

## EUROPEAN LOCATION INTEROPERABILITY SOLUTIONS FOR E-GOVERNMENT (ELISE) (2016.10)

### IDENTIFICATION OF THE ACTION

Type of Activity	Common Frameworks, Common Services, Reusable tools
Service in charge	JRC
Associated Services	DIGIT, ENV, ENER, MARE, MOVE, ESTAT, CNECT

### EXECUTIVE SUMMARY

Location-related information underpins an increasingly high proportion of EU and national governmental policies, digital services and applications used by public administrations, companies and citizens. Although various studies point to the tremendous potential value of publicly and privately held location information, there are many obstacles to the efficient sharing and re-use of this information. The PSI Directive, INSPIRE and ISA have started to remove barriers and some Member States have introduced important initiatives in this field. However, there is much further potential to tap into interoperable location information: the implementation of INSPIRE is ongoing and new thematic policies are emerging and will benefit from a more harmonised approach.

The European Location Interoperability Solutions for e-Government (ELISE) Action is a package of legal/policy, organisational, semantic and technical interoperability solutions to facilitate efficient and effective electronic cross-border or cross-sector interaction between European public administrations and between them and citizens and businesses, in the domain of location information and services, supporting Digital Single Market (DSM), Better Regulation (BR) and Public Sector Modernisation (PSM) goals. It is aligned with the proposed focus of ISA<sup>2</sup> on European public administrations, businesses and citizens, and the need to ensure that best practice interoperable solutions are deployed across the European Union (EU).

The interoperability solutions produced by ELISE will include guidance and tools for data publication and access, building where possible on INSPIRE (e.g. approaches to improve the free flow of data envisaged in the Digital Single Market strategy), “ready for operation” pilots in different sectors (e.g. energy, transport, marine) or cross-sector location-based statistics, and “common services” that support key priorities (e.g. gazetteer of geographic names and addresses). It will also act as the “Geo Knowledge Base” for ISA<sup>2</sup> and Commission services for aspects of legal, organisational, semantic and technical interoperability, where “location” is an important characteristic. This will include ensuring that the “location” aspects in the revised EIS and EIF are duly taken into account, providing “location” inputs to the assessments of ICT implications of new policies and the solution architecture being created with the EIC, and giving “location” advice to other ISA<sup>2</sup> actions where relevant.

ELISE continues and builds on the work of the European Union Location Framework (EULF) and A Reusable INSPIRE Reference Platform (ARE3NA) Actions in the ISA programme, which partially addressed the challenges and opportunities in location-related interoperability, in terms of frameworks, application pilots and re-usable tools. ELISE will build on these and other solutions and provide the step-change that is needed, in particular, to spatially enable the DSM.

The Action also factors in the proposals from Flanders for work on addresses, search engines, and metadata catalogues, either directly or by providing input to other ISA<sup>2</sup> actions.

The ELISE work programme was initiated in 2016, with continued development of geospatial interoperability tools (e.g. the ARE3NA platform, Re3gistry, and web search tools), and pilot activities on energy efficiency and marine spatial data sharing, and new activities to assess Digital Single Market opportunities, start a pilot for an EU gazetteer service, and design and pilot the Geo Knowledge Base service. The 2017 work programme takes ELISE into the ‘execution’ phase with a more substantial work programme of studies, development of frameworks and solutions, development and roll-out of pilots, and operation of the Geospatial Knowledge Base service. All of this is targeted at increasing take-up of best practice location interoperability solutions, and is part of a five-year programme mapped out to 2021.

## OBJECTIVES

Objective	Provide guidelines and tools for the implementation of the EIF regarding location information/services.
Relation to ISA2 objectives and criteria	Being anchored to the EIF, ELISE supports the ISA2 Programme basic objective to identify, create and operate interoperability solutions implementing Union policies.

Objective	To help European public administrations remove barriers to the free flow of location data, and build more effective location enabled e-government services.
Relation to ISA2 objectives and criteria	ELISE facilitates efficient and effective electronic cross-border or cross-sector interaction between European public administrations, citizens and businesses, in the domain of location information and services.

Objective	Support Better Regulation goals by promoting a coherent and consistent approach to the sharing and re-use of location information in EU policies.
Relation to ISA2 objectives and criteria	ELISE supports the development, maintenance and promotion of a holistic approach towards European ‘location’ interoperability, to eliminate fragmentation and inconsistency, by assessing ICT implications of EU legislation; identifying legislation gaps hampering interoperability and supporting policy makers through the policy cycle.

## SCOPE

In scope:

- a) Acting as the “geospatial knowledge base” for Commission Services and other actions in ISA2, including providing ‘location’ inputs to ICT assessments of new legislation, and training and awareness raising;
- b) Establishment of pre-operational “common services” for use of public administrations, businesses and citizens, e.g. gazetteer of geographic names, address registry;
- c) Development and re-use of tools to access and use location data and to make them interoperable;
- d) Studies on key topics, such as the Digital Single Market and location interoperability;
- e) Guidance in key areas across interoperability levels, e.g. on licensing, privacy, spatial data modelling, the adoption of INSPIRE in different sectors and linking geodata and statistical data;
- f) Location pilots in different sectors (e.g. energy, transport, marine) to share Member State best practices between public administrations and to support Digital Single Market goals;

- g) “Location” inputs to the cartography of interoperability solutions (EIC) based on the European Interoperability Reference Architecture (EIRA);

Out of scope:

- a) Generic interoperability solutions produced by ISA2 or elsewhere that are required for ELISE applications and tools. These will be re-used within the ELISE solutions;
- b) Location interoperability solutions produced by other initiatives. Best practice solutions will be promoted and re-used by ELISE.

## ACTION PRIORITY

### Contribution to the interoperability landscape

*The contribution of the action to the interoperability landscape, measured by the importance and necessity of the action to complete the interoperability landscape across the Union*

Question	Answer
<i>Does the proposal directly contribute to implementing the European Interoperability Strategy, the European Interoperability Framework, or other EU policies with interoperability requirements, or needed cross-border or cross-sector interoperability initiatives? If yes, please indicate the EU initiative / policy and the nature of contribution.</i>	The ELISE framework, solutions and pilots apply the principles of the EIF, the structure of the EIRA, and contribute to the EIC and the Rolling Plan for ICT Standardisation. The work programme has a strong focus on supporting Better Regulation and Digital Single Market goals. ELISE also supports the implementation of the Directive 2007/2/EC on the establishment of an infrastructure for spatial information in the European Community (INSPIRE).
<i>Does the proposal fulfil an interoperability need for which no other alternative solution is available?</i>	While INSPIRE is creating cross border geospatial interoperability solutions for environmental policy and the European Location Framework project is creating pan-European mapping data, ELISE is complementary to these activities, in creating a systematic needs-based approach to address geospatial interoperability across sectors and borders.

### Cross-sector

*The scope of the action, measured by its horizontal impact, once completed, across the sectors concerned*

Question	Answer
<i>Will the proposal, <b>once completed</b> be useful, from the interoperability point of view, and utilised in two</i>	ELISE aims to develop cross-sector guidance, tools and services for consistently addressing

<i>(2) or more EU policy areas? If yes, which are those?</i>	location aspects in different policy domains. It will help environmental data publishers meet their commitments more efficiently under INSPIRE (e.g. in marine). It will also pilot and support rollout of applications in other policy domains, e.g. energy, transportation, statistics.
<i>For proposals or their parts <b>already in operational phase</b>: have they been utilised in two (2) or more EU policy areas? Which are they?</i>	Most solutions and frameworks developed in ELISE are aimed to be cross-sector. However, ELISE is mainly aiming at developing cross-sector solutions to a pre-operational stage. The operationalisation of developed solutions is foreseen using dedicated operational funds (e.g. CEF or ESOF) or stakeholder funds (e.g. solutions implemented within Member States infrastructures or used in the private sector).

### Cross-border

*The geographical reach of the action, measured by the number of Member States and of European public administrations involved.*

Question	Answer
<i>Will the proposal, <b>once completed</b> be useful, from the interoperability point of view, and used by public administrations of three (3) or more EU Members States?</i>	Once completed, the common services (e.g. EU Gazetteer) and tools (including those supporting the development of INSPIRE) developed by the ELISE Action will cover many Member States. The ELISE Geospatial Knowledge Base will provide support to the use of location data and services for EU institutions and public administrations, businesses and citizens in multiple Member States.
<i>For proposals or their parts <b>already in operational phase</b>: have they been utilised by public administrations of three (3) or more EU Members States?</i>	The transportation pilot outputs (started under EULF) are operational in Norway and Sweden. The marine pilot outputs (also started under EULF) are being adopted in Germany, the Netherlands and the United Kingdom. The Re3gistry software (developed under ARE3NA) has been reused by Slovakia as well as the SEMIC ISA/ISA2 action, and is currently being tested by France, Spain, Austria and Norway. Several MS have indicated their intention to use the INSPIRE test framework (developed under ARE3NA) once completed.

## Urgency

*The urgency of the action, measured by its potential impact, taking into account the lack of other funding sources*

Question	Answer
<i>Is your action urgent? Is its implementation foreseen in an EU policy as priority, or in EU legislation?</i>	<p>Solutions and frameworks developed in the ELISE Action support</p> <ul style="list-style-type: none"><li>• the implementation of the INSPIRE Directive, which has its next implementation deadline in <b>late 2017</b>,</li><li>• Action 19 of COM(2016) 179 final - EU eGovernment Action Plan 2016-2020 ('Accelerate the deployment and take-up of the INSPIRE Directive data infrastructure') with a target date of <b>2016-2020</b>;</li><li>• the Commission's objective to 'increase R&amp;D&amp;I investment specifically for data interoperability and standards <b>as of 2016</b>. This will cover areas such as (i) cross-sectorial data integration (e.g. for entity identifiers, data models, multilingual data management, etc); (ii) better interoperability of data and associated metadata, including INSPIRE metadata' under COM(2016) 176 final ICT Standardisation Priorities for the Digital Single Market; and</li><li>• the implementation of other policies such as the Marine Strategy Framework Directive and the Intelligent Transport Systems Directive and the Energy Performance of Buildings Directive.</li></ul>
<i>Does the ISA<sup>2</sup> scope and financial capacity better fit for the implementation of the proposal as opposed to other identified and currently available sources?</i>	<p>The ISA2 programme offers a unique opportunity to investigate how to reuse and build on INSPIRE (which is already cross-border and to some degree cross-sector) in order to build synergies between geospatial and wider ICT interoperability solutions and frameworks.</p>

## Reusability of action outputs

*The re-usability of the action, measured by the extent to which its results can be re-used*

Can the results of the proposal be re-used by a critical part of their target user base, as identified by the proposal maker? For proposals or their parts already in operational phase: have they been re-used by a critical part of their target user base?

Examples of the expected re-use of ELISE outputs is given below.

Name of reusable solution	'Location' Guidance
Description	Re-use of Blueprint and associated guidance (e.g. procurement, policy alignment, service design) developed under EULF, coupled with new guidance developed as part of the ELISE work programme (e.g. Digital Single Market 'location framework', geodata and statistics guidance).
Reference	<a href="http://ec.europa.eu/isa/actions/02-interoperability-architecture/2-13action_en.htm">http://ec.europa.eu/isa/actions/02-interoperability-architecture/2-13action_en.htm</a>
Target release date / Status	Q4/2018 – Q4/2019 for new guidance
Critical part of target user base	Reuse by 5 public bodies
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	

Name of reusable solution	References and Inventories
Description	ELISE will provide a structured inventory ('solution patterns') of standard processes, services, applications and tools, referenced to the EIRA, and published in the EIC, Related best practice factsheets will be developed to help communicate and promote selected best practice solutions. This work will build on the existing EULF and ARE3NA inventories.
Reference	<a href="http://ec.europa.eu/isa/documents/eulf-references-v1-final_en.pdf">http://ec.europa.eu/isa/documents/eulf-references-v1-final_en.pdf</a>
Target release date / Status	Q3/2018 – Q4/2020
Critical part of target user base	Input by 5 public bodies, Use by 5 public bodies or businesses
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	

Name of reusable solution	Re3gistry software
Description	The maintenance and extension of the open source Re3gistry software to ensure support for INSPIRE and cross-sector register federations. Plans will be developed to explore hand-over options, including as a full open source project and/or the CEF.
Reference	<a href="https://joinup.ec.europa.eu/software/re3gistry/description">https://joinup.ec.europa.eu/software/re3gistry/description</a>
Target release date / Status	Q4/2018 operational solution

Critical part of target user base	Re-use by 5 public bodies
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	Already used in Slovakia and by SEMIC ISA action.

Name of reusable solution	INSPIRE test framework
Description	Extended testing frameworks to ensure that reuse of INSPIRE and other geo-ICT data infrastructures provide reliable and appropriate content.
Reference	<a href="https://github.com/inspire-eu-validation/">https://github.com/inspire-eu-validation/</a>
Target release date / Status	Q4/2018
Critical part of target user base	Re-use by 10 public bodies
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	

Name of reusable solution	Common services: EU gazetteer, Open EU mapping pilots
Description	Key pan European geospatial common services supporting multiple e-government applications, for example an EU gazetteer services of geonames, administrative units and addresses will be usable within any European data portal or other eGovernment application (e.g. through linked data approaches). ELISE will create 'ready for operation' solutions through pilot projects, reusing other work as appropriate (e.g. INSPIRE implementations, European Location Framework, pan European Data Portal gazetteer approach).
Reference	
Target release date / Status	Q1/2019 – Q1/2021
Critical part of target user base	Use (e.g. integration into applications/portals) by 10 public bodies or businesses
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	

Name of reusable solution	Application pilots
Description	ELISE application pilots, comprising rollout of existing transportation and marine pilots, and development of new pilots in support of energy efficiency, geospatial-based statistics, and business innovation. These developments will be phased in different years where appropriate to ensure a stream of re-usable solutions. Assets produced will include

	data specifications, methodologies, data transformation tools, data assembly and validation testbeds, presentation capabilities, training, guidance, and awareness raising and promotional assets (e.g. videos, business cases).
Reference	<a href="https://www.youtube.com/watch?v=jnny5ATwTYE">https://www.youtube.com/watch?v=jnny5ATwTYE</a>
Target release date / Status	Q1/2018 – Q4/2021 ongoing programme of pilots
Critical part of target user base	Take up by public bodies and/or businesses in 10 MS
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	Transportation pilot outputs already used in Norway and Sweden

### Level of reuse by the proposal

*The re-use by the action of existing common frameworks and elements of interoperability solutions.*

Question	Answer
Does the proposal intend to make use of any ISA <sup>2</sup> , ISA or other relevant interoperability solution(s)? Which ones?	<p>ELISE will promote, re-use and build on the solutions developed in the ISA programme under the EULF and ARE3NA Actions, focusing on how they can be re-used to support the ELISE. Moreover, ELISE will re-use and promote other ISA and ISA<sup>2</sup> solutions, including:</p> <ul style="list-style-type: none"> <li>a) embedding the revised EIS and EIF into its implementation approach;</li> <li>b) applying the recommendations in the sharing and re-use strategy;</li> <li>c) contributing interoperability solutions at all levels to the EIC, and recommending and applying the EIRA as a reference approach where possible;</li> <li>d) promoting the assessment of ICT implications of new legislation process with policy makers, and providing 'location' inputs to the assessments;</li> <li>e) using the Interoperability Maturity Model for assessing selected location-related services;</li> <li>f) publishing documents and solutions on Joinup;</li> <li>g) promoting the guidelines on base registries and applying these in developments of location 'common services';</li> </ul>



- h) re-use of SEMIC generic approaches on vocabularies, metadata and data modelling;
- i) input to SEMIC work on metadata catalogues and spatial annotation of websites;
- j) investigating synergies with the actions on interoperability testing;
- k) incorporating ISA and ISA2 guidelines and solutions, where relevant in the ELISE pilot applications.

ELISE will also re-use and promote solutions from other EU and national initiatives, including:

- a) using INSPIRE data specifications and technical services in application pilots;
- b) identifying best practice re-usable components, applications or services and sharing either information about the solutions (e.g. through factsheets) or the solutions themselves;
- c) reusing solutions in pilot applications and common services, building on other EU-funded or national projects (e.g. European Location Framework services and tools, GeoSmartCity developments in energy efficiency, Belgian approach to OpenStreetMap, Danish and Czech Republic approaches to core registries, Danish cross-border addressing approach);
- d) combining approaches in other projects and initiatives with ELISE activities to establish user-focused, sustainable solutions (e.g. working with ELF on feasibility studies and pilots for common services; reusing methodologies from UN-GGIM: Europe and Geostat2 to integrate statistical and geospatial information in ELISE guidance and a statistical pilot application);
- e) re-using legal and organisational assets, e.g. licensing frameworks, open data frameworks, business cases, public private partnership models, training modules, videos.

For proposals or their parts already in operational phase: has the action reused existing interoperability solutions? If yes, which ones?	The Transportation pilot has reused the TN-ITS data specifications and the INSPIRE approach to location (linear) referencing. The INSPIRE test framework is based on existing test engines, such as the OGC CITE engine.
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## Interlinked

*The link of the action with Union initiatives to be measured by the collaboration and contribution level of the action to Union initiatives such as the DSM.*

Question	Answer
Does the proposal directly contribute to at least one of the Union's high political priorities such as the DSM? If yes, which ones? What is the level of contribution?	<p>The action supports the key policy drivers of Digital Single Market, Better Regulation and Public Sector Modernisation, with in each case:</p> <ul style="list-style-type: none"> <li>a) assessments of demand and opportunities</li> <li>b) specific studies (e.g. assessment of DSM opportunities and barriers);</li> <li>c) relevant guidance (e.g. DSM framework, covering open data, licensing, privacy, data interoperability, skills, and public private partnerships) and tools;</li> <li>d) relevant pilots (e.g. "ready for operation" thematic pilots supporting specific legislative requirements in areas where location data interoperability is essential, e.g. energy, transport, marine, statistics)</li> </ul> <p>There will be a particular focus on actions to enable the free-flow of data (DSM), align policies (BR), and enable better digital services, including supporting the "once-only" and "end-to-end digital services" goals (PSM), all in the context of 'location'.</p> <p>The Geospatial Knowledge Base supports the Better Regulation agenda for aspects related to location (e.g., Better Regulation Toolbox, tool #23: ICT assessment, the digital economy and society). Pilots are envisaged that will implement interoperability solutions based on the guidelines and tools.</p>

**PROBLEM STATEMENT**

The ELISE Action aims to address the following challenges and opportunities that cut across DSM, Better Regulation, and Public Sector Modernisation goals:

Location-related information is important in many policy areas, and a comprehensive approach to sharing and re-use of this information already exists for environmental policy (through INSPIRE). However, other policy areas do not yet have similar approaches or are developing them independently and without recognising the potential role of and/or lessons to be learnt from INSPIRE.

Public administrations do not yet fully support data sharing and re-use including publishing open data. Geospatial data is frequently quoted amongst the ‘high value’ datasets requested by users. Improved sharing and re-use is not just about common data formats and interoperable technologies. Other issues need to be addressed such as licensing (including open data), data quality, funding, awareness raising (‘spatial literacy’) and capacity building (training).

More consistent and relevant approaches are needed to link geospatial information and statistics at increased levels of detail and to support more dynamic cross-sector and cross-border statistical data requirements.

e-Government processes and services do not always use location information efficiently or effectively in support of user needs and expectations (e.g. for location-based mobile applications) and support growth (e.g. through access to location data and other key datasets. More collaborative approaches are needed to make this happen.

**EXPECTED BENEFICIARIES AND ANTICIPATED BENEFITS**

The recent INSPIRE mid-term evaluation demonstrated a strong business case for “location interoperability” on environmental policy. INSPIRE is relevant in many domains, given the scope of the Directive, and, provided an approach is developed that meets specific thematic requirements, the benefits of data harmonisation can be achieved in multiple situations using and reusing the INSPIRE framework documents, technical guidelines, and the infrastructural components (e.g. the registry and validation service) and (open source) tools.

The DSM Strategy has highlighted the importance of removing barriers to the free-flow of data and in the need for data interoperability. The EIF is mentioned as an important element. Various studies have shown the potential value of access to public data in support job creation and growth, including in particular open, accessible location data. The ELISE project places a strong emphasis on actions in these areas, with actions to evaluate DSM barriers, plan solutions, support innovation, and develop open approaches to share important geospatial datasets.

The table below summarises some of the main benefits of ELISE for the different beneficiaries.

Beneficiaries	Anticipated benefits
EU and MS policy makers	More effective policy development where location is a feature (better evidence and analysis, cross policy alignment) Improved policy outcomes (location-enabled policy implementation) Better links between public authorities nationally and internationally on

Beneficiaries	Anticipated benefits
	location matters Cost savings in policy development and implementation involving location information
Public sector location data users	Better business processes, systems and access to location data (cross-sector and cross-border) Effective skills (including spatial literacy) Cost savings in time spent to find and use location data Access to more relevant location data
Public sector location data providers	Access to best practices, standards and guidelines Knowledge sharing with peers across the EU More effective partnering between related organisations and initiatives Cost savings from re-use and interoperability
Businesses	Better location-based services with reduced burdens More effective partnering with government in the use of location data and services Impact on profitability and growth (easier to introduce new location-based products and services) Access to wider markets through removal of barriers
Citizens	Better location-enabled services (designed around user needs) Cost and time savings (location-enabled services, avoiding duplication) Increased transparency and participation Wider socio-economic benefits
Research and academia	More innovative and authoritative research (better access to location data, richer data sources, reusable software) Better links with businesses potentially creating new businesses
EU and international standardisation bodies	Feedback on fitness for purpose of location data standards Requirements for new work, improved standards in thematic domains Increased take-up of standards

## EXPECTED MAJOR OUTPUTS

The ELISE work packages and outputs form a holistic proposal, with a defined approach to delivery, an understanding of the benefits (outcomes and impacts), and clear links to key ISA2 selection criteria. ELISE will act as a ‘solution incubator’ to develop and pilot new interoperability solutions (proposed new thematic “ready for operation” pilots and common services), a ‘solution bridge’ to further develop solutions and bring them to maturity (e.g. ARE3NA Reference Platform, Re3gistry) and a ‘solution broker’ to find new users for existing interoperability solutions:

In addition to the key reusable solutions and instruments summarised in 0, ELISE involves a number of feasibility studies that help scope the requirements and assess solution options on particular topics. Other key outputs are the ARE3NA Reference Platform and the Geospatial Knowledge Base service.

Output name	Improving the free flow of location data in DSM
Description	Assessment of economic opportunities and barriers concerning the free flow of location based data in support of the DSM, and development of plan to address these barriers. Topics are likely to include open data, licensing, privacy, data interoperability (e.g. consistency of standards and levels of detail), skills, and public private partnerships.
Reference	
Target release date / Status	Q4/2017 (under procurement with ISA <sup>2</sup> 2016 ELISE budget)

Output name	Open EU mapping feasibility study
Description	Assessment of requirements, supply options and outline business case for an open EU mapping data service. This will include examining the potential scope of data (including quality parameters), uses of the data, barriers to access, options to create a service, and a recommended way forward (which may include deciding not to proceed).
Reference	
Target release date / Status	Q3/2018 (part of ELISE 2017 work programme)

Output name	Supporting better uses of geodata and statistics
Description	An evaluation of requirements and gaps in the linking of geospatial and statistical data, taking into account the work of Eurostat and UN-GGIM in this area, new demands for more dynamic information and new data sources (e.g. social media, satellite data). Development of recommendations and actions including approaches to combine geospatial and statistical data, areas where guidance is needed (including where existing guidance can be re-used), and actions to make improvements or assess where potential improvements can be evaluated (e.g. through pilots).
Reference	
Target release date / Status	Q4/2018 (part of ELISE 2017 work programme)

Output name	ARE3NA Reference Platform
Description	Platform supporting and providing access to reusable location tools and associated guidance. An online resource will be maintained and extended as a specific development to provide access to reusable tools and support the guidance noted above
Reference	<a href="https://joinup.ec.europa.eu/asset/are3na-re3ference-platform/description">https://joinup.ec.europa.eu/asset/are3na-re3ference-platform/description</a>
Target release date / Status	Q3/2016 – Q4/2021 ongoing maintenance and evolution

Output name	Geospatial Knowledge Base service
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Description	<p>Formalisation and extension of existing services offered by the JRC to other Commission Services and ISA(ISA2) Actions. The Geospatial Knowledge Base service will support policy makers, data publishers and users of geospatial data. The service will include landscape and benefits analysis at EU and MS level, It will provide “location” input to thematic expert groups and ICT assessments of EU legislation, as well as supporting policy makers through the policy cycle. Support will be given to implementers of e-government services and developers through webinars, FAQs, helplines etc. Training and awareness-raising will be a key element of the work programme to bridge the “spatial literacy” gap and to help in ensuring solutions are used effectively. The service will include an “operational handover” package for ELISE interoperability solutions, containing documentation of the solutions and how they should be set up in a typical operational environment. Specialists will be on hand to answer questions and, if required, participate in the handover process. Where solutions are implemented separately in different locations, ELISE will facilitate knowledge sharing within the community.</p>
Reference	
Target release date / Status	Q4/2017 service definition and piloting completed; Q1/2018 – Q4/2021 operation of service

## ORGANISATIONAL APPROACH

### Expected stakeholders and their representatives

Stakeholders	Representatives
Commission Services	ENV, ESTAT, CONNECT, DIGIT, MOVE, MARE, ENER. Commission Inter service group on Geographic information (COGI)
INSPIRE governance	Maintenance and Implementation Group (MIG), e.g. to identify needs, promote reusable solutions Member States National Contact Points (NCPs) Legally mandated organisations (LMOs) European Environment Agency
INSPIRE solution providers	Businesses including SMEs
ISA <sup>2</sup>	ISA <sup>2</sup> Working Group on Geospatial Solutions ISA <sup>2</sup> Committee, Working Groups, and Actions established under the ISA <sup>2</sup> Programme
ITS	ITS Committee

Stakeholders	Representatives
	ITS working groups
Other policy domains	Committees, working groups
Standardisation bodies (CEN, ISO, OGC, W3C, OASIS, etc.)	Coordination groups, including relevant focus groups on e-Government. Liaison with these groups to develop relevant standards.
UN-GGIM:Europe	This committee of experts aims to influence policy and promote good practices. EULF has contributed to the UN-GGIM:Europe priority setting and activities in its initial work programme. ELISE will contribute to and re-use UN-GGIM:Europe deliverables going forward (including a possible pilot activity for statistics and location, taking into account on-going ISA <sup>2</sup> work in this area).
Member State organisations, groups and projects	Location / e-Government coordination bodies Government digital agencies National mapping and cadastral agencies National and cross-border projects Business sector groups
Other pan-European interest groups, organisations and projects	Open source and open data communities, research / academic groups, thematic expert groups, industry groups EuroGeographics, EUROGI FP7 & CIP projects: European Location Framework (this CIP ICT-PSP project is developing seamless pan-European mapping and associated tools, making it easier to build cross-border applications; collaboration with ELF is envisaged in the development of thematic pilots and common services), eENVplus, smeSpire, SmartOpenData
EEA/EIONET, National environment agencies	EEA/EIONET national focal points (NFPs), National Reference Centres for Information Systems.

### Identified user groups

Key stakeholder groups are defined in the table above. Of note, however, is that the scope of ELISE will be extended to cover businesses and citizens, in line with the direction of ISA<sup>2</sup>. Support to businesses and citizens will be addressed primarily through Member State public administrations and will consider successful models and solutions they have put in place (e.g. to support innovation, provide funding, establish public private partnerships, take on board citizen inputs) in devising “ELISE” proposals. However, more direct engagement approaches will be explored, under the guidance of the ISA<sup>2</sup> Working Group on Geospatial Solutions, e.g. involvement of business communities in a ‘Business Forum’.

## Communication plan

Documentation will be published on the ISA<sup>2</sup> website and on Joinup. Cross-references will be made to other communications resources, in particular the INSPIRE website and 'partner' websites. Training will be carried out in face-to-face events, webinars, and through access to online resources. Various key communications will be made through the use of videos, brochures, and the ARE3NA platform will be used and promoted whenever possible. Key governance and communications "events" are summarised in the table below.

Event	Representatives	Frequency of meetings / absolute dates of meetings?
ISA <sup>2</sup> Committee and Coordination Group Meetings	MS representatives	Twice yearly
ISA <sup>2</sup> Working Group on Geospatial Solutions	MS and Commission representatives	1-2 times per year
ISA <sup>2</sup> Geospatial Solutions Business Forum	Business community representatives (possibly divided into thematic streams)	1-2 times per year
ELISE workshops	MS and Commission representatives, invited experts	1-2 times per year
INSPIRE Conferences	INSPIRE stakeholders	Once per year
INSPIRE Maintenance and Implementation Group and Sub-Group meetings	MS representatives and invited experts	To be determined
Meetings of standardisation groups (CEN, ISO, OGC, W3C)	Standards experts	2 - 3 times per year
Business innovation events, e.g. apps incubators, hackathons, competitions	Web / mobile developers Geo ICT SMEs	1 per year
Stakeholder Consultation event(s)	General invite	Provisionally 2018
Meetings of the United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM) Europe	UN-GGIM Europe members	Twice per year
Ad hoc partner events, e.g. EUROGI, ONE Conference, ELF, smeSpire, eENVplus, GeoSmartCity, SmartOpenData	Organisers and participants	As required to promote and obtain inputs to ELISE



## Governance approach

The ISA<sup>2</sup> WG on Geospatial Solutions<sup>1</sup> under the ISA<sup>2</sup> Committee will continue to have a vital role in advising the ISA<sup>2</sup> programme – and the ELISE action – and ensuring new priorities are tackled effectively. In particular, it will be consulted on the yearly update of the ELISE WP.

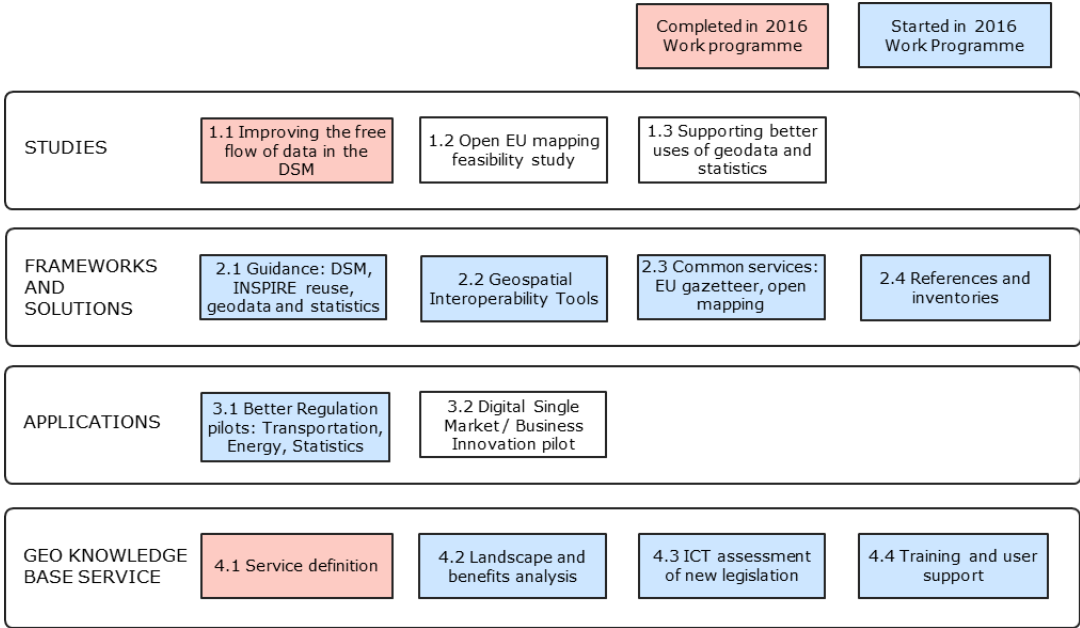
The Action is also strongly linked to the INSPIRE governance structure, and in particular the INSPIRE Maintenance and Implementation Group (MIG), a formal Commission expert group with MS representatives. Selected ELISE activities will contribute to the INSPIRE maintenance and implementation work programme 2016-2020<sup>2</sup>.

A condition for success and sustainability of the ELISE Action is to become firmly embedded in the stakeholder communities it aims to reach. This requires that the governance approach needs to be adapted, and offering shared ownership over the ELISE outputs to the stakeholder communities, e.g. when developing pilots. Based on the EULF recommendations, and in close dialogue with the ISA<sup>2</sup> WG on Geospatial Solutions and the Commission Inter-service Group on Geographic Information (COGI), ELISE will draw-up a governance action plan.

Whenever a consultation is planned, MS representatives will be encouraged to seek views in their countries, and to team-up with national representatives in other relevant general (e.g. UN-GGIM: Europe, Group on Earth Observations, standardisation) or thematic (e.g. MSFD WG DIKE, Covenant of Mayors) initiatives for improved communication and coordination. JRC.B06, as chair for the ISA<sup>2</sup> WG on Geospatial Solutions, will ensure a proper link between ELISE, COGI, and INSPIRE MIG.

## TECHNICAL APPROACH AND CURRENT STATUS

The proposed ELISE work packages and outputs are shown in Figure 1 below. ELISE builds on the work of EULF and ARENA but delivers a step change in the approach to extend the reach of the action in terms of geography, policy areas, applications and users and deliver greater benefit.



<sup>1</sup> The ISA<sup>2</sup> WG on Geospatial Solutions is the successor of the ISA WG on Spatial Information and Services (SIS), which was the governance group for the EULF and ARE3NA ISA actions.

<sup>2</sup> <https://ies-svn.jrc.ec.europa.eu/documents/58>

Figure 1 – ELISE work packages and outputs.

Key features of the ELISE technical approach are:

- a) *Driven by key policies* – the work programme is oriented to support the key policy drivers of the Digital Single Market, Better Regulation and Public Sector Modernisation;
- b) *Support to businesses and citizens* – in line with the direction of ISA<sup>2</sup>. This has been a focus in EULF to date and will be extended in ELISE with more targeted actions (e.g. pilots, governance);
- c) *Extending the framework and tools already delivering benefit* – building on EULF and ARE3NA;
- d) *Developing priority ‘common services’ to extend the range of applications significantly* – key common data services such as geonames, administrative units, addresses, and open mapping will be developed with relevant partners;
- e) *Promoting and developing practical interoperability solutions that address priority needs* – proposed solutions will be based on a rigorous analysis of demand and solutions available for re-use, and assessment of the business case for development and, where necessary, a detailed feasibility study;
- f) *User support model to facilitate take-up* – the emphasis will not just be on delivering solutions but in ensuring they meet user needs and in supporting users in adoption and take-up of the solutions. Specifically, the Geospatial Knowledge Base service will support policy makers and implementers through, for example, ICT assessments of new legislation, training and awareness raising, and support in adoption of best practices and solutions;
- g) *Increased synergies with other ISA<sup>2</sup> actions* – ELISE follows the principles of the EIS and EIF and will contribute solutions to the EIC, cross-referenced against the EIRA. It will build on existing ISA2 observatories to include ‘location’ analysis and will provide ‘location inputs’ to ICT assessments of new legislation and, if required, interoperability maturity assessments. ELISE will also promote and explore joint opportunities with other ISA<sup>2</sup> actions, including possible actions on base registries, SEMIC work on metadata catalogues and semantic annotation of government portals and websites, sharing and re-use etc. Opportunities will also be explored for shared approaches to developing and testing solutions.

The work of ELISE relates to all of the EIF interoperability levels, as shown in the diagram below.

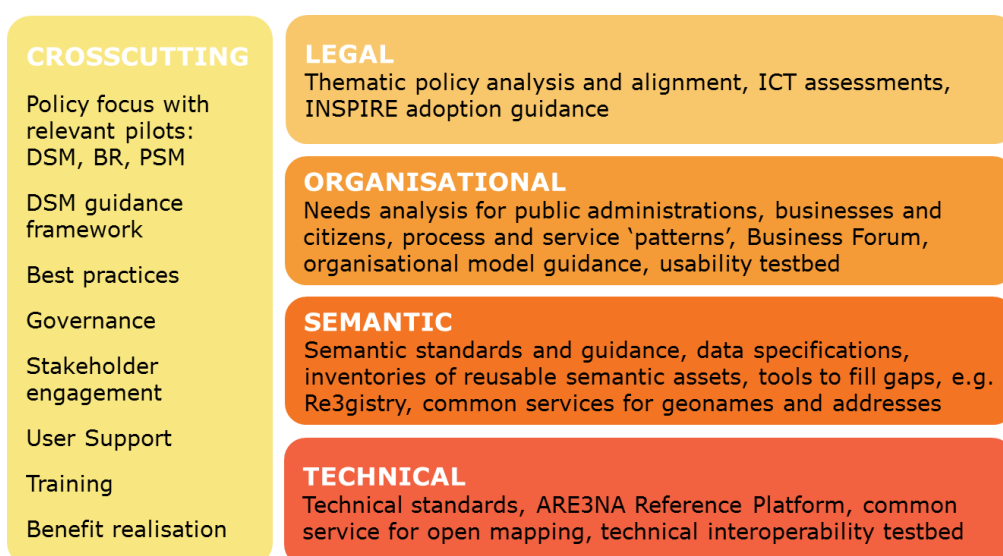


Figure 2 – ELISE work in relation to the EIF interoperability levels.

The focus of the individual ELISE work packages for 2017 is described in detail in Table 1.

**Table 1. Focus of ELISE work packages for 2017**

Work package	2017 focus
1. Studies	
1.2 Open EU mapping feasibility study	Scope, requirements, rationale and plan for an open EU mapping common service; assessment of the fitness for purpose and potential for re-use of OpenStreetMap and ELF services
1.3 Supporting better uses of geodata and statistics	Assessment of uses of geodata for statistical purposes, current gaps and issues, and actions to make improvements
2. Frameworks and Solutions	
2.1 Guidance:	DSM (including open data), INSPIRE reuse, input to SEMIC work on metadata interoperability, maintenance and evolution of existing guidance. Rolling work programme agreed with stakeholders.
2.2 Geospatial Interoperability Tools	Maintenance and evolution of ARE3NA platform; evolution and sustainability of INSPIRE Re3gistry; INSPIRE test framework maintenance and improvement; Spatial Data on the Web tools and guidance for data providers, plus input to SEMIC work on semantic annotation of government portals and websites.
2.3 Common services:	EU gazetteer pilot phase 1 (geonames and administrative units): Initial pilot development
2.4 References and inventories:	Ongoing collection of reusable location interoperability solutions and cataloguing in the EIC best on identified patterns, further best practice factsheets, and input to the Rolling Plan for ICT Standardisation
3. Applications	
3.1 Better Regulation Pilots	CEF Transportation Pilot: Digital maps for multi-modal travel and traffic information - support to pilot execution Marine Pilot: capacity building and support for pilot roll-out in multiple countries Energy Pilot phase 2: pilot execution
4. Geo Knowledge Base Service	
4.2 Landscape and benefits analysis	Monitoring and analysis of EU and MS policies and MS implementations to assess demand and identify re-usable frameworks and solutions. Scoping and piloting approach to impact and benefit capture.
4.3 ICT assessment of new legislation	Support to policy makers and DIGIT in ICT assessments of new legislation, where there is a significant geospatial requirement
4.4 Training and user support	Training development and delivery; Promotion, stakeholder engagement, awareness raising, web publication, support to users

## COSTS AND MILESTONES

### Breakdown of anticipated costs and related milestones

The proposed ELISE work programme spans five years and has three phases:

Initiation (year 1): Mobilisation and definition activities and evolution of EULF and ARE3NA solutions

Execution (years 2-4): Contains largely execution activities with new studies, guidance, services and application pilots; existing tools will be maintained and improved; a mid-term evaluation is also planned in this phase

Closing (year 5)

Readying of solutions for operation, support to handover of solutions, final evaluation, and transition to “operational governance”).

The work programme will be based on the elements identified elsewhere in this proposal, although precise details of the relevant costs and milestones will be identified on a rolling basis. The anticipated costs and related milestones for the Initiation phase and first year of the Execution phase are shown in the table below.

Phase: Initiation Planning Execution Closing/Final Evaluation	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA/ others (specify)	Start date	End date
<b>1. Studies</b>					
Initiation	1.1 Improving the free flow of location data in the DSM	160 –	ISA	Q3/2016	Q4/2017
Execution	1.2 Open EU mapping feasibility study	– 140	ISA	Q3/2017	Q3/2018
Execution	1.3 Supporting better uses of geodata and statistics	– 140	ISA	Q4/2017	Q4/2018
<b>2. Frameworks and Solutions</b>					
Initiation	2.1 Guidance	40	ISA	Q1/2017	Q4/2017
Execution		300		Q1/2018	Q2/2019
Initiation	2.2 Geospatial Interoperability Tools	308	ISA	Q4/2016	Q4/2017
Execution		265		Q3/2017	Q4/2018
Initiation	2.3 Common services	75	ISA	Q4/2016	Q3/2017
Execution		250		Q3/2017	Q1/2019
Initiation	2.4 References and inventories	60	ISA	Q4/2016	Q3/2017
Execution		245		Q2/2017	Q4/2018
<b>3. Applications</b>					
Initiation	3.1 Better Regulation Pilots	135	ISA	Q4/2016	Q4/2017
Execution		360		Q3/2017	Q4/2018
<b>4. Geo Knowledge Base Service</b>					
Initiation	4.1 Geo Knowledge Base service definition and piloting	205 –	ISA	Q4/2016	Q3/2017
Execution	4.2 Landscape and benefits analysis	– 165	ISA	Q3/2017	Q4/2018
Execution	4.3 ICT assessment of new legislation	– 90	ISA	Q3/2017	Q4/2018
Execution	4.4 Training and user support	– 285	ISA	Q2/2017	Q4/2018
	<b>Total</b>	<b>3223</b>			

Note: ELISE is a multi-year action. The above table shows only the milestones and required budget in the first two years. In several work areas, there will continued activity and further milestones in subsequent years. See section 1.1.5.5 and 1.1.8 Expected Re-usable Outputs and Major outputs (target release dates).

The proposed work elements are also important to the JRC in supporting the evolution of INSPIRE and its wider scientific interests in data and technology. Consequently, resources from ISA will be complemented by JRC institutional staff resources, that will cover management and governance support, as well as more specific technical support on INSPIRE issues.

### Breakdown of ISA funding per budget year

Budget Year	Phase	Anticipated allocations (in KEUR)	Executed budget (in KEUR)
2016	Initiation	983	
2017	Execution	2,240	
2018	Execution	2,485	
2019	Execution	2,705	
2020	Closing/Final Evaluation	1,490	

### ANNEX AND REFERENCES

Description	Reference link
INSPIRE Directive, Implementing Rules and Technical Guidelines	<a href="http://inspire.ec.europa.eu/">http://inspire.ec.europa.eu/</a>
European Union Location Framework	<a href="http://ec.europa.eu/isa/actions/02-interoperability-architecture/2-13action_en.htm">http://ec.europa.eu/isa/actions/02-interoperability-architecture/2-13action_en.htm</a>
ARE3NA	<a href="http://ec.europa.eu/isa/actions/01-trusted-information-exchange/1-17action_en.htm">http://ec.europa.eu/isa/actions/01-trusted-information-exchange/1-17action_en.htm</a>
UN-GGIM Europe website	<a href="http://un-ggim-europe.org/">http://un-ggim-europe.org/</a>
European Location Framework (ELF) project website	<a href="http://www.elfproject.eu/">http://www.elfproject.eu/</a>
Covenant of Mayors initiative on energy sustainability	<a href="http://www.covenantofmayors.eu/index_en.html">http://www.covenantofmayors.eu/index_en.html</a>