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

4.1.1 IDENTIFICATION OF THE ACTION

Type of Activity	Solutions
Service in charge	JRC
Associated Services	DIGIT, ENV, ENER, MARE, MOVE, ESTAT, CNECT
Responsible Action manager name	To be confirmed
Responsible Action manager email	To be confirmed

4.1.2 EXECUTIVE SUMMARY

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^2 on European public administrations, businesses and citizens, and the need to ensure that best practice interoperable solutions are deployed across the European Union (EU).

Location-related information underpins an increasingly large proportion of EU and national governmental policies and digital services, and applications used by public administrations, businesses 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 (MSs) have introduced important initiatives in this field, for instance related to “base registries” and “open data”. However, the potential of interoperable location information is only just beginning to be tapped: the implementation of INSPIRE is progressing continuously, new thematic policies are emerging that will benefit from a more harmonised approach, and the relationships with businesses and citizens are key in achieving wider EU goals. Figure 1 summarises the main thrust of the ELISE Action in terms of drivers,

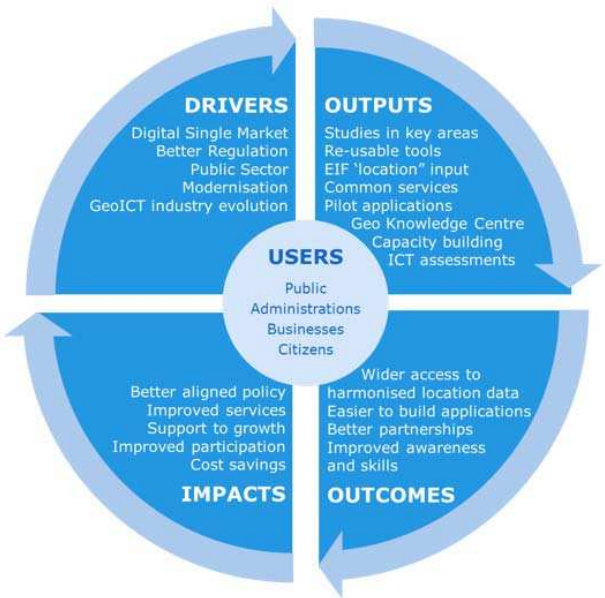

Figure 1 – Drivers, outputs, outcomes and anticipated impacts of the ELISE Action

outputs, outcomes and anticipated impacts. In pursuing its aims, the Action will collaborate closely with stakeholders to determine needs and priorities develop and test solutions and demonstrate benefits.

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 address key priorities (e.g. gazetteer of geographic names, address register). It will also act as the “geo knowledge base” for ISA^2 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 ISA2 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, that have already partially addressed the challenges and opportunities in location-related interoperability. EULF has developed frameworks and pilots, addressing important “policy” aspects (e.g. procurement), helped to improve data sharing between the public and private sector (e.g. road navigation systems), and developed a “fit for purpose” benefits approach. ARE3NA, meanwhile, has focused on semantic and technical aspects, developing an initial version of a reference platform for INSPIRE assets, including inventories of tools, projects, applications, and videos. It has developed valuable software and service components to fill gaps (e.g. the Re3gistry, available on Joinup) and carried out studies in key areas that will lead to better solutions. ELISE will build on these, and other, solutions and provide the step-change that is needed, in particular, to spatially enable the DSM.

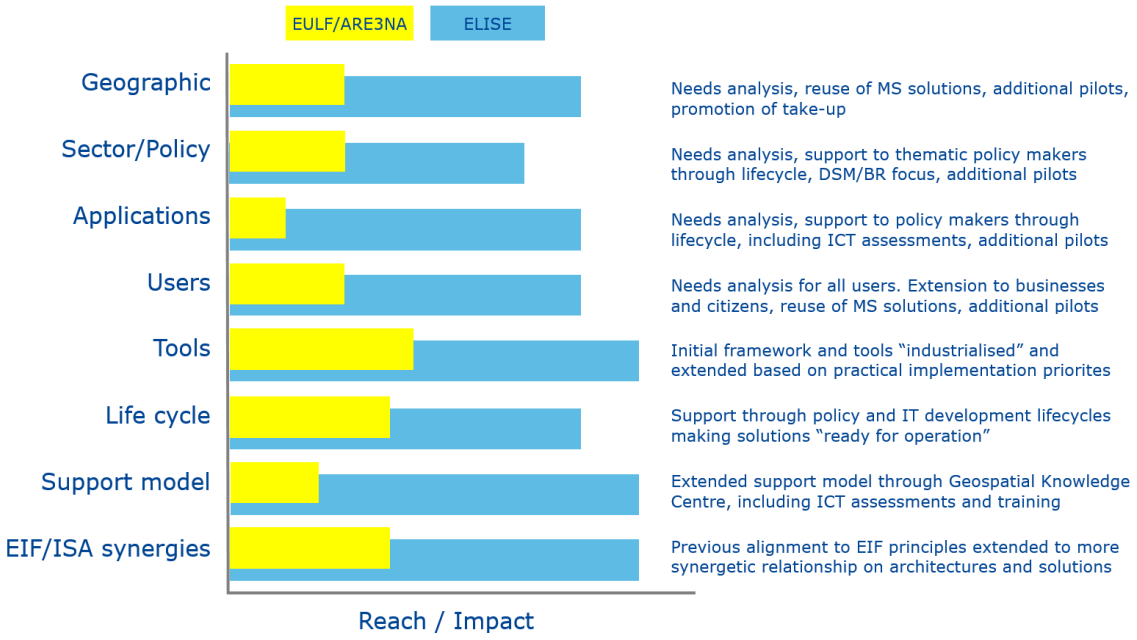

Figure 2 -. “Raising the bar” from EULF and ARE3NA to ELISE.

4.1.3 OBJECTIVES

Objective	To provide guidelines and tools for the implementation of the revised and extended European Interoperability Framework (EIF) regarding location information and services.
Relation to ISA2 objectives and criteria	Through the ISA2 Programme, the Union shall identify, create and operate interoperability solutions implementing Union policies. Being anchored onto the revised and extended EIF, the guidelines and tools foreseen in ELISE promote a consistent and holistic approach to “location” interoperability.
Link to DSM roadmap	DSM roadmap III - maximise the growth potential of the Digital Economy. Under this heading, the DSM roadmap foresees the revision and extension of the EIF in 2015. ELISE builds on this, thus promoting and supporting the implementation of the new EIF for location-related items.

Objective	To help European public administrations remove barriers to the free flow of interoperable 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 and between them and citizens and businesses, in the domain of location information and services. It brings new interoperability services and tools to maturity, as well as maintaining and operating existing interoperability services and tools on an interim basis
Link to DSM roadmap	DSM roadmap III - maximise the growth potential of the Digital Economy. Under this heading, the DSM roadmap foresees the removal of barriers to the free flow of information in 2016.

Objective	To 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	The Action supports the development, maintenance and promotion of a holistic approach towards interoperability in the Union in order to eliminate fragmentation in the interoperability landscape in the Union; the assessment of the ICT implications of proposed or adopted Union legislation; and the identification of legislation gaps that hamper interoperability between European public administrations.
Link to the Better Regulation Strategy	The Geospatial Knowledge Base supports the Better Regulation strategy 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.

4.1.4 SCOPE

In scope:

a) Acting as the “geospatial knowledge base” for Commission Services and other actions in ISA2 for aspects of legal, organisational, semantic and technical interoperability;
b) Establishment of pre-operational “common services” that address key priorities (e.g. addresses, gazetteer of geographic names);
c) Development of harmonised data and data publishing services (building where possible on INSPIRE);
d) Development and re-use of tools to access and use location data;
e) Studies on key topics, such as the Digital Single Market, which includes a focus on open data;
f) Guidance in key areas across all levels of interoperability, e.g. DSM guidance on licensing, privacy, open data, public private partnerships; spatial data modelling guidance; guidance on the adoption of INSPIRE in different sectors; guidance on linking geodata and statistical data; and documentation on using specific tools;
g) Location pilots (solution incubators and bridges) in different sectors (e.g. energy, transport, marine), to integrate location and statistics, to share Member State best practices between public administrations, and to support Digital Single Market goals through the use of open data;
h) Providing “location” inputs to assessments of ICT implications of new policies and interoperability maturity assessments of key location-related services;
i) ‘Location’ inputs to the European Interoperability Reference Architecture (EIRA) and to the cartography of location-based interoperability solutions (EIC) based on “patterns” of common processes, services, applications, data, and tools;
j) liaison with European and international de-facto and de-jure standardisation bodies to develop and maintain relevant standards;
k) Training and awareness raising in best practice location interoperability solutions;
l) Promotion of re-usable solutions in the INSPIRE Maintenance and Implementation Group;

Out of scope:

a) INSPIRE Geoportal;
b) 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;
c) Location interoperability solutions produced by other initiatives. Best practice solutions will be promoted and re-used by ELISE.

4.1.5 PROBLEM STATEMENT

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

1. Policy and strategy alignment

a) Location-related information is important in many policy areas but a coherent and consistent approach to remove policy, organisational, semantic and technical barriers for sharing and re-use is only currently being implemented for environmental policies and policies or activities which may have an impact on the environment (through INSPIRE);
b) There is a need for public administrations to improve the sharing and re-use of all their data, including geospatial data;
c) Open location data benefits are recognised but measures to implement open location data have not been widely adopted;
d) When thematic policies are using INSPIRE, it is often done partially or not fully taking into account interoperability as a requirement, thereby not removing completely the barriers to sharing and re-use;
e) The impact of technological developments such as big data, linked open data, cloud, and Internet of Things that can lead to divergent approaches in data-sharing and interoperability; the increased focus on mobile solutions in most web-based solutions; and the potential for significant market disruption by big (e.g. Google) and new (e.g. Uber) industry players need to be understood and taken into account to ensure organisations can make readily reusable data available for a range of purposes;
f) There is an important link between location and statistics that requires a more coherent cross-sector and cross-border approach;

2. Governance and effective partnerships
   a) More effective public private partnerships may be required to enable the free flow of data envisaged by the Digital Single Market strategy that are necessary for job creation and growth;
   b) Common frameworks and solutions set a context for discussion and endorsement but they risk either not being applied or not helping to improve services. These need to be contrasted with the needs and priorities of stakeholders/users, engaging them in the data-sharing process and, in turn, delivering benefits;
   c) Collaboration is key to delivering and getting benefits from wide scale “location interoperability” – this requires strong governance, integration across ISA^2 and effective relationships with partners;
3. Standardisation and interoperability
   a) Differing standards and quality of data exist across the EU for core reference location data and location data in different thematic areas, making it difficult to achieve cross-border and cross-sector harmonisation;
   b) INSPIRE has an important role in underpinning location interoperability in different thematic sectors. It provides the core data models and the generic framework to extend for a given topic, where specific thematic standards and requirements then come into play. Alignment of thematic standards and INSPIRE or provision of new compatible standards will create benefits in interoperability and the reusability of data, including in cases where more dynamic data are needed;
   c) More consistent and relevant approaches are needed to link geospatial information and statistics at increased levels of detail and to support more dynamic statistical data requirements;
4. Knowledge and Skills Availability

a) 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 and quality standards, funding, knowledge and skills;
b) There is still a lack of "spatial literacy" amongst those responsible for policy and public services other than strictly location-related. Understanding, valuing and making best use of geographic information is increasingly becoming important for modernising government, including in the EC. Communications that aim to bridge this gap tend to be technically focused and simple guides are needed to manage geospatial data ready for interoperability in optimal ways.

4.1.6 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 (geoportal, registry) 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 location matters Constituents receive location-based better services with reduced burdens 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)

Beneficiaries	Anticipated benefits
	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	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

4.1.7 RELATED EU ACTIONS / POLICIES

Action / Policy	Description of relation, inputs / outputs
Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE)	Legal basis for a spatial data infrastructure (SDI) to support EU environmental policy. The SDI can also be used to support other policy areas.
6.5.2015 COM(2015) 192 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the	Support the Digital Economy aspects of the Digital Single Market strategy, in particular in helping improve the free-flow of data through actions to remove barriers and improve

Action / Policy	Description of relation, inputs / outputs
Committee of the Regions : A Digital Single Market Strategy for Europe	interoperability. These actions will include promoting and supporting the implementation of the new EIF.
19.5.2015 COM(2015) Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Better Regulation for Better Results – an EU Agenda and other elements of the Better Regulation package, e.g. Better Regulation guidelines and toolbox, REFIT platform	The ELISE Geospatial Knowledge Base supports the Better Regulation strategy 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.
Directive 2013/37/EU on the re-use of Public Sector Information	Geospatial data is one of the five categories of datasets in highest demand from re-users that should be given priority in being made available for re-use. Geospatial data also underpins the other four priority dataset categories, namely earth observation and environment, transport, statistics and companies (see the “Guidelines on recommended standard licences, datasets and charging for the reuse of documents” – 2014/C 240/01).
26.6.2014 COM(2014) 367 Proposal for a Decision of the European Parliament and of the Council establishing a programme on interoperability solutions for European public administrations, businesses and citizens (ISA2) - Interoperability as a means for modernising the public sector	“Location” input to EIS, EIF, EIRA, EIC and ICT assessments of new EU policies. Alignment with other actions, e.g. semantic interoperability, base registries, sharing and re-use strategy Focus on all levels of interoperability, legal, organisational, semantic and technical Use of Joinup for sharing interoperability assets Participation in programme governance and input to approaches on working with business, supporting citizens, benefit realisation etc.
Regulation (EU) No 1316/2013 of the European Parliament and of the Council of 11 December 2013 establishing the Connecting Europe Facility, amending Regulation (EU) No 913/2010 and repealing Regulations (EC) No 680/2007 and (EC) No 67/2010	To be taken into account as a hosting option when addressing the sustainability of ready-for-operation ‘location’ solutions.

Action / Policy	Description of relation, inputs / outputs
Directive 2010/40/EU of the European Parliament and of the Council, 7 July 2010 on the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other modes of transport **Commission Delegated Regulation (EU) 2015/962 of 18 December 2014 supplementing Directive 2010/40/EU of the European Parliament and of the Council with regard to the provision of EU-wide real-time traffic information services**	The project will continue supporting INSPIRE-related actions within the context of the ITS Directive including: priority action a) provision of EU-wide multimodal travel information services; and priority action b) provision of EU-wide real-time traffic information. A new development anticipated is the provision of open road navigation data using ITS and INSPIRE data standards.
European ITS Platform (EIP), funded by the Connecting Europe Facility	A series of pilots are funded in 2016 to implement road safety data exchange in different MSs using the TN-ITS protocol. These pilots extend the principles of the EULF transportation pilots across the EU and will provide additional learning, operational services and evidence of benefits.
Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive)	This project will facilitate the rollout of interoperable solutions developed within the EULF Marine Pilot in the current ISA programme
Directive 2002/91/EC Energy Performance of Buildings (EPBD) Directive 2012/27/EU Energy Efficiency Directive (updated EESD) Covenant of Mayors initiative	The EULF project has developed a feasibility study to explore how these different buildings-related energy efficiency policies can be supported with the help of INSPIRE. An initial pilot study is underway. This will be extended under ISA2 and roll out of solutions supported.
Other thematic policies collecting or using location information	There are opportunities for better alignment in the collection and use of location information in different policy areas, including transport, health marine, agriculture, energy, and others, without excluding the environment. The project will proactively assess policy opportunities, work with DIGIT to support the ICT implications assessments, and support policy officers where needed through the life cycle.

4.1.8 REUSE OF SOLUTIONS DEVELOPED BY ISA, ISA^2 OR OTHER EU / NATIONAL INITIATIVES

EULF and ARE3NA

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 objectives. The EULF and ARE3NA solutions are summarised in Figure 3 below. Existing work under the ISA programme will be completed in 2016.

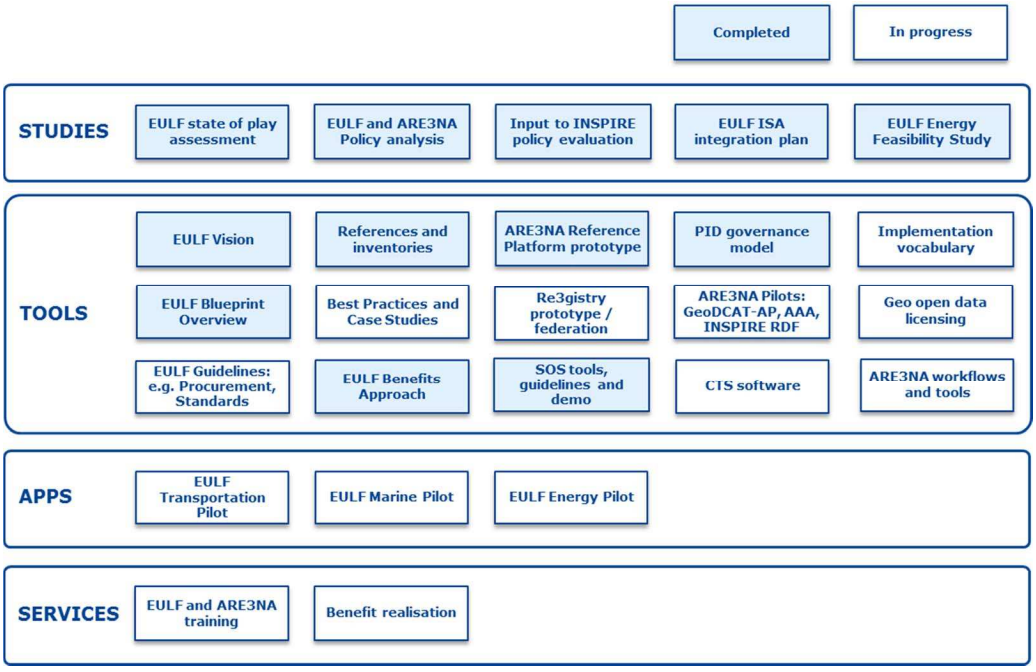

Figure 3 – ARE3NA and EULF solutions developed as part of the ISA programme.

Key outputs from EULF include:

a) A Member State survey and state-of-play assessment that confirmed the need for an EULF;
b) The EULF Strategic Vision based on a series of "focus areas" confirmed in the state-of-play assessment;
c) A compendium of references and best practices to show what MS and various initiatives are doing to location-enable their e-government services;
d) An EULF Blueprint overview containing recommendations in the different focus areas;
e) Detailed guidance in the form of "Procurement Guidelines for spatial technologies and services" and a review of "Standards and Architectures for SDIs and e-Government"
f) An EULF Benefits Approach that demonstrated a realistic approach to dealing with the complexity of "infrastructure" justification;
g) A plan for integration with other ISA actions;
h) Studies and pilot applications in key policy areas:

i. A Transportation pilot sharing road safety data between public authorities and private sector map providers in support of the Intelligent Transport Systems (ITS) Directive;
ii. A Marine pilot addressing the requirements of the Marine Strategy Framework Directive (MSFD), based on INSPIRE;
iii. An Energy Feasibility Study has outlined an approach to support the energy efficiency data requirements of the Energy Performance of Building Directive (EPBD), the Energy Efficiency Directive (EED), and the Covenant of Mayors (CoM) Sustainable Energy Action Plans, using INSPIRE.

Key outputs from ARE3NA include:

a) Inventories of policies, platforms and tools at a European level that share geospatial data;
b) The INSPIRE Resource Description (RDF) Vocabulary, a methodology to create a cross-sector, pan European base-map reusing investments in INSPIRE data modelling;
c) A governance approach for location Persistent Identifiers;
d) The GeoDCAT Application Profile, to share INSPIRE metadata through geoportals and open data portals in a consistent way, developed alongside the update of DCAT in the ISA SEMIC Action (1.1);
e) A series of Reuse Assessments to understand what components of INSPIRE may be reusable and how these could fit with the wider ICT landscape covered by ISA;
f) A review of interoperability solutions for authentication, authorisation and accounting (AAA) and development of an Access Control Federated Testbed. Ongoing work is exploring how European solutions, such as STORK, could be used;
g) Creation of OGC Sensor Observation Services tools, demo and guidelines;
h) Development of the Re3gistry, an open source reference data management and publication tool, which will be important in federated contexts. Ongoing work is increasing its reuse and reusability in the EC and MSs, including the creation of a federation of the systems the software supports;
i) The ARE3NA reference platform is currently being developed to store, organise and present many of these solutions and those available in the wider geospatial community in a common technical framework, helping INSPIRE implementation and its reuse in other sectors.

ISA and ISA2

ELISE will re-use and promote other ISA and ISA^2 solutions, including:

a) embedding the revised EIS and EIF into its implementation approach;
b) contributing interoperability solutions at all levels to the EIC, and recommending and applying the EIRA as a reference approach where possible;
c) using the Interoperability Maturity Model for assessing selected location-related services;
d) applying the recommendations in the sharing and re-use strategy;
e) publishing documents and solutions on Joinup;
f) promoting the assessment of ICT implications of new legislation process in discussions with policy makers;

g) promoting the guidelines on base registries and applying these in developments of location 'common services';
h) re-use of SEMIC generic approaches on vocabularies, metadata and data modelling;
i) incorporating ISA and ISA2 guidelines and solutions, where relevant in the ELISE pilot applications.

Other Initiatives

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

a) identifying best practice re-usable components, applications or services and sharing either information about the solutions (e.g. through factsheets) or the solutions themselves;
b) 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);
c) 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);
d) re-using legal and organisational assets, e.g. licensing frameworks, open data frameworks, business cases, public private partnership models, training modules, videos.

4.1.9 EXPECTED RE-USABLE OUTPUTS (solutions and instruments)

ELISE will prepare a large number of reusable solutions and instruments. Some key outputs are shown below.

Output name	DSM assessment and plan
Description	Assessment of barriers impacting the free flow of location based data and inhibiting the achievement of the DSM and 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	D1.1
Target release date / Status	Q3/2017

Output name	Pilot feasibility studies
Description	Studies to assess requirements, potential options, possible data transformation and implementation costs, and benefits for stakeholders ahead of relevant pilot implementations (i.e. both the "common services" pilots and the "application" pilots". This will include the assessment of the pre-operational ELF

	services in the pilots.
Reference	D1.2
Target release date / Status	Q2/2017 - Q1/2019

Output name	Location guidance: DSM location framework
Description	Package of recommendations and guidance to address the DSM barriers outlined in the assessment, including open data
Reference	D2.1.1
Target release date / Status	Q1/2018 – Q4/2018

Output name	Location guidance: Geodata and statistics
Description	Package of recommendations and guidance to better link geodata and statistics in consistent ways, drawing on the work of UN-GGIM and other initiatives, and supporting requirements for increased levels of detail and dynamic statistics, whilst respecting privacy constraints.
Reference	D2.1.2
Target release date / Status	Q4/2017

Output name	References and Inventories: Solution 'patterns'
Description	Catalogue and description of standard processes, services, applications and tools in e-government using location data
Reference	D2.3
Target release date / Status	Q4/2017

Output name	‘Location’ solution cartography
Description	Reusable best practice components and solutions included in the EIC, based on the definition of solution patterns in 2.3
Reference	D2.4.1
Target release date / Status	Q1/2018 onwards

Output name	‘Location’ inputs to the EIRA
Description	Changes and additions to the EIRA relevant to location data and services taking into account, amongst other things, the

	revision of the EIF and the adoption of INSPIRE
Reference	D2.4.2
Target release date / Status	Q4/2017

Output name	Best practice factsheets
Description	Factsheets to describe best practice processes, services, solutions and components, including those registered in the EIC
Reference	D2.5
Target release date / Status	Q1/2018 onwards

Output name	ARE3NA Reference Platform
Description	Platform supporting and providing access to reusable location tools and associated guidance
Reference	D2.6
Target release date / Status	Q3/2016 onwards

Output name	Re3gistry operational service
Description	Re3gistry operational solution with supporting guidance and training
Reference	D2.7
Target release date / Status	Q3/2017

Output name	Common services: e.g. EU gazetteer, Open EU mapping, EU address registries
Description	Initial release of common services identified as priorities by stakeholders such as an EU gazetteer of geonames, an open seamless cross-border mapping ‘common service’, and an EU address registries service. These services will be based, where possible and following the appropriate assessments, on the pre-operational services resulting from the ELF project. The work will include an assessment of the sustainability of the resulting pre-operational services.
Reference	D2.9, D2.10, D2.11
Target release date / Status	Q2/2018 to Q4/2019

Output name	Better Regulation, Member State Public Sector Modernisation and Digital Single Market / Business pilot solutions
Description	A series of 'ready for operation' pilots addressing key policy, public authority, business and citizen priorities
Reference	D3.1, D3.2, D3.3, D3.4, D3.5
Target release date / Status	Q3/2018 – Q3/2020

Output name	Geospatial Knowledge Base: ICT implications assessments
Description	Location inputs to assessments of ICT implications of new legislation and digital checks
Reference	D4.2.1
Target release date / Status	Q3/2016 onwards

Output name	Geospatial Knowledge Base: Interoperability Maturity assessments
Description	Using the IOP maturity model for selected services and identifying any improvements, assessing the use of the model in the 'location' domain, and conducting an EU-wide assessment of interoperability of key location-related services
Reference	D4.2.2
Target release date / Status	Q1/2017 onwards

Output name	Geospatial Knowledge Base: 'Location' training and awareness raising package
Description	Package of awareness and training resources for public administrations, supporting policy awareness, publication and use of interoperable geodata, and development of applications. This will include recommendations for the use, promotion, and sustainability of the ELF knowledge base.
Reference	D4.2.3
Target release date / Status	Q1/2017 onwards

4.1.10 ORGANISATIONAL APPROACH

4.1.10.1 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) Member States National Contact Points (NCPs) Legally mandated organisations (LMOs)European Environment Agency
INSPIRE solution providers	Businesses including SMEs
ISA	ISA Working Group on Spatial Information and Services ISA Committees, Working Groups, and Actions established under the ISA Programme
ITS	ITS Committee 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
UN-GGIM:Europe	This committee of experts is concerned with regional geospatial interests in Europe and provides input to the UN Committee on Geospatial Information Management. It 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^2 work in this area).
Member State organisations, groups and	Location / e-Government coordination bodies

Stakeholders	Representatives
projects	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.

4.1.10.2 Communication plan

Documentation will be published on the ISA^2 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?
ISA2 Committee and Coordination Group Meetings	MS representatives	Twice yearly
ISA2 Working Group on Spatial Information and Services	MS and Commission representatives	1-2 times per year
ISA2 Spatial Information and Services Business Forum	Business community representatives (possibly divided into thematic streams)	1-2 times per year
ELISE workshops	MS and Commission	1-2 times per year

Event	Representatives	Frequency of meetings / absolute dates of meetings?
	representatives, invited experts	
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

4.1.10.3 Governance approach

The ISA Working Group on Spatial Information and Services (SIS) was established under the main ISA Committee in the ISA programme to help facilitate the dialogue between the e-government and geospatial communities, in particular between ISA and INSPIRE, and to play an important advisory role on the geospatial ISA actions. The Working Group has already provided valuable input in deciding priorities, helping shape the work programmes, reviewing deliverables and contributing best practices. The successor of the Working Group under the ISA^2 Committee will continue to have a vital role in ISA^2 in advising the ISA^2 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 Work Programme.

The Action is also strongly linked to the INSPIRE governance structure, and in particular the INSPIRE Maintenance and Implementation Group, which is a formal Commission expert group with MS representatives. Selected ELISE activities will contribute to the INSPIRE Maintenance and Implementation Work Programme.

A condition for success and sustainability of the ELISE Action is to become firmly embedded – both in terms of process and outcomes – in the stakeholder communities it aims to reach. This requires that the governance approach needs to be adapted, and that the said stakeholder communities will need to be offered shared ownership over the ELISE outputs, for example when developing "ready for operation" pilots. Based on the recommendations of the EULF Action in terms of governance and effective partnerships, and in close dialogue with the ISA SIS WG and the Commission Inter-service Group on Geographic Information (COGI), the ELISE Action will draw-up a governance action plan that addresses questions such as:

1. How to engage more effectively with the e-government and user community;
2. How to enable the handover of "ready for operation" pilots;
3. How to engage with the rest of ISA^2 in decision making
4. How to ensure Member States and Commission services contribute to, and adopt, ELISE solutions?
5. With which DSM groups should ELISE engage, and how?
6. Should a Business Forum be established and how should it operate, e.g. as a sub-group of the ISA SIS WG. Such a group could comprise GeoICT technology companies and thematic business communities acting as end-users/ beneficiaries of increased location interoperability
7. How to engage with particular businesses in determining what is needed?

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.H06, as chair for the ISA Working Group on Spatial Information and Services, will ensure a proper link between ELISE and COGI.

4.1.11 TECHNICAL APPROACH

The proposed ELISE work packages and outputs are shown in Figure 4. 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.

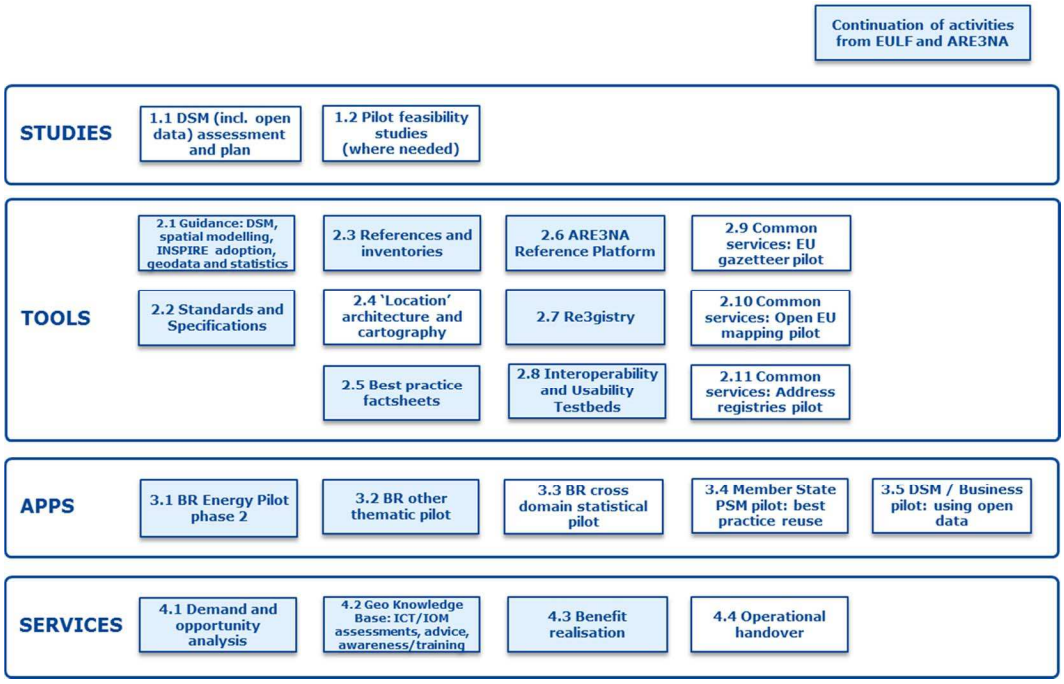

Figure 4 – ELISE work packages and outputs.

Driven by key policies

The work programme will be oriented to support the key policy drivers of DSM, BR and PSM, with in each case:

a) assessments of demand and opportunities
b) specific studies (e.g. assessment of DSM barriers and plan);
c) relevant guidance (e.g. DSM framework, covering open data, licensing, privacy, data interoperability, skills, and public private partnerships) and tools;
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)

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'.

Support to businesses and citizens

The scope of ELISE will be extended to cover businesses and citizens, in line with the direction of ISA[2]. 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 SIS Working Group, e.g. involvement of business communities in a 'Business Forum'.

Extending the framework and tools already delivering benefit

The EULF focus areas agreed with stakeholders in the ISA programme will continue as the framework for assessment and action. The frameworks, guidelines, and tools initiated in the previous EULF and ARE3NA actions will be extended to support the different requirements and enable wider adoption of solutions. The ARE3NA reference platform will be expanded to cover a more comprehensive set of re-usable tools (e.g. tools to support the specification, identification, and assembly of solutions based on re-usable semantic assets) and initial versions of tools created in the ISA programme will be turned into fully operational solutions with relevant support material (e.g. the Re3gistry, federated GeoDCAT-AP).

Developing priority common services to extend the range of applications significantly

Key “common services” for geonames, open mapping and addressing will be developed in conjunction with key partners in MSs and related initiatives such as the European Location Framework (ELF) project. These “common services” address priority needs already expressed and once confirmed and requirements refined will provide an infrastructure to support multiple cross-domain and cross-border applications.

Promoting and developing practical interoperability solutions that address priority needs

The shortlisting of policy interventions, tools and applications will be based on a rigorous process of evaluating demand and supply, involving assessments of user needs and priorities, identifying existing re-usable interoperability assets and determining where new solutions need to be created. New and existing solutions (tools, common services and thematic applications) will be ‘piloted’ within the ELISE action, taking inputs from thematic and technical experts in different MSs, and considering the requirements for cross-EU adoption. Where there is a significant degree of complexity in the possible solution, a feasibility study will be carried out to assess requirements, potential options, data transformation and implementation costs and stakeholder benefits ahead of any pilot implementation (e.g. in the case of each of the ‘common services’ for geonames, open mapping, and addresses. The business case assessments in the feasibility studies will draw on existing studies where possible, e.g. in the area of open data benefits. Developments will involve the creation of ‘sandbox’ solutions for rapid prototyping and development and ‘testbeds’ to assess interoperability, conformance to INSPIRE, and usability.

Increased synergies with other ISA^2 actions

There will be close collaboration with other ISA^2 actions, aligning with the EIS and EIF, providing “location” inputs to the EIRA, and EIC, supporting the assessments of the ICT implications of new legislation and the associated ‘digital checks’ and applying the Interoperability Maturity Model (IMM). Requirements for standards and specifications will be identified for both generic and thematic interoperability. A structured inventory approach will be developed through the specification of “patterns” of typical processes, services and applications, and identification and documentation of best practice interoperability solutions and use of component tools. Documentation will consist of factsheets to describe the best practices and support in populating the cartography of reusable and

interoperable geospatial solutions and building blocks (via EIC/EFIR/TES Actions). ELISE will also promote and explore joint opportunities with other ISA^2 actions, including possible actions on base registries, SEMIC, 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.

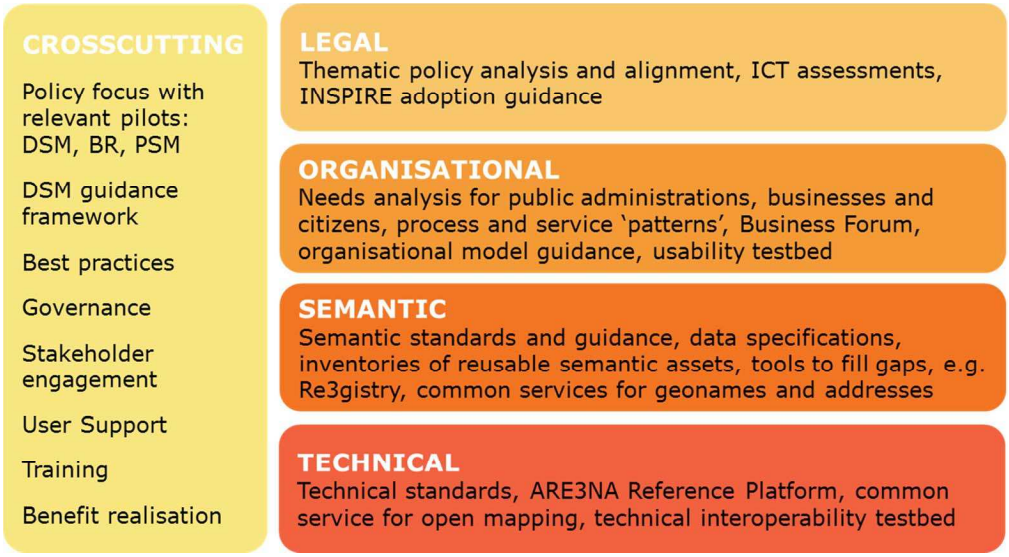

Figure 5 – ELISE work in relation to the EIF interoperability levels.

The full extent of possible ISA^2 synergies will only emerge when the broader set of proposals is delivered and accepted. Further opportunities will also need to be considered as the ISA^2 work programme evolves.

A user support model to facilitate take up of solutions

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. The "Geospatial Knowledge Base" will support policy makers in the ICT implications assessments and provide broader support through the policy cycle. Managers of e-government services will be supported through interoperability maturity assessments of selected services. Support will also 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 Geospatial Knowledge Base will also advise whenever possible on the application of relevant new developments in using location data, linking with relevant reference entities. Coupled with this, there will be elements in the work programme to establish 'ready for operation' solutions that are capable of wide adoption, and to manage the successful handover of solutions to CEF, MSs public administrations, businesses etc.

A coherent set of implementable actions aligned with ISA2 scope and priorities

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:

Output name	1.1 DSM assessment and plan
How delivered?	Policy analysis of interoperability issues stemming from the DSM related to geospatial information-sharing, including SWOT and gap analyses. Consult with DSM policy specialists and MS representatives. Potential use of MS survey. Analyse business impacts of key issues and assess priorities for action. Secure business inputs and needs through research, consultation with MS and direct involvement through nominated contacts / Business Forum. Align plan to DSM timetable.
Beneficiaries and benefits	Businesses able to develop new products and services and enter into new markets through improved access to interoperable data
ISA2: eligible activities	The development, establishment, bringing to maturity, operation and re-use of new cross-border or cross-sector interoperability solutions
ISA2: prioritisation criteria	The link with Union initiatives to be measured by the collaboration and contribution level of the action to Union initiatives such as the (DSM) The identification of legislation gaps that hamper interoperability between European public administrations

Output name	1.2 Pilot feasibility studies
How delivered?	Some potential solutions identified as priorities may require feasibility studies ahead of development. These will involve research and stakeholder engagement to determine requirements and potential alignment with INSPIRE, an assessment of existing solutions that can be adapted or reusable components needed to fill gaps, and an assessment of benefits ahead of establishing a work package to develop the pilot solutions. A feasibility report will be produced and evaluated by the ELISE governance prior to developing the pilot.
Beneficiaries and benefits	ISA^2 and stakeholders will have a clear understanding of the rationale and approach for meeting the particular needs identified. Public administrations can be potential pilot partners and contribute to the definition of problems and solution design, ensuring ready up-take. Barriers to interoperability can be documented across pilots to aid targeted investment in new solutions. Both findings and approach/methodology can be of

	interest to beneficiaries beyond the pilot context.
ISA2: eligible activities	The assessment, improvement, operation and re-use of existing cross-border or cross-sector interoperability solutions The development, establishment, bringing to maturity, operation and re-use of new cross-border or cross-sector interoperability solutions
ISA2: prioritisation criteria	The contribution to the interoperability landscape, to be measured by how important and necessary is the action to complete the interoperability landscape in the Union. The urgency of the action, based on its high potential impact and taking into account the lack of other funding sources.

Output name	2.1 Location Guidance, e.g. DSM framework
How delivered?	Guidance documents in key areas, complementing existing documentation with concise information. A key deliverable will be the DSM Framework, addressing the barriers assessed in 1.1. The likely areas of focus will be open data, licensing, privacy, data interoperability, skills, and public private partnerships. These will be tested with the Working Group and the Business Forum. It will be essential to align with recommendations and guidance in the core DSM implementation programme. Other guidance will be developed in accordance to priorities agreed by the Working Group and relevant stakeholders. Potential topics include spatial data modelling, adoption of INSPIRE in different sectors, and location-based statistics. The Reference Platform will be used to contextualise and share relevant assets linked to both INSPIRE and ISA's frameworks. This will bridge the gaps between legal obligations, technical guidance and possible solutions, while enabling reuse of the infrastructure in different sectors.
Beneficiaries and benefits	Policy makers, managers and practitioners will have practical help available to tackle important issues. Businesses able to develop new products and services and enter into new markets through improved access to interoperable data. As an interoperability tool, the platform will act as a means to readily communicate across stakeholder groups reference material that support (Geo-) ICT interoperability.
ISA2: eligible activities	The maintenance of a platform allowing access and collaboration on best practices. This platform functions also as a means for awareness and dissemination of the available solutions and helps avoid overlapping efforts
ISA2: prioritisation criteria	The reusability of the action, to be measured by the extent its results can be reused

Output name	2.2 Standards and specifications
How delivered?	A technology watch and the results of ongoing projects will enable a flow of relevant standards to be recorded in existing ISA infrastructures. There will be ongoing engagement with relevant standards bodies in the development and maintenance of relevant standards, by providing feedback from pilot implementations and new requirements. Existing coordination mechanisms between standards developing organizations will be used for this purpose.
Beneficiaries and benefits	Organisations responsible for standards and specifications will be able to engage through ELISE, creating a more complete picture of the interoperability landscape. The discrete and consistent referencing of standards will aid tasks such as tool design (e.g. to meet technical requirements) and broader interests such as eProcurement tools and guidance. Standards developing organizations will get feedback on the fitness for purpose of existing standards.
ISA2: eligible activities	The assessment, update and promotion of existing common specifications and standards and the development, establishment and promotion of new common specifications and standards through the Union's standardisation platforms and in cooperation with European or international standardisation organisations as appropriate
ISA2: prioritisation criteria	The geographical reach of the action, to be measured by the penetration of the action in the Member States (MSs)

Output name	2.3 References and inventories
How delivered?	Based on EULF and ARE3NA inventories, ELISE will provide a structured approach based on a catalogue ('patterns') of standard processes, services, applications and tools and cross-referenced to the EIRA and EIC. Solutions will be identified through desk reviews and inputs from stakeholders, together with inputs on needs.
Beneficiaries and benefits	Solution implementers will have ready access to quality-assured Geo-ICT solutions relating to their needs. New solutions can be developed more quickly and at less cost. Users will benefit as a result.
ISA2: eligible activities	The mapping and analysis of the overall interoperability landscape in the Union through the establishment, maintenance and improvement of the EIRA and the EIC as instruments to facilitate the re-use of existing interoperability solutions and to identify the areas where such solutions are still lacking
ISA2: prioritisation criteria	The contribution to the interoperability landscape, to be measured by how important and necessary is the action to

	complete the interoperability landscape in the Union

Output name	2.4 Location solution cartography and 2.5 Best Practice Factsheets
How delivered?	Best practice factsheets will be prepared by the ELISE team with inputs from those responsible. There will be factsheets for new solutions, where ELISE is a 'solution incubator' and externally created solutions, where ELISE is a 'solution broker'. A common document structure will be used tied in with the semantic vocabularies used in identifying the solution patterns. Solutions will be catalogued within the EIC based on the solution patterns defined in 2.3.
Beneficiaries and benefits	Solution providers will benefit from their good practices receiving wide recognition, including acknowledgement beyond the geospatial domain. This can also help to identify expertise for common multi-sector tool development for potential adoption in the CEF. Solution implementers will have ready access to best practice relevant to their needs. New solutions can be developed more quickly and at less cost. Users will benefit as a result.
ISA2: eligible activities	The assessment, improvement, operation and re-use of existing cross-border or cross-sector interoperability solutions
ISA2: prioritisation criteria	The contribution to the interoperability landscape, to be measured by how important and necessary is the action to complete the interoperability landscape in the Union The reusability of the action, to be measured by the extent its results can be reused

Output name	2.6 ARE3NA Reference Platform
How delivered?	An online resource will be maintained and extended as a specific development to provide access to reusable tools and support the guidance noted above.
Beneficiaries and benefits	Geo-ICT actors interested in interoperability issues, including INSPIRE implementers and those considering reuse of the infrastructure in other policy areas.
ISA2: eligible activities	The development, establishment, bringing to maturity, operation and re-use of new cross-border or cross-sector interoperability solutions The maintenance of a platform allowing access and collaboration on best practices. This platform functions also as a means for awareness and dissemination of the available solutions and helps avoid overlapping efforts

ISA2: prioritisation criteria	The contribution to the interoperability landscape, to be measured by how important and necessary is the action to complete the interoperability landscape in the Union The reusability of the action, to be measured by the extent its results can be reused

Output name	2.7 Re3gistry
How delivered?	The maintenance and extension of the open source registry software to ensure a stable federation is created (under current ARE3NA planning). Plans will be developed to explore hand-over options, including as a full open source project and/or the CEF.
Beneficiaries and benefits	All parties interested in managing and sharing reference codes for reuse across systems. Specifically, this will include those implementing and using INSPIRE who will have consistent and harmonised geospatial data across Europe. Other sectors/policies can make use of the semantically rich content of the INSPIRE registry federation for reuse in their information infrastructures. Developments can also contribute to work in the Publication Office.
ISA2: eligible activities	Bringing new interoperability services and tools to maturity, and maintaining and operating existing interoperability services and tools on an interim basis
ISA2: prioritisation criteria	The contribution to the interoperability landscape, to be measured by how important and necessary is the action to complete the interoperability landscape in the Union The reusability of the action, to be measured by the extent its results can be reused

Output name	2.8 Interoperability and Usability Testbeds
How delivered?	Extended testing frameworks to ensure that reuse of INSPIRE and other geo-ICT data infrastructures provide reliable and appropriate content. Development of 'usability' checklist to complement the 'interoperability' checks.
Beneficiaries and benefits	Those developing interoperability testing infrastructures can follow the experience being gained in the geospatial domain. The users of geospatial data can have access to content based on reliable and readily integrated infrastructure components.
ISA2: eligible activities	The development, establishment, bringing to maturity, operation and re-use of new cross-border or cross-sector interoperability solutions
ISA2: prioritisation criteria	The contribution to the interoperability landscape, to be measured by how important and necessary is the action to

	complete the interoperability landscape in the Union

Output name	2.9 - 2.11 Common services: EU gazetteer, Open EU mapping and address registries “ready for operation” pilots
How delivered?	Demand-driven developments of key geospatial data components that offer services for reuse in mainstream e-government practices and resources. The creation of the solutions will be based on pilots, previous work done (e.g., the European Location Framework project, ESTAT’s activities on the gazetteer, other existing implementations) as well as feasibility studies before development and initial operation. Conceptual references to location and real data examples through INSPIRE and other data sources will be explored.
Beneficiaries and benefits	Consistent representation of reference geography and geospatial data will enable an interoperable approach to reuse and link data across information systems via location. It will create new forms of geospatial data for information management and ensure European investments are focussing on critical elements to ensure consistency across borders, in turn reducing costs for technological design and implementation through common approaches. The EC itself can benefit from a modernised approach to geospatial information handling and use for a range of policy areas. The consistent reference to location conceptually and with actual data will enable the power of geography to support better decision-making and potentially new data products and services for businesses and citizens.
ISA2: eligible activities	The assessment, improvement, operation and re-use of existing cross-border or cross-sector interoperability solutions The development, establishment, bringing to maturity, operation and re-use of new cross-border or cross-sector interoperability solutions
ISA2: prioritisation criteria	The scope of the action, to be measured by the horizontal impact of the action, once completed, through sectors The urgency of the action, based on its high potential impact and taking into account the lack of other funding sources.

Output name	3.1 – 3.5 Better Regulation, Member State Public Sector Modernisation and Digital Single Market / Business “ready for operation” pilots
How delivered?	Scope based on key priorities identified through needs analysis. Some pilots may extend the work already started in EULF (e.g. energy, marine); others will tackle new opportunities (statistics). Each pilot will go through phases of mobilisation (project charter), development, evaluation, and operationalization.

	Partners will develop relevant partnering agreements. Resources will come from the core ELISE team and appointed specialists, and will use results of other relevant activities such as the European Location Framework project. Training packages will be developed for partners and future adopters. Benefits will be assessed to help in promotion and understanding. Lessons learned will be documented. Pilot solutions will be made 'ready for operation' and handed over to relevant parties (e.g. CEF, public administrations, and businesses).
Beneficiaries and benefits	Policy makers will have solutions that implement and align policies effectively, public administrations will have access to co-developed best practice applications, businesses and citizens will have better public services and better access, where relevant to government data
ISA2: eligible activities	The assessment, improvement, operation and re-use of existing cross-border or cross-sector interoperability solutions The development, establishment, bringing to maturity, operation and re-use of new cross-border or cross-sector interoperability solutions
ISA2: prioritisation criteria	The geographical reach of the action, to be measured by the penetration of the action in the Member States The urgency of the action, based on its high potential impact and taking into account the lack of other funding sources The link with Union initiatives to be measured by the collaboration and contribution level of the action to Union initiatives such as the Digital Single market (DSM)

Output name	4.1 Demand and opportunity analysis
How delivered?	Desk survey plus inputs from stakeholders, covering policies, member state public administrations, businesses and citizens. Public administrations will be the conduit to business and citizen needs. Prioritisation criteria will be developed with the Working Group and used in assessments. Demand and supply will be matched to understand 'ease of delivery'. Existing solutions will be reused where possible.
Beneficiaries and benefits	Policy makers, public administrations, businesses and citizens will have their priority needs addressed where feasible.
ISA2: eligible activities	The assessment of the ICT implications of proposed or adopted Union legislation The identification of legislation gaps that hamper interoperability between European public administrations

	The mapping and analysis of the overall interoperability landscape in the Union through the establishment, maintenance and improvement of the EIRA and the EIC as instruments to facilitate the re-use of existing interoperability solutions and to identify the areas where such solutions are still lacking
ISA2: prioritisation criteria	The contribution to the interoperability landscape, to be measured by how important and necessary is the action to complete the interoperability landscape in the Union The urgency of the action, based on its high potential impact and taking into account the lack of other funding sources.

Output name	4.2 Geospatial Knowledge Base
How delivered?	Formalisation and extension of existing services offered by the JRC to other Commission Services and ISA(2) Actions. The Geospatial Knowledge Base will support policy makers through the policy cycle. The support function will include the provision of “location” input to thematic expert groups, and support to DIGIT in “location” inputs to ICT assessment of EU policies and DIGIT checks, and Interoperability Maturity assessments Support will also 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.
Beneficiaries and benefits	Policy makers, managers and implementers of services, and developers will be able to decide on and develop appropriate location-based solutions more easily and develop better solutions, with benefits in terms of cost and effectiveness.
ISA2: eligible activities	The development, establishment, bringing to maturity, operation and re-use of new cross-border or cross-sector interoperability solutions Bringing new interoperability services and tools to maturity, and maintaining and operating existing interoperability services and tools on an interim basis
ISA2: prioritisation criteria	The contribution to the interoperability landscape, to be measured by how important and necessary is the action to complete the interoperability landscape in the Union The urgency of the action, based on its high potential impact and taking into account the lack of other funding sources.

Output name	4.3 Benefit realisation
How delivered?	Justification of all elements of the work programme. Reviewing

	before and after processes. Making the benefits as quantifiable as possible. Understanding potential benefits from the perspective of all stakeholders. Focusing on what is significant. Monitoring post initial implementation. Targeting actions that maximise benefits. Using case studies to promote best practice and benefits, including through promotional videos. Sharing best practice business cases.
Beneficiaries and benefits	Stakeholders understand the value of what is being delivered. Future actions are more likely to extend the benefits.
ISA2: eligible activities	The development of mechanisms that measure and quantify the benefits of interoperability solutions The development of methodologies for assessing the cost savings arising from implementing interoperability solutions
ISA2: prioritisation criteria	The contribution to the interoperability landscape, to be measured by how important and necessary is the action

Output name	4.4 Operational handover
How delivered?	The 'operational' package will contain through 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.
Beneficiaries and benefits	Public administrations can rely on operational interoperability services with known service levels Wider roll out in MS beyond the pilot communities can be supported.
ISA2: eligible activities	Bringing new interoperability services and tools to maturity, and maintaining and operating existing interoperability services and tools on an interim basis
ISA2: prioritisation criteria	The reusability of the action, to be measured by the extent its results can be re-used

4.1.12 COSTS AND MILESTONES

4.1.12.1 Breakdown of anticipated costs and related milestones (Inception phase)

The proposed ELISE work programme spans five years, with year 1 the "Inception" phase (containing inception activities and evolution of EULF and ARE3NA solutions), years 2-4 the "Execution" phase (containing largely execution activities) and year 5 the "Operational" phase (containing largely the readying of solutions for operation, support to handover of solutions, 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 Inception phase are shown in the table below.

Phase: Inception Execution Operational	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA/ others (specify)	Start date	End date
	1. Studies				
Inception	1.1 DSM assessment and plan: Assessment of geo-DSM barriers to free-flow of data and adoption of 'once only' and 'digital by default' principles. Plan for addressing barriers and supporting relevant principles. Draft report in year 1. Final report envisaged Q3/2017.	165	ISA	Q3/2016	Q2/2017
Inception	1.2 Pilot feasibility studies (where needed): e.g. EU gazetteer, Open EU mapping, Address registries: Initial work on EU gazetteer study. Final report for first feasibility study envisaged Q3/2017	60	ISA	Q4/2016	Q2/2017
	2. Tools				
Inception	2.1 Location guidance, e.g. DSM (including open data), spatial data modelling, INSPIRE adoption, geodata and statistics. Rolling work programme agreed with stakeholders. Guidance on first topic completed Q4/2017.	59	ISA	Q4/2016	Q2/2017
Inception	2.3, 2.4, 2.5 EIF alignment, solution patterns and inventories: Integration of EIS and EIF changes into existing EULF and ARE3NA deliverables; first patterns of processes, services and applications and inputs to EIRA / EICart in year 1. Continued inputs in future years.	54	ISA	Q3/2016	Q2/2017
Inception	2.6 ARE3NA Reference Platform : Updates to platform agreed with stakeholders for year 1. Multi-year programme of updates envisaged.	90	ISA	Q3/2016	Q2/2017
Inception	2.7 Re3gistry update, federation, maintenance and support . Registry operational solution with supporting guidance and training available Q3/2017. Further upgrades	120	ISA	Q4/2016	Q2/2017

Phase: Inception Execution Operational	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA/ others (specify)	Start date	End date
	envisaged.				
Inception	2.9 Common services: EU gazetteer. Analysis, design and initial phase of development in year 1. Expected duration of development around 24 months.	150	ISA	Q3/2016	Q2/2017
	3. Applications				
Inception	3.1 Better Regulation Energy Pilot phase 2 scoping and mobilisation. Expected duration of pilot phase 18-24 months in total.)	90	ISA	Q4/2016	Q2/2017
	4. Services				
Inception	4.1 Demand, opportunity and benefit analysis: Initial analysis of demand and opportunities in the EU policy landscape, in MS for improvement of location-enabled public services, for improved public private partnerships, and for improving services to citizens and involving them more extensively. Continued intelligence gathering and analysis in future years.	105	ISA	Q3/2016	Q2/2017
Inception	4.2 Geospatial Knowledge Base, training and user support: Evaluation of effectiveness of ISA SIS Working Group, assessment of ISA2 governance needs, reformulation of group, and initial meetings. Terms of reference and plan for Geospatial Knowledge Base. Plan for support to DIGIT on ICT and IOM assessments. User outreach events. Training assessment and plan. Continued support in future years.	75	ISA	Q3/2016	Q2/2017
Inception	4.4 Operational handover: Assessment of sustainability requirements for solutions and plan for fulfilment of these requirements	15	ISA	Q4/2016	Q2/2017
	Total	983			

Note: ELISE is a multi-year action. The above table shows only the milestones and required budget in the first year. In several work areas, there will continued activity and further milestones in subsequent years. See section 1.1.9 Expected Re-usable 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.

4.1.12.2 Breakdown of ISA funding per budget year

Budget Year	Phase	Anticipated allocations (in KEUR)	Executed budget (in KEUR)
2016	Inception	983	
2017	Execution	2,700	
2018	Execution	2,900	
2019	Execution	2,000	
2020	Operation	1,100	

4.1.12.3 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)
-	-	-
-	-	-

4.1.13 ANNEX AND REFERENCES

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