Spatial Data Infrastructures in *Latvia:* State of play 2010

SPATIAL APPLICATIONS DIVISION
K.U.LEUVEN RESEARCH & DEVELOPMENT

Celestijnenlaan 200 E, BE-3001 LEUVEN
TEL.: 32 16 32 97 32 FAX: 32 16 32 97 24
URL: http://www.sadl.kuleuven.be

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Creator	Danny Vandenbroucke & Dimitrios Biliouris (SADL)
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Contributor	Danny Vandenbroucke & Dimitrios Biliouris (SADL), Katleen Janssen (ICRI), Joep Crompvoets (OE)
Previous Contributor	Catharina Bamps (SADL), Jos Van Orshoven (SADL), Katleen Janssen (ICRI)
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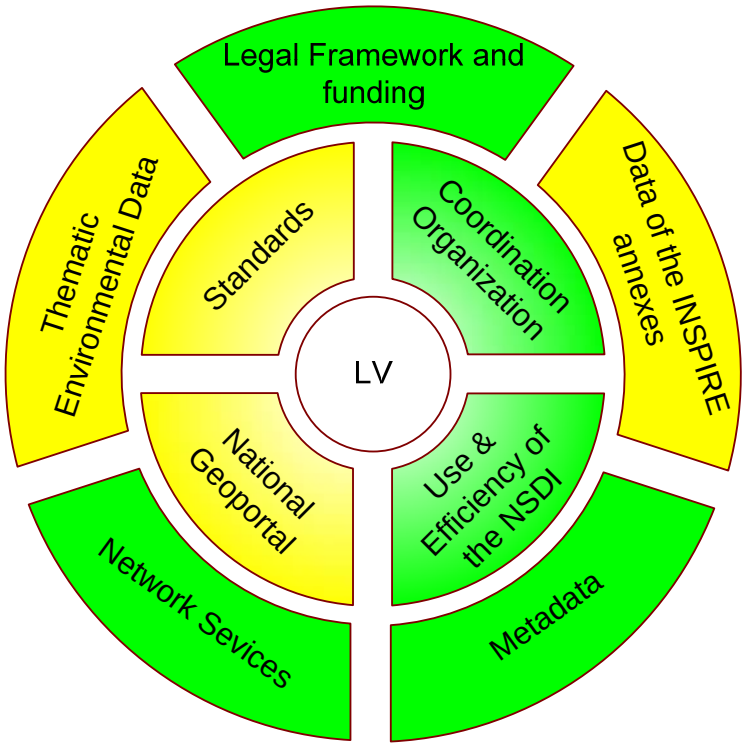
Change matrix 2010 versus 2007

A concise graph is added to indicate changes of the various paragraphs compared to the previous report. Two colours are used: Green and Yellow indicating major and minimum changes respectively compared with the 2007 State of Play. This graph does not reflect the country situation. Merely it represents our findings/changes per section on our preparation of the desktop analysis



Executive summary

The Council of Geodesy and Cartography is a body established by the Cabinet of Ministers with the mandate to co-ordinate GI activities within the public sector. The main executive player is the State Land Survey of Latvia (SLS). It occupies a central position on the GI-scene in Latvia while its activities have also an international dimension. It has developed a conceptual model of a National Geographic Information System. The SLS and the Council of Geodesy and Cartography are presented in this report as the core of a pre-SDI in Latvia.

The eGovernment secretariat has developed a work programme for 2005-2009. Part of this programme is a State GeoPortal. The SLS was reorganized in 3 separate branches: the Latvia GeoInformatic Agency (LGIA), the State Land Survey (VZD) and the State Surveyor Agency.

Latvia in on the process of developing an explicit NSDI policy. Under the Ministry of Defence, LGIA has the responsibility of implementation of the state policy in the field of geodesy, cartography and geospatial information.

Core data production and management is done with international assistance. Cadastral databases linked to address data are already available. There are several web applications in Latvian language available on the SLS-website that allows browsing address registers and some map databases of specific areas.

The MapBSR (Digital map of the Baltic Sea region) is covering the territory of Latvia. A detailed description is given in the country report for Finland.

The creation of a metadata catalogue is one of the planned activities. Metadata on geographical datasets are now isolated – and not coordinated - in different departments and databases.

A thematic environmental information system is being built by the Latvian Environmental Agency. Issues of standardization of metadata and other access services are planned to be undertaken in close cooperation with SLS.

A true legal framework for the NSDI was established by the Law on Geospatial Information, which transposes the INSPIRE directive, and was published on 30 December 2009 in the Official Journal. This law entered into force on 13 January 2010 The law is broader than INSPIRE and is considered as the national law for geodesy, cartography and geospatial information.

Currently there is no national geoportal. It will be established in the frame of the project “Establishment of the National Geospatial Information Portal and Linking the Thematic GI systems with the Geoportal”.

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Abbreviations and acronyms

BSR	Baltic Sea Region
CPS	Catalogue of Public Services
CT	Core Thematic Data
FIR	Further Investigation Required
GI	Geographical Information
GIS	Geographical Information System
GISIG	Geographical information systems international group
GPS	Global Positioning System
HSRS	Human Services Reporting Systems
INSPIRE	INfrastructure for SPatial InfoRmation in Europe
ISO	International Organization for Standardization
LGIA	GeoInformatic Agency
LVGMA	Latvijas Vides, Geoloģijas un Meteoroloģijas Aģentūra
MapBSR	Digital map of the Baltic Sea region
NSDI	National Spatial Data Infrastructures
OGC	Open Geospatial Consortium
PPP	Public-Private Partnerships
PSI	Policy and legislation on access to public sector information
REF	Reference data
SDI	Spatial Data Infrastructures
SJSC	Latvian Railroad
SLS	State Land Service
TRIPS	Trade-Related Aspects of Intellectual Property Rights
UNGEGN	United Nations Group of Experts on Geographical Names
UNSDI	United Nations Spatial Data Infrastructure
VZD	State Land Survey
WFS	Web Feature Service
WIPO	World Intellectual Property Organization
WMS	Web Map Service

1. GENERAL INFORMATION

1.1 Method

This report is summarizing the state of play of SDI in Latvia, and reflects the degree to which the SDI situation in Latvia is similar to the ideas set out in the INSPIRE position papers[1] and the more recent INSPIRE scoping documents.

The first released version of the report (Version 4) was based on the analysis of various documents, project references and web sites readily accessible in English and Latvian (see full list in section 3.2). Although the national mapping bodies have installed bilingual websites (EN and LV), most technical specifications were available in LV version only. The report was completed by integration and consolidation of comments received from a representative of the Latvian Environment Agency and of State Land Service (as representative of the Council of Geodesy and Cartography). The comments were provided in written form (e-mail) and partly refer to conclusions made in the framework of the contract "Conceptual model of the national geographic information system" (contractor SIA "MikroKods", contracted by Ministry of Transport of the Republic of Latvia).

The same person from the Latvian Environment Agency has provided early 2004 limited additional comments which have contributed to this updated report (Version 7). For the 2005 update no comments or input was received from the Latvian Authorities. Some changes on the legal issues were integrated based on other sources. The update of 2006 was based on input from various sources and information obtained from presentations at the workshop *"Preparing the National INSPIRE Information Days"* (organized by JRC for the new and candidate Member States), was integrated. For the 2007 update no feedback was received from Latvian authorities. Through other channels some information was obtained regarding organizational and legal issues which were integrated in this version of the report.

For the 2009 update the survey questionnaire was used provided by the Latvian Geospatial Information Agency, along with various web sources. In this version obsolete information was removed, while a conclusion paragraph regarding the status of each indicator was added for each component.

1.2 Overview of SDI-related actors and initiatives

The Ministry of Defence developed the Latvian Geospatial Information Development Concept. The Concept has been adopted by the Cabinet of Ministers on the 20th of November 2007. The concept is available in the database of policy planning documents (in Latvian language) (http://polsis.mk.gov.lv/view.do?id=2403). Similarly a concept on technological aspects has been prepared (http://polsis.mk.gov.lv/view.do?id=2405). Both are cross linked.

[1] INSPIRE position papers, final versions: RDM, ETC, DPLI, ASF, IST, IAS (latest version).

The State agency 'Latvian Geospatial Information Agency' (LGIA) is established in accordance with the order No.821 of the Cabinet of Ministers of December 21, 2005 and is the successor of the functions, rights, obligations, property and financial resources of the State Land Service in the field of geodesy and cartography (http://www.lgia.gov.lv/).

In compliance with the regulations of the Cabinet of Ministers of the Republic of Latvia No.987 of December 20, 2005 **"Regulations of the State agency "Latvian Geospatial Information Agency"**, LGIA is a state administrative institution under supervision of Minister of Defence.

The agency works in accordance with the activity strategy of the Ministry of Defence for 2007- 2009.

The aim of the agency activity is implementation of the state policy in the field of geodesy, cartography and geospatial information.

The agency has the following functions:

- to obtain, process and maintain the geographic basic data for civil and military purposes;
- to form and develop a joint information system of the geographic basic data;
- to cooperate with state institutions and local authorities, State parties to the North Atlantic Treaty, European Union institutions and the international competent organizations, as well as provide them and the society the geodesic, cartographic and geospatial information.

The main **providers** of geographic information are:

- State Land Service of the Republic of Latvia (SLS) http://www.vzd.gov.lv
- Central Statistical Bureau of Latvia http://www.csb.lv
- Spatial Development Planning Centre
- Latvian Environment Data Centre http://www.vdc.lv
- Latvian Environment Agency http://www.lva.gov.lv
- Geoinformation Bureau of the National Forces
- State Geological Survey of Latvia http://www.vgd.gov.lv/geo/en/_main.htm
- State Forest Service http://www.vmd.gov.lv
- State Hydrographical Service of Latvia
- Private company "Jana Seta" http://www.kartes.lv

- Tourism Development Agency
- Road Traffic Safety Directorate http://www.cssd.lv
- The largest municipalities – Riga City Council

The main users of GI in LV comprise:

- Data producers (see above)
- Land book Department
- Spatial Development Planning Centre
- National Armed Forces, Geoinformation Bureau
- State Police
- State Border guard
- State Fire fighting and Rescue Service http://www.ugdd.lv
- Latvian Road Administration http://www.lad.lv
- SJSC „Latvijas Dzelzceļ□" (Latvian Railway) http://www.ldz.lv
- Port administrations
- State Inspection for the Protection of Cultural Heritage
- Schools and universities
- State Real Estate Agency http://www.vnia.lv
- Municipalities
- Private companies (gas, energy, telecommunications)

[14]

[1]

[7]

The Council of Geodesy and Cartography co-ordinates GI activities. The State Land Service is the most important player, the more since its activities have an international dimension. The State Land Service is described in this report as the core of a pre-SDI in Latvia.

[1]

The NSDI-activities of the State Land Service of Latvia (SLS) are still in a preparatory phase. Only parts of those SDI-like initiatives are documented (homepage (English): http://www.vzd.gov.lv/index.php?s=6

[5])

An international initiative, the MapBSR (Digital map of the Baltic Sea region) is covering the territory of Latvia. A detailed description is given in the country report for Finland. The MapBSR dataset can be obtained at the Latvian National Service of Geodesy and Cartography, but information about project, purchasing and prices can be obtained at the MapBSR home page http://www.mapbsr.nls.fi.

[5]

2. Details of the State Land Service in Latvia

2.1 General Information

The SLS is subordinated to the Cabinet of Ministers and works under supervision of the Ministry of Justice.

The Law on State Land Service was adopted in 1992. In accordance with the provisions of the said law and the SLS regulations, the State Land Service has to fulfil the following functions:

- Implementation of the Land Reform and land privatisation process by delegating its representatives to Land Committees of all levels, by performing surveying work, formation of land properties before registration, and maintenance of the National Real Property Cadastre in the course of the Land Reform;
- Processing of real property data for property registration purposes;
- Development, introducing and maintenance of a national cadastre of land and other real property units and registers of real properties (land, buildings and structures);
- Drafting of regulations for land use and surveying and methodological guidance and supervision of the surveying work;
- Performance of surveying work and cadastral surveying of land on behalf of the state;
- Establishment and supervision of the national geodetic network;
- Drafting of regulations for geodesy, photogrammetry, topography and cartography; methodological guidance and supervision of the work;
- Topographic surveying and mapping of the territory of Latvia;
- Development of sea and air navigation charts;
- Surveying of the national borders;
- Drafting of regulations for technical inspection and valuation of real properties; methodological guidance and supervision of the work;
- Collection of technical data of real properties and real property valuation;
- Licensing of sworn surveyors and sworn assessors;

- Co-ordination and supervision of the development of a land cadastre and a geographical information system; provision, in the procedure established by the Government, of official cadastral and GIS data for the needs of central and local governments, legal entities and individuals;
- Co-ordination of subjects of research, research work and procurement of research, participation in international programs in the field;
- Supervision of professional education of SLS staff, organisation of upgrading of their qualifications and attestation;
- Establishment and maintenance of the technical resources of the SLS;
- Responsibility for the maintenance and use of geodetic, gravimetric, photogrammetric and cartographic materials; storage of legal and technical real property ownership documents of individuals and legal entities; maintenance of SLS archives;
- Supervision and control over land use;
- Drafting of legislative and regulatory acts and government decrees related to the SLS sphere of activity; collection of information about application of legislative acts and monitoring of compliance with regulatory acts by businesses in the sphere of competence of the State Land Service;

From this wide scope of tasks set by legislative and regulatory acts, the State Land Service sets the following tasks as priorities as from 2001:

- Further development of the national geodetic networks;
- Further development of the national cartography system; introduction of advanced cartographic technologies; establishment of SLS regional cartography structures;
- Compiling of topographic maps of 1:50,000 scale; geodetic and cartographic work on the national borders;
- Providing of technical support and measures required for the completion of the Land Reform;
- Further development of the national real property cadastre system; development and introduction of new software provision; development of an address register and its integration into the general cadastral system;
- Further development the cadastral valuation system of real property to ensure the application of the law “On Real Property Tax” to buildings and structures; development of a national GIS concept; preparatory work for the development of the system.

Through the SLS, Latvia is involved in a number of international organisations and projects, such as the preparation of the digital map of the Baltic Sea region in cooperation with Finland and the other Baltic States, preparation of EuroGlobalMap and EuroRegionalMap in cooperation with EuroGeographics. The SLS cooperates or is part of different international organisations, e.g. the Working Party on Land Administration of the Human Committee of UN European Economic Commission, the UN Group of Experts on Geographical Names, Eurogeographics and GISIG (Geographical Information Systems International Group). SLS produces annual reports on its status and objectives describing the performance, services and future plans.

The main tasks of the SLS are as follows:

1. to maintain the State information system of Real estate cadastre and to process the data registration about real estate objects;
2. to perform valuation of real estates;
3. to perform valuation of real estates for land reform, privatisation, expropriation and rent purposes;
4. to perform cadastral surveying of buildings;
5. to realise a proceeding of land disputes;
6. to maintain the register of rural land privatisation and ensure of privatisation processes ;
7. to maintain the Land exchange register, ensuring and organizing of land exchange processes;
8. to maintain the Real estate market data base;
9. to maintain textual and graphical information in the State Address register;
10. to develop the information system of protective zone and process information registration about encumbrances in the Real estate state cadastre information system;
11. to accumulate information from land surveying and dissemination of information for land surveying;
12. to arrange and save materials in the State Land Service archive;
13. to prepare and distribute information from the information systems maintained by SLS;
14. to expertise materials of territorial planning.
15. to realize other duties defined by the laws and regulations.

(http://www.vzd.gov.lv/home/about-us/)

2.2 Component 1: Coordination and organizational issues

For years, GI-activities were coordinated by the Council for Geodesy and Cartography which is a body established by the Cabinet of Ministers.

Recently, the eGovernment secretariat has developed a work programme for 2005-2009. Part of this programme is a State GeoPortal.

The SLS was reorganized in 3 separate branches: the Latvia GeoInformatic Agency (LGIA), the State Land Survey (VZD) and the State Surveyor Agency. The eGovernment secretariat is the NSDI main coordinator with the LGIA and Latvijas Vides, Geoloģijas un Meteoroloģijas Aģentūra (LVGMA) playing an important technical role.

The activities related to INSPIRE are carried out by several organizations: besides the eGovernment secretariat, the Land Administration Department, the MoA, the city of Riga, the University of Latvia, the Environmental Institute, the State Forestry Agency and others.

The Ministry of Defence is responsible for coordination of the overall INSPIRE implementation in Latvia. Other Ministries are responsible for particular tasks such as– developing of the geospatial data sets and corresponding metadata These Ministries are: the Ministry of Defence, the Ministry of Environment, the Ministry of Regional Development and Local Government Affairs, the Ministry of Justice, the Ministry of Transportation, the Ministry of Agriculture, the Ministry of Economic, the Ministry of Health, the Ministry of Interior.

Furthermore, the Ministry of Defence developed the Latvian Geospatial Information Development Concept and prepared a document describing the organisational issues, situation and future needs of INSPIRE implementation. This has been adopted by the Cabinet of Ministers on the 20th of November 2007. The concept is available in the database of policy planning documents (in Latvian language) (http://polsis.mk.gov.lv/view.do?id=2403).

Implementation on technology issues are covered in The Concept of Development of National Geospatial Information Portal (Geoportal). The Concept was also adopted by the Cabinet of Ministers on the 27th of November 2007. The concept is available in the database of policy planning documents (in Latvian language) (http://polsis.mk.gov.lv/view.do?id=2405).

Both concepts have cross-links to each other therefore they must be implemented together. The Ministry of Regional Development and Local Government Affairs took over the obligations of the Secretariat of Special Assignments Minister for Electronic Government Affairs after the reorganization of the secretariat in June 2009. Meanwhile, the Ministry of Regional Development and Local Government Affairs is nominated as the owner (manager) of the national geo-portal (Article 28(3) of the Law on Geospatial Information).

2.2.1 Conclusions of Component 1

The Latvian SDI approach is truly national. SDI building blocks have reached a certain level of operationality. The activities related to INSPIRE are carried out by several organizations: besides the eGovernment secretariat, the Land Administration Department, the MoA, the city of Riga, the University of Latvia, the Environmental Institute, the State Forestry Agency and others. The SLS was reorganized in 3 separate branches: the Latvia GeoInformatic Agency (LGIA), the State Land Survey (VZD) and the State Surveyor Agency. The eGovernment secretariat is the NSDI main coordinator with the LGIA and Latvijas Vides, Geoloģijas un Meteoroloģijas Aģentūra (LVGMA) playing an important technical role.

Based on these conclusions we score the indicators as follows:

- The approach and territorial coverage of the SDI is truly national
- One or more components of the SDI have reached a significant level of operationality (Partially)
- The officially recognised or de facto coordinating body of the SDI is a NDP, i.e. a NMA or a comparable organisation (Not so clear)
- The officially recognised or de facto coordinating body for the SDI is an organisation controlled by data users (No)
- An organisation of the type 'national GI-association' is involved in the coordination of the SDI (No)
- Producers and users of spatial data are participating in the SDI (No)
- Only public sector actors are participating in the SDI

2.3 Component 2: Legal framework and funding

2.3.1 Legal framework

Before the INSPIRE directive, Latvia had already been working on the establishment of a legal framework for geographic information for a couple of years. However, before the adoption of the law implementing the INSPIRE directive, an earlier draft Law on Geospatial Information was attempted, but this was never adopted because no final agreement could be reached between the organizations involved.

The Law on the State Land Service was adopted in 1992, and adapted by the Cabinet of Ministers Order No.674 "On Reorganisation of the State Land Service" of October 18, 2005. As a result, the geodesy and cartography function was taken over by the Latvia

GeoInformatic Agency (LGIA), and the surveying work was delegated to a new public limited company – Latvian State Surveyor. Currently, the operation of the SLS is regulated by the regulations of the Cabinet of Ministers No. 439 "Regulations on the State Land Service" of May 30, 2006. (see State Land Survey Annual Report 2007, http://www.vzd.gov.lv/faili/ENG/SLS%20Annual%20report%20EN%202007.pdf). SLS has many agreements on data exchange with several public institutions, such as the Ministry of the Interior, the State Forest Service, the Construction, Energy, and Housing State Agency, the Register of Enterprises, the Central Statistical Bureau, the Centre of Emergency and Disaster Medicine, the Electronic Communication Office, the State Education Development Agency and the Environment, Geology and Meteorology Agency, the Population Register of the Office of Citizenship and Migration Affairs, the state agency "Latvian Geospatial Information Agency" and the State Inspection for Heritage Protection. Agreements also exist with more than 400 local governments (see State Land Survey Annual Report 2007, http://www.vzd.gov.lv/index.php?s=11&sub=175; State Land Survey Annual Report 2008, http://www.vzd.gov.lv/faili/gada_parskati/SLS_Annual_report_2008.pdf).

On December 1, 2005, the Parliament reviewed in the final reading and adopted the Law on the State Cadastre of Real Properties as proposed by the experts of the SLS, thus completing the process of more than ten years of drafting a law that would ensure the coordinated administrative, organisational and technical functioning of the State Cadastre of Real Properties and would enable obtaining, registration, maintenance and use of updated textual and spatial data. (see State Land Survey Annual Report 2005, http://www.vzd.gov.lv/index.php?s=11&sub=175).

A true legal framework for the NSDI was established by the Law on Geospatial Information, which transposes the INSPIRE directive, was published on 30 December 2009 in the Official Journal and entered into force on 13 January 2010 (. (The Law on Geospatial Information entered in force on the 13th of January, 2010). The law is broader than INSPIRE and is considered as the national law for geodesy, cartography and geospatial information.

2.3.2 Public-private partnerships (PPPs)

There is a strong cooperation of SLS with public and private organizations. [1] For instance, the national geoportal was intended to be created in cooperation with the private sector. It should be finished by 2012 (ePSIplus national meeting report, http://www.epsiplus.net/content/download/11000/135164/file/Latvia%20National%20Meeting%20Report%20(Final).pdf).

SLS has signed an agreement with "Jana Seta", the largest private producer of maps in the Baltic States.

2.3.3 Policy and legislation on access to and re-use of public sector information (PSI)

The law on Freedom of Information was adopted by the Saiema (Parliament) in October 1998 and signed by the State President in November 1998. It guarantees public access to all information in "any technically feasible form" not specifically restricted by law. Information can only be withheld if specifically provided by a statute; e.g. information for internal use of an institution; commercial secrets; information about the private life of an individual, certification, examination, project, tender and similar evaluation procedures. Individuals may use it to obtain their own records.

Latvia has transposed both Directive 2003/4 on the access to environmental information and Directive 2003/98 on the re-use of PSI. The transposition of the PSI directive was done by an amendment of the Freedom of Information Act, which entered into force in October 2006. This act was complemented by Cabinet Regulation No. 940 "Regulation on the Charged Services of Information Provision", and Cabinet Regulation No. 338 "The Procedure of Granting an Exclusive Right to Reuse of Information and Publication of Information on Granting of Such Right" (ePSIplus national meeting report, http://www.epsiplus.net/content/download/11000/135164/file/Latvia%20National%20Meeting%20Report%20(Final).pdf).

2.3.4 Legal protection of GI by intellectual property rights

The Latvian Government has joined the Bern Convention and signed the TRIPS Agreement in 1998. Major intellectual property protection legislation is in effect since 1993. A new copyright act dates from 2000 and is in force since 2002. The current law corresponds with WIPO Copyright, TRIPS, and the European directive on the legal protection of databases. The Directive of 2001 regarding copyright in the information society was implemented into the Latvian Copyright Act by the Statutory Instrument No. 16 of 2004 [European Communities (Copyright and Related Rights)] Regulations 2004. The law is in force since 22 April 2004.

The term of copyright protection is seventy years after the author's death, while database protection is granted for fifteen years after the database is formed. Geographical maps, plans, sketches, and moulded works which relate to geography, topography and other sciences, are explicitly mentioned as protected works.

During the transposition of the INSPIRE directive, the intellectual property rights on geographic data and the related exceptions were considered to be most problematic. With the help of the Ministry of Culture, a solution was found, and the intellectual property rights of geographic data owners will be governed according to the Copyright law.

2.3.5 Restricted access to GI further to the legal protection of privacy

Article 96 of the Latvian Constitution explicitly recognizes the right to privacy by stating that everyone has the inviolable right to private life, home and correspondence. Article 17

of the Constitutional Law on Rights and Obligations of a Citizen and a Person secures the privacy of communications subject only to a judge's order.

A law on data protection was adopted by the Parliament on 23 March 2000. It is based on the EU directive on the processing of personal data and the Council of Europe Convention nr. 108. Latvia has implemented Directive 2002/58 on privacy and electronic communications with a framework of regulations. For an overview of the Acts implementing this Directive, more information is to be found on the following link: http://europa.eu.int/information_society/policy/ecomm/doc/implementation_enforcement/country_by_country/latvia_2002_58.pdf

Latvia is a member of the Council of Europe and signed the Convention for the Protection of Individuals with Regard to Automatic Processing of Personal Data on 11 February 2000. It has signed and ratified the European Convention for the Protection of Human Rights and Fundamental Freedoms.

2.3.6 Licensing framework

The general rules for data sharing in the Law on Geospatial information have not been developed into licensing policies yet. During 2010, rules of the Cabinet of Ministers will be developed that will serve as a background for the development of a common approach to data sharing in Latvia.

Licensing of datasets provided by SLS is based on individual contracts. Data, including cadastral data and the national address registry, is available to any interested person, taking into account privacy requirements. They are distributed on paper and in digital form. Some data are available freely on the website of the SLS, while for larger data sets a subscription agreement has to be concluded with SLS. In 2008, over 800 users had a subscription agreement State Land Survey Annual Report 2008, http://www.vzd.gov.lv/faili/gada_parskati/SLS_Annual_report_2008.pdf).

Other examples of access and licensing policies can be found in the Agriculture Data Centre, the Land Parcel Identification Register, the State Register of Forests, the State Fire and Rescue Service, and LGIA.

2.3.7 Funding model for SDI and pricing policy

Development of SDI initiatives (chapter 1.2) is financed from three different sources:

- State grants (mostly for civil mapping);
- State investments programs (base information and military mapping);
  - Contributions from the SLS revenues ;
  - NATO-grants for Ministry of Defence.

For the implementation of INSPIRE, no common national funding is foreseen. All costs have to be carried by the institution that implements particular measures. This is usually done either by asking for a part of the State budget, or by looking for funding through a European project.

With regard to pricing policy, under the Freedom of Information Law, general accessible information which does not require any additional processing has to be provided free of charge. Other information can be charged for, but the charges cannot exceed the expenses of the searching for, additional processing and copying of the documents or information. Charges may be waived or reduced by the institution.

SLS aims at covering costs for the preparation (including copying) and distribution of information but does not pursue any profit from the data distribution. A large amount of data can be viewed freely on the SLS website. For other data, the prices are regulated by the Regulations of Cabinet No. 147 "Regulations for price list of paid services provided by the SLS" of February 14, 2006, and the Regulations No. 561 "Regulations on state fee for cadastral certificate" of July 4, 2006. The Procedure of payments for paid services of the SLS is regulated by the Regulations of CM No. 727 "Procedure of payments for paid services provided by the State Land Service" of August 29, 2006 (State Land Survey Annual Report 2008, http://www.vzd.gov.lv/faili/gada_parskati/SLS_Annual_report_2008.pdf).

2.3.8 Conclusions of Component 2

A true legal framework for the NSDI was established by the Law on Geospatial Information, which transposes the INSPIRE directive, and was published on 30 December 2009. The law is broader than INSPIRE and is considered as the national law for geodesy, cartography and geospatial information. Moreover a strategy plan exists. There is a strong cooperation of SLS with public and private organizations. For instance, the national geoportal was intended to be created in cooperation with the private sector. The transposition of the PSI directive was done by an amendment of the Freedom of Information Act, which entered into force in October 2006. The general rules for data sharing in the Law on Geospatial information have not been developed into licensing policies yet. Licensing of datasets provided by SLS is based on individual contracts. For the implementation of INSPIRE, no common national funding is foreseen.

Based on these conclusions we score the indicators as follows:

- There is a legal instrument or framework determining the SDI-strategy or –development
- There are true PPP's or other co-financing mechanisms between public and private sector bodies with respect to the development and operation of the SDI-related projects (Not so clear)
- There is a freedom of information (FOI) act which contains specific FOI legislation for the GI-sector (In Preparation)

- GI can specifically be protected by copyright
- Privacy laws are actively being taken into account by the holders of GI (No Information found)
- There is a framework or policy for sharing GI between public institutions (No)
- There are simplified and standardised licences for personal use (No)
- The long-term financial security of the SDI-initiative is secured (No)
- There is a pricing framework for trading, using and/or commercialising GI (No)

2.4 Component 3: Data for themes of the INSPIRE annexes

2.4.1 Scale and resolution: European, National, Regional, Local, Other

Datasets from SLS are provided at local (1:2.000 for urban zones, 1:10.000 for rural areas), regional (1:50.000) and national (1:250.000) scales. Considering the BSR map also the European scale level is supported. The latter pertains to the territory of Latvia as part of Baltic Sea Region at scale 1:1.000.000.

[1]

Topographic maps 1:50.000 are currently not covering the full national territory. No further information could be found on the SLS-website.

[1]

A Forest register and a Land reclamation register, Geodatasets on field blocks, etc are produced by the Ministry of Agriculture, while datasets on contaminated areas etc., are produced by local authorities.

2.4.2 Data by resolution or scale range for the INSPIRE themes

Regarding the three INSPIRE annexes addressing the 34 spatial data themes Latvia is providing discovery and view services for some of them. The datasets are provided in a variety of scales and resolution according to their usage. A complete list will be presented in the updated report including the information provided by the country in 2010.

2.4.3 Geodetic reference systems and projections

The Latvian Geodetic Coordinate System 1992 is based on the geodetic datum ETRS'89: http://crs.ifag.de/crs_national.php .

The projection system is Transverse Mercator (conformal transverse cylindrical projection), central meridian 24°E, scale factor 0.9998 at 24°) –for details see: http://crs.ifag.de/description_crs.php .

For satellite data the ellipsoid GRS-80 is used.

For mapping on national and regional level the Latvian Geodetic Coordinate System 1992 is used (sameas for EE, LT). Major scales are 1:250.000; 1:50.000; 1:25.000 and 1:10.000.

Algorithms for conversion of coordinates to ETRS'89 are available for coordinate systems which are available in Latvia and for calculation of geoid heights in the Latvian area.

Height assessment is done according to the Baltic Normal Heights System of 1977.

2.4.4 Quality of the data

The spatial referencing is done based on

- Planimetric control database (GPS points, triangulation points, poligonometry points);
- Heights control database (benchmarks);
- Gravimetric control database (gravimetric points);
- Mapping areas database;
- Maps database (catalogue of printed maps of different scales and datum)
- Photogrammetry areas database;
- Photo images database (catalogue of aerial and satellite images) ;
- Archive database (catalogue of documents, kept in the Archive of the State Land Service of Latvia).

2.4.5 Interoperability

The GIS software predominantly used are from ESRI, Intergraph/Bentley, AutoDesk, Smallworld and MapInfo.

[14]

NATO standards are used for 1:250.000, 1:50.000, 1:25.000 maps and partly for the 1:10.000 maps.

[1]

2.4.6 Language and culture

Metadata, as far as available, is provided in Latvian. Accompanying documents are available in Latvian of which some in English.

2.4.7 Data Content

The text explanation for attributes and for the data dictionary is available.

2.4.8 Geographical names

Geographical names are managed in Latvian with original information on the names of the places. As secondary names Livonian names and dialectal (Latgalian) names may be accepted when standardizing geographical names. State, regional and local toponymic dictionaries are planned. Four unofficial regional dictionaries (containing mainly names of natural features) have been published since 1991. An official gazetteer of Latvia (1:1.000.000) is under construction. Latvia is member of UNGEGN (United Nations Group of Experts on Geographical Names).

In 2009 the gazetteer (1:1.000.000) has been published. The publication consists of a gazetteer and four appendixes, including two maps, scale 1:1 000 000. The gazetteer includes the names of the most significant geographic objects of Latvia – all the cities and towns, the largest villages, the main features of the Baltic Sea and coast, the largest lakes, the longest rivers, uplands and their highest hills. The gazetteer is compiled using the Place Names Database of Latvia, the Laboratory of Toponymy, Department of Cartography, Latvian Geospatial Information Agency, as well as maps compiled by the Department of Cartography.

The gazetteer shows official names for populated places: cities, towns and villages in accordance with the State Register of Addresses (www.vzd.gov.lv/aris/). In some cases the second, traditional name is given in brackets.

Moreover, the gazetteer shows official names for administrative and territorial division units.

2.4.9 Character sets

There are used following national character sets:

For Windows based workstations and graphical files officially cp1257 also widely used unicode cp 775;

For Oracle databases: BLT8CP921;

For ArcInfo databases: ISO8859-13

2.4.10 Conclusions of Component 3

Already from the previous LV's SoP report Geodatasets partially existed which provide a basis for contributing to the coverage of pan-Europe for the INSPIRE-selected data themes and components while the geodetic reference system and projection systems are standardised, documented and interconvertable. The INSPIRE 2010 MR confirms the statement. 113 data sets have been reported 34, 25 and 54 for Annex I, II and III respectively). However a number of important themes are missing e.g. Geographical grid systems, Administrative units, Geology, etc. Algorithms for conversion of coordinates to

ETRS'89 are available for coordinate systems which are available in Latvia and for calculation of geoid heights in the Latvian area. Metadata, as far as available, is provided in Latvian. Accompanying documents are available in Latvian of which some in English.

Based on these conclusions we score the indicators as follows:

- Geodatasets exist which provide a basis for contributing to the coverage of pan-Europe for the INSPIRE-selected data themes and components (Partially)
- The geodetic reference system and projection systems are standardised, documented and interconvertable
- There is a documented data quality control procedure applied at the level of the SDI (Partially)
- Concern for interoperability goes beyond conversion between different data formats (No Information found)
- The national language is the operational language of the SDI
- English is used as secondary language (Partially)

2.5 Component 4: Metadata

2.5.1 Availability of metadata

Metadata are produced, but not systematically nor according to a systematic procedure or standard.

[1]

Recent metadata development is undertaken with international projects like NaturNet-Redime and the UNSDI initiative which is being prepared also in Latvia. The GeoPortal is the central place through which metadata can be published and used.

2.5.2 Metadata catalogues availability + standard

The creation of a metadata catalogue is one of the planned activities. Metadata of geographical datasets, which are now available are not coordinated and isolated in different departments and databases.

A metadata standard was adopted in 2003. No further information could be found.

[13]

A geological reports catalogue GEOFONDS exists. No standards known.

2.5.3 Dublin core metadata standards for GI-discovery

NIA

2.5.4 Metadata implementation

NIA

2.5.5 Conclusions of Component 4

Metadata are produced for a significant fraction of geodatasets of the themes of the INSPIRE annexes. The 2010 MR reveals that for the reported datasets of INSPIRE (65% of the data sets have metadata for Annex I, 56% for Annex II and 44% for Annex III). However these are metadata on the reported geodatasets. The creation of a metadata catalogue is one of the planned activities. Metadata of geographical datasets, which are now available are not coordinated and isolated in different departments and databases.

Based on these conclusions we score the indicators as follows:

- Metadata are produced for a significant fraction of geodatasets of the themes of the INSPIRE annexes (Partially)
- One or more standardised metadata catalogues are available covering more than one data producing agency (No)
- There is a coordinating authority for metadata implementation at the level of the SDI (No Information found)

2.6 Component 5: Network Services

2.6.1 On-line access service for metadata: discovery services

Currently there is no national geoportal. It will be established in the frame of the project "Establishment of the National Geospatial Information Portal and Linking the Thematic GI systems with the Geoportal". At the moment electronic and non-electronic services are described in the Catalogue of Public Services (CPS). There is the section "Geodesy & Cartography" in the CPS for geospatial data and services - https://www.latvija.lv/LV/PublicServices/ServiceList.aspx?pubcatid=120 (information available in Latvian only).

There are specific web sites under the responsibility of different institutions with access to geospatial information, as well.

For instance:

LGIA has established special web site for services and data provided – http://map.lgia.gov.lv (in January 2010 LGIA opened an English version of the web site - http://map.lgia.gov.lv/?lang=2). It is planned in the 1st quarter of 2010 to publish the map viewer of LGIA data, as well.

The most recent topographic maps (scale 1:2000 to 1:500000), the orthophoto images, the digital elevation model, the place names and the state geodetic network points will be available in the map viewer for the whole Latvia territory (http://map.lgia.gov.lv/index.php?lang=2&cPath=4_15_29).

LGIA services include Topographic, Orthophoto, Satellite, Thematic maps as well as a map viewer.

The SLS has established the data distribution portal www.kadastrs.lv for data sets under responsibility of the SLS in 2009. There are two versions of the portal: public version and authorized version. The SLS of the Republic of Latvia data distribution portal is developed to ensure that anyone can have an on-line access to textual and spatial data for all territory of Latvia as found in National Real Estate Cadastre information system and in National Address Register

Geoportal HSRS (http://giz.zpr.gov.lv/simplecms/?menuID=4&action=article&presenter=Article) is a package of applications which allows working with maps in web environment based on OGC web services. It allows searching metadata in accessible catalogues by OGC CSW. There is the possibility to show detailed information in founded records or in accessible services while connect them into a map web client. Furthermore, it allows viewing maps based on OGC web services and other formats (Google maps, KML, MapServer, and GML). The basic functions are:

- Viewing web services (OGC WMS, WFS) selected by a user from a catalogue or directly by address.
- Saving user defined map('project') on local hard drive and rereading this saved composition (OGC WMC)
- Distance and area measurements.
- Searching in map.
- Inserting user defined objects into map.
- Large format print in PDF.

- Showing legends, metadata and querying in map.

Functions for maintaining geographic DBs, metadata storage etc. are available for logged users

Moreover, users can buy data from the cadastre information system such as:

- prognosticated cadastre value of land parcels and buildings;
- data that characterize land parcel's, building's, premise group's (for example, area, area division per kind type, amount of building floors, building capacity, premises count in premise group, area division, improvements and so on);
- real estate belonging - if owner, juridical possessor or user is a legal person (name, identification number, address);
- supposed parts belonging to owner if real estate is a common property;
- encumbrances and restrictions;
- registered real estate documents;
- physically related object (land parcel, buildings, located on land parcel, premise groups located in building.

2.6.2 On-line access service for data: download services

Data stored in information systems and registers maintained by the SLS are available to any interested person taking into account requirements of personal data protection. Data are distributed in both paper and digital form according with the desire of the client.

Data of the Cadastre Information System

Data of the Cadastre Information System are available for anyone using the program *KRPārlūks* of the SLS. In the public section of it (http://krp.vzd.gov.lv/pub), and since November 2008 on data publication portal www.kadastrs.lv the following data are available free of charge: cadastral number; cadastral designation of land parcels, buildings, groups of premises; address of land parcel, building, groups of premises; name of property; cadastral value of land parcel and building; number of land book section (if ownership is fixed in the Land Register); depiction of land parcel and building location by symbols in satellite map M 1:50 000.

Likewise, by conclusion of subscription agreement, customers of the SLS can use browser *Apvidus*, which enables online overview, as well as link to the spatial data or the Cadastre Information System (cadastral map) on the whole state territory (SLS annual report 2009).

2.6.3 Inter-linkages of on-line access services for metadata and data

NIA

2.6.4 OpenSource software and access services

Not applicable

2.6.5 Availability of viewing service(s)

see 2.5.1 and 2.52

2.6.6 Availability of catalogue services to regulate access

Not available.

2.6.7 Availability of catalogue services that perform payment operations

Not available.

2.6.8 Availability of catalogue services to extract and send data to a user application

Not available.

2.6.9 SDI user applications

There are several web applications in Latvian language available on the SLS website (http://www.vzd.gov.lv/pakalpojumi/default.asp?id=28). These applications allow the public to browse address registers and the iKarte service (www.ikarte.lv). Applications for consultation of aerial photographs from SLS and of the Real Estate Cadastre is subject to restricted access.

The State Fire and Rescue Service (under Ministry of Interior) has developed and maintains a database of objects of increased danger. Database contains information on location, hazard criteria, and quantities of hazardous chemicals. The database is available for public, state institutions and local governments. Furthermore, in cooperation with local governments it has developed the Local Government Civil Protection Plan. This plan is accompanied with maps of district or cities at scale 1:10000 or 1:25000, where is indicated:

1. Objects of increased danger and areas which may affect the potential consequences of accidents;
2. Areas prone to flooding;
3. Trunk gas, petroleum and petroleum products pipelines;
4. Areas with high fire risk (such as forests, swamps).

As part of the GRISI project, a sub-project (REGIS) was developed, and the aim was to promote development of local government territories so that their attractiveness could become evident to all interested parties. In GRISI project partners decided to use INSPIRE directive as a guideline and to use that directive in the various projects. As a result of this, each partner established its own GRISI spatial data infrastructure to allow for the establishment of new spatial data, to use the GRISI metadata profile, which was developed on the basis of ISO 19115 and Dublin Core standards, and to ensure compatibility with OGC (Open Geospatial Consortium) services on the Internet so as to review and make use of data and metadata.

In 2007, a number of regional initiatives were carried out as sub-projects in the GRISI project. New spatial databases and new Internet-based services were established (www.grisi.lv).

The Daugavpils University established a geographic database about local tourism objects. It also designed a technology which ensures the compatibility of the data with the GRISI spatial data infrastructure and the geo-portals of project partners.

The GEOPOP (location services for residents) technical sub-project integrates the principles of co-operation and the reuse of established data. The Bauska District Council was the GEOPOP project partner. It established a territorial planning database for the district, one that is compatible with the spatial data infrastructures of partners, as well as with the Internet map service that is widely available on the Internet (http://www.ebaltics.com/00805600).

2.6.10 Availability of geo-processing services

Not available on-line. Geo-processing services can be provided on request by SLS.

2.6.11 Conclusions of Component 5

LGIA has established special web site for services and data provided. There is a discovery service reported in the MR but this is related to EuroGeoNames. Although the MR states that 6 download services exist, none of them enabled copies of datasets to be downloaded.

Based on these conclusions we score the indicators as follows:

- There are one or more discovery services making it possible to search for data and services through metadata (No)
- There are one or more view services available for to visualise data from the themes of the INSPIRE annexes (Not so clear)
- There are one ore more on-line download services enabling (parts of) copies of datasets (No)

- There are one or more transformation services enabling spatial datasets to be transformed to achieve interoperability (No information found)

- There are middleware services allowing data services to be invoked (No information found)

2.7 Component 6: Thematic environmental data

The Latvian Environment Agency aims to establish an environmental information system. Following projects are the major building blocks:

- Preparation for Latvia's Compliance with the EMERALD and Nature 2000 Networks of Protected Areas;
- Development of Biodiversity Monitoring System and Establishment of CHM Structures in Latvia;
- Development of lake monitoring program according to EUROWATERNET;
- Designation of water quality monitoring reference stations and reference conditions of rivers and lakes of Latvia;
- Implementation of CORINE Land Cover inventory in Latvia.

2.7.1 Application of the legal framework and funding principles (for reference & core thematic data) to thematic environmental data

NIA

2.7.2 Application of reference data & core thematic data characteristics to thematic environmental data

The environmental information system will be developed in cooperation with SLS. The data quality/scale/resolution will be based on the SLS reference data. The Latvian Environment Agency will participate in the SDI as provider of environmental data and user of reference data & core thematic data.

2.7.3 Application of metadata issues identified for reference data and core thematic data to thematic environmental data

Metadata production and management will be developed in cooperation with SLS. Metadata of environmental data will be free of charge.

2.7.4 Application of access services issues identified for reference data and core thematic data to thematic environmental data

Access services to environmental datasets will be developed in cooperation with SLS. The main principles will be based on the Aarhus Convention – free access to environmental information.

2.7.5 Application of standards issues identified for reference data and core thematic data to thematic environmental data

The environmental information system will adhere to the same standards as the SLS-initiatives.

2.7.6 Application of update procedures issues identified for reference data and core thematic data to thematic environmental data

NIA

2.7.7 Data available in the Latvian Environment Agency

Geographical location	Type	Inspire priority	European	National	Regional	Local	Other (indicate scale)
Natural resource							
Water catchments	CT	H	Y (103 main basins and sub-basins)	Y	Y		
Groundwater bodies	CT	H					
Soil	CT	H					
Bedrock geology	CT	L					
Climatic regions/data	CT	L					
Bio-ecological regions	CT	M					
Vegetation	CT	L					
Land Cover	CT	H	Y (CORINE Land Cover)	Y			
Transport							
Transport networks	REF	H	Y				
Transport facilities	REF	L					
Facilities		M					
Location of facilities	CT	M	Y (pollution sources : stocks, wastewater outlets, environment quality monitoring posts)	Y	Y		
Location of utilities	CT	M					
Land use regulation							
Protected areas	CT	H	Y (Nature protected areas)	Y	Y		
Land regulation/Land use plans	CT	H					
Demography							
Demographic attribute data	CT	H					
Natural objects			Y				

2.7.8 Conclusions of Component 6

The Latvian Environment Agency aims to establish an environmental information system. Access services to environmental datasets will be developed in cooperation with SLS A number of environmental themes of Annex II and III were reported in the MR.

Based on the information provided on the previous paragraph we score the indicator as follows:

- Thematic environmental data are covered by the described SDI-initiative or there is an independent thematic environmental SDI

2.8 Standards

Some initiatives to implement standards (OGC WMS, WFS, WMC) are present such as the Geoportal HSRS mentioned in section 2.6.1.

2.8.1 Conclusions of Component 7

Several attempts exist of standard initiatives.

Based on these conclusions we score the indicator as follows:

- The SDI-initiative is devoting significant attention to standardisation issues (Partially)

2.9 Use and efficiency of SDI

A fair evaluation of the use and efficiency of the available (pre-) SDI-components in Latvia is made difficult by the unilinguality of the web sites. It is clear however that important effort is being taken to create and upgrade reference and core thematic geodatasets. Legal frameworks are being modernised to allow enhanced use of these data. However, the lack of metadata and other access services currently prevents the efficient use and dissemination of and value-adding to the data. Restricted access to geodatasets seems to be rule rather than exception.

3. Annexes

3.1 List of SDI addresses / contacts for Latvia

Table: SDI contact list			
SDI Name	Web address	Organisational mailing address	Over-all contact person: tel./fax/e-mail
National			
Latvian Environment Agency	www.lva.gov.lv	Straumes 2, Jurmala, LV-2015	phone: +371 7811492, fax +371 7811494 email: lva@gov.lv
Preparation for Latvia's Compliance with the EMERALD and Nature 2000 Networks of Protected Areas	http://www.lva.gov.lv/eng/proj/emerald_2000.htm		(contact person: M. Plotniece) Mara.Plotniece@lva.gov.lv
Development of Biodiversity Monitoring System and Establishment of CHM Structures in Latvia	http://www.lva.gov.lv/eng/proj/chm_latvia.htm		(contact person: A. Grantins) Ansis.Grantins@lva.gov.lv
Development of lake monitoring program according to EUROWATERNET	http://www.lva.gov.lv/eng/proj/lake_mon_ewn.htm		(contact person: Sandra Poikane) Sandra.Poikane@lva.gov.lv
Designation of reference stations and reference conditions of rivers and lakes of Latvia	http://www.lva.gov.lv/eng/proj/ref_stat_cond.htm		(contact person: Sandra Poikane) Sandra.Poikane@lva.gov.lv
Implementation of CORINE Land Cover inventory in Latvia	http://nfp-lv.eionet.eu.int/clc_db/		(contact person: Harijs Baranovs) Harijs.Baranovs@lva.gov.lv
State Land Service	http://www.vzd.gov.lv		

3.2 List of references for Latvia

Table: list of references used to compile the Country Report	
Web sites:	http://www.vzd.gov.lv [2] http://www.mapbsr.nls.fi [3] http://www.csb.lv [4] http://www.vdc.lv [5] www.lva.gov.lv [6] http://www.lva.gov.lv/eng/str/strukt.htm [7] http://www.vgd.gov.lv/geo/en/_main.htm [8] http://www.lva.gov.lv/eng/proj/emerald_2000.htm [9] http://www.lva.gov.lv/eng/proj/chm_latvia.htm [10] http://www.lva.gov.lv/eng/proj/lake_mon_ewn.htm [11] http://www.lva.gov.lv/eng/proj/ref_stat_cond.htm [12] http://www.vgd.gov.lv/geo/en/p7.html [13] http://www.gisig.it/panel-gi/EUGISES2000/GII_Latvia.ppt [14] http://www.vmd.gov.lv [15] http://www.ugdd.lv [16] http://www.vnia.lv [17] http://nfp-lv.eionet.eu.int/clc_db/

	[18] http://unstats.un.org/unsd/geoinfo/En-Report-7thUNCSGN.pdf [19] http://www.ebaltics.com/00805600 https://www.kadastrs.lv/# http://giz.zpr.gov.lv/content/geoportal/ www.mk.gov.lv
Publications:	M. Craglia and J. F. Dallemand: Geographic Information and the Enlargement of the European Union. EUROGI-European Commission Workshop. Brussels, 16-17/11/2000. Technical Report. EUR 19824 EN http://www.ec-gis.org:8080/wecgis/docs/F22346/IMPAGINATO.PDF [1]
	H. Baranovs, 2004. SDI-like initiatives in Latvia. Presentation at the INSPIRE for enlargement countries workshop held at JRC, Ispra on 13-14 May 2004.
	CONCISE GAZETTEER OF THE REPUBLIC OF LATVIA Scale 1:1 000 000 Updated Edition, 2009
	State Land Survey Annual Report 2008, http://www.vzd.gov.lv/faili/gada_parskati/SLS_Annual_report_2008.pdf
	State Land Survey Annual Report 2007, http://www.vzd.gov.lv/faili/ENG/SLS%20Annual%20report%20EN%202007.pdf
	(ePSIplus national meeting report, http://www.epsiplus.net/content/download/11000/135164/file/Latvia%20National%20Meeting%20Report%20(Final).pdf)

4. Additional information on Jana Seta Map Publishers

4.1 Details of Jana seta Map Publishers

Jana seta Map Publishers was founded in 1992. Today it is the biggest private map publisher company in the Baltic States.

Field of specialization:

- Town plans (scale 1:5000 to 1:30 000; about 200 editions with towns of Latvia, Lithuania, Estonia and also plan of St. Petersburg)
- Regional maps of Latvia (scale 1:100 000 – 1:200 000)
- Eastern Europe's and the Baltic States road maps (scale 1:200 000 – 1:2 000 000)
- Several thematic maps and atlases
- GIS databases and programming

4.2 GIS databases of Jana seta Map Publishers

The geo-information data base of Jana seta Map Publishers contains data layers of almost all the compiled maps. Information is prepared and stored in ESRI format with ArcInfo® and ArcView® software.

Data are available in all the most often used GIS and CAD software formats in LKS-92 or other coordinate systems. It is possible to add some special attribute information to the existing data layers as well as to develop new, special data layers.

The following data layers are available:

On the territory of Latvia:

- 1: 10 000 scale data base on Riga and other settlements of Latvia (land use, street and road network, railway and public transport network, hydrography, construction sites, addresses, services, other special information etc.
- 1: 100 000 scale district and regional maps (land use, road network, railways, administrative territorial division and borders, farmsteads, hydrography, protected nature territories, farmsteads, services, special information etc.)

- complex data base on scales 1: 200 000 to 1: 400 000 (land use, detailed road network, railways, administrative territorial division and borders, hydrography, protected nature territories, transmission pipelines, special information etc.)

- unified point object data base that correspond to scale 1: 50 000 (populated places, educational establishments, hotels and other accommodation, health care establishments, churches, filling stations, hills and castle mounds, museums, cultural establishments, places of tourist interest, post offices, finance institutions, diplomatic missions, border crossing points, airports and landing fields, railway stations and stop points, seaports, bus stations, beacons, tourist information centres etc.)

- georeferenced raster pictures of all the products of Jana seta Map Publishers - maps and town plans together with grid registration file.

On other territories:

- 1 000 000 scale data base on Eastern and Northern Europe (populated places with its original and alternative place names, road network, railways, hydrography, administrative division and borders, hydrography, land use, seaports, airports, national parks and nature reserves, elements of orography, nature and historical areas and other information)

- Europe data base on scale 1: 3 500 000 (populated places, road network, railways, hydrography, administrative division and borders, construction structures etc.)

- World regional data bases on scales 1: 60 000 000 to 1: 60 000 000 (populated places, road network, railways, hydrography, administrative division and borders, Antarctic stations, coral reefs, islands, peninsulas, gulfs and straits, capes, distribution and density of population etc.).

Including data layers into the interactive map system JS Latvija it is possible to create a special GIS application to find the necessary solutions for customers.