE



An interactive tool for presenting and disseminating geospatial data viewing statistical content in thematic maps at the 10 spatial scales. Based on spatial queries, spatial units can be freely combined and statistics customized.



Standardised Geographic Information professional profiles



Some technical standards, defining in a detailed way the requirements related to the GI professional activity.



Why are a user driven approach together with knowledge transfer essential to achieve the benefits of interoperability?

6

Panel



What do you see important in the future in terms of (location) interoperability and what collective efforts or support will help?

7

Conclusion



Thank you



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Join the *ELISE* community in JoinUp



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EU-LOCATION@ec.europa.eu



EU Location (ELISE playlist)