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Global Geospatial Information Management Country Report of Slovenia

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Slovenia

Slovenia, a small country between Italy, Austria, Hungary and Croatia, is a combination of Alpine beauty, majestic valleys and blue and turquoise colour lakes purified by their limestone surroundings.

Slovenia, officially the Republic of Slovenia is a nation state in southern Central Europe at the crossroads of main European cultural and trade routes. It lies between latitudes 45° and 47° N, and longitudes 13° and 17° E. The 15th meridian east almost corresponds to the middle line of the country in the direction west-east. The Geometrical Center of the Republic of Slovenia is located at coordinates 46°07'11.8" N and 14°48'55.2" E. It lies in Slivna in the Municipality of Litija. Slovenia's highest peak is Triglav (2,864 m or 9,396 ft); the country's average height above sea level is 557 m (1,827 ft).

It covers 20,273 square kilometers (7,827 sq mi) and has a population of 2.06 million. It is a parliamentary republic and a member of the European Union and NATO.

Four major European geographic units meet on the territory of Slovenia: the Alps, the Dinaric Alps, the Pannonian Plain, and the Mediterranean, with a small portion of coastline along the Adriatic Sea. The territory has a mosaic structure and a mountainous landscape and biological diversity. The country is one of the most water-rich in Europe, with a dense river network, a rich aquifer system, and significant karstic underground watercourses. Around 11,859 km2 or 4,578sq mi is covered by forests which presents 58.5% of the country. This makes Slovenia one of the most forested countries in Europe.

Slovenia is in a rather active seismic zone because of its position on the small Adriatic Plate, which is squeezed between the Eurasian Plate to the north and the African Plate to the south and rotates counter-clockwise. Many parts of Slovenia have a carbonate ground, and an extensive subterranean system has developed.

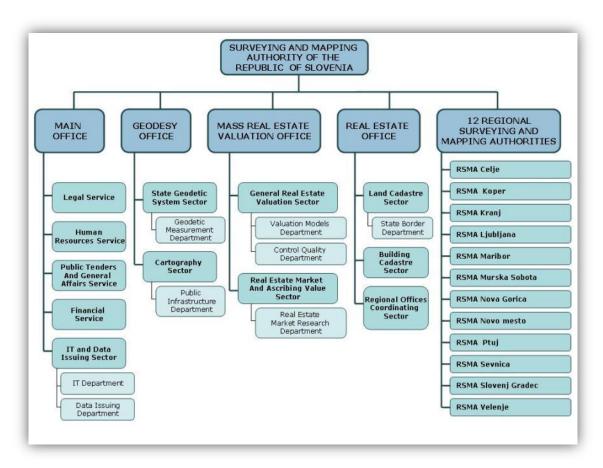
The Surveying and Mapping Authority of the Republic of Slovenia

The Surveying and Mapping Authority of the Republic of Slovenia is a body within the Ministry of the Environment and Spatial Planning. The competence of the Surveying and Mapping Authority of the Republic of Slovenia comprises the tasks of the national land survey service, which include the creation, management and updating of databases pertaining to the basic geodetic system, real estate, the state border, spatial units and house numbers, and the Consolidated Cadastre of Public Infrastructure, as well as the topographic and cartographic system.

The Surveying and Mapping Authority of the Republic of Slovenia is responsible for basic data on space and real estate in the finalized databases, provides services pertaining to the registration of changes in physical space and on real estate, and performs the role of coordinator for the real estate system and spatial data infrastructure. In cooperation with the Ministry of Finance, it is carrying out a mass real estate appraisal with the aim of creating the foundations for successful and efficient real estate management, to provide data for objective and comprehensive real estate taxation and improve the efficiency of the real estate market. It provides for the national coordinate system and its compliance with the European coordinate system and creates the conditions for implementing land surveys.

The Surveying and Mapping Authority of the Republic of Slovenia comprises: the Main Office, the Real Estate Office, the Mass Real Estate Valuation Office, the Geodesy Office and twelve regional

surveying and mapping authorities. The latter have been set up to streamline operations and increase the accessibility of administrative and professional tasks and services implemented by the Surveying and Mapping Authority of the Republic of Slovenia.



Picture 1 Organizational chart of the Surveying and Mapping Authority of the Republic of Slovenia

In cooperation with the regional surveying and mapping authorities, the regional offices implement the following joint tasks:

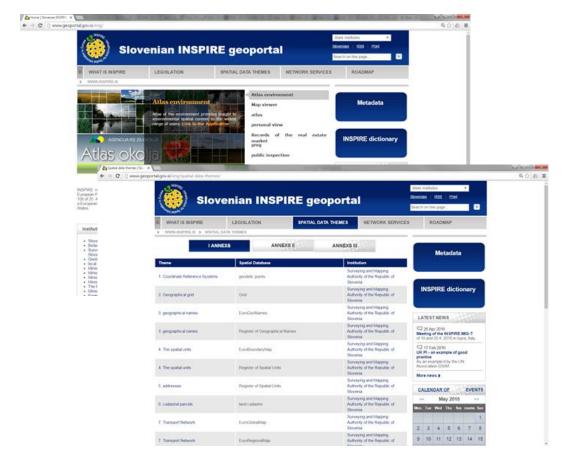
- preparing the national land survey service annual program and the report on its implementation,
- organizing the work of the regional surveying and mapping authorities, monitoring their work and ensuring the uniform implementation of national land survey service assignments,
- directing the implementation of development assignments pertaining to surveying and mapping activities,
- implementing operational, professional and administrative assignments from the offices' fields of work,
- drafting regulations on surveying and mapping activities,
- meeting international obligations in the field of national land survey services.

INSPIRE Directive

INSPIRE represents the abbreviation for the Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (OJ L 108, 24.4.2007, p. 1), along with the Corrigendum to Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (OJ L 365, 19.12.2014, p. 165). The Directive was implemented on 15 May2007 It establishes the legal framework for the establishment and operation of an European spatial data infrastructure, which represents a collection of interoperable infrastructures for spatial information of individual Member States. Its intended goal is to facilitate the infrastructure for the access and re-use of spatial data to the broadest possible public and for the broadest possible use, in broader terms to maximize the added value of spatial data appropriated with public funds.

The INSPIRE Directive was transposed into the Slovenian legal system with the Infrastructure for Spatial Information Act — ISI Act (Official Gazette of RS, No. 8/2010 and 84/2015), which requires the enactment of a national contact point for the communication between INSPIRE stakeholders and the European Commission as well as the establishment of a nation INSPIRE geoportal.

The Surveying and Mapping Authority has established the **national INSPIRE geoportal** (www.geoportal.gov.si). It includes a metadata system, INSPIRE glossary, links to some web applications for data access and key information related to the INSPIRE Directive and its implementation in Slovenia (list of events, list of spatial datasets and their managers, regulations and materials, and other information)



Spatial data infrastructure in Slovenia

The Slovenian National Assembly adopted the ISI Act on 26 January 2010 and amended with the Act Amending the Infrastructure for Spatial Information Act on 27 October 2015 on the basis of an EU Pilot enquiry procedure of the European Commission. The ISI Act regulates the establishment, management and maintenance of the infrastructure for spatial information in the Republic of Slovenia as an integral part of the infrastructure for spatial information in Europe relating to the establishment and operation of a metadata system, network services to access the data and their use, coordination in establishing the infrastructure for spatial information (ISI) and the use of this infrastructure. It also defines the tasks of individual public entities responsible for establishing, managing and using spatial data and services, which have to be provided as an integral part of the Slovenian and, thus, also European infrastructure for spatial information.

Activities to establish the infrastructure for spatial information in Slovenia have become organizationally embedded into a broader scheme of activities meant to manage and harmonize spatial data – eSpatial. It represents a comprehensive strategy for the betterment of processes in the field of spatial planning, construction and Real Estate management achievable with linked (interoperable), easily accessible and reliable spatial datasets managed and maintained by the public sector. Actions of the proposed eSpatial strategy are further part of an even broader strategy of the public sector of the Republic of Slovenia eGovernment. The implementation of the eGovernment strategy encompasses the establishment of the Governmental Strategic board for development of informatics in state authority which steers the development of ICT systems in public administration and manages their financial sources. Because of the intertwined and interdependent nature of tasks for the establishment of the infrastructure for spatial information and tasks carried out by the strategic board for development of informatics the Surveying and Mapping Authority and the Ministry of the Environment and Spatial Planning proposed the establishment of a Strategic board for geoinformatics which would operate as a part of the Strategic board for development of informatics in state authority. The Strategic board for geoinformatics would coordinate all strategic tasks with the establishment and management of the infrastructure for spatial information in the Republic of Slovenia.

Coordination of the spatial data infrastructure in Slovenia

Different stakeholders cooperate in the Republic of Slovenia in the implementation of the INSPIRE Directive, while arguably the main tasks of the implementation of the infrastructure for spatial information is in the hands of the Surveying and Mapping Authority of the Republic of Slovenia These main participants in the implementation of the INSPIRE Directive are: the national contact point, the Intersectoral INSPIRE project group, managers of datasets, individual public institutions and interested users. The key public authorities are as follows:

- Ministry of the Environment and Spatial Planning, (<u>www.mzip.gov.si/</u>) and the bodies affiliated to it:
 - Surveying and Mapping Authority of the Republic of Slovenia, (<u>www.gu.gov.si</u>)

- Slovenian Environment Agency (<u>www.arso.gov.si</u>)
- Slovenian Water Agency (http://www.dv.gov.si/)
- Ministry of Infrastructure (http://www.mzi.gov.si/) and the bodies affiliated to it:
 - Slovenian Infrastructure Agency (http://www.di.gov.si/)
- Ministry of Agriculture, Forestry and Food, (http://www.mkgp.gov.si/)
- Ministry of Defence (<u>www.mo.gov.si/</u>) the body affiliated to it:
 - Administration of the Republic of Slovenia for Civil Protection and Disaster Relief, (www.sos112.si),
- Ministry of Culture, (<u>www.mk.gov.si</u>)
- Ministry of Economic Development and Technology, (http://www.mgrt.gov.si/)
- Ministry of Health, (www.mz.gov.si)
- Ministry of Public Administration, (www.mju.gov.si)
- Ministry of the Interior (www.mnz.gov.si)
- Geological Survey of Slovenia, (www.geo-zs.si
- Biotechnical Faculty, (www.bf.uni-lj.si
- Slovenia Forest Service, (<u>www.zgs.gov.si/</u>)
- Fisheries Research Institute of Slovenia, (www.zzrs.si),
- Institute of the Republic of Slovenia for Nature Conservation, (www.zrsvn.si/)
- Statistical Office of the Republic of Slovenia, (<u>www.stat.si</u>)
- other ministries and local communities (municipalities).

GOVERNMENTAL STRATEGIC BOARD FOR DEVELOPMENT OF INFORMATICS IN STATE AUTHORITY

COLLEGE of the MINISTER Ministry of the Environment and Spatial Planning

INSPIRE PROJECT GROUP

NATIONAL CONTACT POINT

- Ministry of Defence Administration of the Republic of Slovenia for Civil Protection and Disaster Relief.
- Ministry of Infrastructure Slovenian Infrastructure Agency,
- Ministry of Agriculture, Forestry and Food,
- Ministry of the Environment and Spatial Planning.
- Ministry of the Evnironment and Spatial Panning Surveying and Mapping Authority of the Republic of Slovenia
- Ministry of the Environment and Spatial Planning Slovenian Environment Agency,
- · Statistical Office of the Republic of Slovenia,
- Ministry of Culture,
- Ministry of Public Administration.
- Geological Survey of Slovenia,
- Slovenia Forest Service,
- · Fisheries Research Institute of Slovenia.
- Ministry of Health,
- Institute of the Republic of Slovenia for Nature Conservation,
- Ministry of Economic Development and Technology

Legislative regulation working group Data standardisation and harmonisation working group Metadata and portal connection working group Prototype solution working group

Picture 2: Organizational structure of the Spatial data infrastructure in Slovenia

Legal Framework

Infrastructure for Spatial Information Act – ISI Act (Official Gazette of the RS, No. 8/10 and 84/2015).

The Act defines the tasks related to the establishment and operation of a metadata system, network services to access the data and their use, coordination in establishing the infrastructure for spatial information (ISI) and the use of this infrastructure. It also defines the tasks of individual public entities responsible for establishing, managing and using spatial data and services, which have to be provided as an integral part of the Slovenian and, also European infrastructure for spatial information.

Act on georeference system (Official Gazette of the RS, No. 25/14)

This act introduces a new, modern national spatial reference system, which is based on the European Spatial Reference System (ESRS), and a new national topographic system together with the new mapgrid system. The scope of the new act is regulation of competences and tasks of the Surveying and Mapping Authority of the Republic of Slovenia related to the realization and maintenance of the national spatial reference system in long term and providing up—to—date spatial datasets and data products.

Decree on communication and re-use of information of public character (Official Gazette of the RS, 76/05, 119/07 and 95/11)

This Decree lays down the method by which public information shall be provided to applicants and published on the World Wide Web, as well as the charging of costs for provision, re-use of information, price and other terms of such use and reporting on provision of access to public sector information.

Public Information Access Act (Official Gazette of the RS, No. 51/06, 117/06-ZDavP-2, 23/14 and 50/14) This Act governs the procedure which ensures everyone free access to and re-use of public information held by state bodies, local government bodies, public agencies, public funds and other entities of public law, public powers holders and public service contractors.

Use of spatial data infrastructure in Slovenia

All existing elements of the Slovenian infrastructure for spatial information are used mainly by the institutions of the public administration. For several years, individual elements of the infrastructure for spatial information have been available to the public. Such information contains mainly joint fast communication network of public authorities (HKOM), managed and maintained by the Ministry of Public Administration, which has been connecting all public authorities and some other public institutions for many years. On the basis of the Act on the Access to Information of Public Character and according to the Decree on re-use of information of public sector, every public authority must publish on its website the »Catalogue of Public Information«, which enables the users a more transparent access to the information managed and maintained by a particular public authority. In these data, spatial information occupies an important position. The Ministry of Public Administration is actively working on establishing a national interoperability framework (NIO). The National interoperability framework provides information to public administration authorities as well as other users regarding elements for interoperability provided by different authorities and are available for use or are mandatory to consider and use when performing administrative or other tasks as well as managing elements of data infrastructure. It also represents Slovenia in the EU ISA program »Interoperability Solutions for European Public Administrations«. Cooperation of the national administration in the EU ISA program offers an additional dimension of the ISI use in Slovenia.

In the field of information and communication technology (ICT) and electronic commerce, interoperability represents one of the most important conditions for a successful development of information society, as it brings positive effects to the users (greater choice of services, increased competition and, thus, also better quality at lower price, enabling the closing of information systems and applications), as well as for the ICT industry (facilitating the entry to the market, sharing knowledge, basis for the development of new innovative and competitive products and services). This allows faster development and implementation of innovation (technological, organizational, procedural) in the public administration and economy, which shall ensure faster dissemination of knowledge, involvement, innovation and competition for society as a whole. The Ministry of Higher Education, Science and Technology and the Ministry of Public Administration implemented a project "Concept of national interoperability framework and test interoperability of the e-Vrtci (meaning e Kindergartens) application". From the outset the systematic establishment of the national eadministration, the interconnection of official records has been one of the main problems impeding faster development of electronic services of the types G2G, G2B and G2C. Due to lack of connectivity standards the interconnection of data bases or applications is facing technical and organizational problems related to harmonising interests, duties and rights of national (public) institutions.

All these activities are in line with the current global trend for open and free public data and Slovenia has made some changes (legal and technical) to follow them. The Ministry for Public Administration, which oversees the management and development of all ITC infrastructures of the public authorities is in the process of preparing guideless and recommendations for the opening of public datasets to the public and thus facilitate its use for neverbefore planed cases and generating added value and economic growth.

Therefore the restrictions regarding access to public data (including spatial data) and the facilitation of access to public information in Slovenia needed to be re-evaluation and regulated appropriately. For those reasons an amendment of the Public Information Access Act (ZDIJZ-E) was passed. The original Act was passed in 2003 with the intention to provide transparency in the use of public administration funds. The latest amendment builds on this foundation and broadens the obligation for transparency also for those institutions, which administer public funds, in other words national funds, local government funds or funds of other public institutions.

This change is the first step for the Republic of Slovenia on the road to open data and it enables not only the public administration access to certain products but also a broader user base which needs them for their commercial activities. Coordinated and harmonized open data along with improvements to data access will increase the potential for applications and the usefulness of data gathered using public funds.

Practical benefits of an open data policy are not instantaneous but are more long term. Enough of datasets need to be open and harmonized for their interoperability and reuse to for to its fullest potential and in the future also enable the next level of data use – linked data.

Practical examples of access to spatial information in Slovenia

By taking into consideration general and specific indicators, it can be determined that, in regards to the use the spatial data services for the infrastructure, today there are already a number of discover, view, download and transformation network services in Slovenia

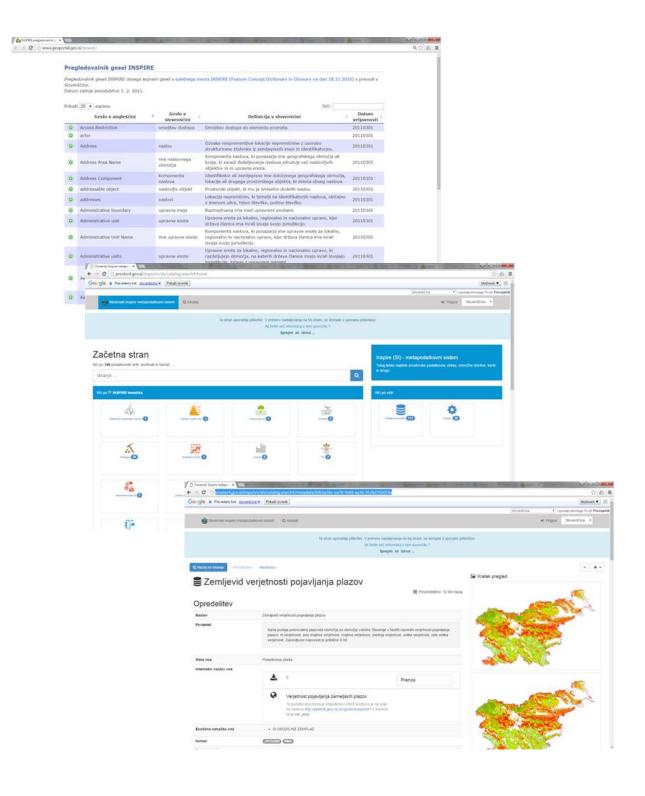
The Surveying and Mapping Authority of the Republic of Slovenia provides re-use of its datasets through its website service to almost 30 public authorities and some private associations with the average of almost 100,000,000 requests per year, while 2014 showed over 130,000,000 requests for spatial data in light of interest for different project associated with spatial data. Monitoring hits at their geoportal, the Slovenian Environment Agency recorded almost 8000 hits per month. Some hits are generated also by service users.

Slovenian INSPIRE geoportal

The before mentioned Slovenian **INSPIRE** geoportal (http://www.geoportal.gov.si/eng/) provides access to different spatial datasets provided by different public administrations and to the European **INSPIRE** geoportal along with services for spatial dataset metadata. Its intended purpose is as a national hub with access to all necessary information regarding all available spatial datasets.

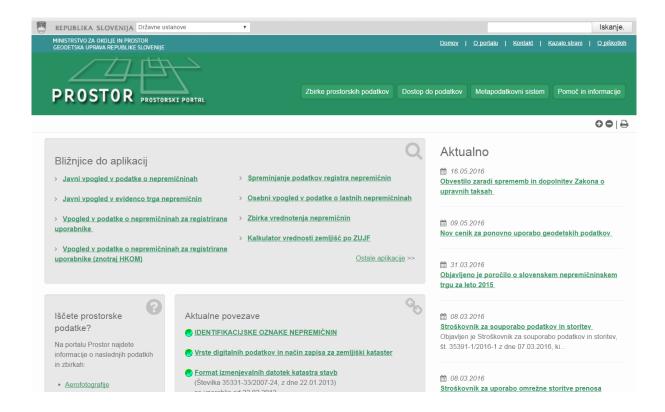


At this moment only view network services are accessible via the Slovenian INSPIRE geoportal in accordance with the provisions of the INSPIRE Directive and the ISI Act. In the year 2015 a project for the establishment of a common infrastructure was carried out named Establishment of INSPIRE compliant network systems. It encompassed the establishment of INSPIRE compliant discovery, view and download network services along with the prepared access to working services through the Slovene and European INSPIRE geoportals. The first phase of the project covered the updating of existing hydrographic and topographic data and the second phase of other INSPIRE spatial data themes under the jurisdiction of the Surveying and Mapping Authority of the Republic of Slovenia into an INSPIRE compliant structure. The services are not yet accessible to the public as they are in the final stages of informational testing and control of adherence to the provision of the INSPIRE Directive and ISI Act..



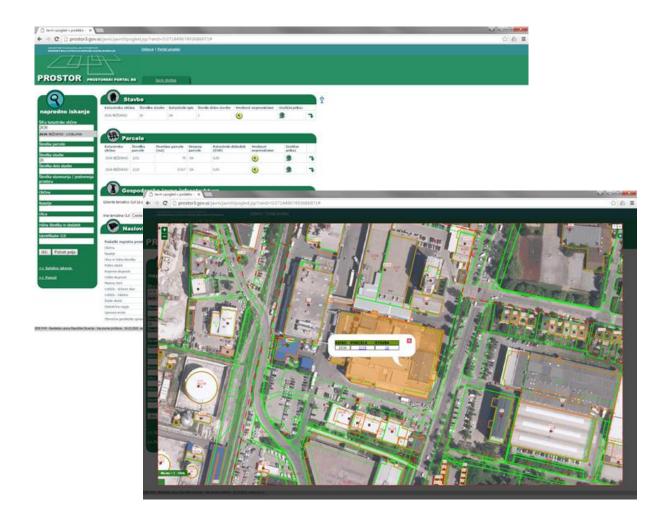
Portal PROSTOR

Several years ago the Surveying and Mapping Authority of the Republic of Slovenia established its web portal PROSTOR (www.e-prostor.gov.si).



PROSTOR is a web portal, intended to improve access to geographical, surveying and other spatial information in Slovenia. Beside access to data it offers also access to web services developed according to open standards and geographical information systems.

The broad public has access to spatial data through the application "Javni vpogled v podatke o nepremičninah" (Public viewer into real estate data) in accordance with public information laws and restrictions.

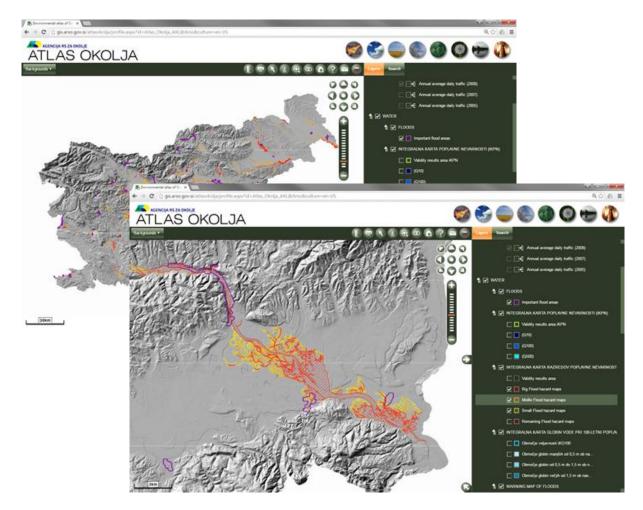


Geoportal of the Slovenian Environment Agency

The Slovenian Environment Agency, as the second largest manager of datasets relating to INSPIRE in the country, has also established its Geoportal (www.gis.arso.gov.si) for datasets within its competence.

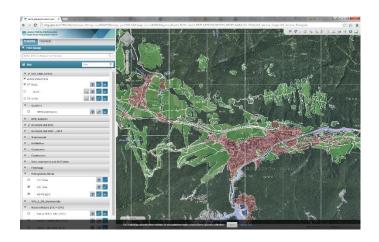
The portal includes a metadata system, a search engine and a browser for datasets, WMS and WFS network services (viewing and downloading) and a link to the web data viewer (Environmental Atlas). The portal allows access to more than 150 datasets.





LPIS

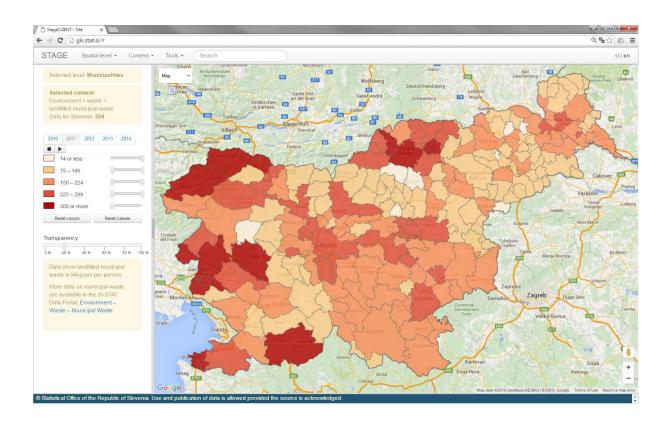
Land Parcel Information System (LPIS – www.rkg.gov.si) is a system to identify land use. It provides an overview of data on land use of agricultural holdings, records of actual use of agricultural and forest land, and certain other information: orthophoto and other information The Surveying and Mapping Authority of the Republic of Slovenia (maps, register of spatial units, cadastral data, digital model of relief), vineyard information, forestry



data, control layers for agricultural policy measures, bee pasture, water regulation, the soil map.

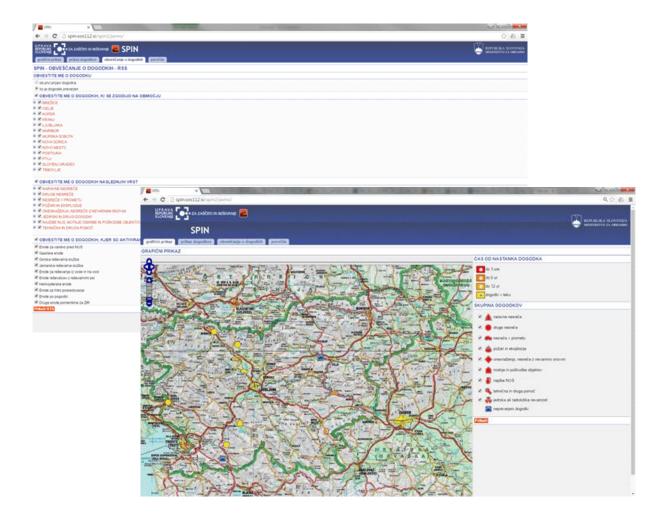
STAGE

The Statistical office of the Republic of Slovenia developed an interactive application for viewing and downloading of geo-referenced statistical data based on different variables named STAGE (http://gis.stat.si/). It provides access to more than 20 statistical datasets and more than 300 variables which can be displayed based on different territorial levels.



SPIN

Since 2005 Administration of the Republic of Slovenia for Civil Protection and Disaster Relief, use their own application SPIN (www.spipn.sos112.si) - Information system for the reporting of accidents and intervention. Application SPIN is the result of collaboration Administration for Civil Protection and Disaster Relief and representatives of the civil protection rescue and enables timely collection and processing of data on accidents and interventions. The application allows instant capture data on all natural and other disasters, the activation of protection and rescue units and informing all those they need to be notified of activation. For a real time alert of user also provides an RSS feed integration for users.



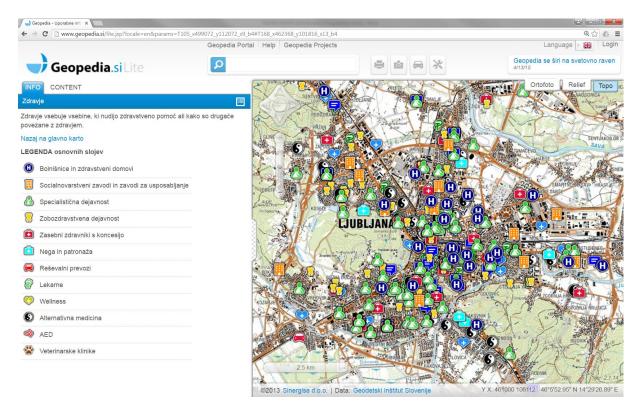
All the previously stated data access portals and viewer applications are managed by public administration however in Slovenia there also exist spatial data portal provided by the private sector as well as public crowdsourcing.

Web portal Geopodia

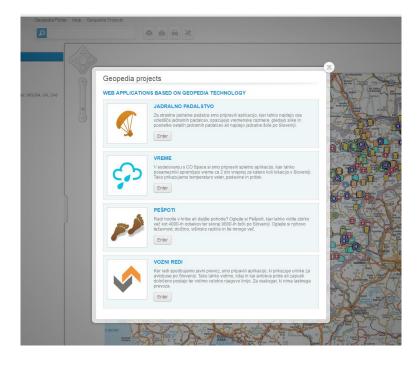
Geopedia (www.geopedia.si) is a prominent example of crowdsourced spatial data application in Slovenia. It is a web based application for searching, viewing, and editing of geographical data, with service available to many clients at the same time. It contains various kinds of geographical and georeferenced information which comes from many different sources and is thoroughly described, tagged, cross-referenced and categorized.

Its user-friendly web interface makes it easy to find items of interest – either through full text search or via hierarchically organized categories – and to display them on interactive maps, which can be saved for later viewing and manipulation.

Users can define and publish new layers with custom styling and textual descriptions, aggregate related layers into custom maps and associate them with other sources of information. Its advanced browser-based geometry editor allows anyone to insert new geographical features or edit existing one.



It its frame the development of special Geopedia projects – web applications for particular areas of use have been established, appertaining to paragliding, hiking and public transport.



iObčina

iObčina Internet GIS (http://info.iobcina.si/iobcina3/index.php/en/what-is-iobina) is an IT system that is used to search , view, ,quantity analyse of different elements, measuring distances and surface areas of all kinds and types of spatial information that can be displayed on maps.

iObčina includes municipal, regional and national spatial information that are available to the broad public or accessible with the authorization of the Republic of Slovenia.

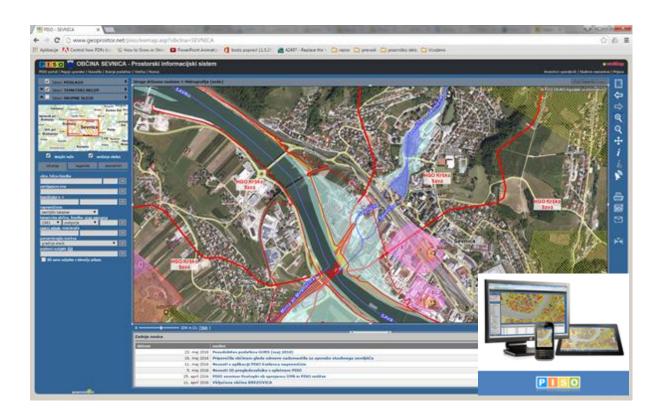
The basic concept and idea of iObčine is that municipalities (local government) contractually agree to rent the GIS system iObčina and in doing so authorize a specialized GIS team of the company Kaliopa to manage and process data as needed by the employees of local government in their everyday work and for the broader use and display for the public.



PISO

The web-viewer PISO (http://www.geoprostor.net/PisoPortal/vstopi.aspx) provides access to a system for viewing spatial data. The application enables viewing and executing spatial queries to discover location and the distribution of spatial phenomena. The basic functions PISO provides are: graphical display of data for a chosen municipality, search and viewing of spatial phenomena based on queries, preparation of excerpts and cartographic data for printing, saving of viewpoints and sending them over email, combining different geographic data into one display...

This functionality enables an easy way to discover for example the location of a specific street address, business subject, geographical name or land cadaster parcel and display it on maps of different scale. The defined viewpoint can be than printed out or send with relevant comments to another person as an email. On the other hand, if we want to receive information for a specific location on the map, we can mark that location and PISO displays relevant information, for example: coordinates, height above sea level, the nearest street address, land cadastral parcel identification number, the planed land use, which business subjects are located at the marked location)



LINKS

The Surveying and Mapping Authority of the

Republic of Slovenia

Slovenian INSPIRE geoportal

Portal Prostor

Geoportal ARSO

STAGE

Application SPIN

Land Parcel Information System LPIS

Web Portal Geopedia

iObčina

PISO

http://www.gu.gov.si

www.geoportal.gov.si

www.e-prostor.gov.si

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www.geopedia.si

http://info.iobcina.si/iobcina3/

http://www.geoprostor.net