

## **ELISE state of play**

**European** 

Location

**I**nteroperability

**Solutions for** 

**E**-Government

**ISA<sup>2</sup> Coordination Group**13<sup>th</sup> October 2017

Brussels





## Tallinn Digital Summit: creating a EU digital continent by 2025

Ministers from 32 countries of EU and EFTA have unanimously signed on the 6 October 2017 the Tallinn declaration confirming the commitment to the vision laid out in the EU eGovernment Action Plan 2016-2020 and in the European Interoperability Framework (EIF).

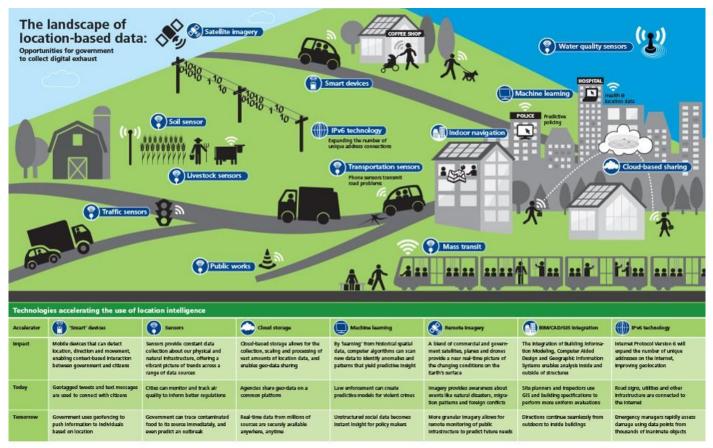
In the **next 5 years** (2018-2022) steps will be taken towards the **declared principles** in EU Public Administrations:

- "digital-by-default"
- "inclusiveness and accessibility"
- "once only"
- "trustworthiness and security"
- "openness and transparency"
- "interoperability by default"





## **Geospatial technologies fuel the Digital Economy**



Graphic: Deloitte University Press | DU Press.com

http://government-2020.dupress.com/driver/geospatial-technology//

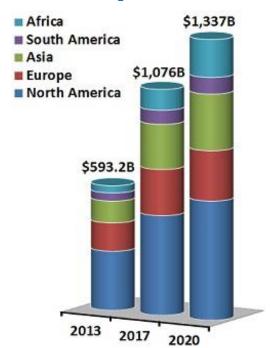






## **Geospatial technologies fuel the Digital Economy**

- In 2020, the location-based service market will be a US\$1.3 trillion industry<sup>(1)</sup>
- In 2020, use of geo-location data, including GPS, will generate US\$500 billion in consumer value<sup>(2)</sup>
- Geographer jobs will grow by 35% per annum, while those of cartographers and photogrammetrists will grow by 22% between 2010 and 2020<sup>(3)</sup>



Location-based services market forecast - 2013-2020

- 1. "Location Based Services Market and Technology Outlook 2013-2020," Market Info Group LLC, http://www.marketinfogroup.com/location-based-services-market-technology/
- 2. "Implications of the ICT Skills Gap for the Mobile Industry," MacLeod Consulting, http://www.gsma.com/events/wp-content/uploads/2013/08/ICT-Skills-Gap-Research.pdf
- 3. \$3.7 Billion Reasons Why GIS Technology is The Future," American Sentinel University, http://www.americansentinel.edu/about-american-sentinel-university/newsroom/3-7-billion-reasons-why-gis-technology-

ISA<sup>2</sup>

4 *is-the-future* 

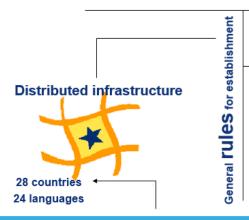


## INSPIRE, Europe's "lingua franca" for anything geospatial

Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE)

Institutional framework standards

Fundamental data sets Services





**Environment & sustainability** 

34 spatial data themes

Entry into force on 15/05/2007

Set of European legal acts and their coordinated implementation

Directive 2013/37/EU of 26 June 2013

amending Directive 2003/98/EC on the re-use of

**Public Sector Information** (PSI)

Directive 2003/98/EC

Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee, and the

Committee of the Regions: A Digital Agenda for

**Europe** - COM(2010) 245 final/2

## **Digital Single Market**

Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee, and the

Committee of the Regions: **EU eGovernment Action Plan 2016-2020** COM(2016) 179 final

The New European Interoperability
Framework COM(2017) 134

EU implementation of the

**G8 Open DataCharter EU Open Data Strategy** 

Tallinn Declaration on **eGovernment** 



## **ELISE: ongoing and future activities**

GEOSPATIAL

INTEROPERABILITY

Role of location data in digital platforms

Geodata and Statistics

Support to Multimodal Travel Information Services barriers and enablers to

> Feasibility studies Assessment studies

Digital Transformation of government

Assessing interoperability

Barriers and opportunities of location information

**Studies** 

Re3gistry

INSPIRE in Practice

*Implementing* and enabling interoperability

Recommendations

Tools and Guidance

Common services Frameworks

and **Solutions**  Spatial Data on the Web

EU Gazetteer study

Location Interoperability quidance and blueprint

Solution patterns inventory

INSPIRE Test framework

ELISE Network of national experts

Location interoperability Observatory

Location-related ICT assessments of new policy

Stakeholder engagement

Awareness raising publications / events 6

Geo Knowledge **Base Service** 

Landscape Analysis

Capacity Building

Stakeholder Support

Helping implement interoperability **Applications** 

Pilot projects

Partnerships and Collaborations

> Showing the benefits of interoperability

Energy Efficiency of Buildings

ITS Road Transport Data exchange

Training



## **ELISE** is active in supporting several EU policy initiatives

- European Interoperability Framework Implementation Strategy (Interoperability Action Plan) SWD (2017) 112 final
  - **Action 4:** Expand and maintain the NIF Observatory to monitor implementation of the EIF and compliance of national interoperability strategies/frameworks with the EIF. Also, monitor and assess interoperability action plan's implementation.
  - **Action 6:** Clarify and propose ways to formalise public administrations' organisational relationships as part of the establishment of European public services. Identify and develop common process models to describe business processes. Identify best practices.
  - **Action 17:** Further support the implementation and enhancement of the INSPIRE Directive though the use of geospatial data in digital public services.
  - **Action 19:** Develop a method to assess the possible ICT impact of legislation at EU or, if possible, national levels; identify legislation that hampers interoperability (including legal screening); perform digital checks on proposed or existing policies and legislation; support actions facilitating the preparation and coherence of legislation.
- The review of PSI Directive (2013/37/EU) spring 2018
- **INSPIRE Directive** (2007/2/EC) implementation (deadlines:11/17, 02/18, 10/20, 12/21)
- EU eGovernment action plan 2016-2020 COM(2016) 179 final
  - Action 19: Accelerate the deployment and take-up of the INSPIRE Directive data infrastructure

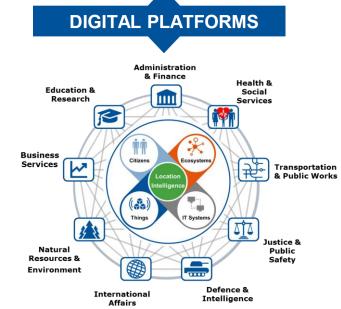


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## **ELISE and the Digital Economy**

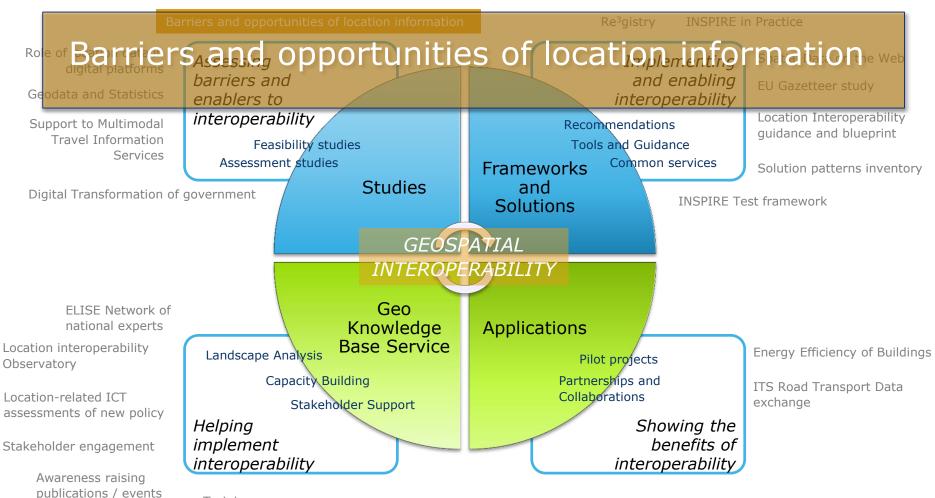
- The Digital Single Market aims at creating economic growth and ensuring Europe remains competitive on a global level in the digital and data economy
- The evolution of **Digital Platforms** (public and private) is expected to greatly impact data and knowledge intensive markets (financial services, governments, transportation, etc.)
- Location-enabled services as well location data play an essential in almost all of these Digital Platforms and the importance of location intelligence is increasing thanks to the more than 30 billion location aware devices that will be connected to the "Internet of Things" by 2020
- Europe should understand how location-enabled digital platforms might impact the European digital and data economy in large-scale public and private sector and across different industries, i.e. Automotive, Maritime, Aviation, Rail, Space, Environment etc.







## **ELISE: ongoing and future activities**



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## Study approach

European data-driven Economy

This study should be seen in the context of the creation of a **European data-driven economy**, which is essential to ensuring a functional **digital single market**.

Commission Communication Building on this, the European Commission adopted a Communication on **'Building a European Data Economy**', in January 2017, aimed at ensuring improved data flows across borders and sectors.

Relevance to the geospatial domain

The Commission Communication outlines emerging issues relevant to the geospatial domain such as the availability, access and interoperability of data sets, which are necessary for the development of geospatial data-based services and products useful to actors involved in the "geospatial value chain".

#### **Analyse**

Five different case studies exhibiting the use of geospatial data for creation of products and services

#### Assess

The value created from the use of geospatial data and identify existing barriers to its wider reuse as well as the associated opportunities

#### Propose

Policy recommendations
to help eliminate
existing barriers to the
use of geospatial data
and to realise the
identified opportunities



#### Five Case Studies

- 1.PDOK (NL)
- 2.The Foodie Project (DE, CZ, PL, LV, ES)
- 3.Smart Open Data Portugal Spain Pilot (ES, PT)
- 4. Innovate UK (UK)
- 5. Danish Basic Data programme (DK)



#### Stakeholder Interviews

- ✓ Interviews were held with identified stakehodlers within each case study.
- ✓ Stakeholders included: public administrations, national agencies, research bodies, private companies (including SMEs).





#### Data Analysis

✓ Collected data was complemented by desk research;

The data analysis was done along the main research questions of the study.

Value Created

Identified barriers

Future Opportunities



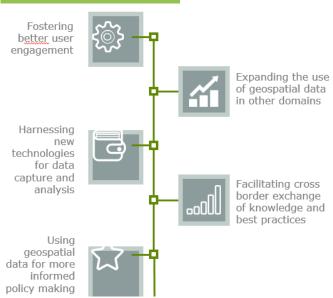
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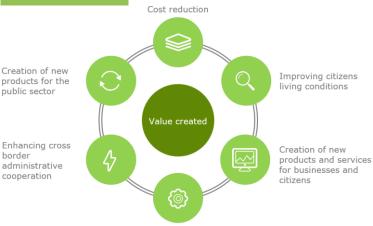


## **Preliminary findings**

#### Future Opportunities



#### Value Created



Improving administrative capacity

#### Identified barriers



Not enough data is yet available and data licensing prevents further  ${\it access}$ 



The current way of publishing geospatial data requires extensive IT and geospatial knowledge from potential users





Complexity of INSPIRE standards leads to continuing existence of different standards across Europe



There is a lack of knowledge in the public sector about the potential users' needs



Currently it is difficult to integrate geospatial data with other types of data



Potential users are not always aware about the existence of open geospatial data





## **ELISE: Ongoing and future activities**

Barriers and opportunities of location information Re3gistry INSPIRE in Practice Role of location data in Spatial Data on the Web Assessing *Implementing* digital platforms barriers and and enabling EU Gazetteer study Geodata and Statistics enablers to interoperability interoperability Location Interoperability Support to Multimodal Recommendations quidance and blueprint Travel Information Feasibility studies Tools and Guidance Services Assessment studies Common services Frameworks Solution patterns inventory **Studies** and Digital Transformation of government **INSPIRE** Test framework **Solutions** GEOSPATIAL INTEROPERABILITY Geo ELISE Network of national experts Knowledge **Applications** Base Service Location interoperability Landscape Analysis Pilot projects Observatory Pilots in Transport, Energy and Marine domains Location-related ICT Stakeholder Support assessments of new policy Helping Showing the implement benefits of Stakeholder engagement interoperability interoperability Awareness raising publications / events Training

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## **Pilots for Business opportunities**

## **Transportation Pilot**

**Commercial** map providers like **HERE** and **TomTom** need **road** network **data** that are

- consistent
- accurate
- up-to-date

In the **Transportation Pilot**, **INSPIRE** standards are used to get **geospatial data from public administrations** 

Significant reduced error rates in maps of from 25% to 7%, and Road Authorities (SE, NO) upgraded from quarterly to daily updates to map providers

Commercial map providers able to move **from disparate** national processes **to more standardised processes** in EU countries

Pilot now being **rolled out across Europe** under CEF – Transport (**14 countries**)

Next step to open solutions to **ALL industry players** 



Up-to-date flow of road safety data between National Road Authorities and private map providers

http://publications.jrc.ec.e uropa.eu/repository/handl e/JRC104569

Published in December 2016



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

https://joinup.ec.europa.eu/page/eulftransportation-pilot



## **Pilots for Better Regulation**

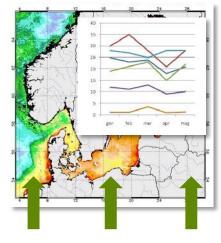
#### **Marine Pilot**

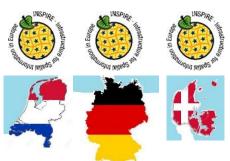
Monitoring marine environment is needed for multiple EU & international laws

Data can be re-used easier in cross-border applications if:

- harmonised
- up to date
- exposed via services

The Marine Pilot implements INSPIRE standards to support marine data re-use

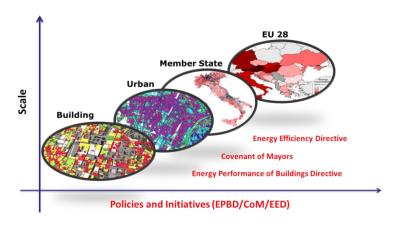




https://www.youtube.com/watch?v=ROJqljr8aDU&feature=youtu.be

https://joinup.ec.europa.eu/community/eulf/ogpage/eulf-marine-pilot

## **Energy Pilot**



Energy efficiency policy landscape includes several Directives requiring data with different scales and accuracy

**Location data** can help **scale-up methodologies** from building to local to regional to national level

**INSPIRE** can **facilitate** the collection, harmonization, elaboration, access to and sharing of reliable data

https://joinup.ec.europa.eu/community/eulf/og\_page/eulf-energy-pilot



## Focus on Buildings (EPBD)

According to studies conducted by BPIE (Buildings Performance Institute Europe):

- 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
- Deep renovation of buildings could cut
   36% of their energy consumption by 2030

Pilot will be tested by means of Use Cases with various actors: public authorities at regional and local level, businesses working in the energy sector, citizens





## **ELISE: ongoing and future activities**

Barriers and opportunities of location information

Re3aistry

#### **INSPIRE** in Practice Role of location Searching for information linked to enabling barriers and for information linked to enabling barriers and search to the web largest and enabling barriers and search to the web largest to EU Gazetteer study teroperability enablers to interoperability quidance and blueprint Travel Information Tools and Guidance Feasibility studies Services Assessment studies Common services Frameworks Solution patterns inventory **Studies** and Digital Transformation of government **INSPIRE** Test framework **Solutions** GEOSPATIAL INTEROPERABILITY Geo ELISE Network of national experts

Location interoperability Observatory

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Awareness raising publications / events 16

Knowledge **Base Service** 

Landscape Analysis

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## What is a gazetteer?

- A place names dictionary
- Unambiguously defines a geographic location
- Typical gazetteer service functions and data:





## **Rationale for an EU-Gazetteer**

- Increasing number of neighbouring and pan-European data initiatives:
  - Provide growing data resources, often under open licences
  - Need an integrated EU-gazetteer to support their processes
  - Often elect to develop their own custom gazetteer...

There is not yet a gazetteer for the whole of Europe that is:

European Data portal

INSPIRE Copernicus

DRDSI

Interreg



Official

Open

Free

Would it not be better to create a common EU-Gazetteer?



## Potential cross-border applications for an EU Gazetteer





## The ELISE EU gazetteer project proposition\*:

A pilot service potentially including geonames, admin units and addresses



Maximise the use of authoritative GN and AU data



**Open licence**, free at point of use for all MS



Fill gaps with **best available non-authoritative data** 



Involvement of multiple
Member States



**Attribution of data sources** (authoritative vs. non-authoritative)



Supporting **priority applications** 



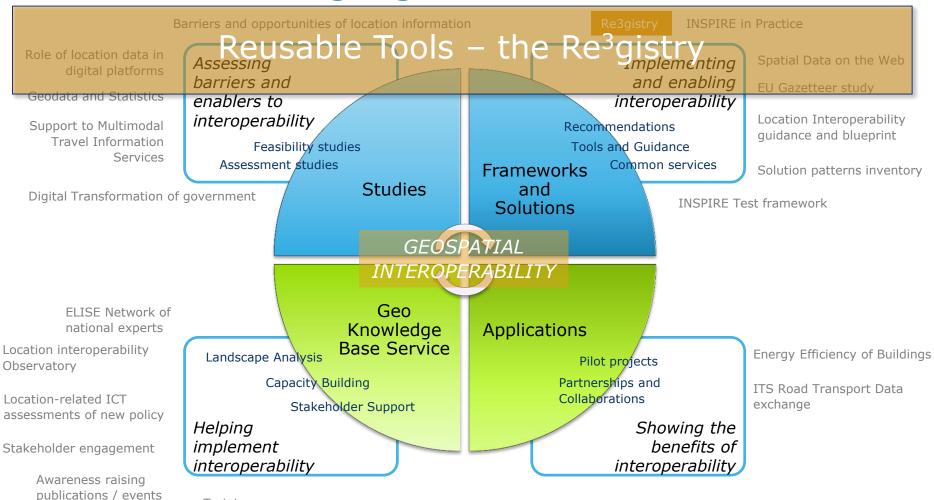
Service available through an **API** to enable reuse



Use **ISA**<sup>2</sup> to develop and evaluate a service that can be made operational, possibly using **CEF** 



## **ELISE: ongoing and future activities**



Training



## A reusable tool for sharing reference data to support semantic interoperability

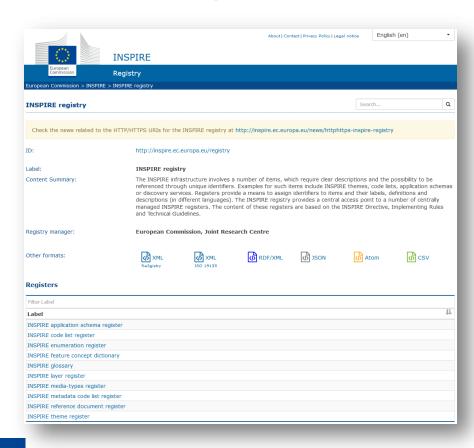
## Re<sup>3</sup>gistry

#### **Reusable software powering:**

- The official pan-European INSPIRE Registry
- Slovakian registry
- Austrian (CCCA) registry
- FYROM registry
- Italian (AgID) registry
- French registry
- Finnish registry

#### ...including beyond INSPIRE:

- GeoSmartCity registry
- SEMIC Core Vocabularies registry
- SEMIC EU Budget Vocabulary
- ELISE Energy Pilot registry





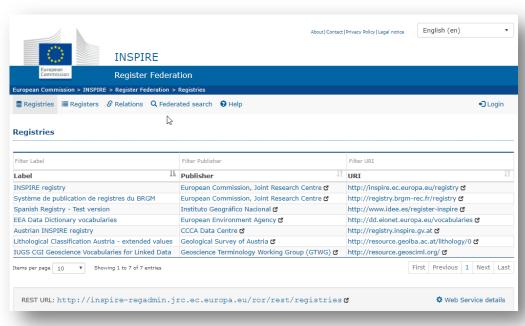
## 2017 highlights

## Increased usage of the service



## Re<sup>3</sup>gistry

## Full testing of the *Registry of Registries*



## Published technical guidance



"Technical Guidelines & Best Practices for INSPIRE registers and registries"



## **ELISE: ongoing and future activities**

Role of location data in digital platforms

Geodata and Statistics

Support to Multimodal Travel Information Services Assessing barriers and enablers to interoperability

> Feasibility studies Assessment studies

Digital Transformation of government

Barriers and opportunities of location information

**Studies** 

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Stakeholder engagement

Awareness raising

Geo Knowledge Base Service

and Stakeholder engagement

Helping implement interoperability

benefits of interoperability

Showing the

Training

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## **Geo Spatial Knowledge Base Service (KBS)**

Support policy makers, application developers, business and citizens apply INSPIRE in other domains/initiatives beyond environment

Support DIGIT in their assessment of ICT implications of EU legislation where location information and associated processes are relevant

Share evidence, best practices and benchmark developments across Europe by operating an observatory, complementing NIFO, supported by a network of experts

Enable the EC and Member States to build capacity by transferring knowledge targeting public, administration, business and citizens

Expanding communication and engagement activities for awareness-raising and the uptake of results



### **ELISE links with other ISA<sup>2</sup> Actions**



National Interoperability Framework Observatory (NIFO)

Location interoperability observatory development in coordination with NIFO



Core Location Vocabulary – GeoDCat - AP



Communication and stakeholder engagement support





SDI representation according to EIRA – Solution patterns



ICT Implications of EU Regulations

Coordination with DIGIT to include location information and services





Reused in all the ELISE survey



ELISE solutions and community on joinup







## **Stakeholders**













**MOVE** 



European Commission







ARe<sup>3</sup>NA































## **Events organisation and participation**



1° ISA<sup>2</sup> Geospatial Solutions WG April 2017

Geosmartcity final conference, January 2017

FOSS4G Conference, July 2017

Webinars on Blueprint, EU Gazetteer, RDF and INSPIRE validator



Sharing and Reuse Conference, March 2017



INSPIRE Conference, September 2017



## New directions in Digital Government using INSPIRE ELISE Workshop, 4/9/2017



















Transition from e-Government to Digital Government to be clarified

Raise awareness in Public Administrations about benefits of innovating external interactions and internal processes

Mind-set change needed in Public Administration to publish data considering users' needs

Artificial intelligence, machine created data validation and digitalisation of services key technology trends

Vital to build on SDIs to make spatial data available to a wider audience (e.g. crawlable on the web)

**Private sector role** as an intermediator to provide added value services on top of public data and stimulate competition

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## **New ELISE visual identity - @EULocation**



https://joinup.ec.europa.eu/community/elise/description https://ec.europa.eu/isa2/actions/elise\_en

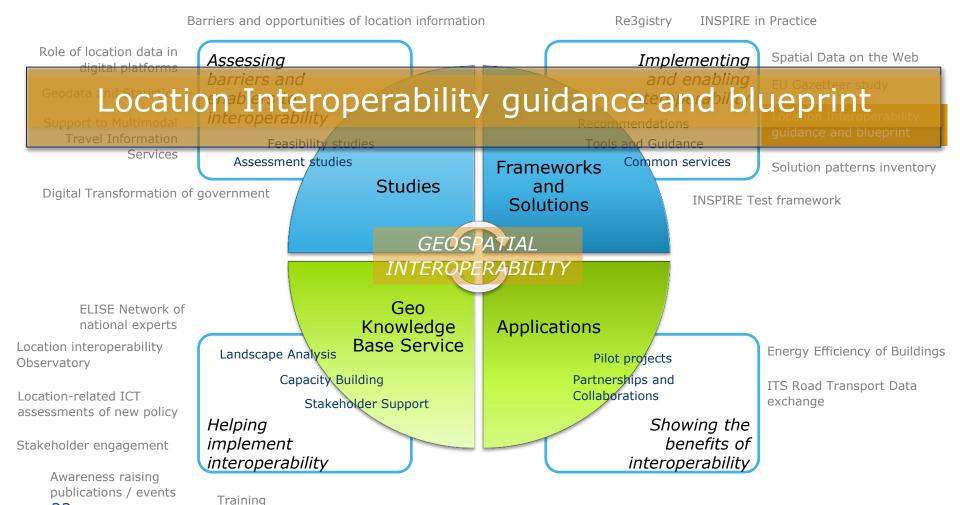


## **Collaboration opportunities for Member States**

- Involvement in shaping and steering the ELISE activities through the Working Group
- Provide advice and expertise for studies and guidelines
- Contribute to the location interoperability observatory as MS expert
- Testing and development of geospatial interoperability tools and solutions
- Reuse of solutions (e.g. Re<sup>3</sup>gistry, application pilot solutions) and best practices (e.g. Blueprint and detailed guidance) + contributions to improve the knowledge base
- Cooperation in pilot applications in the field of energy, transport and common services (Gazetteer)
- Possibility for pan-European and international projects/initiatives to participate in pilot applications as partners or observers



## **ELISE: ongoing and future activities**



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## The Blueprint is comprehensive and actionable



Policy and strategy alignment



Digital government integration



Standardisation and reuse

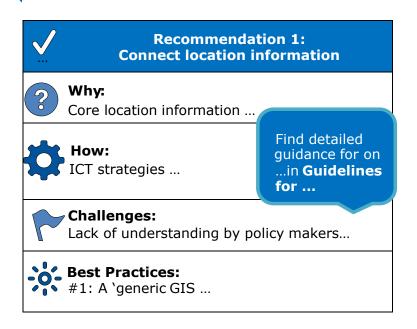


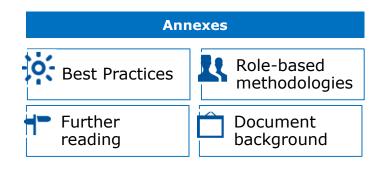
Return on investment



Governance, partnerships and capabilities

18 recommendations to reach the EULF vision





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# The role-based methodologies indicate the relevant recommendations that should be considered when undertaking the typical tasks for each of these roles.

Policymaker	Preparation Adoption		option	Implemen	tation	Application		
INSPIRE Data Publisher		Identify spatial data sets	Create and maintain reusable spatial data sets		• •		Support use of spatial datasets	
ICT Manager and Developer	Plan	Design	Deve	lop and test	Release, opera maintain	ite and Revie	ew and improve	
Data Manager	Data policy and governance	d Data spec- ification and modelling	acquisition do	ata ocumentation, ganisation and ontrol	Data access, sharing and dissemination	Data ware- housing and analytics	Data d archiving	
Digital Public Service O Manager and Impleme		Plan	Design	Develop and	l test Introdu operate		eview and nprove	
rivate Sector Product and Developer/Entrepren		Insight and definition	Prototyping and development	Testing and	Marketing and	d Deployment	Maintenance	



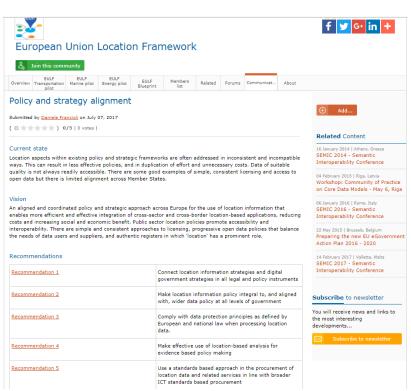
## The online

## **Version:**<a href="https://joinup.ec.europa.eu/community/eulf/og\_page/eulf-">https://joinup.ec.europa.eu/community/eulf/og\_page/eulf-</a>

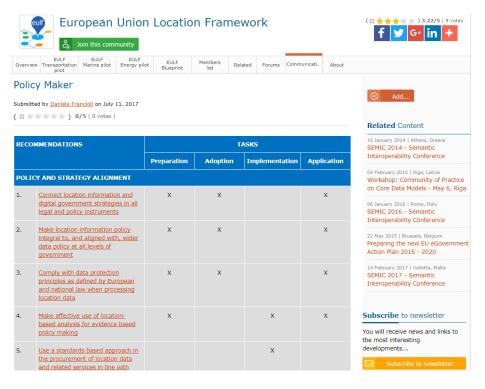




### Access along focus areas

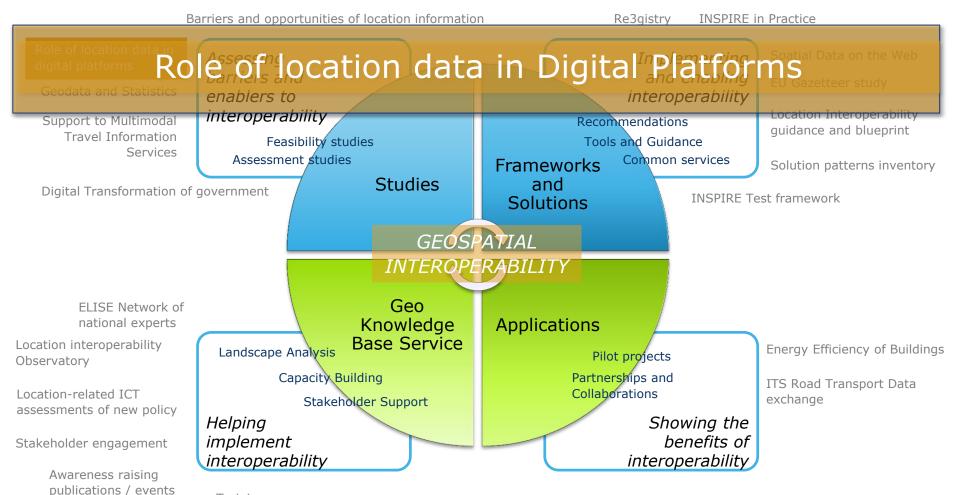


## Access through your role





## **ELISE: ongoing and future activities**



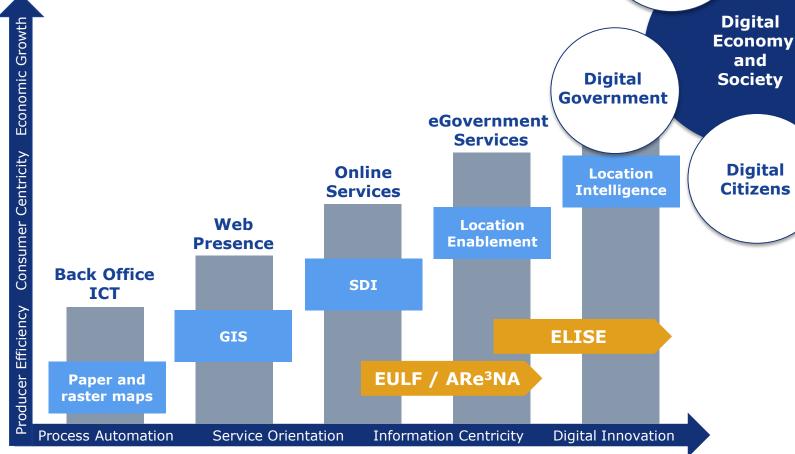
Training

37



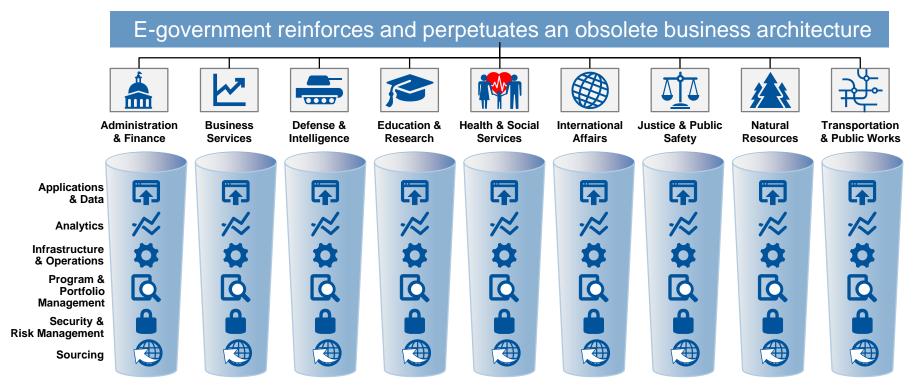
## **ELISE:** Location Data underpins transformation towards Digital Government

Digital Businesses





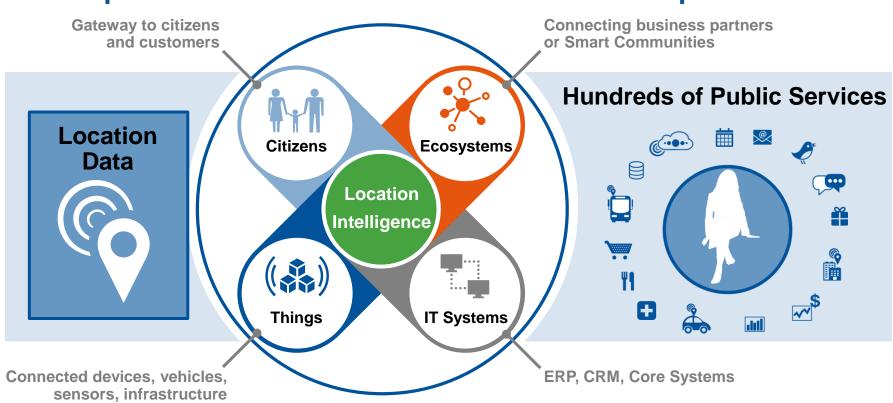
## **Digital Government is Confused With E-Government**



Digital government takes advantage of digital data to optimize, transform and create government services



# At the core of the transformation towards Digital Government is the Digital Platform ... delivering cross-sector and cross-border Operational Efficiencies and a unified Citizen Experience





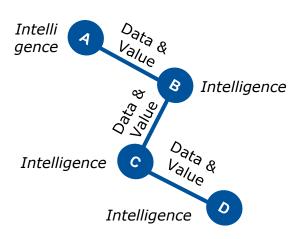
# Digital Platforms will transform the traditional linear business models to become multidimensional and multidirectional, scale exponentially and support hundreds of public services

A value chain approach

is

**one-dimensional** and

one-directional



Linear impact of 41 eGovernment

**Hundreds of Public Services** 

### **Digital Platform**

**Location intelligence** makes combined use of

analytics, geospatial information and location based services

**ELISE** 

**EULF** 

Location data is foundational to deliver added value in public services - it can be combined with other data and existing services

Cross-border and Cross-sector interoperability is conditional for an effective use and analysis of location data

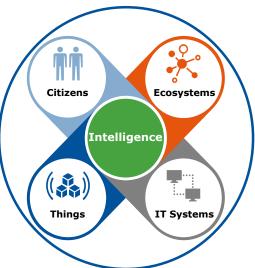
A digital platform approach

is

multidimensional

and

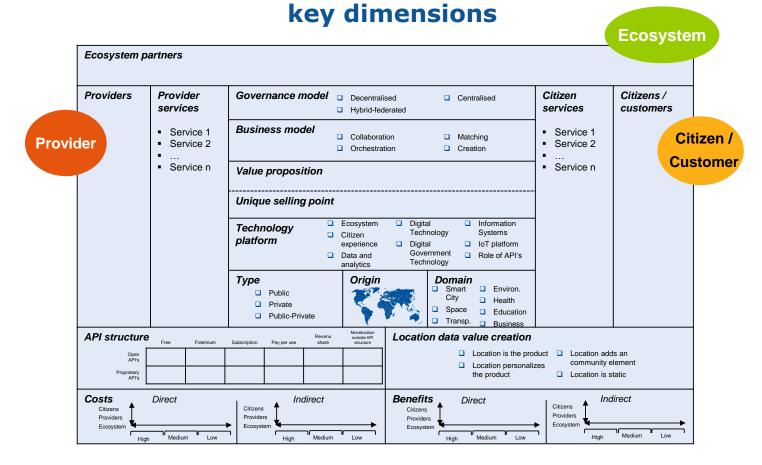
multidirectional



Exponential impact of Digital Government

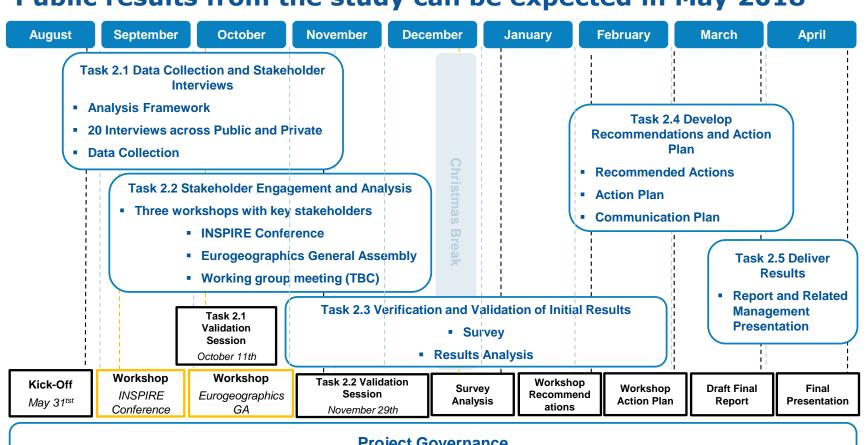


Introducing and developing the Digital Platform Canvas – a reusable framework to describe Digital Platforms along all its





## You are welcome to contribute as stakeholder! Public results from the study can be expected in May 2018



#### **Project Governance**

- Task 1.1 Benchmark Kick-off
- Task 1.2 Benchmark Progress Reporting
- Task 1.3 Benchmark Finalisation



### Want to know more?

#### **ELISE**

European Location
Interoperability Solutions
for e-Government

**Get started:** ELISE Action page

Join and collaborate: **ELISE Community** 

Stay tuned: @EULocation



http://inspire.ec.europa.eu/



The ELISE action is undertaken with the support of <u>ISA</u><sup>2</sup>.

ISA<sup>2</sup> is a EUR 131 million programme of the European Commission which develops digital solutions that enable interoperable cross-border and cross-sector public services for the benefit of public administrations, businesses and citizens across the EU.

ISA<sup>2</sup> supports a large range of <u>actions</u> and <u>solutions</u>. The ISA<sup>2</sup> solutions can be used free of charge and are open source when related to IT.

<u>ISA<sup>2</sup></u> - IT solutions for less bureaucracy You click, we link. Follow us on <u>twitter</u>.

