

## 1.1 EUROPEAN LOCATION INTEROPERABILITY SOLUTIONS FOR EGOVERNMENT (ELISE) (2016.10)

### 1.1.1 IDENTIFICATION OF THE ACTION

Service in charge	EC Joint Research Centre (JRC)
Associated Services	DIGIT, CNECT, ENV, ENER, MOVE, ESTAT, GROW

### 1.1.2 EXECUTIVE SUMMARY

Location information underpins policy assessment, digital services and applications for public administrations, businesses and citizens. However, interoperability barriers hinder the optimal performance of underlying ICT systems and obstruct the creation of economic value from location information. Although the PSI and INSPIRE Directives and the ISA Programme have started to remove interoperability barriers, more needs to be done to reach the potential of location information, supporting Digital Single Market (DSM) Strategy goals. To address this need, the European Location Interoperability Solutions for e-Government (ELISE) Action is a package of solutions facilitating efficient and effective electronic cross-border or cross-sector interactions between European public administrations, citizens and businesses, in the domain of location information and services.

In 2020, ELISE will perform transitional activities to maintain momentum on key topics (such as GDPR<sup>1</sup> support, solution re-use, AI pilot study scoping), while consolidating most of the work across the Action. A key output of this activity will be to develop a policy-relevant summary document to show the results of ELISE in supporting a domain-specific interoperability framework. Work will also involve activities with stakeholders to understand how ELISE outputs have been applied, the resulting benefits and what more could be done, including the processes that should be involved to maximise impact. In parallel, work will analyse the outputs of ELISE's Location Interoperability Framework Observatory (LIFO) to understand common needs in the Member States in any follow-up activity, as well as aiming for a full European coverage for outputs towards DIGIT's National Interoperability Framework Observatory (NIFO) Action.

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<sup>1</sup> <https://joinup.ec.europa.eu/collection/elise-european-location-interoperability-solutions-e-government/news/gdpr-and-location-data>

ELISE will also initiate two activities within the scope of ELISE towards the forthcoming Digital Europe Programme (DEP), addressing location interoperability issues in the digital transformation of government: (i) location intelligence and (ii) data spaces, assessing, reusing and reforming much of its outputs in recent years to begin to shape these new topics.

For the duration of the Action, ELISE will continue supporting the implementation of the INSPIRE Directive through tools and pilots making use of the interoperability assets of the Directive, especially in the Energy domain. Capacity building, communication and engagement activities will also be a key focus, including further development of knowledge transfer activities, including joint actions with EU Digital Innovation Hubs and the ‘rapid studies’ to help fill the remaining gaps in sharing knowledge on topics such as AI, IoT, APIs and HPC from technological, semantic, organisational and legal perspectives relevant to location interoperability.

### **1.1.3 OBJECTIVES**

ELISE aims to provide location-related solutions for all four levels of the EIF. It supports the ISA<sup>2</sup> Programme's basic objective to identify, create and operate interoperability solutions implementing Union policies. It will remove barriers to the sharing and reuse of location information in Europe, and build effective interactions between public administrations, citizens and businesses. ELISE will promote a holistic approach towards ‘location interoperability’ by helping to optimise the contribution of location information in the digital transformation of public administrations for both policy and online service delivery activities.

### **1.1.4 SCOPE**

In scope:

- a) Evaluate and promote the role of location information in the digital transformation of government;
- b) Provide a Geo Knowledge Base Service for ISA<sup>2</sup> Programme stakeholders;
- c) Develop pre-operational ‘common services’ for decision-making and value-added applications;
- d) Develop and evolve reusable tools supporting location interoperability;
- e) Run application pilots covering different policies/sectors;
- f) Evaluate and pilot new technologies in support of digital government transformation;

- g) Communicate effectively and disseminate the results by actively engaging stakeholders.

Out of scope:

Create or develop solutions already in place or being produced by other initiatives. ELISE will re-use or promote them, where relevant.

### 1.1.5 ACTION PRIORITY

ELISE contributes to the interoperability landscape by ensuring that the ‘location’ dimension has an impact, adds value and is appropriately addressed within solutions across borders and sectors, in line with DSM objectives and in support of digital government transformation. ELISE is linked strongly to various other ISA<sup>2</sup> Actions, and has harmonisation and reuse as core themes in its approach.

ELISE also targets a wide range of EC and Member State stakeholders, with specific focus on the links between public administrations, businesses and citizens. Geospatial data not only has relevance to the policy and service delivery activities of the Member States and the EC but also great potential for the European digital economy, as recently recognised in the new Open Data and Reuse of PSI Directive (EU 2019/1024), highlighting its value, both as Open Data and as high-value datasets.

#### 1.1.5.1 Contribution to the interoperability landscape

Question	Answer
<p><i>How does the proposal contribute to improving interoperability among public administrations and with their citizens and businesses across borders or policy sectors in Europe?</i></p> <p><i>In particular, how does it contribute to the implementation of:</i></p> <ul style="list-style-type: none"> <li>• <i>the new European Interoperability Framework (EIF),</i></li> <li>• <i>the Interoperability Action Plan</i></li> <li>• <i>the Connecting European Facility (CEF) Telecom guidelines</i></li> <li>• <i>any other EU policy/initiative having interoperability</i></li> </ul>	<p>ELISE will continue assessing location interoperability enablers and barriers related to the digital transformation of government, including contributions to the EIF and the Interoperability Action Plan (e.g. Actions 4,6,17 &amp; 19).</p> <p>ELISE pilots are designed to test cross-border and cross-sector interoperability and deliver pre-operational and reusable solutions. Their outputs contribute to different EU initiatives; including supporting the implementation of the INSPIRE Directive 2007/2/EC, promoting the Once Only Principle (OOP, recommendation no.18 of the e-Government Action Plan) and the CEF by providing building blocks for Member State deployment.</p>

Question	Answer
<i>requirements?</i>	
<i>Does the proposal fulfil an interoperability need for which no other alternative action/solution is available?</i>	ELISE is the only action in ISA <sup>2</sup> focusing on location interoperability. It will promote widespread uptake and the reuse of good practices through the development its Geo Knowledge Base Service.

### 1.1.5.2 Cross-sector

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

Question	Answer
<i>Will the proposal, <b>once completed</b> be useful, from the interoperability point of view and utilised in two (2) or more EU policy sectors? Detail your answer for each of the concerned sectors.</i>	Location interoperability is relevant to almost all EU policies and many of the outputs apply in any policy context. The ELISE pilots will be tested in domains such as environment, transportation, energy, statistics, health and the digital economy.
<i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised in two (2) or more EU policy sectors.</i>	The Re <sup>3</sup> gistry and INSPIRE test framework / validator are available online for free for all Member States, as well as reusable software for others to explore, and have already been used in the environmental and energy domains.  The GeoDCAT-AP specifications for reusing metadata from a range of sectors in open data catalogues (in collaboration with the SEMIC Action) have led to Member State implementations (e.g. Italy).

### 1.1.5.3 Cross-border

Question	Answer
<i>Will the proposal, once completed, be</i>	The common data services and

<i>useful from the interoperability point of view and used by public administrations of three (3) or more EU Members States? Detail your answer for each of the concerned Member State.</i>	interoperability tools will be designed to be accessible and reusable across Member States. All Member States are actively encouraged to participate in development and trialling of these interoperability solutions. The Geo Knowledge Base Service will offer guidance, advice and solutions for EU institutions and Member States.
<i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised by public administrations of three (3) or more EU Members States.</i>	Road safety data-exchange solutions piloted and implemented in Norway and Sweden are being rolled-out to 14 other Member States using CEF Programme Support Action <sup>2</sup> . INSPIRE Registry services (see below) have managed to obtain over 1.8 million hits in 2018 from many different Member States.

#### 1.1.5.4 Urgency

Question	Answer
<i>Is your action urgent? Is its implementation foreseen in an EU policy as priority, or in EU legislation?</i>	ELISE is active in supporting several EU policy initiatives, such as the EIF (Actions 4, 6, 17 & 19); the new Open Data and Reuse of PSI Directive; the introduction of GDPR (2018); INSPIRE Directive implementation (next deadline end 2020) and its use for data-sharing in other legislation (e.g. MMTIS); the Digital Single Market Strategy; the eGovernment Action Plan 2016-2020 (COM(2016)179 final; Action 19), and the Tallinn Declaration on e-Government (2017).
<i>How 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>	The ISA <sup>2</sup> Programme offers a unique opportunity to investigate how to reuse and build on the cross-sector/cross-border approach of INSPIRE to create synergies between location and wider ICT interoperability solutions and frameworks. The Programme is the only funding source to address interoperability issues in the scope of ELISE.

#### 1.1.5.5 Reusability of action's outputs

Name of reusable solution	Geo Knowledge Base Service – Knowledge Transfer
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<sup>2</sup> Reference call: CEF MOVE/B4-2017-63

Description	The Service will continue fostering the reusability of solutions in the context of location interoperability. It is disseminating acquired knowledge from specific studies, successful pilots, tools and frameworks or guidance performed in ELISE. Innovative channels are being established in 2019 for finalisation in 2020 through Digital Innovation Hubs, including re-usable workshop “packs”, quizzes, and hands-on activities.
Reference	<a href="https://joinup.ec.europa.eu/collection/european-union-location-framework-eulf/eulf-blueprint">https://joinup.ec.europa.eu/collection/european-union-location-framework-eulf/eulf-blueprint</a>
Target release date / Status	Q4/2018- Q4/2020 (operational solution)
Critical part of target user base	Service: usage by 10 Member States and 3 EC DGs Approach: reuse of approach or basic ‘knowledge elements’ in 2 other initiatives
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	N/A

Name of reusable solution	Pilots and testbeds for applications, technologies, and common data services
Description	These help test concepts and develop reusable solutions towards operational activities. Outputs include application pilots in transport and energy efficiency domains, an evaluation of EU gazetteer services, testbeds for publishing spatial data on the web and the use of APIs and AI. A focus is on cross-border use cases in the geospatial domain. The work will also engage with agricultural data through the Farm Sustainability Tool (FaST, detailed below)
Reference	<a href="https://www.youtube.com/watch?v=jnny5ATwTYE">https://www.youtube.com/watch?v=jnny5ATwTYE</a> <a href="https://joinup.ec.europa.eu/community/eulf/og_page/eulf-energy-pilot">https://joinup.ec.europa.eu/community/eulf/og_page/eulf-energy-pilot</a>
Target release date / Status	Q1/2018 – Q4/2021 ongoing programme of pilots
Critical part of target user base	Services: integration into applications/portals by 10 public bodies or businesses Pilots: Take up by public bodies and/or businesses in 10 Member States

For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	Transportation pilot outputs already used in NO, SE, UK, BE (Flanders), IE.
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Name of reusable solution	Re <sup>3</sup> gistry software
Description	Maintenance and extension of the open source Re <sup>3</sup> gistry software to ensure support for the INSPIRE Registry and cross-sector register federations. Handover options will be assessed, such as release as a full open source project or as a DSI building block in the CEF.
Reference	<a href="https://joinup.ec.europa.eu/software/re3gistry/description">https://joinup.ec.europa.eu/software/re3gistry/description</a> <a href="http://inspire.ec.europa.eu/registry/">http://inspire.ec.europa.eu/registry/</a> <a href="http://inspire-regadmin.jrc.ec.europa.eu/ror/">http://inspire-regadmin.jrc.ec.europa.eu/ror/</a>
Target release date / Status	Q4/2018 operational solution
Critical part of target user base	Re-use of software by 5 public bodies and high levels of usage through the online INSPIRE Registry service.
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	Already re-used in several Member States (AT, ES, IT, FI, FR and SK) and for managing ISA Core Vocabularies. Indicators are part of quarterly reporting on the ISA <sup>2</sup> Dashboard. Promotion for uptake will continue for the duration of the Action.

Name of reusable solution	INSPIRE test framework / validator
Description	Extended testing frameworks to ensure that reuse of INSPIRE and other geo-ICT data infrastructures provide reliable and appropriate content across INSPIRE's data themes, supporting public administrations in their implementation tasks.
Reference	<a href="https://github.com/inspire-eu-validation/">https://github.com/inspire-eu-validation/</a>
Target release date / Status	V1 Q3/2017, V2 Q1/2019, V2.x Q4/2019
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)	Version 1.0 was released in July 2017 and V2.0 in January 2019, with an update due by the end of 2019. Reuse will be monitored periodically. Promotion for uptake will continue for the duration of the Action.

### 1.1.5.6 Level of reuse of existing solutions

Question	Answer
<p><i>Does the proposal intend to make use of any ISA<sup>2</sup>, ISA or other relevant interoperability solution(s)? Which ones?</i></p>	<p>ELISE will promote re-use and build on EULF, ARE<sup>3</sup>NA and other ISA/ISA<sup>2</sup> solutions, including:</p> <ul style="list-style-type: none"> <li>i) publishing outputs on JoinUp, carrying out surveys using EUSurvey, and sharing solutions based on the EIF and EIRA;</li> <li>ii) making ‘location’ contributions to the assessment of ICT implications of new legislation and to the NIFO;</li> <li>iii) following recommendations/methods of the Sharing and Re-use strategy and the Interoperability Maturity Model; and</li> <li>iv) supporting various SEMIC activities (especially in relation to vocabularies and GeoDCAT-AP).</li> </ul> <p>ELISE will also reuse or promote solutions from other initiatives, including, i.e.:</p> <ul style="list-style-type: none"> <li>i) the European Data Portal;</li> <li>ii) ESTAT geocoding services;</li> <li>iii) the interoperability assets from INSPIRE;</li> <li>iv) European projects, such as ELF, OpenELS and GeoSmartCity;</li> <li>v) Danish and Czech approaches to core registries; and</li> <li>vi) relevant legal and organisational assets (e.g. business cases, licensing approaches, Public Private Partnership (PPP) models, training modules).</li> </ul>
<p><i>For proposals completely or largely already in operational phase: has the action reused existing interoperability solutions? If yes, which ones and how?</i></p>	<p>Examples include the Transportation pilot reusing the TN-ITS data specifications and INSPIRE approach to location (linear) referencing.</p> <p>The INSPIRE test framework is partly based on the OGC CITE test engine for web services.</p>

### 1.1.5.7 Interlinked

Question	Answer
<p><i>Does the proposal directly contribute to at least one of the Union’s high political priorities such as the DSM?</i></p>	<p>ELISE contributes directly to the DSM Strategy, as it actively supports the EIF, the Open Data and Reuse of PSI Directive and</p>



<p><i>If yes, which ones? What is the level of contribution?</i></p>	<p>INSPIRE Directive implementation, as requested by the EU eGovernment Action Plan 2016-2020.</p> <p>By assessing demand, opportunities and barriers through specific studies and thematic pilots, ELISE creates targeted guidance and (location) interoperability tools.</p> <p>ELISE contains actions that correspond to the vision laid out in the Tallinn Declaration on e-Government from October 2017, specifically on open access (including data licencing and promoting open EU gazetteer services), usability (guidance on user-driven design), trust (knowledge sharing on GDPR within the geospatial community); development of the data economy (assessment of data flows and data value, understanding and overcoming barriers); cross-border (EU-wide common data services and cross-border pilots); and interoperability by default (applying the EIF and monitoring through ELISE's LIFO).</p> <p>FaST brings digitalisation benefits to the agricultural sector and related authorities. It creates cross-border market opportunities for Copernicus and Galileo-based digital products for the sector and EU-wide re-use of solutions for MS authorities.</p> <p>FaST's implementation will help mitigate emissions as part of the Energy Union and Climate priority, while contributing to Common Agricultural Policy objectives in terms of digitalisation and effective agro-environment and climate interventions.</p>
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### 1.1.6 PROBLEM STATEMENT

<i>The problem of</i>	barriers to location interoperability
<i>affects</i>	many policy areas and public services
<i>the impact of which is</i>	higher costs due to inefficiencies in current governmental processes and barriers in the creation of economic value. Data are undervalued, not managed efficiently or misinterpreted, with impacts on decision-making as a consequence.
<i>a successful solution</i>	sharing best practices, guidelines and tools, supported

<i>would be</i>	through the ELISE Geo Knowledge Base Service, including training and pilots to demonstrate the feasibility and identify the benefits of solutions. For example, different data specifications are used in different contexts, whereas ELISE pilots use INSPIRE to have a harmonised approach.
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<i>The problem of</i>	limited data-sharing of location data
<i>affects</i>	European data economy
<i>the impact of which is</i>	over-investments / spending using often poor quality information and barriers to innovation, especially in the private sector
<i>a successful solution would be</i>	to understand the needs of different users and the extent to which data is required across borders and the barriers to sharing this data and to promote collaborative efforts to improve the extent and impact of EU location data sharing. This includes actions relating to simplified, harmonised, and open licensing, use of common data formats, improvements in searching for data, as well as capacity building and knowledge transfer. These efforts need to be in line with the Open Data and Reuse of PSI and INSPIRE Directives, and the protections afforded by GDPR.

<i>The problem of</i>	delayed reaction in government to advances in the technology landscape
<i>affects</i>	inhibits public service innovation and timely take-up of policy measures
<i>the impact of which is</i>	reduced policy impact and public administration satisfaction levels (as expectations increasingly rise)
<i>a successful solution would be</i>	to use agile knowledge gathering and dissemination processes to improve the readiness of public sector. ELISE contributes to mitigate this issue by disseminating specific studies on the impacts of new technologies in government environments (e.g. digital platforms, APIs, AI, IoT), by facilitating the testing through pilots, developing specific tools, and facilitating knowledge transfer through guidance, ‘rapid studies’ and webinars.

## 1.1.7 IMPACT OF THE ACTION

### 1.1.7.1 Main impact list

Impact	Why will this impact occur?	By when?	Beneficiaries
(+) Savings in money	Savings will occur thanks to avoiding duplicated efforts and reusing cost-efficient solutions in e.g.: data procurement, software development and service delivery	Once solutions are in an operational phase in Public Administrations	Public administrations, businesses and citizens
(+) Savings in time	Time savings will occur thanks to avoiding duplicated efforts and, again, reusing cost-efficient solutions	As above	Public administrations, businesses and citizens
(+) Better interoperability and quality of digital public service	Interoperability objectives will be realised through fostering collaboration between actors, sharing of best practices, highlighting optimal business processes and (user-centric) services, promoting harmonised policy approaches (e.g. INSPIRE, GDPR, ITS, EPBD) and deploying new technologies effectively to support digital government transformation, with developments monitored through LIFO.	The duration of ELISE and the operation of its Geo Knowledge Base Service	All stakeholders
(-) Integration or usage cost	Effort will be needed to integrate 'location' in other initiatives, across all the EIF	ELISE supports such integration until 2021	EU and MS policy makers
(+) Improved policy-making where location plays a role (including cross policy alignment)	Considering location information at the early stages will provide a cohesive approach to analysing status/problems throughout the policy cycle	Within the policy implementation and review timeframe (e.g. 5 years approx. for new policies)	EU and MS policy makers
(+) Effective skills	Organisations will improve their geospatial literacy and other skills	ELISE duration and	All

Impact	Why will this impact occur?	By when?	Beneficiaries
	to make best use of available data	operation of Geo Knowledge Base Service	
(+) Creation of a collaborative network	<p>The Geo Knowledge Base Service is a focal point for facilitating partnerships between organisations/ initiatives, offering expert advice about location data and services/ sources, reusable software etc.</p> <p>The best practices identified through the Location Observatory will be promoted for reuse across the ELISE and broader ISA<sup>2</sup> stakeholder communities.</p>	Initial benefits will occur when partnerships are set up, such as via pilots or the roll-out of interoperable services	Various stakeholder relationships, including with research and businesses. Examples of best practice in the geospatial domain are often of interest to other interoperability activities.

### 1.1.7.2 User-centricity

Collaboration is core to ELISE’s approach, involving key stakeholder input through workshops, consultations, surveys and co-development of solutions. In particular, the ISA<sup>2</sup> Working Group on Geospatial Solutions is invited to propose priority actions. Inputs are sought from public and private sector stakeholders, academia, key industry bodies and thematic communities. ELISE’s use cases and feasibility studies help assess demand for particular solutions and priorities. Validation in the field ensures that needs are met in a practical way, with improvements through direct feedback from users. As well as practising a user-centric approach, the ELISE Blueprint incorporates user-driven service delivery best practice in its guidance framework.

### 1.1.8 EXPECTED MAJOR OUTPUTS

ELISE outputs form a holistic proposal, including evaluating benefits, outcomes and impacts, with clear links to key ISA<sup>2</sup> selection criteria. It will act as a ‘solution incubator’ to develop and pilot solutions, a ‘solution bridge’ to bring them to maturity and a ‘solution broker’ to find new users. ELISE also involves a number of feasibility studies to scope and assess requirements/options for key topics before launching pilots, alongside engagement and knowledge-sharing activities. The major outputs for the 2020 Work Programme are summarised below.

Output name	Location intelligence landscaping
Description	This work will focus on location intelligence in the public sector, which combines AI, data analytics and geospatial technologies/techniques (including data visualisation) to aid decision-making.
Reference	<a href="https://joinup.ec.europa.eu/community/eulf/og_page/eulf-blueprint">https://joinup.ec.europa.eu/community/eulf/og_page/eulf-blueprint</a> <a href="https://ec.europa.eu/knowledge4policy/ai-watch_en">https://ec.europa.eu/knowledge4policy/ai-watch_en</a>
Target release date / Status	Q3/2021

Output name	Data space interoperability pilot
Description	Scoping and initial setup of a pilot for investigating interoperability issues within and between data spaces involving location information in different sectors (e.g. energy, health, environment, transport, agriculture), addressing all levels of the EIF.
Reference	<a href="https://ec.europa.eu/digital-single-market/en/news/digital-europe-programme-proposed-eu92-billion-funding-2021-2027">https://ec.europa.eu/digital-single-market/en/news/digital-europe-programme-proposed-eu92-billion-funding-2021-2027</a> <a href="https://ec.europa.eu/knowledge4policy/ai-watch/topic/data-cornerstone-ai-%E2%80%93-toward-common-european-data-space_en">https://ec.europa.eu/knowledge4policy/ai-watch/topic/data-cornerstone-ai-%E2%80%93-toward-common-european-data-space_en</a>
Target release date / Status	Q3/2021

Output name	Consolidated ELISE outputs towards policy-relevant advice
Description	<p>For the remainder of the Action, ELISE will aim to close pilot and application developments for potential handover, ensuring that findings are well documented towards a domain interoperability framework for the EIF related to location.</p> <p>This will include a final update of the EULF Blueprint towards this destination and final findings from the LIFO activity (see below).</p> <p>Feedback from the knowledge transfer activities will be included, where appropriate, and ELISE will share its findings via JoinUp and in a final conference, to be organised with stakeholders in the Member States to help promote and validate final policy recommendations.</p>
Reference	<a href="https://joinup.ec.europa.eu/community/eulf/og_page/eulf-blueprint">https://joinup.ec.europa.eu/community/eulf/og_page/eulf-blueprint</a>

Target release date / Status	Q1 2021
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Output name	Location Interoperability Landscape-analysis and Technology Watch
Description	Evidence will continue to be gathered on EULF Blueprint recommendations through the LIFO assessments with MS representatives, with an aim for full European coverage as a secondary data source for NIFO. Country factsheets and an overall state-of-play report will be produced and contributions to the analytical tools of NIFO.
Reference	<a href="https://joinup.ec.europa.eu/collection/elise-european-location-interoperability-solutions-e-government/location-interoperability-framework-observatory-lifo">https://joinup.ec.europa.eu/collection/elise-european-location-interoperability-solutions-e-government/location-interoperability-framework-observatory-lifo</a>
Target release date / Status	Q1/2021

Output name	Geo Knowledge Base Service – Knowledge Transfer
Description	<p>2020 will see further knowledge assets developed beyond the activities started in 2018 and the new examples being setup in 2019, with a specific exploration of Digital Innovation Hubs as knowledge brokers.</p> <p>Feedback from stakeholders will help to finalise outputs such as the initial primer on geospatial literacy, location interoperability and the digital transformation of government; the reusable workshop pack (with new topics added); and more practical exercises, including hackathons.</p> <p>Work will also explore how contributions can be shared with the Interoperability Academy ISA<sup>2</sup> Action and the JRC's EU Academy for further exploitation as part of sustainability assessments. The reusability of the activity will be further tested, for example by including relevant project resources from JRC citizen science activities.</p>
Reference	<p>See, for example the Rapid Studies:</p> <p><a href="https://joinup.ec.europa.eu/collection/elise-european-location-interoperability-solutions-e-government/elise-rapid-studies-and-webinars">https://joinup.ec.europa.eu/collection/elise-european-location-interoperability-solutions-e-government/elise-rapid-studies-and-webinars</a></p>
Target release date / Status	Q2/2021

## 1.1.9 ORGANISATIONAL APPROACH

### 1.1.9.1 Expected stakeholders and their representatives

Stakeholders	Representatives	Involvement in the action
ISA <sup>2</sup>	Member State representatives in the ISA <sup>2</sup> Working Group on Geospatial Solutions and the ISA <sup>2</sup> Committee. Plus, other ISA <sup>2</sup> Actions	Inputs to Work Programme, governance, identifying best practices, partnerships and synergies with other activities
Commission Services	ENV, ESTAT, CNECT, DIGIT, MOVE, ENER, GROW. EC Inter service group on Geographic information (COGI)	Scoping solutions / pilots, IMSB Action 5.4 related to work on capacity building in geospatial data
INSPIRE Governance	Maintenance and Implementation Group (MIG), National Contact Points (NCPs), Legally Mandated Organisations (LMOs), European Environment Agency (EEA)	Identifying needs, promoting reusable solutions, participating in pilots
Geospatial Solution providers	Businesses (including SMEs) and research bodies	Knowledge base content and solution development
Thematic Policy domains	Committees , working groups, including those related to location data, such as Copernicus (GROW) and GEO (RTD)	As relevant for application, solution or pilot activities
UN-GGIM: Europe	ELISE will collaborate with ESTAT on the promotion of geospatial data management for public administrations.	Uptake of results of work on geospatial data and statistics
Member State organisations, groups and projects	Location / e-Government coordination bodies, Government digital agencies, National mapping and cadastral agencies, National agricultural management and Paying Agencies, Private sector actors	Solution providers and users
Pan-European interest groups, organisations and projects	Such as OSGeo and other communities; open data communities, research / academic groups, European umbrella organisations (e.g. EuroGeographics)	As data sources and pilot partners and inputs to feasibility studies
EEA/EIONET, Environment National agencies	EEA/EIONET national focal points (NFPs), National Reference Centres for Information Systems.	As partners in potential INSPIRE environmental pilots

Stakeholders	Representatives	Involvement in the action
Network of businesses, or individual private companies	Smespire (and similar) networks of enterprises, private companies working in specific thematic domains. A selection of Digital Innovation Hubs relevant to geospatial activities and digital transformation, Earth Observation industry events	Pilot partners and stakeholders for scoping solutions

### 1.1.9.2 Identified user groups

Existing stakeholder groups are defined above but ELISE will also cover businesses and citizens by exploring successful models and solutions (e.g. to support innovation, provide funding, put PPPs into practice, take on board citizen inputs, including establishing a link to JRC citizen science activities).

### 1.1.9.3 Communication and dissemination plan

Documentation will be published on the ISA<sup>2</sup> website and on JoinUp. Cross-references will be made to, for example, INSPIRE's knowledge base<sup>3</sup> and relevant 'partner' websites.

The source code of solutions developed under ELISE will be published in well-accepted open source repositories such as GitHub.

Training will be carried out in face-to-face events, webinars, and through access to online resources.

Videos, brochures, and platforms, including social media will also be used. Engagement activities such as surveys will also help to raise awareness about the Action and the ISA<sup>2</sup> Programme.

Key events are summarised in the following table:

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	2-3 times per year
ELISE workshops, partner events, webinars	MS and Commission representatives, thematic groups,	8-10 times per year

<sup>3</sup> <http://inspire.ec.europa.eu/>



Event	Representatives	Frequency of meetings / absolute dates of meetings?
	invited experts, including awareness raising and capacity building events	
INSPIRE Conferences	INSPIRE stakeholders	Once per year
INSPIRE Maintenance and Implementation (MIG) 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	1-2 times per year
Other thematic conferences	Transport, Energy as well as FOSS/ICT conferences, including ISA <sup>2</sup> 's SEMIC and Sharing and Reuse Conferences, Space Data (Copernicus and Galileo) conferences and industry workshops	Once per year
ELISE final conference	All stakeholders from government and business	One-time event

#### 1.1.9.4 Key Performance indicators

Description of the KPI	Target to achieve	Expected time for target
Number of interventions where ELISE has aided European Commission policy makers in advancing location interoperability good practice in their policies and initiatives with relevant studies and recommendations	10	Q4/2020
Number of MS public services where ELISE guidance, tools, support or pilots have helped them improve the integration of location information in their processes	5	Q4/2020

Description of the KPI	Target to achieve	Expected time for target
Number of positive impacts, collaborations, stakeholder (Member State organisations and DGs) feedback or implementation of results in MS/EC from outputs of ELISE activities	10	Q4/2020
Number of hits on the INSPIRE Registry service (based on the Re <sup>3</sup> gistry software)	700,000	Q4/2020

### 1.1.9.5 Governance approach

The broad reach of ELISE involves engaging with work in the Member States and the EC. The ISA<sup>2</sup> Working Group on Geospatial Solutions<sup>4</sup> will continue to play a vital advisory and facilitating role (e.g. for ELISE WP updates, Geo Knowledge Base Service content/scope, promoting take-up).

ELISE focusses on user-centricity, co-creation and shared ownership of results for wider reuse. WG representatives are, therefore, encouraged to contact others (e.g. GI and digital government communities in their Member States, UN-GGIM: Europe, Group on Earth Observations, standards bodies and thematic actors) to aid communication / coordination / promotion of location interoperability.

As JRC.B06 is the chair of the WG, ELISE can also connect with other groups, such as COGI, IMSB and INSPIRE governance structures, including the MIG EC expert group, where ELISE helps to deliver some aspects of its work programme 2016-2020<sup>5</sup>.

In 2019, ELISE established 'User Panels' to allow small teams of Working Group members to provide inputs to key activities in their development phase, with an aim to support their wider uptake/application in the Member States.

### 1.1.10 TECHNICAL APPROACH AND CURRENT STATUS

The focus of the ELISE work packages for 2020 is described in detail in Table 1.

**Table 1. Focus of ELISE work packages for 2020**

Work package	2020 focus
1. STUDIES	
Location intelligence landscaping	A series of small studies, stakeholder workshop findings and architecture documents will help to conceptualise and document the potential further

<sup>4</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>5</sup> <https://ies-svn.jrc.ec.europa.eu/documents/58>

Work package	2020 focus
	<p>development of location intelligence in the public sector, as a bridging activity towards the forthcoming DEP.</p> <p>Inputs will include the EULF Blueprint and AI-related studies by ELISE alongside others from the JRC's AI Watch project with DG Connect.</p> <p>Work will involve mapping key public services using geospatial data, how data is shared and an analysis of their business processes for using AI to improve decision-making and service delivery. Issues of current and necessary capacity and data/service quality to support location intelligence will be explored with stakeholders.</p> <p>The work will include analysing: how geospatial data can be combined with other data (e.g. from IoT sources) to enhance/enrich processes; selected geo-AI solutions to better understand their behaviour in practice; and economic and social aspects, including the added-value generated and the potential ethics/privacy issues involved (continuing some of the work ELISE has already done on GDPR).</p>
<h2>2. FRAMEWORKS AND SOLUTIONS</h2>	
<p>Consolidated ELISE outputs towards a Location Interoperability Reference Framework</p>	<p>The EULF Blueprint (plus its related guidance), several technical studies, the outcomes and components of ELISE pilots/applications and materials such as good practices from the ELISE's knowledge base provide the basis to fully document and illustrate a domain interoperability reference framework for location.</p> <p>This activity will, therefore, involve the successful closure of relevant activities, including the incorporation of Member State best practices in the EULF Blueprint and the EI Cart. A key output will be a policy-relevant document as an addition to the EIF drawing on evidence and key examples from across the Action.</p> <p>Developments will be performed in discussion with stakeholders as a 'jointly agreed framework', especially members of the Geospatial Solutions Working Group and the outcomes will be published along with promotion through a video and the planned ELISE final conference (see below).</p>

Work package	2020 focus
Location Interoperability Tools and Testbeds <sup>6</sup>	<p>Work will support the maintenance and implementation of additional features of the Re<sup>3</sup>gistry software, in close collaboration with stakeholders in the Member States.</p> <p>The INSPIRE validator software and service will be maintained. In addition, work will explore extending INSPIRE validation rules to cover requirements from Reporting Obligations to support those public authorities that must deliver data compliant to both.</p> <p>The benefits of this work will also be explored and showcased, for example, through a brief promotional video.</p>
<b>3. APPLICATIONS</b>	
Application Pilots	<p>Following successful closure ELISE's Multi-Modal Transport Information Services (MMTIS) pilot, 2020 will see finalisation of the Energy Efficiency of Buildings pilot, where packaging of results will help consortium members take the results further and where an analysis of the work will contribute to the above-mentioned policy advice.</p>
Data space interoperability pilot	<p>The DEP has brought data spaces to the fore, where they will be developed in a number of sectors (e.g. statistics, energy, health, environment, transport and agriculture) and geographical areas. Many of these will have a location component or would benefit from being combined with geospatial data.</p> <p>In order to avoid creating new data silos, there is a need to ensure that these data spaces will be interoperable across domains, borders and between stakeholders. The work will, therefore, design and create the initial setup of a pilot to explore solutions to enable interoperability within and between data spaces across all levels of the EIF. The piloting, with stakeholders, will aim to capture a complete view of data flows between data providers and users, so that the specific barriers and possible solutions for interoperability are fully understood.</p> <p>The outcomes of this work will provide the basis for further development of the pilot in the DEP. Outputs will also be relevant to both the sharing of high-value datasets under the Open Data and Reuse of PSI</p>

<sup>6</sup> Formerly entitled "Geospatial Interoperability Tools"

Work package	2020 focus
	Directive and to the evolution of INSPIRE.
FaST	<p>The Farm Sustainability Tool (FaST) and platform proposes to pilot a solution developed jointly by DG AGRI, DG GROW, DG DIGIT, DG ENV, DG CLIMA and JRC's MARS Unit, which already has a blueprint architecture and tool prototype. The pilot will allow the EU-wide mutualisation of digital solutions and costs for MS agricultural authorities in CAP-related IT developments through a common micro-services platform. It will also boost the uptake of geospatial solutions based on Copernicus (remote sensing) and Galileo (geo-location), and the use of EU-funded cloud-based data and information access capabilities (DIAS). In general, it will provide a EU-wide tool for data-driven digital decision-support solutions at field and farm level, powered by the sharing and re-use of public datasets through the management of micro-services for FaST's foreseen web services.</p> <p>Of interest to Paying Agencies, the work foresees pilots with the National Agricultural Research Institute <i>Põllumajandusuringute Keskus</i> (Estonia); Spanish Agrarian Guarantee Fund/FEAGA. Coordination body of Paying Agencies (Spain); and Piemonte Region, Agricultural Directorate <i>Regione Piemonte – Direzione Agricoltura</i> (Italy), including farmers in these areas.</p> <p>FaST will reuse and build on ELISE activities by evaluating the EULF Blueprint's recommendations in the practical context of this important policy and economic context, mixing public and private sector actors as both geospatial data providers and users. It will also identify and make use of key INSPIRE data applicable to farm-level sustainable development, including data from themes such as Protected Sites and Land Use, complemented with data from Copernicus and Galileo.</p>

Work package	2020 focus
<b>4. GEO KNOWLEDGE BASE SERVICE</b>	
Location Observatory	<p>Following initial assessments and factsheets for some Member States in 2019, the 2020 activity will aim to capture and publish a full picture of location interoperability across Europe. The 2020 assessment model and process will build on the lessons learnt in 2019.</p> <p>The results will fully align with the NIFO and will make use of its technical platform to ensure that stakeholders have one resource to contribute and compare their activities on interoperability, while showcasing the contribution from location-related stakeholders. Support for the activity will involve tools on JoinUp helping to build online links between LIFO, the Blueprint/online guidance, linked with training materials under the Knowledge Transfer activity.</p> <p>The work will also involve analysing gaps and priorities with stakeholders towards a common direction of travel to maximise impacts for any future activities. This will include applying the EIF to examine where there have been strengths and weaknesses in location interoperability in cross-border activities. This will include exploring issues related to moving from pilots to operational location-enabled public services and the legal frameworks underpinning them.</p> <p>This will include reviewing sectoral and technology trends from digital transformation studies and external research, translating 2019’s “Future of SDIs” outputs into a model for the future and priority actions to facilitate evolution, including the future role of INSPIRE in the digital transformation of Europe and relevant strategic priorities.</p>
Knowledge Transfer, communication and stakeholder engagement	<p>All the above actions will identify sustainability paths and focussing on increasing user-uptake and impact of ELISE outputs. Suitable dissemination channels and dedicated events will be agreed in close collaboration with the Member States for relevant outputs such as papers sharing best practice, guidance materials, workshops, regional events and ‘hot topic’ webinars.</p> <p>An ELISE final conference will also be organised with stakeholders, to showcase the Action’s and</p>

Work package	2020 focus
	<p>partners' activities. This event will help launch the Location Interoperability Reference Framework and to present the transition of ELISE to the DEP.</p> <p>In addition, ELISE will further explore the role and potential of Digital Innovation Hubs for digital transformation of government, making best use of geospatial technologies, data and digital skills. This will include exploring the role of more standardised professional profiles for Geo-ICT related to knowledge, skills and competences, such as in the context of European e-Competence Framework (e-CF) and continuing work on geospatial literacy.</p> <p>Defining such professional profiles will help to meet the pressing demand for qualified professionals with digital and geospatial skills in both the public and private sectors. Work will also include a training package agreed with stakeholders, including potential support to SMEs engaged with the public sector, a series of communication events, as well as improvements to ELISE's resources in JoinUp.</p>

## 1.1.11 COSTS AND MILESTONES

### 1.1.11.1 Breakdown of anticipated costs and related milestones

The proposed ELISE Work Programme spans five years and has three phases, with **Initiation** (year 1) completed in 2016/2017. **Execution** (years 2-4) contains activities and new studies and other outputs, with the maintenance of existing tools. Work has also included several contributions to the mid-term evaluation of the ISA<sup>2</sup> Programme.

**Closing** (year 5) will involve readying of solutions for operation/handover, final evaluation and transition of results to either “operational governance” or continuation under the DEP. Details of each activity, with dates and costs for each year in the Work Programme are shown 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 Assessment of economic opportunities and barriers related to geospatial data in the context of the DSM	160 - - -	ISA	Q3/2016	Q4/2017
Execution	1.2 INSPIRE and spatial data standards in support of EU-wide Multimodal Travel Information Services	- 100 - -	ISA	Q3/2017	Q1/2019
Execution	1.3 Supporting better uses of location data and statistics	- 90 - -	ISA	Q4/2017	Q4/2018
Execution	1.4 The role of location information in digital government transformation	- 230	ISA	Q4/2017	Q3/2018
Execution		400		Q3/2018	Q3/2019
Execution		620 -		Q2/2019	Q3/2020
Execution	1.5 Location-Enabled Digital Platforms Benchmark	- 260 - -	ISA	Q3/2017	Q2/2018
	1.6 Location intelligence	-	ISA		



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
Initiation	landscaping	- - - <b>350</b>		Q2/2020	Q3/2021
<b>2. FRAMEWORKS AND SOLUTIONS</b>					
Initiation Execution Execution Execution Closing/Final	2.1 Guidance (2020: Consolidation and Policy advice)	110 50 40 100 <b>150</b>	ISA	Q1/2017 Q3/2017 Q4/2018 Q3/2019 Q2/2020	Q2/2017 Q4/2018 Q4/2019 Q4/2020 Q2/2021
Initiation Execution Execution Execution Execution	2.2 Location Interoperability Tools and Testbeds	220 240 300 540 <b>300</b>	ISA	Q4/2016 Q4/2017 Q4/2018 Q2/2019 Q2/2020	Q4/2017 Q3/2018 Q3/2019 Q4/2020 Q2/2021
Initiation Execution	2.3 References and inventories	60 100 - - -	ISA	Q4/2016 Q2/2017	Q3/2017 Q4/2018
<b>3. APPLICATIONS</b>					
Initiation Execution Execution Execution Closing/Final	3.1 ELISE Application Pilots	80 260 300 280 <b>170</b>	ISA	Q4/2016 Q3/2017 Q3/2018 Q2/2019 Q2/2020	Q4/2017 Q2/2018 Q4/2019 Q4/2020 Q2/2021
Initiation Execution Execution	3.2 Common services – EU Gazetteer	85 150 270 - -	ISA	Q4/2016 Q3/2017 Q3/2018	Q3/2017 Q3/2018 Q1/2020
Initiation	3.3 Location-powered data spaces	- - - - <b>350</b>	ISA	Q2/2020	Q3/2021
Initiation	3.4 FaST	- - - 400	ISA	Q4/2019	Q4/2020

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
Execution		<b>500</b>		Q4/2020	Q4/2021
<b>4. GEO KNOWLEDGE BASE SERVICE</b>					
Initiation	4.1 Geo Knowledge Base service definition and piloting	81 - - -	ISA	Q4/2016	Q4/2017
Initiation Execution Execution Execution Closing/final	4.2 Location interoperability observatory, landscape analysis and technology watch	91 65 360 350 <b>180</b>	ISA	Q2/2016 Q4/2017 Q3/2018 Q3/2019 Q2/2020	Q3/2017 Q2/2018 Q4/2019 Q4/2020 Q1/2021
Initiation Execution	4.3 Location input to ICT assessment of new legislation	36 50 - -	ISA	Q2/2016 Q4/2017	Q3/2017 Q4/2018
Initiation Execution Execution Execution Closing/Final	4.4 Knowledge Transfer, communication and stakeholder engagement	60 240 230 310 <b>300</b>	ISA	Q3/2016 Q2/2017 Q3/2018 Q3/2019 Q2/2020	Q2/2017 Q4/2018 Q4/2019 Q4/2020 Q3/2021
	<b>2016</b>	983			
	<b>2017</b>	+1835			
	<b>2018</b>	+1900			
	<b>2019<sup>7</sup></b>	+2200			
	<b>2020</b>	+2300			
	<b>Total</b>	=9218			

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, ISA resources will be complemented by JRC institutional staff resources for management, ELISE governance support and technical support on INSPIRE issues.

#### 1.1.11.2 Breakdown of ISA2 funding per budget year

Budget	Anticipated allocations	Executed budget
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<sup>7</sup> The 400k Euros for FaST in 2019 did not use the ELISE budget and is not accounted here.

Year	Phase	(in KEUR)	(in KEUR)
2016	Initiation	983	983
2017	Execution	2240	1835
2018	Execution	1900	1900
2019	Execution	2200	2200
2020	Initiation, Execution and Closing	2300	

### 1.1.12 Planning for the tendering procedures to be launched for the action

Call for tenders foreseen Global amount in KEUR	Call for Tenders Duration in years	Indicative planning of publication (QX/YYYY)
Intramuros: 750k	n/a	Q2 2020
Framework contracts: 950k	1 - 1.5 years	Q3 2020
Small/expert contracts: 100k	0.5 - 1.5 years	Q2 2020
Open calls: 500k	1-1.5 years	Q2 2020

### 1.1.13 ANNEX AND REFERENCES

Description	Reference link	Attached document
INSPIRE resources	<a href="http://inspire.ec.europa.eu/">http://inspire.ec.europa.eu/</a>	
EULF	<a href="https://joinup.ec.europa.eu/community/eulf/description">https://joinup.ec.europa.eu/community/eulf/description</a>	
ARE3NA	<a href="https://joinup.ec.europa.eu/community/are3na/description">https://joinup.ec.europa.eu/community/are3na/description</a>	
ELISE	<a href="https://joinup.ec.europa.eu/community/elise/home">https://joinup.ec.europa.eu/community/elise/home</a>	
Digital Europe Programme	<a href="https://ec.europa.eu/digital-single-market/en/news/digital-europe-programme-proposed-eu92-billion-funding-2021-2027">https://ec.europa.eu/digital-single-market/en/news/digital-europe-programme-proposed-eu92-billion-funding-2021-2027</a>	
Open Data and Reuse of PSI Directive	<a href="https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1561563110433&amp;uri=CELEX:32019L1024">https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1561563110433&amp;uri=CELEX:32019L1024</a>	
Towards a common European data space	<a href="https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=COM:2018:0232:FIN">https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=COM:2018:0232:FIN</a>	
FaST: Feasibility Study for joint Space-Agriculture Solutions on Nutrient	<a href="https://ec.europa.eu/info/sites/info/files/food-farming-fisheries/news/presentations/fast-final-review-meeting_en.pdf">https://ec.europa.eu/info/sites/info/files/food-farming-fisheries/news/presentations/fast-final-review-meeting_en.pdf</a> <a href="https://embedded.fast.sobloo.io/static/farmer_mobile_app/embedded.html">https://embedded.fast.sobloo.io/static/farmer_mobile_app/embedded.html</a>	

Management		
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