



# LIFO: Location Interoperability Framework Observatory

## 2019 COUNTRY FACTSHEET

### ITALY

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 publication date is August 2020.

The monitoring information for Italy has been provided by the *Agenzia per l'Italia Digitale* (AgID – Agency for Digital Italy), Databases and Open Data Unit.

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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](#)**<sup>1</sup>, 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 identifying 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 ([ISA<sub>2</sub>](#)) 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 ISA<sub>2</sub> and INSPIRE implementing countries in 2020 in order to capture the full status of location interoperability across Europe.

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<sup>1</sup> 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 Italy 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 Italy and the corresponding scores.

The 2019 LIFO monitoring information for Italy has been provided by the *Agenzia per l'Italia Digitale* (AgID – Agency for Digital Italy), Databases and Open Data Unit.

## 3. Location Interoperability State of Play

### 3.1. Overview

The information collected through LIFO 2019 data collection indicates that Italy scores below the European average across the focus areas assessed, with only one focus area, “Governance, Partnership and Capabilities”, above the European average. In this focus area, Italy displays a particularly high score for the organisation of initiatives that raise awareness and develop geospatial skills. On the contrary, Italy performed slightly below the average in the other focus areas, “Policy and Strategy Alignment”, “Digital Government Integration”, “Standardisation and Reuse” and “Return on Investment”. In these focus areas, a larger margin of improvement is required, in particular for the use of location-enabled services and data for the provision of cross-sector and cross-border digital public services.

The value of the overall LIFO index combining the scores for all focus areas, is 0.47<sup>2</sup>. This compares with a European average of 0.54.



Figure 1 - Overall EULF Blueprint implementation

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

<sup>2</sup> For the description of calculation method of the LIFO index and the other indicators and indexes see [Annex 1: LIFO 2019 scoring methodology](#)

## 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 Italy is 0.48 compared with a European average of 0.57. Italy has developed a location strategy which is partially aligned with the overall digital government strategy ([Recommendation 1](#))<sup>3</sup>. In particular, the "*Repertorio Nazionale dei dati territoriali*" (National Catalogue for Spatial Data)<sup>4</sup> is identified as the main reference to the location strategy, as the catalogue represents the base register identified as

the access point to location information available in Italy.

Furthermore, the Three-Year Plan for ICT in Public Administration<sup>5</sup> addresses some elements of the location strategy.

Italy's strength in relation to [Recommendation 1](#) is the existence of cross-sector legislation mandating the use of authoritative location datasets and services in digital government.

With respect to [Recommendation 2](#), which concerns the alignment of location information policy with wider data policy, certain location data in Italy are available free of charge under an open licence without

restrictions. This follows the recommendation to use an open licence for data established in the data policy. Two core location reference datasets are made available as part of a broader

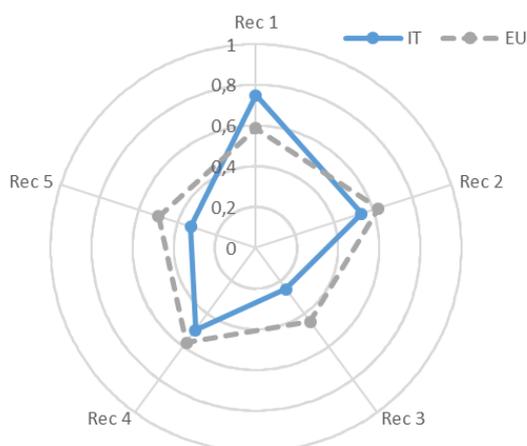


Figure 2 - Policy and Strategy Alignment – scores by recommendation

<sup>3</sup> [https://www.agid.gov.it/sites/default/files/repository\\_files/documentazione/strat\\_crescita\\_digit\\_3marzo\\_0.pdf](https://www.agid.gov.it/sites/default/files/repository_files/documentazione/strat_crescita_digit_3marzo_0.pdf)

<sup>4</sup> <https://geodati.gov.it>

<sup>5</sup> See Best Practice [IT1](#)

core reference data policy<sup>6</sup>. These are DBPrior and the Geo-Topographic Databases that include the main base spatial layers. DBPrior covers the overall national territory and includes five main layers (i.e. road network, rail network, hydrography, administrative units and inhabited areas); the Geo-Topographic Databases, established by a specific national law and produced, managed and maintained by Regions, includes more spatial layers (e.g. land use, large scale cartography) at different scales (provinces, municipalities).

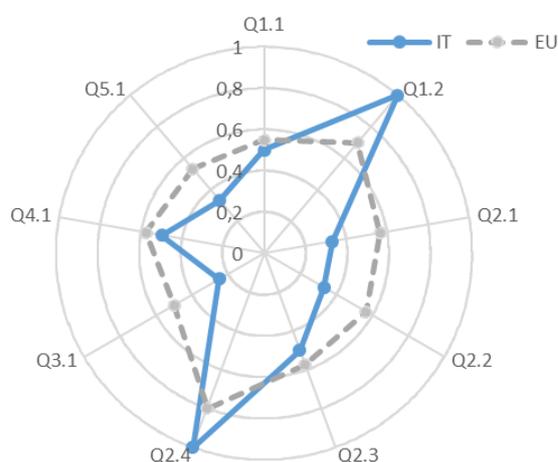


Figure 3 - Policy and Strategy Alignment - scores by indicator

The availability of such datasets is regulated by broader policies<sup>7</sup> and guidelines on sharing and reuse of core reference datasets and also refer to location information. Many location datasets are available under the same licensing conditions, but not as part of an Italian national licensing framework.

The national guidelines on the publication of public sector data, also covers location aspects, linking between location data and open data (i.e. organisational, data quality, formats, legal and licensing).

With reference to [Recommendation 3](#), Italy has an opportunity for improvement in the level of preparedness of location data

controllers and processors for GDPR. Higher implementation of this recommendation would improve awareness of potential location data privacy issues and related processes in the country. However, certain cases involving potential privacy concerns brought to the national data protection authority may have set precedents on how to deal with similar issues.

Location-based evidence and analysis is used to help in developing relevant policies and monitoring outcomes on a range of topics ([Recommendation 4](#)). An example is OpenCoesione<sup>8</sup>, the open government initiative on cohesion policy in Italy. The portal provides access to searchable data such as location, planned resources and costings. The OpenCoesione data also represents the source of information for analysis, visualisations, applications and research of the projects, to aid in examining issues associated with the implementation of the cohesion policy and observe its impact on the public and private sector.

The final opportunity for improvement in this focus area relates to including INSPIRE and related standards in the context of public procurement, in particular, when procuring location information and/or services ([Recommendation 5](#)). Currently, guidelines for public procurement of location information make generic references to the INSPIRE standards; without providing more detailed guidelines.

<sup>6</sup> Such data are described in the National Catalogue for Spatial Data at <https://geodati.gov.it>

<sup>7</sup> [https://www.ot11ot2.it/sites/default/files/linee\\_guida\\_e\\_protocolli/LGeP%20open%20data\\_0.pdf](https://www.ot11ot2.it/sites/default/files/linee_guida_e_protocolli/LGeP%20open%20data_0.pdf); <https://www.dati.gov.it/content/linee-guida-nazionali-valorizzazione-patrimonio-informativo-pubblico>.

<sup>8</sup> <https://opencoesione.gov.it/en/>

### 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 Italy is 0.42, well below the European average of 0.54. Italy's positioning in this focus area is close to the European average for [Recommendation 8](#). For the other three recommendations, Italy is well under the European average and has a wide scope for improvement.

There are a number of key digital public services, both at the central and regional / municipal levels, using location information to a significant extent and, in general, steps are taken to improve use, on a case-by-case basis ([Recommendation 6](#)). Examples within Italy of digital public services using location information are:

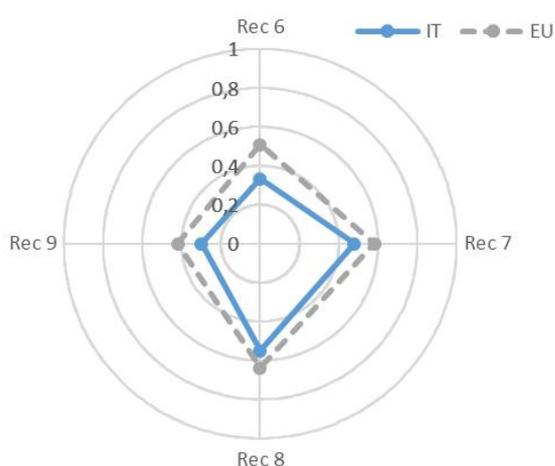


Figure 4 - Digital Government Integration - scores by recommendation

- **RADAR – DPC**: a service providing information regarding ongoing meteorological phenomena. This example is an innovative case, where location information contributes to the execution and integration of automatic data collection processes and publication of parameterised web services, used to forecast and prevent hydrogeological risks;
- **Public transport of Lecce Municipality**<sup>10</sup>: provides a digital map with bus stops, lines, timetables and next service arrival times for each bus stop in

<sup>9</sup> <http://www.protezionecivile.gov.it/attivita-rischi/meteo-idro/attivita/previsione-prevenzione/centro-funzionale-centrale-rischio-meteo-idrogeologico/monitoraggio-sorveglianza/mappa-radar>

<sup>10</sup> <http://dati.comune.lecce.it/trasporti/>

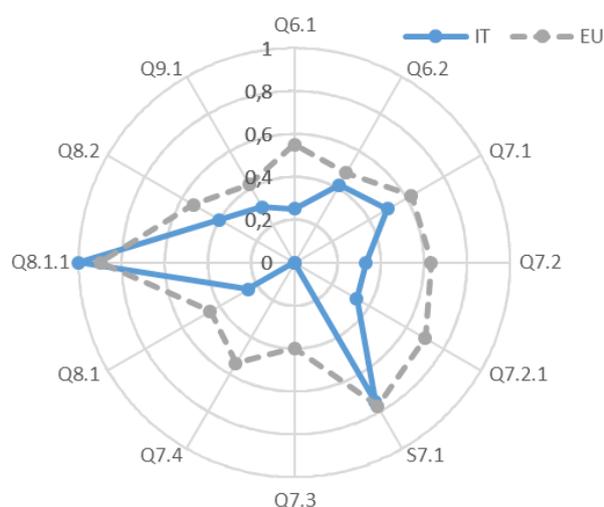


Figure 5 - Digital Government Integration - scores by indicator

Cadastral Agency)<sup>12</sup>: allows public access to the cadastral database in relation to the properties owned by an applicant;

- **ARPAV – BATHING app**: application that contains information on the state of bathing waters for the Veneto coasts, Lake Garda and other water bodies in the region. Bathing water quality at selected locations is indicated by the colour of the flags assigned to water quality criteria at predefined survey points<sup>13</sup>.

A notable achievement in Italy is the use of the public sector SDI by the private sector and other organisations (e.g. NGOs) for delivery of ‘new and innovative’ applications, products and services, across a wide number of applications ([Recommendation 7](#)).

Recommendation 7 has areas for improvement regarding implementation of the INSPIRE Directive. The implementation of the INSPIRE Directive has made positive progress in Italy but is still far from being complete (INSPIRE country fiche<sup>14</sup>). Identification of spatial datasets and their documentation (i.e. metadata) is complete and the overall trend in implementation of the INSPIRE Directive is positive, with clear and targeted future actions being identified to support reaching the objectives outlined in the Directive.

Regarding [Recommendation 8](#), an open and collaborative methodology is adopted to design and improve location-enabled digital public services through specific initiatives such as, consultations, user groups, feedback requests and iterative development. Working examples of these methodologies are:

- A platform “*Developers Italia*” launched by AgID<sup>15</sup> to allow all Public Administrations to make the source code of their solutions available under an open licence, allowing stakeholders to provide feedback and collaborate to fix bugs and improve the solutions. The platform includes location tools and solutions, though not specific location data. Furthermore, AgID has carried out several actions aimed at simplifying the development

<sup>11</sup> <https://maps.agcom.it/>

<sup>12</sup> <https://www.agenziaentrate.gov.it/portale/it/web/guest/schede/fabbricatiterreni/visura-catastale/visura-catastale-online>

<sup>13</sup> <https://play.google.com/store/apps/details?id=it.busnet.omar.arpavbalneazione1>

<sup>14</sup> Currently the INSPIRE country fiche 2019 is available

<sup>15</sup> <https://developers.italia.it>

and use of the digital services produced by Public Administrations, both through the spread of the platforms and creation of guidelines and development kits to be used;

- The Italian Government recently launched the platform ParteciPa<sup>16</sup> dedicated to public consultation and participation processes. The platform will be used for location enabled digital public services.

These aforementioned platforms demonstrate good examples of links between the public and private sector, either through involvement of external parties in service delivery through public / private partnership, or through use of public sector location data by external parties to develop their own products and services. As an example of the latter, the Lombardy Region collects and publishes in an open data portal, all the cases of open data re-use, including those affecting location information<sup>17</sup>.

Finally, referencing [Recommendation 9](#), Italy implements the following actions for the integration of location and statistical information in the production of location-based statistics:

- A knowledge base of where their citizens and businesses are located;
- 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.

### 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 Italy is 0.47, compared with a European average of 0.54. In Italy, certain aspects of the ICT technological framework are well focused on standardisation (i.e. [Recommendation 11](#) and [Recommendation 12](#)), while others require improvement (i.e. [Recommendation 10](#) and [Recommendation 13](#)).

<sup>16</sup> <https://partecipa.gov.it> was launched after the deadline of the questionnaire.

<sup>17</sup> <https://www.dati.lombardia.it/Government/Utilizzo-dei-dataset/m58v-fh6e/data>

Good examples of implementations under this focus area are:

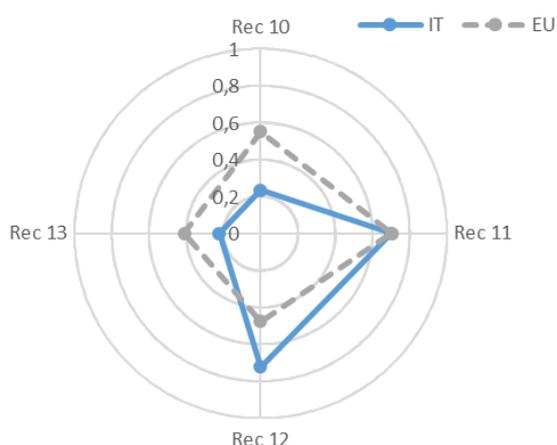


Figure 6 - Standardisation and Reuse - scores by recommendation

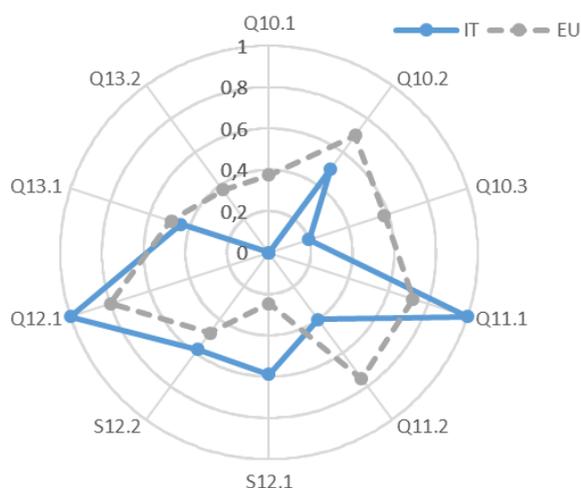


Figure 7 - Standardisation and Reuse - scores by indicator

- Solutions belonging to the ISA2 programme<sup>18</sup> (funded by the European Commission with a focus on sharing and reuse of interoperability solutions), such as the Re3gistry<sup>19</sup>, GeoDCAT-AP and GeoDCAT-AP API<sup>20</sup>, which have been implemented in the geospatial domain in Italy. These solutions are used to implement specific actions defined in the Three Year ICT Plan concerning the management of the registers of location information and the integration of national catalogues respectively;
- The GeoDCAT-AP specification is used for the integration and coordination of the catalogue for spatial data and the open data portal<sup>21</sup>;
- A number of the most common registers of location information are implemented (administrative units, glossary, code lists, Italian public administration discovery services, reference data sets, spatial objects for public lighting, topographical spatial objects)<sup>22</sup>.
- The quality of location data is ensured at design level, by linking data quality standards to data standards, through the inclusion of the different dimensions of data quality in the standard, of multilingualism and through the definition of national guidelines on data quality based on ISO Standard 25012.

Areas within this focus that require improvement are:

- There is no commonly used architectural approach for the design, re-engineering, interconnectivity and reuse of location data and services;
- The approach to discover, explore and incorporate new technological features or emerging technologies tends to involve ad-hoc monitoring of new developments, with very little testing;
- No specific actions are put into place in relation to governance of location data quality;
- The use of APIs for location datasets is still in the planning and testing phase;

<sup>18</sup> [https://ec.europa.eu/isa2/home\\_en](https://ec.europa.eu/isa2/home_en)

<sup>19</sup> <https://joinup.ec.europa.eu/solution/re3gistry/about>

<sup>20</sup> <http://geodcat-ap.semic.eu:8890/api/>

<sup>21</sup> See Best Practice [IT3](#)

<sup>22</sup> See Best Practice [IT4](#)

- There is little conformity of spatial data sets to the INSPIRE Directive implementing rules and technical guidelines, as well as to the INSPIRE network services with Regulation (EC) No 976/2009 on Network Services for the spatial data sets.

### 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 Italy is 0.53, some way below the European average of 0.60.

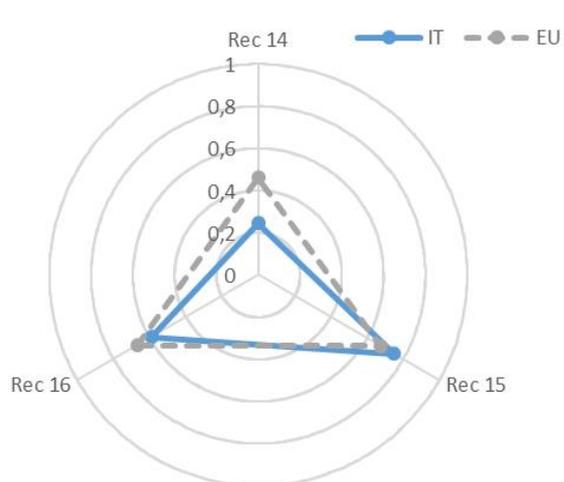


Figure 8 - Return on Investment - scores by recommendation

Three significant points of strength have been identified in Italy, referencing [Recommendation 15](#) and [Recommendation 16](#):

- *Improved communication:* is being developed to increase awareness of and understanding of the availability and benefits of location data and location-enabled digital public services. Communication of the availability, use and benefits of location data and location-enabled digital public services, is organised at national and regional

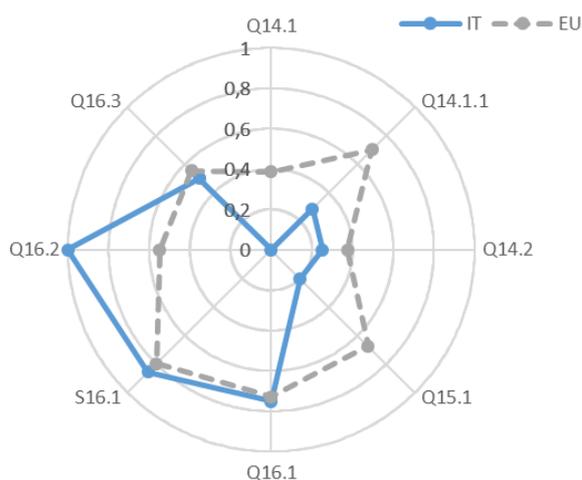


Figure 9 - Return on Investment - scores by indicator

- level, through webinars<sup>23</sup>, conferences<sup>24</sup>, meetings, news articles in several websites, and a dedicated magazine<sup>25</sup>.
- *Data availability*: is well represented across a number of access channels, with searchability and accessibility of location data and web services openly available for many stakeholders. This includes a national data portal merging location data and non-location data<sup>26</sup>; a national discovery (geo)portal integrating INSPIRE and non-INSPIRE data<sup>27</sup>; a geoportal harvested by the European Data Portal<sup>28</sup>; thematic portals complementing general search facilities with “specialist” search<sup>29</sup> functionalities; websites with exposition of data; and availability of spatial data sets on web search engines<sup>30</sup>.

- *Policies*: are well established supporting the reuse of Public Sector Information (PSI) within public administrations and by the private sector<sup>31</sup>.

Furthermore, a variety of initiatives support private, non-profit and academic players in the development of new products and e-services in the geospatial domain.

Italy can improve in this focus area, especially with respect to the following two points:

- [Recommendation 14](#), the assessment of the efficiency and effectiveness of location based services, is based on a relatively limited set of elements (reusability, reduction in administrative burdens, simplification of administrative processes, user-centricity), and only at project or service level;
- Under [Recommendation 16](#), there is no strategic approach to funding public sector location reference data to make access at point of use cost effective.

<sup>23</sup> A list of webinars about digital innovation, including location information, is available at <http://egov.formez.it/content/webinar-innovazione-digitale-materiali-e-statistiche>

<sup>24</sup> The main conferences in the GI field, including the communication of use cases and benefits evidence of location information, are: ASITA Conference (<http://www.asita.it/conferenza/>), Foss4G-IT (<http://foss4g-it2019.gfoss.it>), ESRI Italy Conference (<https://www.esriitalia.it/news-ed-eventi/eventi/conferenza-esri-italia/conferenza-esri-italia-2019>)

<sup>25</sup> GeoMedia (<https://rivistageo-media.it>)

<sup>26</sup> <https://dati.gov.it>

<sup>27</sup> <https://geodati.gov.it>

<sup>28</sup> <https://geodati.gov.it>

<sup>29</sup> The portal <https://geodati.gov.it> itself and several regional and local geoportals and websites.

<sup>30</sup> <https://toolbox.google.com/datasetsearch/search?query=site:geodati.gov.it>

<sup>31</sup> Included in [https://docs.italia.it/italia/piano-triennale-ict/pianotriennale-ict-doc/it/2019-2021/05\\_dati-della-pubblica-amministrazione.html](https://docs.italia.it/italia/piano-triennale-ict/pianotriennale-ict-doc/it/2019-2021/05_dati-della-pubblica-amministrazione.html)

### 3.6. Governance, Partnerships and Capabilities

Vision	
<p>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.</p>	
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 Italy is 0.46, compared with the European average of 0.44.

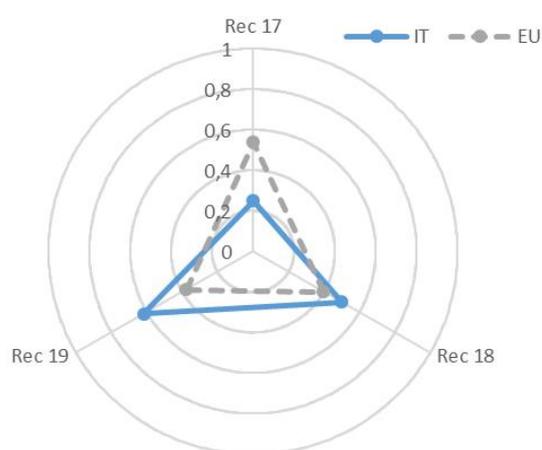


Figure 10 - Governance, Partnerships and Capabilities - scores by recommendation

The country is well positioned for Recommendations 18 and 19 against the European average and has opportunities for improvement for Recommendation 17. Stakeholders are involved in decision making on the role of location information in Digital Government through public consultations. The location information governance bodies (e.g. the National Committee for Spatial and Environmental Information) and the digital government bodies (Minister for Technological Innovation and Digitisation and Agency for Digital Italy) cooperate regarding location information / SDI in the context of Digital Government ([Recommendation 17](#)).

In terms of partnerships ([Recommendation 18](#)), there is a limited number of formal agreements to finance, build and operate location data services or digital public services using location

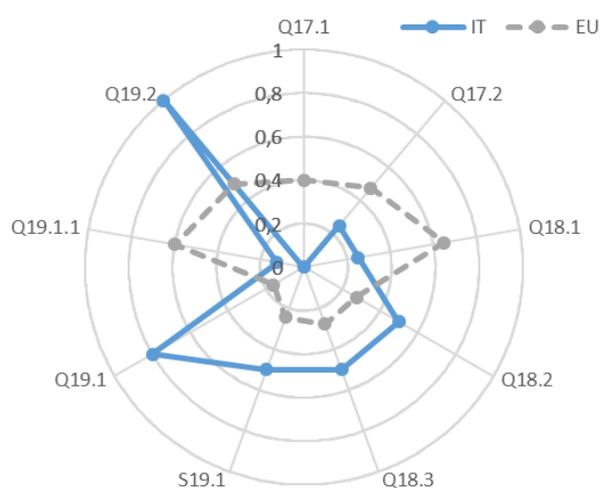


Figure 11 - Governance, Partnerships and Capabilities - scores by indicator

data, between public authorities in the country<sup>32</sup>, or with public authorities in other countries<sup>33</sup>, as well as public-private partnerships<sup>34</sup>.

**Recommendation 19** offers various initiatives organised to raise awareness and develop geospatial skills. These comprise of spatial literacy awareness raising for non-specialists (e.g. policy makers, legal advisers and project managers); training for specialists (e.g. developers, data analysts); public or cross-government events specialising in location information / GI topics; structured training programmes to obtain accreditation under a geospatial competency framework; INSPIRE training modules; online self-learning tools; certain training or awareness raising initiatives on geospatial skills undertaken by

organisations to meet specific needs but not as part of a recognised or accredited competency framework; and definition of national guidelines on digital skills<sup>35</sup>.

A notable strength is that the geospatial competency framework is part of a broader ICT framework. Furthermore, there is a specific technical standard for GI professional profiles extending the standard in the European e-Competence Framework 3.0 (EN 16234-1)<sup>36</sup>.

<sup>32</sup> Two relevant examples of cooperation among Italian PAs can be: 1) the SIGMATER project (<http://www.sigmater.it>) for which an agreement has been established between the National Cadastral Agency and the Regions aimed at data exchanging (cadastral and topographic data) in order to operate digital public services; 2) the agreement between the Italian Geographic Military Institute and the Regions aimed at data exchanging in order to operate digital public services.

<sup>33</sup> Two examples of cross-border cooperation are: 1) the cross border ticket SLO-ITA in the context of CONNECT2CE EU project (<https://www.regione.fvg.it/rafvfg/cms/RAFVFG/infrastrutture-lavori-pubblici/infrastrutture-logistica-trasporti/FOGLIA22/>); 2) the HARMODATA project (<https://www.ita-slo.eu/it/harmo-data>), concerning the harmonisation of data for cross-border land management

<sup>34</sup> SmartRoadSense, a crowd-sensing application for continuous road quality monitoring using smartphone sensors (<http://www.smartroadsense.it>)

<sup>35</sup> [https://lg.competenzedigitali.readthedocs.io/it/latest/doc/competenze\\_specialistiche/lg-competenze/lineeguida-competenze.html](https://lg.competenzedigitali.readthedocs.io/it/latest/doc/competenze_specialistiche/lg-competenze/lineeguida-competenze.html)

<sup>36</sup> See Best Practice [IT5](#)

## 4. Best practices

EULF Best Practice IT1	Actions addressing location interoperability in the Three-Year ICT Plan
<b>Policy domain:</b> ICT	
<b>Process owner:</b> Italian Government	
<p><b>Short description:</b> The ICT Plan is a strategic and economic policy document for all Public Administrations that oversees the digital transformation of the country, based on the Strategy for digital growth 2014-2020 aligned with the European Digital Agenda. A section of the Plan is dedicated to the policy on public data considered one of the main digital assets whose enhancement is a strategic goal to reach. In particular, two macro areas are identified, base registers and open data, to which the creation of controlled vocabularies and data models are related. In this context, some actions addressing location interoperability are included.</p>	
<p>Although the ICT Plan does not specifically concern location information (with the exception of the specific actions mentioned above), it represents the interoperability background and framework - as its provisions should also be applied in the location field - to foster the use and integration of location information in digital public services. Finally, the ICT Plan represents a good practice in designing an overall framework and defining a strategic document encompassing digital and location policies.</p>	
<p><b>Recommendations:</b> <a href="#">Recommendation 1</a> (<a href="#">Policy and Strategy Alignment</a>)</p>	
<p><b>Link:</b> <a href="https://pianotriennale-ict.italia.it">https://pianotriennale-ict.italia.it</a></p>	

EULF Best Practice IT2	Extending INSPIRE data specifications for use beyond environmental policy
<b>Policy domain:</b> Energy Telecommunications	
<b>Process owner(s):</b> Agency for Digital Italy (AgID) and several Public Administrations	
<p><b>Short description:</b> New thematic data models have been defined consistent with the national and European reference specifications (i.e. the relevant INSPIRE data specifications and the national rules on the geo-topographic database (DBGT), the reference data model including the main base spatial layers and objects being harmonised to INSPIRE). Two examples are:</p>	
<ul style="list-style-type: none"> <li>i) the data model for the physical infrastructures information system to allow access to information related to the implementation of the EU Directive 2014/61/EU on measures to reduce the cost of deploying high-speed electronic communications networks;</li> <li>ii) the data model defined for the PELL (Public Energy Living Lab) project aimed at implementing a digital platform for public lighting. The PELL project is also linked to the Energy &amp; Location Applications project executed under the ELISE action of the ISA<sub>2</sub> Programme, through a collaboration between JRC, ENEA (the organisation responsible for the project) and AgID, which is helping to provide a European</li> </ul>	

perspective on the benefits of using digital platforms for the smart management of public lighting infrastructures.

**Recommendations:** [Recommendation 7 \(Digital Government Integration\)](#)

**Link:** <https://geodati.gov.it/geoportale/datiterritoriali/regole-tecniche>

### EULF Best Practice IT3 Implementation of GeoDCAT-AP specification

**Policy domain:** Geospatial

**Process owners:** Agency for Digital Italy (AgID)

**Short description:** GeoDCAT-AP is an extension of DCAT-AP (Data Catalog Application Profile) for describing geospatial datasets, dataset series, and services. It provides an RDF syntax binding for the metadata elements defined in the core profile of ISO 19115:2003 and those defined in the framework of the INSPIRE Directive. Its basic use case is to make spatial datasets, data series, and services searchable on general data portals, thereby improving discoverability of geospatial information across borders and sectors. The GeoDCAT-AP specification has been defined in the context of the ISA<sup>2</sup> programme and Communications Networks, Content & Technology (CONNECT) of the European Commission.

Actions in Italy have been:

- i) definition of national guidelines based on the European specification;
- ii) implementation of these guidelines and development of the tools needed for their implementation;
- iii) full engagement of the Italian organisations managing local catalogues by June 2020.

The tools developed include the XSLT script extended (to take into account the extensions introduced in the national metadata profiles) and the GeoDCAT-AP IT API reusing and extending the API developed under the ISA<sup>2</sup> Programme. Those tools are used for the integration and coordination of the catalogue for spatial data and open data portal in order to enable and provide access to spatial data in both catalogues and make open spatial data available to a wider and diversified audience, beyond the geospatial domain.

**Recommendations:** [Recommendation 12 \(Standardisation and Reuse\)](#)

**Link:** <https://geodati.gov.it/geoportale/documenti/12-documenti/277-linee-guida-nazionali-geodcat-aph>[https://geodati.gov.it/geodcat-ap\\_it](https://geodati.gov.it/geodcat-ap_it)

### EULF Best Practice IT4 INSPIRE Italia Registry

**Policy domain:** Geospatial

**Process owner(s):** Agency for Digital Italy, Minister of Environment, Superior Institute for Environmental Protection and Research

**Short description:** The INSPIRE Italia Registry provides a central access point for a number of nationally managed registers, both in order to comply with INSPIRE requirements regarding the publication of extensions to the code lists set out in Regulation

(EU) No. 1089/2010 on interoperability of spatial data sets and services and for identified and nationally defined purposes in the e-Government context.

**Recommendations:** [Recommendation 12 \(Standardisation and Reuse\)](#)

**Link:** <https://registry.geodati.gov.it>

## EULF Best Practice IT5 Standardised Geographic Information professional profiles

**Policy domain:** Geospatial

**Process owner(s):** UNI (Italian Standardisation Body)

### Short description:

This technical standard defines the requirements related to GI professional activities carried out in different organisational contexts, public and private. These requirements are detailed, starting from identified tasks and professional activities, in terms of knowledge, skills and ability, in accordance with the European Qualifications Framework (EQF) and stated in such a way as to support learning outcomes assessment and endorsement.

The technical standard (the first of its type in Europe) is part of the European Framework of Reference and Definition of Competences and Related Competences in accordance with UNI EN 16234-1 (e-Competence Framework) and UNI 11506 (Non- Regulated Professional Activities – Professional profiles in ICT) and follows the methodology for creating third-generation profiles (UNI 11621-1).

A short description of the GI professional profiles is included both in the [Guidelines on digital skills](#) and in the [dedicated register](#) published in the INSPIRE Italia Registry.

**Recommendations:** [Recommendation 19 \(Governance, Partnerships and Capabilities\)](#)

**Link:** <http://store.uni.com/catalogo/index.php/uni-11621-5-2018.html>

## 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<sup>37</sup> 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

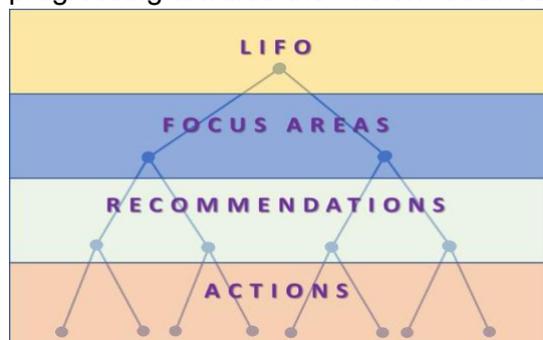


Figure 12 – Hierarchy of indicators and indexes hierarchy

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:

*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 <sup>38</sup>
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.

<sup>37</sup> Described in the “How” section of each Recommendation

<sup>38</sup> 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 ISA <sub>2</sub> programme responsible for maintaining the EULF Blueprint and coordinating the LIFO.	<a href="https://joinup.ec.europa.eu/collection/elise-european-location-interoperability-solutions-e-government/about">https://joinup.ec.europa.eu/collection/elise-european-location-interoperability-solutions-e-government/about</a>  <a href="https://ec.europa.eu/isa2/home_en">https://ec.europa.eu/isa2/home_en</a>
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.	<a href="https://joinup.ec.europa.eu/collection/european-union-location-framework-eulf/about">https://joinup.ec.europa.eu/collection/european-union-location-framework-eulf/about</a>
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.	<a href="https://joinup.ec.europa.eu/collection/european-union-location-framework-eulf/eulf-blueprint">https://joinup.ec.europa.eu/collection/european-union-location-framework-eulf/eulf-blueprint</a>
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.	<a href="https://joinup.ec.europa.eu/sites/default/files/inline-files/ReqNo_JRC94727_lb-na-27125-en-n%20.pdf">https://joinup.ec.europa.eu/sites/default/files/inline-files/ReqNo_JRC94727_lb-na-27125-en-n%20.pdf</a>
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
	<p>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.</p>	
INSPIRE implementing countries	<p>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.</p>	<p><a href="https://inspire.ec.europa.eu/INSPIRE-in-your-Country">https://inspire.ec.europa.eu/INSPIRE-in-your-Country</a></p>
Recommendation	<p>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.</p>	