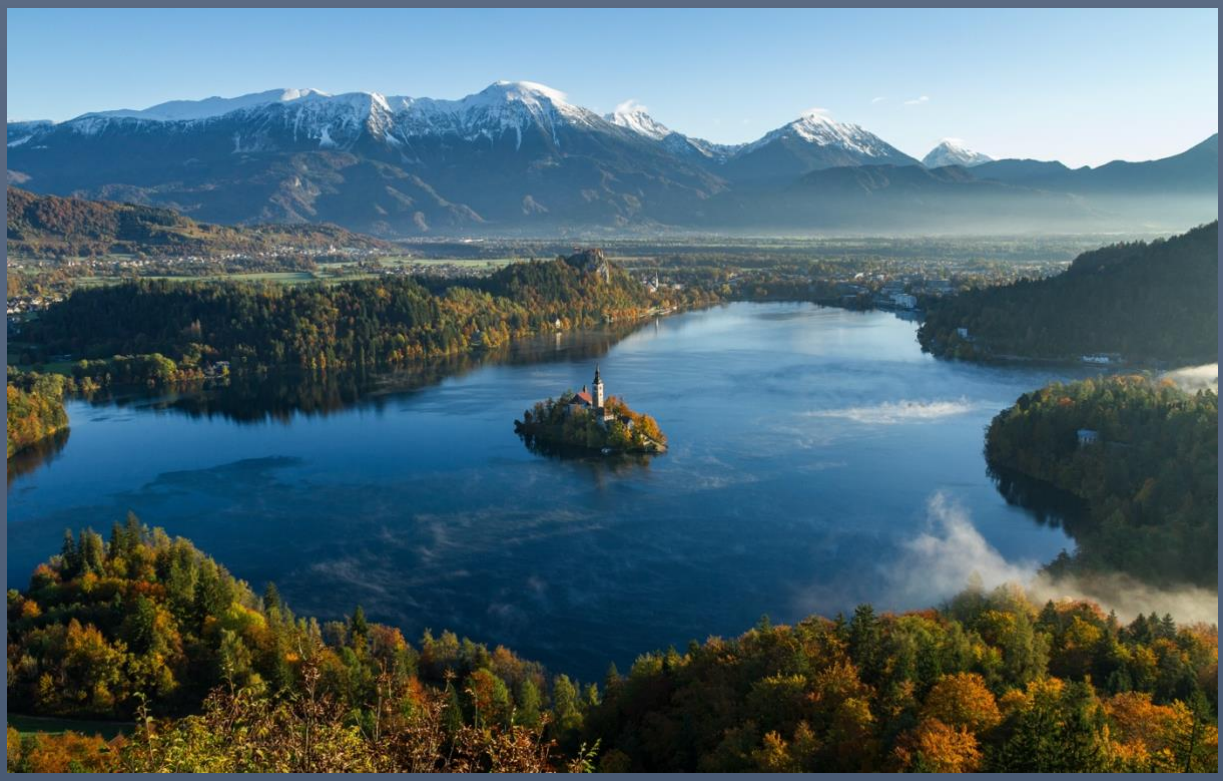
European Commission



LIFO: Location Interoperability Framework Observatory

2019 Country Factsheet

Slovenia

ISA²

This LIFO 2019 publication has been prepared by KPMG for the European Commission, Joint Research Centre (JRC) as part of the ELISE Action of the ISA2 Programme. The date of publication is August 2020.

The monitoring information for Slovenia has been provided by the *Geodetska uprava Republike Slovenije* (Surveying and Mapping Authority of the Republic of Slovenia).

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1. Introduction

The **Location Interoperability Framework Observatory** (**LIFO**) is a domain-specific observatory relating to location interoperability. It provides a tool **to monitor, assess and report on the state of play of location interoperability in policy and digital public services of EU Member States and other countries implementing** INSPIRE**.**

The LIFO complements the National Interoperability Framework Observatory (NIFO) that monitors, assesses and reports the progress in implementing the **European Interoperability Framework** (EIF). The NIFO collects and shares details across all levels of the EIF relating to important initiatives in the Member States, uncovering best practices, areas needing improvement or where solutions could be developed.

The LIFO analytical model measures, through specific indicators, **the current level of adoption of the recommendations on location interoperability from the** EULF Blueprint[1], covering its five focus areas: *Policy and Strategy Alignment*; *Digital Government Integration*; *Standardisation and Reuse*; *Return on Investment*; *Governance, Partnerships and Capabilities*. The LIFO model is composed of primary indicators, based on information provided by respondents to a questionnaire, and secondary indicators, re-using information from existing sources, for example the INSPIRE monitoring.

The information collected through the observatory can be used to assess the current status, compare countries and plan appropriate measures, including potential partnerships and opportunities for sharing solutions. More in detail:

- it helps achieve the objectives of the EULF, for example: policy coherence, effective use of location information in digital public services, standards-based approaches, attention to data quality, effective partnerships, and increased awareness and skills;
- as a complementary tool for NIFO (and thanks to the alignment between EULF and EIF), LIFO helps monitor how the EIF is implemented in the geospatial domain;
- it provides visibility and access to guidelines and best practices for each country and across countries, for reuse and/or suggestion of similar / connected developments;
- it can be used as a self-assessment tool for public administrations towards their implementation of location interoperability, both internally and cross-border.

The LIFO is coordinated by the European Location Interoperability Solutions for e-Government (ELISE) action in the Interoperability Solutions for European Public Administrations, Businesses and Citizens (ISA2) programme.

Appreciation is given to the ELISE ‘User Panel’ of 10 Member States and other countries (namely, AT, BE, CZ, DK, FR, IT, NO, PT, SI and SK) who validated the model, answered the survey, and provided further information to ensure the results are representative of the national state of play.

The LIFO will be extended to all ISA2 and INSPIRE implementing countries in 2020 in order to capture the full status of location interoperability across Europe.

[1] The European Union Location Framework (EULF) is a geospatial domain interoperability framework allied to the EIF. Key EULF guidance is published in the EULF Blueprint.

2. Structure of the document

This factsheet provides an overview of the information collected on location interoperability in Slovenia in 2019. It contains the following chapters:

- Location Interoperability State of Play: this chapter contains an overview of the implementation of the EULF Blueprint recommendations in the different focus areas. The paragraphs dedicated to each focus area contain graphs displaying the country's scores for the individual indicators and the average scores for each recommendation. In both cases, scores are compared with the average of the monitored countries. Descriptions and evidence are included to support the relevant scores.
- Best Practices: which highlights existing initiatives and applications in different domains demonstrating the benefits of a consistent use and integration of location information and services in digital public services.

Annexes to the document are:

- The method of scoring and normalisation applied to the indicators;
- A glossary of the most relevant terms used in the document;
- The questionnaire with the replies provided for Slovenia and the corresponding scores.

The 2019 LIFO monitoring information for Slovenia has been provided by *Geodetska uprava Republike Slovenije* (Surveying and Mapping Authority of the Republic of Slovenia).

3. Location Interoperability State of Play

3.1. Overview

The trends of Slovenia's implementation of the EULF Blueprint recommended practices are slightly behind the European average across the 10 surveyed countries (see Figure 1). The country scores are on a par in the "Policy and Strategy Alignment" and "Digital Government Integration" focus areas, while showing gaps, in the "Return on Investment" and, to a lesser extent, the "Governance, Partnership and Capabilities" focus areas.

In the "Policy and Strategy Alignment" focus area, the strengths of Slovenia's practice are the integration between location data policy and wider data policy, the compliance with data protection principles and the use of a standard-based approach in the procurement of location data and services. For "Digital Government Integration", the scores for all of the recommendations were close to the European averages.

The widest gap between the practices in Slovenia and the European average was in the "Return on Investment" focus area. The low scores were attributed to the absence of a structured communication approach on the use of location data enabled services and, to a lesser extent, the limited span of actions taken to facilitate the reuse of public sector location data by non-governmental actors and to support them in developing new location-based services.

The lowest score overall and another significant gap to the European average was in the "Governance, Partnership and Capabilities" focus area, in particular, concerning the involvement of actors other than the central institutions in location data governance and the set-up of formal cooperation agreements in the geospatial domain.

The value of the overall LIFO index is 0,41[2]. This compares with a LIFO European average of 0.54.

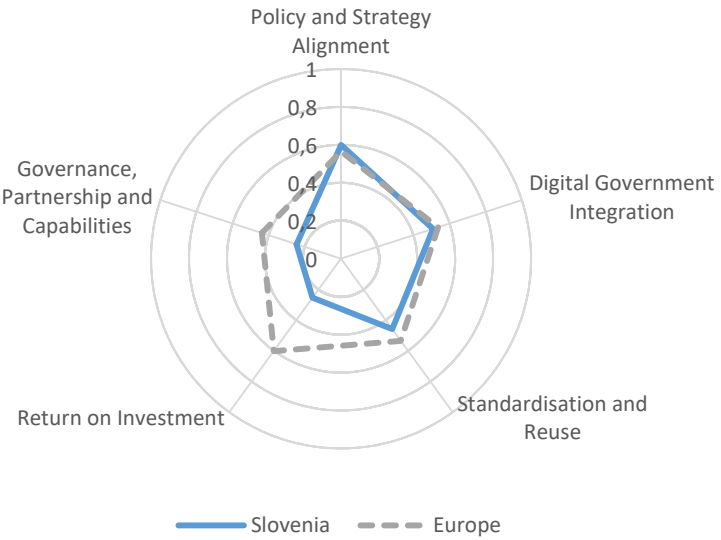

Figure 1 - Overall EULF Blueprint implementation

The following sections present the results in detail for each focus area.

[2] For the description of calculation method of the LIFO index and the other indicators and indexes see **Error! Reference source not found.Error! Reference source not found.**

3.2. Policy and Strategy Alignment

Vision There is an aligned and coordinated policy and strategic approach across Europe for the use of location information that enables more efficient and effective integration of cross-sector and cross-border location-based applications, reducing costs and increasing social and economic benefit. Public sector location policies promote accessibility and interoperability. There are simple and consistent approaches to licensing, progressive open data policies that balance the needs of data users and suppliers, and authentic registers in which 'location' has a prominent role.	
Recommendation 1	Connect location information and digital government strategies in all legal and policy instruments
Recommendation 2	Make location information policy integral to, and aligned with, wider data policy at all levels of government
Recommendation 3	Comply with data protection principles as defined by European and national law when processing location data
Recommendation 4	Make effective use of location-based analysis for evidence-based policy making
Recommendation 5	Use a standards-based approach in the procurement of location data and related services in line with broader ICT standards-based procurement

Table 1 - Focus Area "Policy and Strategy Alignment" - vision and recommendations

The “Policy and Strategy Alignment” focus area index for Belgium is 0.60, slightly above the European average of 0.57. This focus area yields the best results for Slovenia.

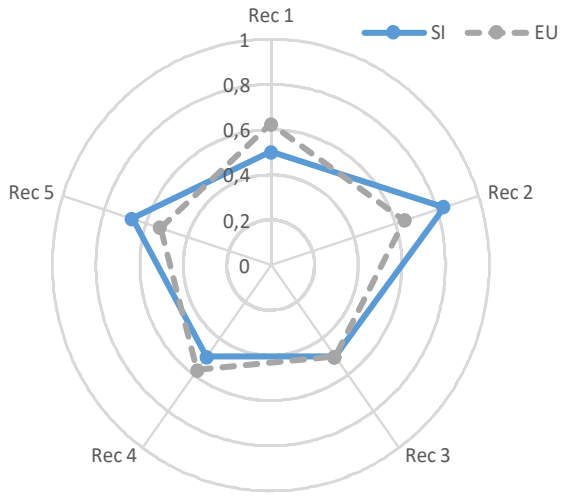

Figure 2 – Policy and Strategy Alignment – scores by recommendation

For Recommendation 1, the location strategy, which is in the preparation phase, is aligned with the digital government strategy under various elements[3]. The use in digital government of authoritative location datasets is mandated by thematic legislation, for instance in domains such as agriculture, statistics, demography, geology, spatial planning, utility networks, telecommunications, transport and nature protection.

Against Recommendation 2, Slovenia scores particularly well. Location information policy is integral to, and aligned with, wider data policy at all levels of government. In this respect:

- most location data is available free of charge under an open licence without restrictions;
- a wide range of location core reference datasets[4] are available for general use[5];

[3] See http://nio.gov.si/nio/asset/strategija+razvoja+javne+uprave+2015+2020

[4] Core reference datasets are government-authorised geospatial data; particularly, data included in one of the core location registers, such as, addresses, geographical names, cadastral parcels and buildings, hydrography etc.

[5] Guidelines on sharing and reuse of core reference datasets can be found at https://www.e-prostor.gov.si/access-to-geodetic-data/ordering-data/#tab2-1791

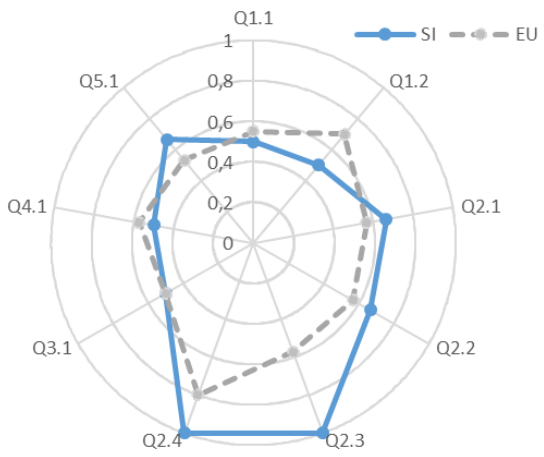

Figure 3 - Policy and Strategy Alignment – scores by indicator

- all public sector location data is available under a national licensing framework[6];
- national guidelines on the publication of public sector data cover location aspects, particularly concerning open data[7].

In relation to location data privacy (Recommendation), some public organisations are fully prepared in terms of GDPR implementation.

Under Recommendation 4, location-based evidence and analysis is used to help in developing relevant policies and monitoring outcomes in some relevant policy topics, such as telecommunications[8], agriculture[9], hydrography[10], meteorology, hydrology, oceanography and seismic service[11] .

Regarding Recommendation 5, specific references to the applicable parts of the INSPIRE Directive and / or the national standards framework are made in public sector procurements of location information and/or services[12].

3.3. Digital Government Integration

Vision Location is well integrated in digital government processing supporting G2G, G2B and G2C interactions, through location related services across government. Users do not have to supply the same mandatory information multiple times. There is visibility of common coordinating and support structures, expert groups and technologies, a strong user voice in the design, evaluation and improvement of location-based services, and good evidence of take-up of services.	
Recommendation 6	Identify where digital government services and processes can be modernised and simplified through the application of location-enabled services and implement improvement actions
Recommendation 7	Use INSPIRE and SDI models, data and services for delivering cross-sector and cross-border digital public services to citizens, businesses, government and other parties
Recommendation 8	Adopt an open and collaborative methodology to design and improve location-enabled digital public services
Recommendation 9	Adopt an integrated location-based approach in the collection and analysis of statistics on different topics and at different levels of government

Table 2 - Focus Area "Digital Government Integration" - vision and recommendations

The “Digital Government Integration” focus area index for Slovenia is 0.51, only marginally behind the European average of 0.54. Slovenia’s strength in this focus area is related to the

6 http://www.pisrs.si/Pis.web/pregledPredpisa?id=URED6941
7 https://podatki.gov.si/sites/default/files/attachments/OPSI_Prirocnik_1._izdaja_junij_2016.pdf
8 Electronic Communication Act available at http://www.pisrs.si/Pis.web/pregledPredpisa?id=ZAKO6405
9 Agriculture act available at http://www.pisrs.si/Pis.web/pregledPredpisa?id=ZAKO4716
10 See the Water act, available at http://pisrs.si/Pis.web/pregledPredpisa?id=ZAKO1244
11 National Meteorology, Hydrology, Oceanography and Seismic Service Act available at http://pisrs.si/Pis.web/pregledPredpisa?id=ZAKO7430
12 See http://www.djn.mju.gov.si/resources/files/razno/Smernice_JN_IT.pdf

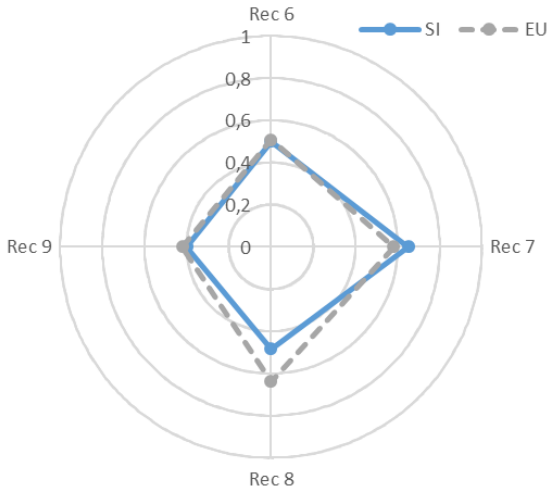

Figure 4 - Digital Government Integration - scores by recommendation

use of INSPIRE and SDI models, data and services for delivering cross-sector and cross-border digital public services. There are lower scores, indicating gaps, regarding the adoption of an open and collaborative methodology to design and improve location-enabled digital public services. Results for the remaining practices of this focus area appear in line with the European average.

For Recommendation 6, improvements of digital public services and processes in their use of location information are usually pursued through incremental upgrades to the use of location information.

Several key digital public services use location information as an important feature in performing the service such as: spatial planning, areas covered with available efficient internet connections, registration of residence or place of company, taxation of real estate, e-social services such as requests for subsidies, benefits and allowances.

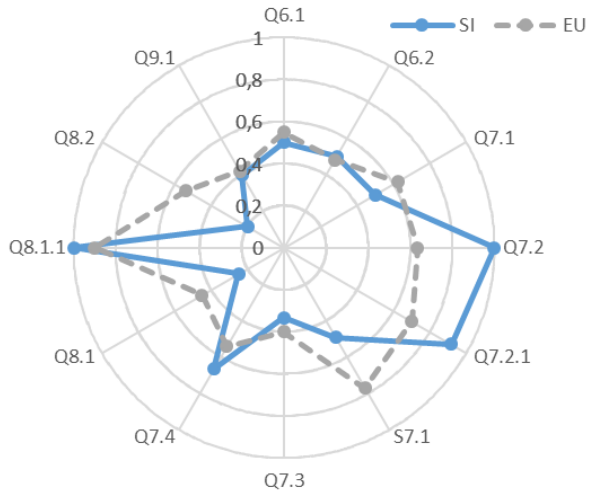

Figure 5 - Digital Government Integration - scores by indicator

Location information is used innovatively for statistical purposes. For instance, users may access data and customised statistics for different timeframes and spatial units, thanks to STAGE, a freely accessible, user friendly interactive cartographic application to use indicators data on a mobile devices or on the web.

With reference to Recommendation 7, the public sector SDI is used in several cases by the private sector and other organisations (e.g. NGOs) for the delivery of new and innovative applications, products and services.

Standardised location data is used for most digital public services in domains such as environment, marine, transport, energy, property / land administration, local / regional planning, smart cities, health, culture, education and tax policy. INSPIRE datasets are used for European Location Framework (ELF) services in a few cases and for hydrography data and Harmo-data (cross-border Slovenian-Italian spatial management[13]).

Based on the 2019 INSPIRE country fiche[14], while the implementation of INSPIRE Directive is completed under the obligations of identification of spatial datasets and documentation of these datasets (metadata); the key obligation for the provision of services for identified datasets is far from being fully implemented. The implementation of the provision to make spatial datasets interoperable by aligning them with common data models is still half way to completion.

13 https://www.ita-slo.eu/sl/harmo-data
14 Currently the INSPIRE country fiche 2019 is available

Slovenia is involved in the delivery of cross-sector digital public services such as key registers, environment and planning, with data harmonised through national and international frameworks other than INSPIRE, as well as in the deployment of cross-border digital public services using INSPIRE. Examples of these are OneGeology[15] and the STAGE[16] application.

As mentioned above, with reference to Recommendation 8, an open and collaborative methodology, through consultations, user groups, feedback requests and iterative development, is applied in certain cases to design and improve location-enabled digital public services in specific initiatives, mostly at national level.

Private companies, municipalities and responsible ministries provide through specific studies, updates to feed the consolidated cadastre of public infrastructure. After a quality check phase, such data are registered in a central database held by the Surveying and Mapping Authority, who then distribute the data to all users. The same process is applied to real estate data.

Concerning the integration of location and statistical information (Recommendation 9), Slovenia implements the following actions:

- a common geospatial reference framework for statistics to enable timely, accurate and efficient production of location-based statistics;
- collection of census data based on the location reference framework for statistics;
- contribution to European projects aiming at establishing a data and production infrastructure for location-based statistics (e.g. GEOSTAT)[17].

3.4. Standardisation and Reuse

Vision	
Core data has been defined and a funding model has been agreed for its ongoing maintenance and availability. Consistent use of geospatial and location-based standards and technologies, enabling interoperability and reuse, and integration with broader ICT standards and technologies, including the standards and solutions promoted by the ISA2 programme. Use of these standards in all areas related to the publication and use of location information in digital public services, including metadata, discovery, view, exchange, visualisation etc.	
Recommendation 10	Adopt a common architecture to develop digital government solutions, facilitating the integration of geospatial requirements
Recommendation 11	Reuse existing authentic data, data services and relevant technical solutions where possible
Recommendation 12	Apply relevant standards to develop a comprehensive approach for spatial data modelling, sharing, and exchange to facilitate integration in digital public services
Recommendation 13	Manage location data quality by linking it to policy and organisational objectives, assigning accountability to business and operational users and applying a “fit for purpose” approach

Table 3 - Focus Area “Standardisation and Reuse” - vision and recommendations

The “Standardisation and Reuse” focus area index for Slovenia is 0.46, compared with a European average of 0.54.

[15] The initiative has the mission of 'mak[ing] web-accessible the best available geological and other geoscience data worldwide at the best possible scales, starting with at least 1:1 million scale.' (from its mission statement). See http://www.onegeology–.org/home.html

[16] See Best Practice SI1

[17] Statistical information is displayed in a geospatial format at https://gis.stat.si/

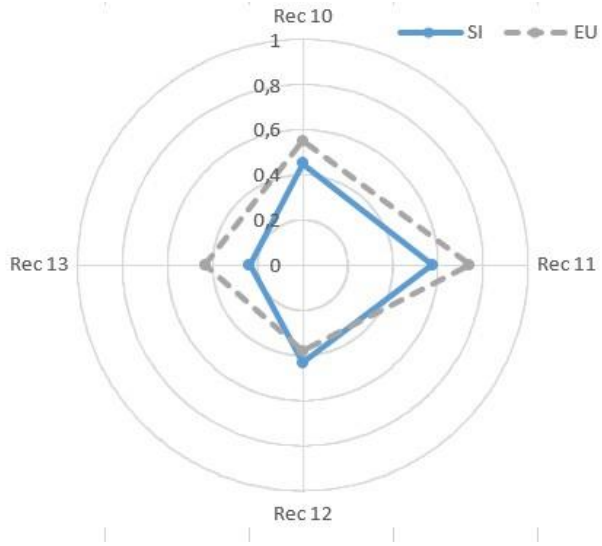

Figure 6 - Standardisation and Reuse – scores by recommendation

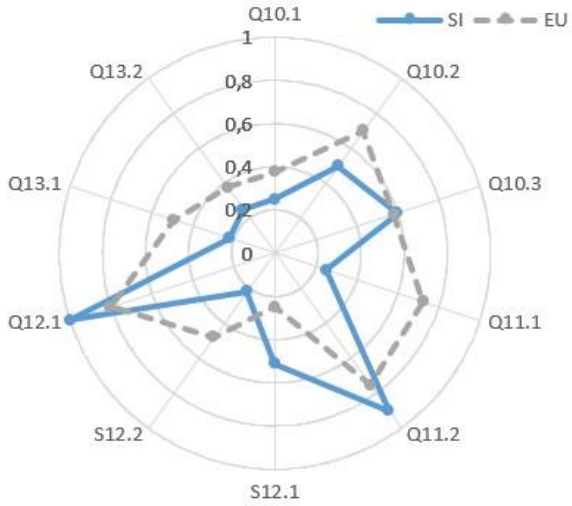

Figure 7 - Standardisation and Reuse – scores by indicator

Regarding Recommendation 10, there is a policy defining the architecture for location data and services in the SDI, fitting within a broader national ICT architecture approach, but it is not yet widely adopted[18]. The approach to discover, explore and incorporate new technological features or emerging technologies is rather ad-hoc. In terms of evolving technologies, a series of location data APIs have been developed, documented and are accessible[19] (Recommendation 10).

With respect to reuse practices (Recommendation 11), the possibility to reuse in the SDI generic ICT solutions, such as those designed by the ISA/ISA² programme, has been studied ahead of a possible adoption. Furthermore, Slovenia has implemented various registers of location information, i.e.:

- Addresses;
- Geographical names;
- Administrative units;
- Cadastral parcels;
- Buildings;
- Hydrography;
- Transport networks;
- Glossary;
- Code lists.

As for Recommendation 12, on INSPIRE implementing rules, Slovenia has the highest percentage of datasets conformant with Regulation (EU) No 1089/2010, among the 10 monitored countries. Conversely, relatively few network services are compliant with Regulation (EC) No 976/2009. Another factor relating to this recommendation is that the GeoDCAT-AP specification used to align the metadata for geospatial data with that for general data.

Management of location data quality (Recommendation 13) is where the country displays the largest gaps against the European average in this focus area, with only a small set of the possible actions being implemented to assure data quality:

- Design: inclusion of the different dimensions of data quality in the standard, such as timeliness, accuracy, completeness, integrity, consistency, compliance to specifications / standards / legislation;
- Measurement: ex-post evaluation of existing data quality issues;

18 More information on location data is available in the document: http://nio.gov.si/nio/asset/smernice+mju+za+razvoj+informacijskih+resitev-768

19 https://www.e-prostor.gov.si/dostop-do-podatkov/spletne-storitve/

- Governance: definition of a data quality review process for various datasets; collection of feedback from users to report problems and help improve data quality.

3.5. Return on Investment

Vision There is a strategic approach to national and European funding, procurement, and delivery of location information and location-based services to minimise costs and maximise benefits for government, businesses and citizens, recognising best practices, and building on INSPIRE and standardisation tools. The funding and sourcing model for collection and distribution of core location data takes into account user needs from different sectors and the strategic importance of continued supply of data at a suitable quality. Procurement recognises INSPIRE and other standardisation tools in a meaningful way. There are compelling impact assessments and business cases, a rigorous approach to targeting and tracking benefits, and good evidence that benefits are being achieved.	
Recommendation 14	Apply a consistent and systematic approach to monitoring the performance of their location information activities
Recommendation 15	Communicate the benefits of integrating and using location information in digital public services
Recommendation 16	Facilitate the use of public administrations' location data by non-governmental actors to stimulate innovation in products and services and enable job creation and growth

Table 4 - Focus Area "Return on Investment" - vision and recommendations

The "Return on Investment" focus area index for Slovenia is 0.25, significantly below the European average of 0.60. As mentioned in the Overview, this is the area with the widest gap against the European average of surveyed countries.

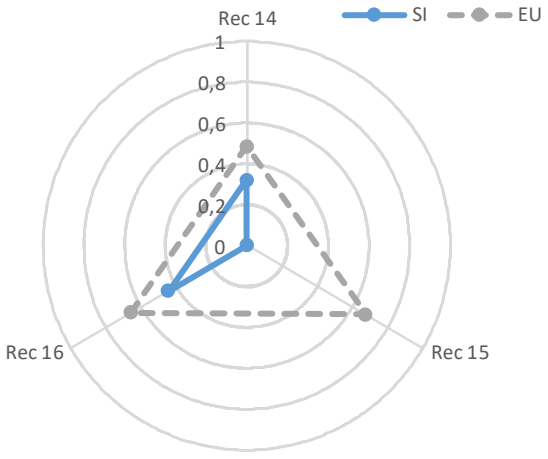

Figure 8 - Return on Investment – scores by recommendation

In particular, the communication of availability and benefits of location data and location-enabled digital public services to raise awareness and understanding of such benefits, is not based on a systematic approach (Recommendation 15).

The assessment of the efficiency and effectiveness of location-based services is mostly, if not exclusively, done under the dimension of their availability and responsiveness (Recommendation 14).

Slovenia facilitates the process of searching and accessing location data and web services by non-governmental actors (Recommendation 16) through a series of measures which is less varied than the European average and includes:

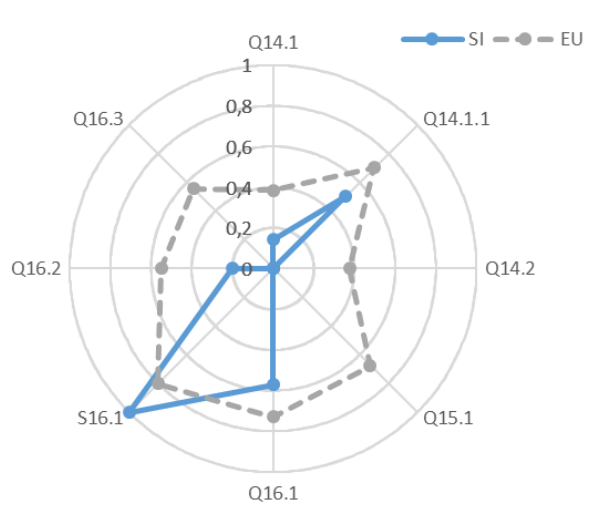

Figure 9 - Return on Investment – scores by indicator

- a national data portal merging location data and non-location data[20];
- a national discovery geoportal integrating INSPIRE and non-INSPIRE data[21];
- a geoportal harvested by the European Data Portal; and
- thematic portals complementing general search facilities with "specialist" search functionalities[22].

Similarly, a limited range of actions are implemented to support private, non-profit and academic actors in the development of new products and e-services. This includes promotion of the open data policy and brokering access to this data through hackathons and pilot projects.

Good examples of reuse of public resources and solutions by the private sector are the involvement of several external stakeholders in a working group with national authorities for the development of a national strategy for artificial intelligence[23], as well as SI-Chain, a national test blockchain infrastructure to enable the testing of existing and new blockchain applications for both the public and private sectors[24].

20 For example, https://www.e-prostor.gov.si/, which provides real estate prices dynamically selected over a national map, http://rkg.gov.si/GERK/WebViewer, a dynamic viewer of the register of land use, http://prostor.zgs.gov.si/pregledovalnik/, a forest data viewer, https://gis.stat.si/, the portal of geospatial statistics,

21 http://www.geoportal.gov.si/eng/

22 http://biotit.geo-zs.si/ogk100/, which presents the geological survey of Slovenia, https://gisportal.gov.si/evrd, with the map of protection regimes for cultural heritage, http://www.pis.gov.si/; with information on spatial planning acts and other related measures, https://gis.akos-rs.si/HomePublic/OPTPogledResult/slo

23 https://ec.europa.eu/knowledge4policy/ai-watch/slovenia-ai-strategy-report: the strategy setting involves a number of private sector stakeholders, such as the Slovenian Digital Coalition, Slovenian Society for Artificial Intelligence, Slovenia's Digital Ambassador, the Chamber of Commerce and Industry of Slovenia, Strategic Research and Innovation Partnerships (SRIP PMiS - Smart Cities and Communities and SRIP ToP - Factories of the future), the Jozef Stefan Institute, the Faculty of Computer and Information Science of the University of Ljubljana and others.

24 https://www.gov.si/en/news/2019-12-11-slovenia-launched-national-test-blockchain-infrastructure-and-slovenian-blockchain-partnership/

3.6. Governance, Partnerships and Capabilities

Vision There is high level support for a strategic approach to the funding and availability of location information at Member State and EU level, based on INSPIRE and other tools to achieve interoperability. Effective governance, partnerships, work programmes, responsibilities and capabilities to progress such an approach have been established, taking into account the needs and expectations of stakeholders at Member State and EU level. Governments recognise the importance of 'location' understanding and skills and invest in awareness raising, training and resourcing. Service design takes account of user capabilities. Specialists form communities to share knowledge and develop new ideas related to location information. As a result, there is a sufficient level of understanding and skills to develop, deploy and use effective location-based services.	
Recommendation 17	Introduce an integrated governance of location information processes at all levels of government, bringing together different governmental and non-governmental actors around a common goal
Recommendation 18	Partner effectively to ensure the successful development and exploitation of location data infrastructures
Recommendation 19	Invest in communications and skills programmes to ensure sufficient awareness and capabilities to drive through improvements in the use of location information in digital public services and support growth opportunities

Table 5 - Focus Area "Governance, Partnerships and Capabilities" - vision and recommendations

The "Governance, Partnerships and Capabilities" focus area index for Slovenia is 0.25, well below the European average of 0.44. This is the lowest scoring focus area for Slovenia, due mainly to factors relating to governance and partnerships. The scores for capacity building are more aligned with the European averages.

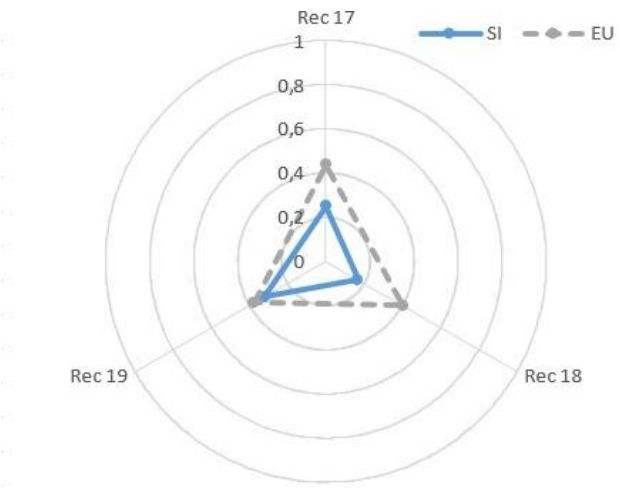

Figure 40 - Governance, Partnerships and Capabilities – scores by recommendation

Regarding, governance of location information processes, (Recommendation 17), the participation and cooperation of many different actors is mostly achieved through public consultation.

The Surveying and Mapping Authority of Slovenia, is responsible for coordinating the implementation of location information and the SDI, while the Slovenian Ministry of Public Administration, is responsible for supervising Digital Government. Coordination between these bodies is ensured by assigning to the former, specific tasks and responsibilities with regard to Digital Government under a geospatial perspective and the latter consideration of geospatial aspects from a Digital Government perspective.

Figure 11 - Governance, Partnerships and Capabilities – scores by indicator

Finally, NSDI and location information are a vital and very important part of National Interoperability Framework[25] in Slovenia.

Under Recommendation 18, a small number of formal agreements exist between public authorities in the country to finance, build and operate location data services or digital public services using location data.

On the other hand, no formal agreements with public authorities of other countries, nor public-private partnerships exist, to finance, build and operate location data services or digital public services using location data.

With reference to Recommendation 19, some training or awareness raising on geospatial skills is undertaken by organisations to meet specific requirements, however, these actions are not part of a recognised nor accredited competency framework.

In this context, the following can be found:

- a public sector location information / GI champion;
- location information / GI champions in specific organisations where location information plays a significant role;
- training for specialists, such as developers or data analysts;
- public or cross-government events specialising in location information / GI topics[26];
- INSPIRE training modules.

25 https://nio.gov.si/nio/vstopna.nio?lang=en
26 For example the national INSPIRE day (http://www.geoportal.gov.si/slo/novice/357/5-slovenski-inspire-dan).

4. Best practices

EULF Best Practice SI1	**Interactive tool for the presentation of geospatial data**
Policy domain: Statistics; broad range of other policy domains	
Process owners: Statistical Office of Slovenia	
Short description: STAGE is an interactive tool for presenting and disseminating geospatial data. It provides users with interactive viewing of statistical content in the form of thematic maps at 10 spatial scales. Based on spatial queries, spatial units can be arbitrarily combined and statistics can be customised. All data are freely available in geospatial formats (vector * .shp file) or in a thematic map and can be used in further spatial statistical analyses. The generated map displays can be shared as a simple or embedded link. In terms of metadata and network services, STAGE follows the recommendations of the INSPIRE Directive.	
Recommendations: Recommendation 16 (Standardisation and Reuse), Recommendation 19 (Governance, Partnerships and Capabilities)	
Link: http://gis.stat.si/	

Annex 1: LIFO 2019 Scoring methodology

The LIFO scoring methodology is based on a hierarchy of indicators and indexes.

(Action) Indicators: A certain number of actions[27] have been selected in the EULF Blueprint as being representative of the scope of the recommendations to which they belong. For each of these actions, an indicator has been designed to measure how monitored countries are progressing towards the "vision" outlined in the EULF Blueprint. Each indicator is calculated on a specific scale, which best reflects the nature of the action (e.g. if it can be measured over a continuous or a discrete scale, if it is a binary phenomenon i.e. yes/no or similar, etc.). Indicators are then normalised over a scale 0-1, as follows:

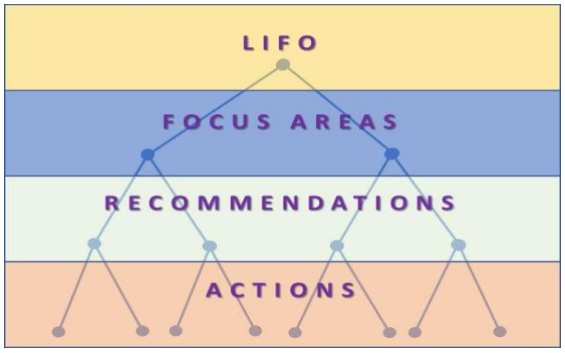

Figure 12 – Hierarchy of indicators and indexes hierarchy

Score attributed to the answer / Maximum Applicable Value: where the Maximum Applicable Value is the upper end of the scale that the non-normalised Value of the indicator can reach.

Note: Optional questions in the LIFO survey capture supplementary information relevant to corresponding mandatory questions about the actions. The mandatory questions (i.e. those marked '*' in the survey) are scored whereas the optional questions are not scored.

(Multi-level) Indexes: Indexes aggregate the Action Indicators at the levels of Recommendations, Focus Areas and LIFO overall, in order to represent the performance of each country at the respective levels. The relationships between (Action) Indicators, Recommendation Indexes, Focus Area Indexes and the overall LIFO Index are described in the table below.

Level	No.	Scoring method
LIFO	1	Average of the 5 Focus area indexes
Focus area	5	Average of scores for all recommendations associated with a focus area
Recommendation	19	Average of normalised scores for all indicators associated with a recommendation[28]
Action	61	Scores calculated using different scoring methods, converted to standard normalised scores in range 0-1.

***Table 6** – Relationships between indicators and indexes*

Action indicators, Recommendation indexes and Focus Area indexes are thus equally weighted in the calculation of their respective upper level indexes.

Note: *Some questions have a "don't know" response as an option. Respondents are encouraged to provide answers wherever possible. Where a "don't know" response is given, the question has a null score*. This is shown as *zero in the indicator charts* and the question is ignored *in calculating the index scores.*

[27] Described in the "How" section of each Recommendation

[28] In the event of a failure to respond or an "I don't know" answer, the indicator in question scores zero and it is excluded from the computation of the average score for the above levels.

Annex 2: Glossary

Term	Meaning	Link
European Location Interoperability Solutions for e-Government (ELISE)	The action in the ISA2 programme responsible for maintaining the EULF Blueprint and coordinating the LIFO.	https://joinup.ec.europa.eu/collection/elise-european-location-interoperability-solutions-e-government/about https://ec.europa.eu/isa2/home_en
European Union Location Framework (EULF)	An EU-wide, cross-sector interoperability framework for the exchange and sharing of location data and services. It consists of a package of recommendations, guidance, methodologies, case studies, training, pilots and collaborative action required by public administrations and stakeholder communities to facilitate the free flow of location data and ensure its effective use in e-government services.	https://joinup.ec.europa.eu/collection/european-union-location-framework-eulf/about
EULF Blueprint	Guidance framework for a wide audience to implement the EULF vision. The EULF Blueprint is updated periodically to embrace new developments in digital government.	https://joinup.ec.europa.eu/collection/european-union-location-framework-eulf/eulf-blueprint
EULF Vision	Vision and framework for 'location-enabled government', based on applying good practice in a number of 'focus areas'. It identifies the objectives, transition strategy and high-level actions needed in each focus area.	https://joinup.ec.europa.eu/sites/default/files/inline-files/ReqNo_JRC94727_lb-na-27125-en-n%20.pdf
Focus area	Best practice domain relevant to the effective use of location information in policy and digital public services. The focus areas identified in the EULF Vision and adapted in the EULF Blueprint are: Policy and Strategy Alignment, Digital Government Integration, Standardisation and Reuse, Return on Investment, Governance, Partnerships and Capabilities.	
Indicator	Quantitative measurement of the performance / practice of an organisation or entity. In the context of the LIFO, the	

Term	Meaning	Link
	indicators evaluate the degree of alignment of the practices implemented by Member States to the EULF Blueprint recommendations. LIFO includes "primary indicators", which are specifically created for the Observatory and are measured through direct questions to LIFO contact points, and "secondary indicators", taken from external sources, following principles of relevance for the scope of LIFO.	
INSPIRE implementing countries	Group of countries that have engaged to implement the INSPIRE directive or parts thereof. It includes: EU Member States, EFTA Members and a group of non-member states.	https://inspire.ec.europa.eu/INSPIRE-in-your-Country
Recommendation	EULF location interoperability best practices in the EULF Blueprint focus areas. Each of the 19 EULF Blueprint recommendations, contains a description of the rationale for following the recommendation and the expected benefits (why?), a checklist of associated actions (how?), potential problem areas to address in implementing the recommendation (challenges), a variety of best practices across Europe where this has been done successfully, links to relevant parts of the EIF, and further reading related to the recommendation.	