European Commission

LIFO: Location Interoperability Framework Observatory

2019 Country Factsheet

Czech Republic

ISA²

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The monitoring information for Slovenia has been provided by *Státní správa zeměměřictví a katastru* (CUZK - Czech Office for Surveying, Mapping and Cadastre).

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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 Czech Republic 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 the Czech Republic and the corresponding scores.

The 2019 LIFO monitoring information for Czech Republic has been provided by *Státní správa zeměměřictví a katastru* (CUZK - Czech Office for Surveying, Mapping and Cadastre).

3. Location Interoperability State of Play

3.1. Overview

The Czech Republic obtained good results in the implementation of actions defined under all focus areas in the EULF Blueprint, scoring well when compared with the European average (the average score across the 10 participating countries, indicated as “Europe” in Figure 1).

The value of the overall LIFO index for the Czech Republic is 0.79[2]. This compares with a European Average of 0.54.

The Czech Republic obtained its highest scores in three focus areas, “Policy and Strategy Alignment”, “Digital Government Integration” and “Return on Investment”, with “Digital Government Integration” showing the biggest difference to the European average. In this focus area, alignment with the EULF Blueprint target state is particularly effective in two dimensions:

- the comprehensive use of location information in key digital public services and the way that opportunities are seized for improving services and processes through that use;
- the effective integration of statistical and location information.

In the “Policy and Strategy Alignment” focus area, the Czech Republic scored well in its use of location data for evidence-based policy making, whereas for “Return on Investment” positive aspects include the systematic approaches to assessment and communication of benefits.

For the “Standardisation and Reuse” focus area, the Czech Republic has mixed results. This is due to the low quantity of datasets and network services conformant with Regulation (EU) No 1089/2010 and Regulation (EC) No 976/2009, albeit compensated by particularly strong positioning in the management and governance of location data quality.

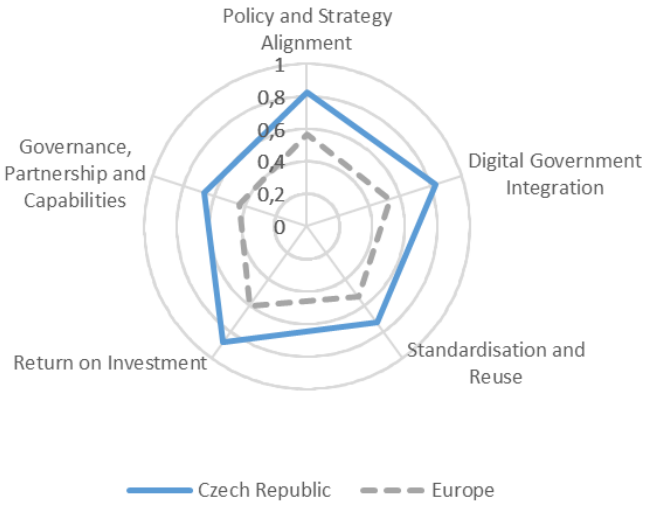

Figure 1 - Overall EULF Blueprint implementation

The focus area where Czech Republic received the lowest individual score is “Governance, Partnership and Capabilities”; however, this is generally the lowest scoring focus area of all the participating countries, with the notable exception of Denmark.

The following paragraphs describe in detail how the results in each focus area are composed.

[2] 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 the Czech Republic is 0.83, well above the European average of 0.57.

The location and digital government strategies in Czech Republic are aligned in many key elements (Recommendation 1). The reference documents for these strategies are:

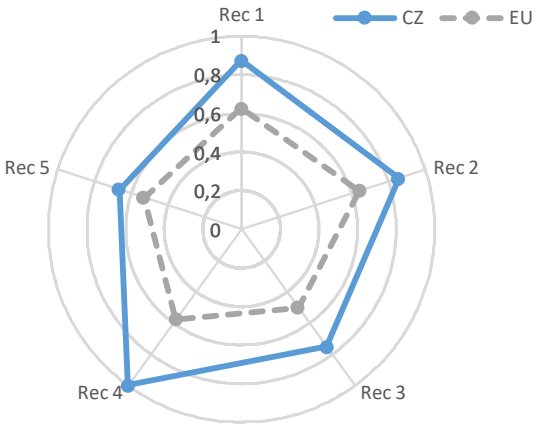

Figure 2 – Policy and Strategy Alignment – scores by recommendation

- for digital government, ‘*Digital Czech Republic*’[3], an umbrella strategy realised through *Implementation Plans* with specific location-related tasks or connections to the location tasks;
- the ‘*Information Policy*’[4], which has an eGovernment, focus, and defines generic concepts and rules concerning ICT solutions, data and services of public bodies, and also considers several specific aspects and tasks related to location information;
- for location information, the ‘*Strategy for the Development of Infrastructure for Spatial Information in the Czech*

3 https://www.databaze-strategie.cz/cz/mv/strategie/digitalni-cesko-2030
4 https://archi.gov.cz/ikcr-dokument:ikcr

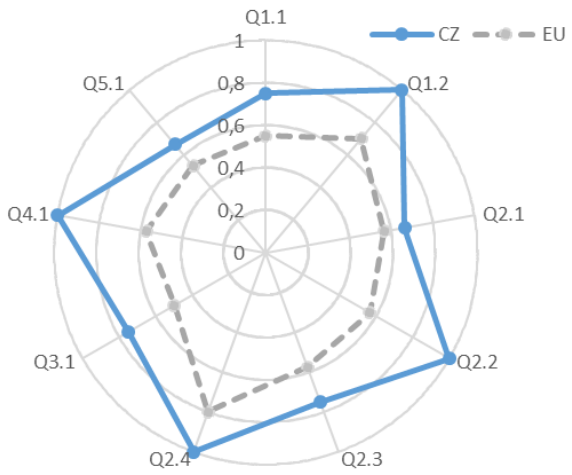

Figure 3 - Policy and Strategy Alignment – scores by indicator

Republic until 2020'[5] (GeoInfo Strategy in short), which defines the main objectives and key themes for the NSDI.

This set of policy and strategy documents represents the general formal cross-sector framework for further NSDI development and enhancement. This framework, which mandates the provision and use in digital government of authoritative interoperable location data and services, has been drafted in line with previous PSI and eGovernment policies (1998, 2008 and their implementing act[6], including the Act nr.111/2009 on Base Registries, approved in 2009 and implemented in 2012).[7]

The integration and alignment of location information policy with wider data policy (Recommendation 2) is implemented through several actions:

- most authoritative location data is available free of charge under an open licence without restrictions;
- core location reference datasets are incorporated in a national scheme of core datasets that also includes, for example, citizen, business and vehicle data. The core reference data sources are:
  - the *Base Registry of Territorial Identification, Addresses and Real Estates* (called RÚIAN), which is in accordance with the Act on Base Registries, and provides up-to-date core location data to be re-used in other base registries and also for any public administration agendas and services[8];
  - the *Fundamental Base of Geographic Data of the Czech Republic* (ZABAGED)[9], a digital vector geographic model of the territory of the Czech Republic managed by the Land Survey Office; in accordance with the Act on Land Surveying[10] data are available free of charge for public administrations and services.
  - RÚIAN and ZABAGED also provide the basis for thematic INSPIRE datasets (Annexes I and II)[11].
- most location data is available under a national data licensing framework. The National Committee for INSPIRE (called KOVIN) recommended to the Czech Republic public geodata providers to use CC BY 4.0[12] whenever applicable. The national metadata profile v.4.2 (extending the INSPIRE profile), which will be implemented from 2020, applies this recommendation[13];

5 https://www.databaze-strategie.cz/cz/mv/strategie/strategie-rozvoje-infrastruktury-pro-prostorove-informace-v-cr-do-roku-2020-2014
6 https://albatros.vlada.cz/usneseni/usneseni_webtest.nsf/0/2D3D4E0B293F4DFFC125755500310AB6/$FILE/854%20uv080709.0854.pdf
7 https://www.zakonyprolidi.cz/cs/2009-111
8 See Best Practice CZ2
9 https://geoportal.cuzk.cz/(S(l2g3cacdtggv3yjuax5rnmsv))/Default.aspx?lng=EN&mode=TextMeta&text=dSady_zabaged&side=zabaged&menu=24
10 https://www.cuzk.cz/Predpisy/Pravni-predpisy-v-oboru-zememerictvi-a-katastru/200-1994.aspx
11 Sharing and re-use of authoritative geographic data from the ZABAGED by public authorities (free of charge) are based on the Act nr 200/1994 on Land surveying.
12 https://creativecommons.org/licenses/by/4.0/deed.cs
13 Moreover, the MD editor and related guidelines approved by KOVIN are published via Czech INSPIRE geoportal: https://geoportal.gov.cz/php/micka/metadata.php?iframe=true&ak=_insert&l=cs&t=1573908834116.

- national guidelines on the publication of Public Sector Information are adopted and cover location aspects, such as the definition of core location sources to publish as open data[14] and licensing.

With reference to Recommendation 3, controllers and processors of public sector location data in most organisations are fully prepared for GDPR, including awareness of potential location data privacy issues and processes in place to comply with the rights of data subjects.

In relation to location data privacy, no significant issues have been detected by the Office for Personal Data Protection (UOOU - Úřad pro ochranu osobních údajů), responsible for GDPR implementation in the Czech Republic. Complaints addressed to the UOOU regard the legal basis for data collection, its relevance, and the scope or level of detail of such data[15]. In the location domain, an example involves one claim concerning the pixel size represented on publicly available ortho imagery. A revision carried out by CUZK (Czech Office for Surveying, Mapping and Cadastre) to comply with GDPR, resulted in the reduction of details about property owners published as open information.

A strength under Recommendation 4 is the use of the location-based evidence and analysis to help in developing relevant policies and monitoring outcomes in all relevant policy topics, such as those relating to forestry[16], air pollution[17] and water management[18].

Specific references to the applicable sections of the INSPIRE Directive and the national standards framework, are made in public sector procurements of location information and/or services (Recommendation 5). In this regard, the Act No. 134/2016[19] art. 90 specifies standards and technical documents, including INSPIRE, to be applied and how they should be referenced. Moreover, Czech Republic makes use of ESPD in public sector procurements of location information and services.

[14] The list of public sources for publication as open data was approved by the Government in December 2016 (No. 425/2016) as an attachment to the Act No. 106/1999 on free access to information (and its updates); the RUIAN as a source of core location data is given as the item nr 15 there. See https://www.zakonyprolidi.cz/cs/2016-425/zneni-20190101. See also, https://data.gov.cz/english/.

[15] More info: https://www.uoou.cz/prehled-prestupku/ds-5466/p1=5466

[16] Forestry represents a significant branch in the competence of Czech Ministry of Agriculture. UHUL - its specialised institute has been dealing with spatial data and GIT tools for mapping, planning, analyses and monitoring of forests in the Czech Republic for several decades, see http://geoportal.uhul.cz/mapy/mapyzsl.html

[17] Ministry of Environment and its specialised bodies have been using and producing location-based evidence and analyses regarding various policies since its establishment in the early 1990-ies. The air pollution has been monitored, analysed and visualized by Czech Hydrometeorological Institute from various perspectives, see http://portal.chmi.cz/?tab=2&l=en

[18] A simple spatial display of several types of projects focused on anti-drought related measures combines a country wide overview with useful information for users at local and regional levels, see: https://www.google.com/maps/d/viewer?mid=1ehpMmxMWh8PLje-XSt_OgrFt6HmEP8WC&hl=cs&ll=49.89059322933319%2C15.923880006249987&z=7

[19] https://www.noveaspi.cz/products/lawText/1/86384/1/2?vtextu=z%C3%A1kon%20o%20ve%C5%99ejn%C3%BDch%20zak%C3%A1zk%C3%A1ch#lema0

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

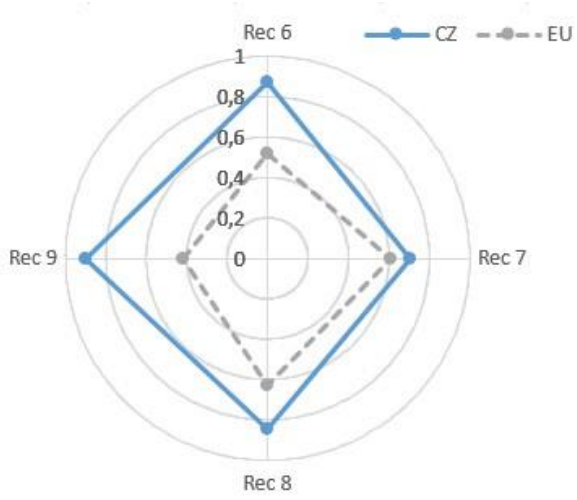

Figure 4 - Digital Government Integration – scores by recommendation

The "Digital Government Integration" focus area index for the Czech Republic is 0.83, significantly above the European average of 0.54. As highlighted in the overview, this is one of the areas with the highest degree of alignment with the EULF Blueprint. Specific strengths are Recommendation 6 and Recommendation 9.

With reference to the former, opportunities are taken to introduce new business models with, for example, co-delivery with the private sector or use of digital platform concepts to engage multiple parties.

Some examples of key digital public services, where location information is used innovatively are provided below:

- use of location information as an integral part of management, planning and information and service provision by regional and municipal governments and authorities or specialised public bodies, such as *Prague geoportal*[20], *thematic maps in the Liberec Region geoportal*[21], *map composition for flood protection*[22], the *monitoring and warning systems of Czech Hydro-meteorological Institute*[23];
- *Integrated Rescue System* supported by RÚIAN location data (on addresses, buildings, cadastral parcels, …) in a 24/7 regime[24];

20 http://www.geoportalpraha.cz/en/main
21 https://geoportal.kraj-lbc.cz/mapy
22 https://povodnovyportal.kraj-lbc.cz/mapy
23 http://portal.chmi.cz/files/portal/docs/meteo/om/vystrahy/index.html
24 See Best Practice CZ3

- GI support for user-oriented services published by providers of various types of infrastructures[25].

Location information is used in a comprehensive way in the provision of the following services:

- *Elections[26],* at national level to the Czech and European Parliaments and the Senate, at regional and municipal levels to local governments[27] are supported by RÚIAN location data and on-line tools during the election preparatory activities[28];
- use of up-to-date location data by numerous private sector providers of accommodation and travel services, such as *mapy.cz[29]* for tourist-oriented navigation and analytics;
- public platform(s) on barrier-free transport and mobility, such as the *Atlas of Brno city center accessibility* for persons with reduced mobility[30].

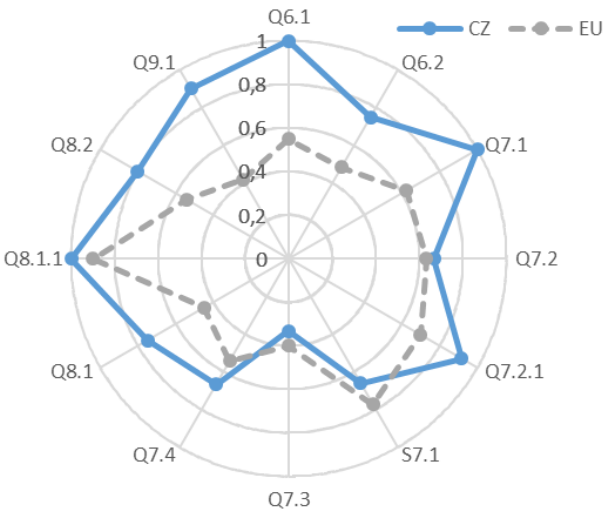

Figure 5 - Digital Government Integration - scores by indicator

With reference to Recommendation 7, location data, i.e. interoperable non-INSPIRE and INSPIRE datasets and related INSPIRE webservices, are used in digital public services in many cases[31], in domains such as Environment, Transport, Energy, Property / Land Administration, Local / Regional Planning, Smart cities, Health, Culture, Education, Tax policy, Elections, History, Precise farming, Forestry, Planning, Property Management, Socio-demographic analyses, Utilities management and Crime evidence.

The public sector SDI is also used very extensively by the private sector and other organisations (e.g. NGOs) for delivery of new and innovative applications, products and services.

Based on the INSPIRE country fiche[32], the implementation of INSPIRE Directive is quite advanced with no significant issues, however, there are areas that are not complete, such as the provisions related to data sharing and the identification of spatial datasets. Implementation of these provisions made significant progress in 2019.

The country pays high attention to the delivery and maintenance of cross-sector digital public services based on systematic interoperability arrangements (legal, organisational, semantic and technical). In addition to the INSPIRE harmonisation instruments (e.g. metadata, webservices), more complex multi-thematic data models and databases have been used and quality requirements applied to cover the everyday needs of eGovernment. RÚIAN content

25 For roads and highways, see https://geoportal.rsd.cz/web/Geoportal/Index_en and https://geoportal.rsd.cz/webappbuilder/apps/24/; for utilities, see e.g. https://geoportal.cezdistribuce.cz/geoportal/

26 https://vdb.czso.cz/vdbvo2/faces/en/index.jsf?page=statistiky&filtr=G%7EF_M%7ET_Z%7EF_R%7EF_P%7E_S%7E_U%7E301-501-401-202-421-411-402_null_&katalog=30846

27 https://vdb.czso.cz/vdbvo2/faces/en/index.jsf?page=vystup-objekt&z=M&f=GRAFICKY_OBJEKT&skupId=926&filtr=G%7EF_M%7ET_Z%7EF_R%7EF_P%7E_S%7E_U%7E301-501-401-202-421-411-402_null_&katalog=30846&pvo=VOL01-ZO&pvo=VOL01-ZO&ds=ds426&c=v74~2__RP2018MP10DP06

28 Preparation for the electoral process from a geospatial perspective has been conducted on the basis of updated online cadastral maps, such as for example https://vdp.cuzk.cz/marushka/?ThemeID=1&MarQueryID=VO&MarQParamCount=1&MarQParam0=8541&InfoURL=https://vdp.cuzk.cz/vdp/ruian&InfoTarget=vdpWindow_1585313999607

29 https://en.mapy.cz/

30 http://www.brno-prorodiny.cz/mapovani-pristupnosti-ve-meste-brne

31 https://inspire.ec.europa.eu/sites/default/files/presentations/Bridge_between_eGovernment_and_Environmental_Applications-_Czech_Use-Cases_final.pdf;

32 Currently the INSPIRE country fiche 2019 is available

and its continuous maintenance represent an example of extensive cross-sector collaboration. This involves several central authorities (Czech Office for Surveying, Mapping and Cadastre - CUZK, Ministry of Interior, Czech Statistical Office, etc.), 14 regional authorities and thousands of municipal bodies (altogether about 7500 public bodies).The thematic data sets and related services compliant to INSPIRE have been regularly generated from this national core source. CUZK produces and publishes (on behalf of the mentioned authorities) the countrywide INSPIRE datasets for the addresses, administrative units, buildings, cadastral parcels themes and contributes systematically to the geographic names and transport networks datasets. These INSPIRE datasets are used for cross-border projects, and some are intensively re-used by application providers, e.g. addresses.

The country is also involved in the deployment of cross-border digital public services using INSPIRE. Some examples of relevant projects are: the European Location Framework (ELF)[33] [34], OpenELS[35], EU Gazetteer and Attractive Danube[36]. In addition to the INSPIRE based interoperability activities, Czech Republic stakeholders also participate in specific cross-border services[37].

With reference to Recommendation 8, an open and collaborative methodology (e.g. through consultations, user groups, feedback requests, iterative development), is applied extensively to design and improve location enabled digital public services at national level. The first example of such collaboration among public administrations in location related service delivery was the Memorandum of Understanding (MoU) between national and regional authorities to build up a "map of public administration" (DMVS)[38], which was signed in November 2008. This became a formal basis for a series of interoperability actions (legal, organisational, semantic and technical) at national and regional levels.

Many actions are implemented to involve external parties in delivering location-based public services, such as:

- services are contracted to the private sector or NGOs under public sector accountability;
- public authorities rely on public/private partnerships in specific cases;
- public authorities make data openly available for external parties to develop their own products and services;
- government encourages 'civic hacking' to develop new ideas, technologies or methodologies;
- feedback on data quality is regularly collected (e.g. in RÚIAN through a web application);
- claims go through a legally defined revision and validation process to guarantee base registry requirements;
- universities or research and development institutes provide independent testing, specific comparison studies and analyses.

Nemoforum,[39] the national platform for discussion, co-operation and co-ordination of activities related to land and geo-information, has been functioning for two decades. Its thematic

[33] European Location Framework (ELF) project, see https://www.int-arch-photogramm-remote-sens-spatial-inf-sci.net/XLI-B4/181/2016/

[34] European Location Framework (ELF) project and INSPIRE, see: https://inspire.ec.europa.eu/events/conferences/inspire_2016/pdfs/2016_psessions/30%20FRIDAY_PSESSIONS_F_14.00-15.30_____ELF,%20INSPIRE%20and%20EIF_Pauknerova_Jakobsson4.pdf

[35] https://openels.eu/

[36] https://www.cenia.cz/wp-content/uploads/2019/07/ATTRACTIVE-DANUBE_Final_publication_EN-1.pdf

[37] E.g. activities launched by NATO; GNSS or the international meteorological information and alert systems (http://portal.chmi.cz/files/portal/docs/meteo/om/vystrahy/index.html; http://www.meteoalarm.eu/index.php?lang=en_UK); international air navigation (http://www.rlp.cz/en/Pages/homepage.aspx; https://aisview.rlp.cz/index.php?lang=2)

[38] MoU on DMVS among CUZK, Ministries of Interior and Environment, representation of Regions and professional associations signed on 27. 11. 2008: https://www.cuzk.cz/O-resortu/Nemoforum/Akce-Nemofora/Seminare/Digitalni-mapa-verejne-spravy/06-Kubatova.aspx

[39] https://www.cuzk.cz/English/About-us/Nemoforum/Nemoforum-uvod.aspx

seminars, working groups and pilot studies enable exchange of views, constructive debate and preparatory activities regarding complex issues which go across levels of public administration (local, regional and national), sectors (public, private, academic) and thematic domains.

The actions planned and started under the Memorandum of Understanding on the Digital Technical Map (DTM) have become an example of effective involvement of the private sector in the delivery of digital public service. This MoU[40] was signed by representatives of 19 bodies (central and regional governments, professional unions and associations for ICT, GIT, utilities etc.) in September 2018. It will underpin extensive cross-sector and cross-domain activities to further increase data quality of master data in the Czech Republic, for both public and private use. The roles and competences of specific DTM players and the integration of their interoperability and communication tools are planned to speed-up the administrative process related to building permits[41].

Concerning the integration of location and statistical information (Recommendation 9), the Czech Republic implements all actions defined under this recommendation, i.e.:

- an accurate and up-to-date knowledge base of where citizens and businesses are located;
- a common geospatial reference framework for statistics[42] to enable timely, accurate and efficient production of location-based statistics;
- use of INSPIRE to support the location reference framework for statistics;
- collection of census data based on the location reference framework for statistics;
- dynamically updated location-based statistics to give an up-to-date snapshot on which to make decisions;
- spatio-temporal dimension of statistics captured in a format that enables it to be used readily in a GIS for geostatistical analysis;
- relevant private sector data included in the statistical information infrastructure;
- a location intelligence infrastructure continuously kept relevant to growing and evolving needs based on a regular quality assessment of whether the infrastructure is fit for purpose;
- contribution to European projects aiming at establishing a data and production infrastructure for location-based statistics (e.g. GEOSTAT).

40 https://www.geobusiness.cz/memorandum-spoluprace-dtm-cr/

41 https://www.cuzk.cz/O-resortu/Nemoforum/Akce-Nemofora/Seminare/Vyuzijeme-sance-vybudovat-digitalni-mapu-verejne-s/6-Nemoforum_20191018_Formanek.aspx

42 See ZSJ: https://vdp.cuzk.cz/vdp/ruian/sidelnijednotky/vyhledej?ob.nazev=Praha&ku.kod=762130&zj.nazev=&zj.kod=&ohrada.id=&zjg.sort=UZEMI&search=Vyhledat; https://vdp.cuzk.cz/marushka/?ThemeID=1&MarQueryID=ZJ&MarQParamCount=1&MarQParam0=162124&InfoURL=https://vdp.cuzk.cz/vdp/ruian&InfoTarget=vdpWindow_1585322638983

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

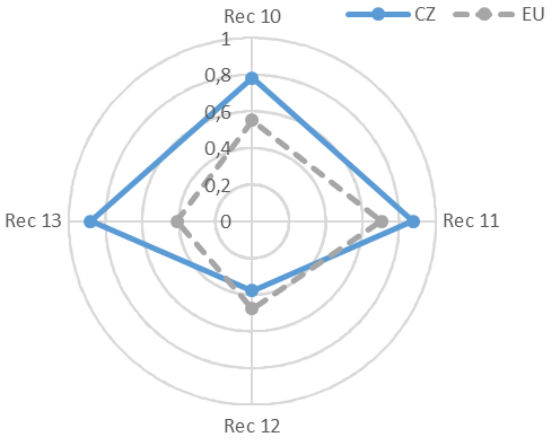

Figure 6 - Standardisation and Reuse - scores by recommendation

The “Standardisation and Reuse” focus area index for the Czech Republic is 0.73. The score is well above the European average of 0.54 for this focus area but still less than the Czech Republic scores for some other focus areas.

Regarding Recommendation 12, CUZK provides INSPIRE compliant country wide datasets for most of the Annex I and II themes, as well as the Czech Geological Service and the Agency of Nature and Landscape Protection (AOPK) in their thematic domains. Nevertheless, a low number of datasets and network services are in conformity with, respectively, Regulation (EU) No 1089/2010 and Regulation (EC) No 976/2009 as regards the Annex III Themes.

The common location architecture approach in the Czech Republic fits within a broader national ICT architectural framework based on the EIF / EIRA (Recommendation 10). Furthermore, a clear approach is applied to monitoring, testing and upscaling of new technological developments, in collaboration with different stakeholders. In relation to evolving technologies, a series of location data APIs have been developed, documented and are accessible[43] [44].

With reference to Recommendation 11, reuse of generic ICT solutions from other national or international catalogues is made in the SDI. In addition, Czech Republic public administrations have implemented several interoperable registers of location information, i.e. Addresses;

[43] https://inspire.ec.europa.eu/events/conferences/inspire_2017/submissions/140.html
[44] https://www.ikatastr.cz/#info=49.61134,14.15526&kde=49.77999,14.90764,19E

Geographical names; Administrative units; Cadastral parcels; Buildings; Hydrography; Transport networks; Election Districts; Glossary; and Code lists.

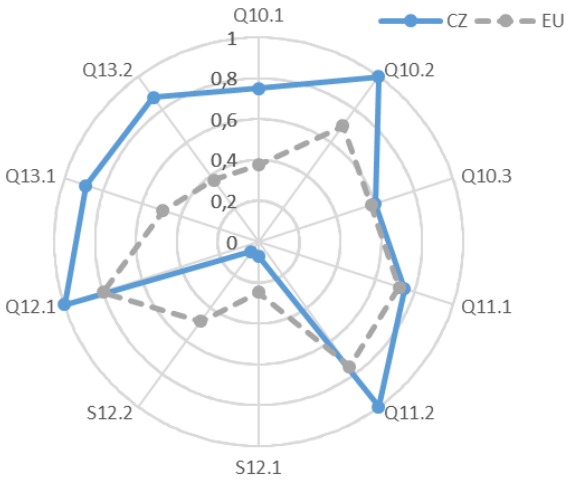

Figure 7 - Standardisation and Reuse - scores by indicator

To connect geospatial data and general data, the GeoDCAT-AP specification is used and a specific tool is made available in the geoportal[45]. By entering the URL of the metadata record or selecting the XML file, that tool transforms metadata from ISO 19139 (INSPIRE) to the GeoDCAT profile.

In addition to the CEN and OGC standards, several organisations, such as CUZK, the Geographic Service of Czech Army[46] and the Geological Service[47] also apply international (standard-based) thematic specifications as members of international bodies (e.g. NATO) and pan-European associations (e.g. EuroGeographics, EuroGeoSurvey) to contribute to their international projects and seamless cross-border data production.

Concerning the management of location data quality (Recommendation 13), many actions are typically implemented to assure quality.

At design level, the following actions are taken:

- development and application of a framework for analysis of data quality;
- linking of data quality standards to data standards;
- inclusion of the different dimensions of data quality in the standard, such as timeliness, accuracy, completeness, integrity, consistency, compliance to specifications / standards / legislation.

In terms of measurement, actions implemented include:

- measurement of conformance of data to quality parameters set out in the data policy on an agreed frequency;
- data quality dashboards for critical information such as authentic data;
- ex-post evaluation of existing data quality issues;
- assessment of the current business value in terms of the existing data quality level;
- incorporation of web tools for collection of user feedback on data quality;
- incorporation of analytical and publication tools for monitoring changes in data quality and visualising the territorial distribution of data[48].

As for location data quality governance, several actions are implemented, namely:

- alignment of a data quality improvement roadmap with the information governance vision and strategy;
- well-defined data quality responsibilities;
- existence of a cross-unit or cross-organisation special interest group for data quality;
- definition of a data quality review process;
  - collection of feedback from users to report problems and help improve data quality;
  - field revisions and comparison of input databases.

45 https://geoportal.gov.cz/web/guest/metadata/geodcat/
46 http://www.geoservice.army.cz/
47 http://www.geology.cz/extranet-eng/maps
48 See, e.g., https://www.cuzk.cz/Katastr-nemovitosti/Digitalizace-a-vedeni-katastralnich-map.aspx

Other actions are:

- new techniques for quality enhancement are tested as pilots by the Research Institute of Geodesy and Cartography (VUGTK);
- the DTM development[49] includes projects for enhancing data quality and administrative processes (similarly to the RÚIAN development and implementation over the last 10-15 years).

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 the Czech Republic is 0.88, well above the European average of 0.60. Many elements are evaluated to assess the efficiency and effectiveness of location-based services (Recommendation 14): return on investments, total cost of ownership, reusability, risks, availability, responsiveness, reduction in administrative burden, simplification of administrative processes, increased participation, enhanced business opportunities, user satisfaction[50] and user-centricity. These elements of evaluation are used in different contexts, with different frequencies (e.g. the technical monitoring runs on an everyday basis) and at various levels (at strategic planning or evaluation phases, at project or service level, at organisational level or at SDI / national level).

Many actions are also implemented for impact-based improvement in location-enabled processes and services. An example is the incorporation of performance parameters and technical details, such as hospital entrance points into the RÚIAN, which are defined together with emergency services and fire brigades.

49 https://www.cuzk.cz/O-resortu/Nemoforum/Akce-Nemofora/Seminare/Vyuzijeme-sance-vybudovat-digitalni-mapu-verejne-s/6-Nemoforum_20191018_Formanek.aspx

50 http://egako.eu/wp-content/uploads/2020/05/zivotska_kalas_2020_05.pdf

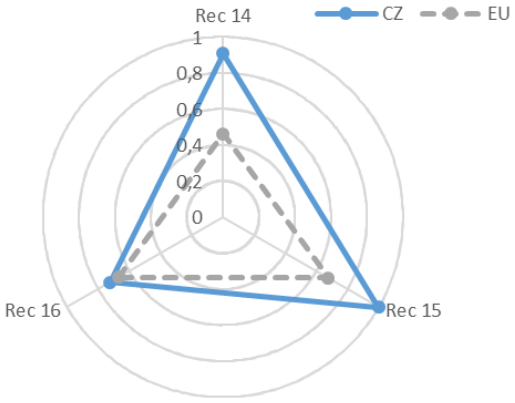

Figure 8 - Return on Investment - scores by recommendation

Identification and monitoring of the benefits of location information has been done through product related surveys or preparatory studies (e.g. during the GeoInfo Strategy planning). Regular monitoring of "upstream" (i.e. production and dissemination) is carried out on a daily basis by data providers and "downstream" (i.e. use) aspects of location data and services are shared at user conferences, workshops or via particular surveys. The monitoring information is used to fund improvements in particular location data or services and to prioritise investment across the governmental portfolio and PPP activities, e.g. the DTM development. The use of a common maturity assessment method across EU Member States and performance benchmarking with other Member States is a part of INSPIRE and EIONET activities and was also used during the ELF and ELS projects and in common actions coordinated by EuroGeographics (Euro Global and Regional Maps, Euro Geonames etc).

A strength in this focus area is the systematic approach to communication of availability and benefits of location data and location-enabled digital public services to raise awareness and understanding (Recommendation 15). The most used forms of communication are news, conferences, seminars and hackathons. There are several coordination structures and cross-sector bodies supporting information and knowledge exchanges, e.g. the national coordination body for INSPIRE (KOVIN), CAGI[51], Nemoforum[52], RVIS and its WG for SDI[53].

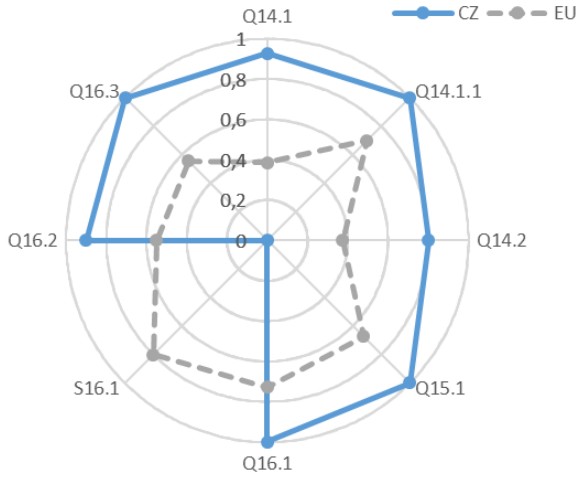

Figure 9 - Return on Investment - scores by indicator

The Czech Republic facilitates the use of public administrations' location data by non-governmental actors by making the process of searching, finding and accessing location data and web services as easy as possible (Recommendation 16). In this regard, the various measures implemented include: a national Open Data portal merging location data and non-location data[54]; a national discovery (geo)portal integrating INSPIRE and non-INSPIRE data[55]; a geoportal harvested by the European Data Portal[56]; thematic portals complementing general search

51 http://www.cagi.cz/
52 https://www.cuzk.cz/English/About-us/Nemoforum.aspx
53 Government Commission for Information Society, including a Board on location information (see https://www.mvcr.cz/clanek/rada-vlady-pro-informacni-spolecnost.aspx?q=Y2hudW09Ng%3d%3d)
54 https://data.gov.cz/
55 https://geoportal.gov.cz/
56 Several geoportals are harvested by the EDP, i.e.: EGDI Metadata Catalogue (Metadata Catalogue of Czech Geological Survey); Geoportal Czech Office for Surveying, Mapping and Cadastre (Cadastre); INSPIRE Geoportal of Czech Republic; Geo Data Portal of South Moravian region; Geoportal of Zlin Region.

facilities with “specialist” search[57]; websites with exposure of data[58]; availability of spatial data sets on web search engines, and other measures such as newsletters, conferences[59], seminars and hackathons[60].

Furthermore, many actions are implemented to actively support private, non-profit and academic actors in the development of new products and e-services, such as "innovation labs" or "innovation hubs"; promotion of open data policy and brokering access to this data through hackathons; incorporation of non-government actors in the governance framework for public sector data; testbeds; pilot projects; adding data and services from non-governmental actors to the public sector (spatial) data infrastructure; collecting requirements of businesses, research institutions and other (potential) users for consideration in further development of INSPIRE/SDI; collecting best practice examples of how private companies, citizens, academic institutions and other users make use of INSPIRE/SDI data and services; and training in skills necessary to exploit the SDI.

Finally, there is a strategic approach to funding public sector location reference data alongside the funding of other important public sector authentic datasets to make access at point of use cost effective and to promote the highest possible benefit from such investment.

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

[57] E.g. https://egdi.geology.cz/
[58] https://geoportal.cuzk.cz/(S(4gq4yw5y54abrmmw4se3jesj))/Default.aspx?lng=EN&head_tab=sekce-00-gp&mode=TextMeta&text=uvod_uvod&menu=01&news=yes&UvodniStrana=yes
[59] http://www.cagi.cz/historie-akci; https://www.isss.cz/art/about; https://www.arcdata.cz/zpravy-a-akce/akce/konference
[60] http://www.cagi.cz/upload/documents/Workshop_Otevrena_data_Code_Camp_Hack_23_24_25_1_2017_20161226061010.pdf

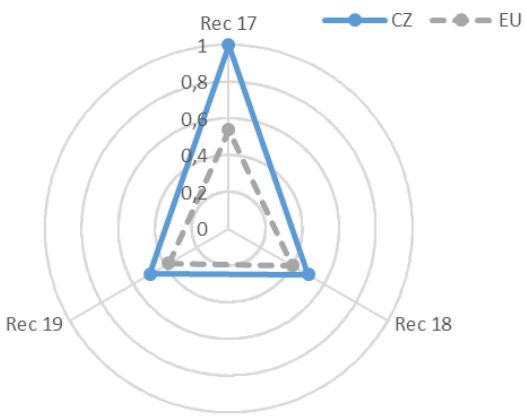

Figure 10 - Governance, Partnerships and Capabilities - scores by recommendation

The "Governance, Partnerships and Capabilities" focus area index for the Czech Republic is 0.67, significantly above the European average of 0.44. Although this is the lowest scoring focus area for the Czech Republic, the country still scores much higher than the European average for all recommendations.

An integrated governance of location information processes, including the participation and cooperation of many different actors, has been introduced in the Czech Republic (Recommendation 17). The governance structure includes the existence of a joint decision-making body[61] with a well-defined scope and mandate, the participation of all relevant communities (location and digital government), domains (thematic), administrative levels (central and local) and sectors (public, private, academic, society) in decision making on the role of location information in Digital Government, and the existence of other governance and decision-making mechanisms (e.g. public consultation). Furthermore, organisations leading and coordinating the implementation of location information and Digital Government fully and jointly deal with location information in the context of Digital Government.

For Recommendation 18, roles, competences, duties of, and relations between, public authorities in the Czech Republic (including Czech eGovernment) are formally well defined. In compliance with the Constitution of the Czech Republic, this is mostly done by law. The hierarchy of legal/formal arrangements is defined by acts and decrees (some of them accompanied with technical specifications and/or guidelines). Even if formal agreements between public entities to jointly finance and operate location-based services are applied only in limited cases, especially at local level[62], they have had quite a relevant impact.

Formal agreements such as Memorandums of Understanding (MoUs), including public-private partnerships[63], are used during preparatory phases to underpin formally the initial stage of extremely complex cross-sector solutions (see the case of MoUs for the DMVS in 2008 and the DTM[64] in 2018). These are then followed by analytical studies[65] and pilots going in parallel with legislation up-dates or development. The cooperation between public and private organisations is mostly through joint projects and service delivery based on transparent

[61] Government Commission for Information Society, including a Board on location information (see https://www.mvcr.cz/clanek/rada-vlady-pro-informacni-spolecnost.aspx?q=Y2hudW09Ng%3d%3d)
[62] The preferred hierarchy of legal interoperability is demonstrated by the case of RUIAN: zákon (an act); vyhláška (a decree), veřejnoprávní smlouva (an agreement between public entities at local level), see https://www.cuzk.cz/Uvod/Produkty-a-sluzby/RUIAN/6-Legislativa/Legislativa.aspx#ui_6
[63] https://www.mvcr.cz/clanek/digitalni-technicka-mapa-cr-urychli-rozvoj-rychleho-internetu.aspx;
[64] https://www.mvcr.cz/soubor/memorandum-digitalni-technicka-mapa-cr.aspx
[65] https://www.cuzk.cz/O-resortu/Nemoforum/Akce-Nemofora/Seminare/Vyuzijeme-sance-vybudovat-digitalni-mapu-verejne-s/8-Nemoforum_20191018_Valicek.aspx

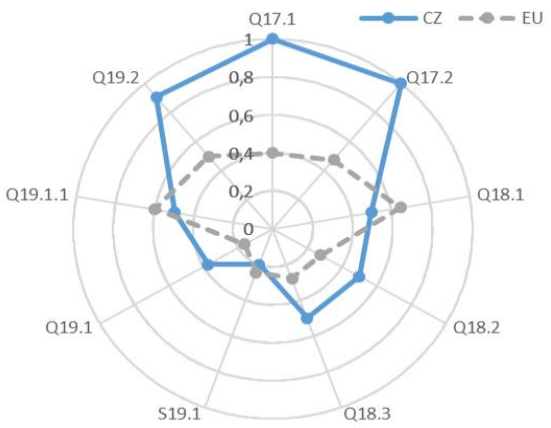

Figure 11 - Governance, Partnerships and Capabilities – scores by indicator

procurement rules[66] and tools. Knowledge exchange and mutual cooperation during strategic planning is enabled and supported by well-functioning coordination structures and awareness-raising platforms built-up over several decades. There is willingness and ability for cooperation across sectors and domains, as demonstrated in the cases of RÚIAN, GeoInfo Strategy and the DMT, now in the early implementation phase.

With reference to Recommendation 19, a high degree of adoption of the geospatial competency framework is reached either through recognition of its value or national law / regulation. In addition to study programmes provided by universities, several central bodies (e.g. CUZK) provide training and authorisation of experts dealing with location data and NSDI elements in their domains of competence.

The national geospatial competency framework[67] is based on international educational concepts and rules, e.g. Body of Knowledge for GIS&T and the Geospatial Technology Competency Model (GTCM)[68]. The national competency framework was created as a part of the GeoInfoStrategy Implementation[69] by several Czech Republic universities together with the Czech Association for Geoinformation (CAGI). It represents a good basis for a broader ICT or data awareness raising and educational activities going beyond the GI/SDI domain. CAGI awareness raising activities helped to consider GIT and SDI as an integral part of a broader ICT and eGovernment in the Czech Republic already 20 years ago[70].

Many initiatives are organised to raise awareness and develop geospatial skills: a public sector location/GI champion; spatial literacy awareness raising for non-specialists; e.g. policy makers, project managers; training for specialists, e.g. developers, data analysts; spatial literacy / GI elements in Digital Innovation Hubs; special interest group for knowledge sharing within the geospatial community; public or cross-government events[71] specialising in location information / GI topics; structured training programmes to obtain accreditation under a competency framework; INSPIRE training modules; online learning tools. Some specific examples are:

- the RÚIAN has been supported by a complex awareness-raising, training programme, on-line tools and expert advisers from 2011 till now[72];
- the GeoInfo strategy[73] in the Czech Republic also involves SDI competencies in the Recommended Curricula[74] for the geographic information domain;
- some NGOs, e.g. the Czech Association for GI (CAGI), have a long tradition of awareness-raising and knowledge transfer activities[75].

66 https://portal.gov.cz/registr-smluv/formulare
67 https://www.cagi.cz/narodni-kmen-znalosti-gist
68 https://www.urisa.org/resources/geospatial-management-competency-model/
69 https://www.cagi.cz/navrh-doporucujicich-narodnich-kurikul-v-oblasti-prost-informaci
70 https://www.isss.cz/archiv/2000/geoaplikace.asp;
71 https://www.mvcr.cz/clanek/geoinfostrategie.aspx?q=Y2hudW09Mw%3d%3d; e.g. organised by the Czech Association for Geoinformation (CAGI) or held in the framework of Nemoforum
72 See https://www.cuzk.cz/Uvod/Produkty-a-sluzby/RUIAN/RUIAN.aspx
73 See Best Practice CZ1
74 https://www.mvcr.cz/clanek/3-seminar-konkurenceschopnost-vzdelavani-a-legislativa-v-oblasti-prostorovych-informaci-a-sluzeb-v-cr.aspx
75 https://www.isss.cz/archiv/2004/program.asp

4. Best practices

EULF Best Practice CZ1	**GeoInfoStrategy**
Policy domain: Broad set of policy domains	
Process owners: Ministry of Interior of the Czech Republic	
Short description: The GeoInfoStrategy (Development Strategy for Spatial Information Infrastructure in the Czech Republic by 2020) was elaborated on the basis of the Czech Government Resolution No. 837 of 14 November 2012, while respecting all international obligations binding on the Czech Republic in the area of spatial information (EU, NATO) and in connection with strategic documents of the Czech Republic, with the aim of defining a strategic development framework, setting clear rules for the creation, management and use of spatial information by society as a whole and creating conditions for the organic integration of authoritative spatial information into decision-making processes in public administration and in the life of society as a whole. The GeoInfoStrategy, approved by Government Resolution No. 815 of 8 October 2014, elaborates the basic principles of the development of public administration and eGovernment in the area of spatial information, focuses on solving specific problems in the Czech Republic and proposes the provision of quality authoritative spatial information and services not only for the efficient performance of public administration, but also for the needs of the entire society.	
Recommendations: Recommendation 1 (Policy and Strategy Alignment), Recommendation 19 (Governance, Partnerships and Capabilities)	
Link: https://www.mvcr.cz/clanek/geoinfostrategie.aspx?q=Y2hudW09Mg%3d%3d	

EULF Best Practice CZ2	**Register of Territorial Identification, Addresses and Real Estate (RÚIAN)**
Policy domain: Spatial planning, Geodata	
Process owners: Czech Office for Surveying, Mapping and Cadastre (ČÚZK)	
Short description: The Register of Territorial Identification, Addresses and Real Estates (RÚIAN), underpinned by the Act No. 111/2009 on Base Registries and the Decree n. 359/2011 on RÚIAN (and their updates), has operated since 2012 as an integral part of the system of public administration base registries. The RÚIAN project was one of the most comprehensive projects in the frame of the Czech civil service basic registries system (basic registries are managed by the Act no. 111/2009 Sb., their general coordinator is the National Registries Authority). The main benefit of the system of basic registries is the creation of a set of reference data, which are binding for the performance of agendas in public administration. Part of the RÚIAN project was to build a Public Remote Access (VDP), through which the RÚIAN data is freely available via the Internet for viewing or downloading. Open access to the RÚIAN location data and their wide re-use are based on § 30 and § 47 of Act No. 111/2009 (see https://www.noveaspi.cz/products/lawText/1/68500/1/2?vtextu=z%C3%A1kon%20o%20z%C3%A1kladn%C3%ADch%20registrech#c_61)	

Recommandations: Recommendation 2 (Policy and Strategy Alignment), Recommendation 11 (Standardisation and Reuse)
Link: https://geoportal.cuzk.cz/(S(l2g3cacdtggv3yjuax5rnmsv))/Default.aspx?lng=EN&mode=TextMeta&text=dSady_RÚIAN&side=dSady_RÚIAN

EULF Best Practice CZ3 **Integrated Rescue System**
Policy domain: Emergency response
Process owners: Fire Rescue Service of the Czech Republic – FRS CR
Short description: The Integrated Rescue System (IRS) is used for co-ordination of rescue and clean-up operations in case where a situation requires operation of forces and means of several bodies, e.g. firefighters, police, medical rescue service and other bodies. The system is supported by RÚIAN (Register of Territorial Identification, Addresses and Real Estate) location data (on addresses, buildings, cadastral parcels, …).
Recommendations: Recommendation 6 (Digital Government Integration)
Link: https://www.hzscr.cz/hasicien/article/about-us-scope-of-activities-integrated-rescue-system.aspx; https://cs.wikipedia.org/wiki/Integrovan%C3%BD_z%C3%A1chrann%C3%BD_syst%C3%A9m

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[76] 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:

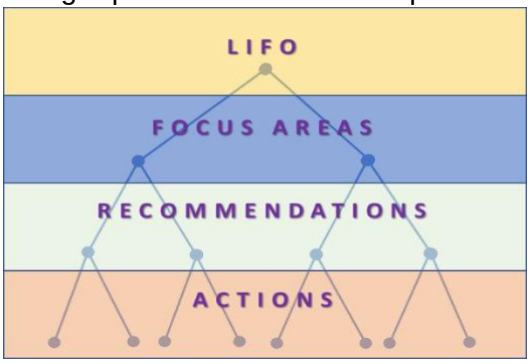

Figure 12 – Hierarchy of indicators and

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[77]
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

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

[77] 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 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.	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	Domain critical to the successful use of location information and delivery of services using this information. The Focus areas identified in the EULF Vision and as adapted in the latest release of the EULF Blueprint are 5: 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, it evaluates the degree of alignment of the practices implemented by the Member States. LIFO includes “primary indicators”, which are specifically created for the Observatory and will be measured through direct questions to the panel of 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

Term	Meaning	Link
Recommendation	A set of key points, listed in the EULF Blueprint, for progressing from the current state to the vision. Each of the 19 EULF 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, and further reading related to the recommendation.	