INSPIRE
Infrastructure for Spatial Information in Europe

Member State Report: Latvia, 2010-2012

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Summary

This report has been prepared and submitted pursuant to Commission Decision No 2009/442/EC of 5 June 2009 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards monitoring and reporting. The report contains information on the creation and use of the infrastructure for geospatial information in Latvia, and covers a period of three calendar years (2010 – 2012).

1   Abbreviations used

INSPIRE Directive	Directive 2007/2/EC of the European Parliament and of the Council
ERDF	European Regional Development Fund
EuroGeographics	Membership association of the European cadastre, land registry and national mapping authorities
EU	European Union
IGI	infrastructure for geospatial information
GIS	geographic information system
MoI	Ministry of the Interior
MA	VAS "Maritime Administration of Latvia"
RSS	Rural Support Service
ADC	Agricultural Data Centre
LGIA	Latvian Geospatial Information Agency
LEGMC	VSIA "Latvian Environmental, Geological and Meteorological Centre"
RESCIS	Real Estate State Cadastral Information System
SPPS	State Plant Protection Service
SARIS	State Address Register Information System
MoEPRD	Ministry of Environmental Protection and Regional Development
VAS	State public limited liability company
SIPCM	State Inspectorate for the Protection of Cultural Monuments
SRDA	State Regional Development Agency
SFS	State Forest Service
VSIA	State limited liability company
SLS	State Land Service
MoA	Ministry of Agriculture
MoARE	VSIA "Ministry of Agriculture Immovable Property"

2   Introduction

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 (INSPIRE) entered into force on 15 May 2007 (INSPIRE Directive) [1]. The obligations of ministries and bodies to undertake technical measures for implementing the INSPIRE Directive, namely the production of geospatial data sets and metadata, to create a geospatial information portal, were laid down in Cabinet Order No 718 of 20 November 2007 on the Latvian geospatial information development concept [2] and in Cabinet Order No 737 of 27 November 2007 on the creation of a common geospatial information portal [2].

The Latvian geospatial information development concept approved under Cabinet Order No 718 of 20 November 2007 [3] provided for the creation of an infrastructure for geospatial information in Latvia. Under this Order, the Ministry of Defence was appointed the responsible body for coordinating the implementation of INSPIRE in Latvia.

In the light of rapid technological growth, which has had a significant impact on the development of geospatial information infrastructure, both at the national and global level, and as result of reduced financing for producing geospatial data due to the impact of the financial crisis, work on updating the Latvian geospatial information development concept was begun in 2012, by creating an entirely new

approach and methods for obtaining, processing and using information. The new and updated Latvian geospatial information development concept is due to be approved by July 2013.

The concept for creating a common geospatial information portal, which was approved under Cabinet Order No 737 of 27 November 2007 provides for a technological solution, whereby the national common geo-portal will serve as a common access point for geospatial information according to the principle of a "one-stop agency". Under this Order the former Secretariat of the Special Assignments Minister for Electronic Government was appointed as the body responsible for creating the common geospatial information portal. At present the functions and duties of the Secretariat are being performed by the Ministry of Environmental Protection and Regional Development (MoEPRD).

The INSPIRE Directive has been transposed into Latvian legislation mainly by means of the Law on Geospatial Information, which entered into force on 13 January 2010 [4]. Similarly, the conformity of legislation with the provisions of the INSPIRE Directive is also ensured by means of other legislative acts, such as the State Administration Structure Law [25], the Copyright Law [26], the Freedom of Information Law [27], the Law on the Protection of Personal Data [28] and Cabinet Regulation No 711 of 16 October 2012 "Regulations on development planning documents in local authority areas" [5].
The Law on Geospatial Information lays down the delegation of Cabinet Regulations, which set out the procedures and terms in detailed terms and more specifically for applying specific principles and rules. The INSPIRE Directive has been transposed into the Law on Geospatial Information, but some of the supplementary Cabinet Regulations supplement the requirements for implementing the provisions of the INSPIRE Directive. The following Cabinet Regulations, arising from the Law on Geospatial Information, apply to the implementation of the INSPIRE Directive:
1) Cabinet Regulation No 211 of 22 March 2011 "Regulations on the mandatory content of geospatial data sets" [6];
2) Cabinet Regulation No 673 of 30 August 2011 "Mandatory content of the rules for using geospatial data sets, and procedures for receiving a permit for use" [7];
3) Cabinet Regulation No 668 of 30 August 2011 "Regulations for the national common geospatial information portal" [8].

This report contains information on the implementation of the INSPIRE Directive in Latvia, and this information has been provided by the responsible persons at ministries engaged in the creation of the infrastructure for geospatial information, within the scope of their competence. In addition to the Ministry of Defence a further nine ministries are involved, namely the Ministry of Environmental Protection and Regional Development, the Ministry of Justice, the Ministry of Agriculture, the Ministry of Transport, the Ministry of the Interior, the Ministry of Education and Science, the Ministry of Economics, the Ministry of Health and the Ministry of Culture. Under Cabinet Order No 718 of 20 November 2007 [3] each ministry is the designated ministry responsible or jointly responsible for creating and updating the geospatial data sets and their metadata in respect of the data themes referred to in the Annexes to the INSPIRE Directive.

3   Coordination and quality assurance (Art. 12)

3.1   Coordination (Art. 12.1)

3.1.1   Member State contact point

Name and contact information

Latvian contact point	
Name of the public authority	Latvian Geospatial Information Agency
Contact information:	
Mailing address	O.Vācieša iela 43, Riga, LV-1004
Telephone number	+371 - 29481235
Telefax number	+371 – 29370505
Email address	info@lgia.gov.lv
Organisation's website URL	www.lgia.gov.lv
Contact person (if available)	Mr. Valdis Bērziņš

Telephone number	+371 29481235
Email address	valdis.berzins@lgia.gov.lv
Contact person - substitute (if available)	-
Telephone number	-
Email address	-

Functions and obligations

The Latvian Geospatial Information Agency (LGIA) is the leading authority for implementing state policy in the area of geodetic, mapping and geospatial information. Under the Law on Geospatial Information [4] and Cabinet Regulation No 1132 of 21 December 2010 "By-laws of the state agency 'Latvian Geospatial Information Agency'" [9] the following functions have been laid down for the LGIA:
1. To obtain, process and maintain geospatial data for military and civil needs, and to perform the other functions set out in the Law on Geospatial Information;
2. To create and develop a common geospatial data information system;
3. To cooperate with state and local authority bodes, NATO member countries, EU institutions and international competent organisations, within the scope of its competence, and to provide them and the public with geodetic, mapping and geospatial information.

The following important obligations have been laid down to ensure the functions of the LGIA:
1. To methodically monitor and coordinate the creation of the geodetic reporting system;
2. To create and maintain the state geodetic network and a database of its points;
3. To create and maintain the system of permanent global positioning base stations "Latvian Positioning System" (LatPos);
4. To obtain, produce and update the following geospatial information data for civil and military needs:
    a. Land cover images, distance investigation data and orthoimagery within a scale of 1:50 000 - 1:2000;
    b. Digital terrain and surface models used for compiling topographical plans and topographical maps within a scale of 1:250 000 - 1:10 000;
    c. Geospatial information that is included in topographical plans and topographical maps within a scale of 1:250 000 - 1:2000;
    d. Geospatial information data to provide support for the national armed forces when performing their duties and participating in NATO;
5. To collate information on place names in the database of place names necessary for undertaking geodetic and mapping activities;
6. To ensure that the geodetic coordinates of Latvia's border markers are specified and depicted in maps as required by international treaties.

The LGIA is subordinate to the Ministry of Defence and its activities are monitored by the Minster for Defence.

3.1.2 Coordinating structure

Name and contact information

Coordinating structure supporting the MSCP	
Name of the coordination structure	Civil-military Cooperation Section of the Crisis Management Department, Ministry of Defence
Contact information:	
Mailing address	Kr. Valdemāra iela 10/12, Riga, LV-1473
Telephone number	+371 67335184
Telefax number	+371 67212307
Email address	geoinfo@mod.gov.lv
Organisation's website URL	www.mod.gov.lv
Contact person (if available)	Mrs. Ilona Ekmane
Telephone number	+371 67335184
Email address	ilona.ekmane@]mod.gov.lv

Contact person - substitute (if available)	-
Telephone number	-
Email address	-
Date and period of mandate	-

Functions and obligations

The Ministry of Defence has the function [10] of organising and coordinating the implementation of state policy in the area of geodetic, mapping and geospatial information.

Performance of the Ministry of Defence's functions is coordinated by the Civil-military Cooperation Section of the Crisis Management Department. The Deputy Director of the Civil-military Cooperation Section of the Crisis Management Department at the Ministry of Defence, Ilona Ekmane, is also Latvia's representative on the INSPIRE Committee.

The Ministry of Defence has developed Latvia's geospatial information development concept, which provides for the creation of an infrastructure for spatial information in Latvia, and it is also responsible for updating the concept. Under Cabinet Order No 718 of 20 November 2007 [3] the Ministry of Defence is the designated responsible authority for coordinating the implementation of the INSPIRE Directive in Latvia. The Geospatial Information Coordination Board is due to be established in 2013, and the Ministry of Defence will manage and coordinate its work.

The Law on Geospatial Information [4] provides that the Ministry of Defence and the Ministry of Environmental Protection and Regional Development shall collaborate to ensure that Latvia is represented at EU institutions in matters concerning the creation of an infrastructure for geospatial information in the Community, and to ensure the harmonisation and adoption of draft regulations governing its operation by EU institutions.

Paragraph 2 of Cabinet Order No 718 of 20 November 2007 [2] lays down the responsibility of ministries and their subordinate bodies for creating and updating the geospatial data sets and their metadata, taking into account the data themes referred to in the Annexes to the INSPIRE Directive.

Organisational structure

Collaboration between ministries and other bodies
for implementing the INSPIRE Directive in Latvia.
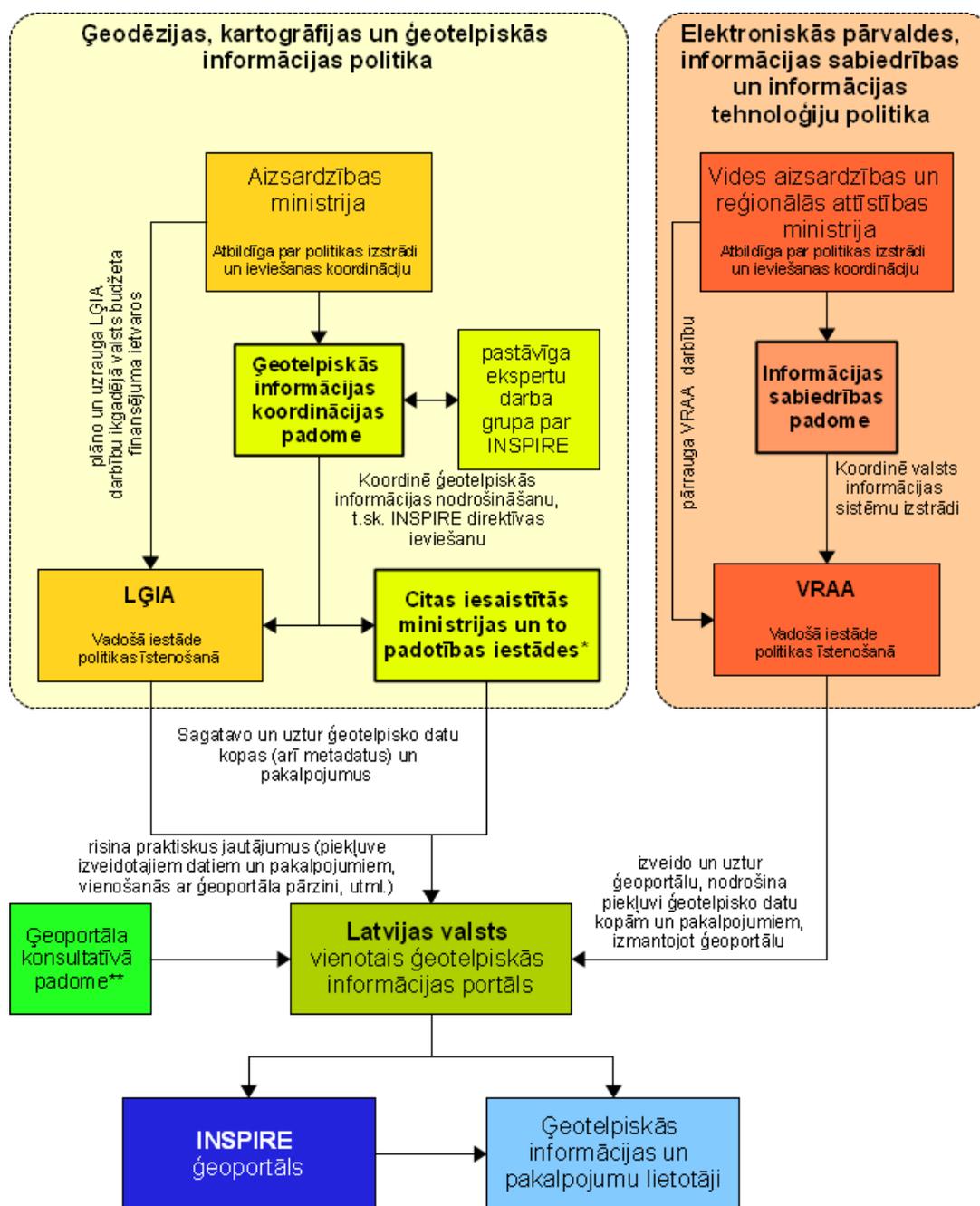
LATVIAN	ENGLISH
Ģeodēzijas, kartogrāfijas un ģeotelpiskās informācijas politika	Geodetic, mapping un geospatial information policy
Aizsardzības ministrija. Atbildīga par politikas izstrādi	Ministry of Defence. Responsible for developing policy

un ieviešanas koordināciju	and for coordinating its implementation
Ģeotelpiskās informācijas koordinācijas padome	Geospatial Information Coordination Board
Pastāvīga ekspertu darba grupa par INSPIRE	Permanent expert working group for INSPIRE
Koordinē ģeotelpiskās informācijas nodrošināšanu, t.sk. INSPIRE direktīvas ieviešanu	Coordinates the provision of geospatial information incl. implementation of the INSPIRE Directive
Citas iesaistītās ministrijas un to padotības iestādes*	Other ministries and their subordinate bodies that are involved*
LĢIA. Vadošā iestāde politikas īstenošanā	LGIA. Leading authority for implementing policy
Plāno un uzrauga LĢIA darbību ikgadējā valsts budžeta finansējuma ietvaros	Plans and monitors the activities of the LGIA within the framework of annual budget financing
Sagatavo un uztur ģeotelpisko datu kopas (arī metadatus) un pakalpojumus	Produces and maintains geospatial data sets (also metadata) and services
Risina praktiskus jautājumus (piekļuve izveidotajiem datiem un pakalpojumiem, vienošanās ar ģeoportāla pārzini, utml.)	Resolves practical matters (access to data and services that have been created, agreement with the manager of the geo-portal, etc.)
Ģeoportāla konsultatīvā padome **	Geo-portal Consultative Board **
Latvijas valsts vienotais ģeotelpiskās informācijas portāls	Latvian national common geospatial information portal
INSPIRE ģeoportāls	INSPIRE geo-portal
Ģeotelpiskās informācijas un pakalpojumu lietotāji	Users of geospatial information and services
Elektroniskās pārvaldes, informācijas sabiedrības un informācijas tehnoloģiju politika	Electronic government, information society and information technology policy
Vides aizsardzības un reģionālās attīstības ministrija. Atbildīga par politikas izstrādi un ieviešanas koordināciju	Ministry of Environmental Protection and Regional Development. Responsible for developing policy and for coordinating its implementation
Pārrauga VRAA darbību	Monitors the activities of the SRDA
Informācijas sabiedrības padome	Information Society Board
Koordinē valsts informācijas sistēmas izstrādi	Coordinates the creation of the state information system
VRAA. Vadošā iestāde politikas īstenošanā	SRDA. Managing Authority for implementing policy
Izveido un uztur ģeoportālu, nodrošina piekļuvi ģeotelpisko datu kopām un pakalpojumiem, izmantojot ģeoportālu	Creates and maintains the geo-portal, ensures access to geospatial data sets and services using the geo-portal

Notes:
* The MoEPRD is also responsible for producing and maintaining certain geospatial data sets (and their metadata).
** The Geo-portal Consultative Board has not been established yet, but it is due to take place in accordance with the decision recorded in item 2 of the minutes of the Cabinet meeting of 30 August 2011 "Draft regulation "Regulations for the national common geospatial information portal"" (minutes No 50 §29) [45].

Coordination of the implementation of the INSPIRE Directive in Latvia is undertaken as a result of collaboration between policies in two sectors. The Ministry of Defence is responsible for coordinating the creation and implementation of state policy in the area of geodetic, mapping and geospatial information, and it is also the ministry responsible for coordinating the implementation of the INSPIRE Directive.
The MoEPRD is the ministry responsible for developing and coordinating state policy in the area of electronic government, information society and information technology.
Collaboration of both policies ensures the creation of the national common geo-portal, and the planning of its functionality and maintenance, and collaboration between the national common geo-portal and the Community geo-portal (INSPIRE geo-portal) is ensured.

Relations with third parties

The Law on Geospatial Information [4] provides that associations and foundations (such as the Latvian Association of Surveyors and the Latvian Association of Cartographers and Geodesists), which bring together natural and legal persons working in the field of geospatial information, may participate in the implementation of state policy in the field of geospatial information, by undertaking discussions concerning regulatory documents and standards, providing opinions, and fostering public involvement in the circulation of geospatial information and improving professional qualifications.
The Latvian Association of Surveyors and the Latvian Association of Cartographers and Geodesists, as well as other non-governmental organisations operating in the field of geospatial information, are due to participate in the Geospatial Information Coordination Board and its working groups at various levels. The Geospatial Information Coordination Board is due to be established in 2013.
Natural and legal persons are involved and operate in the production and maintenance of several geospatial data sets in collaboration with public authorities.

Overview of the coordinating structure's working practices and procedures

In order to ensure the operative and effective resolution of matters concerning the implementation of the INSPIRE Directive, the Ministry of Defence has established a permanent working group with representatives from all ministries involved in the creation of the infrastructure for geospatial information, in accordance with the tasks laid down in the Law on Geospatial Information [4]. A total of nine ministries are involved, namely the Ministry of Environmental Protection and Regional Development, the Ministry of Justice, the Ministry of Agriculture, the Ministry of Transport, the Ministry of the Interior, the Ministry of Education and Science, the Ministry of Economics, the Ministry of Health and the Ministry of Culture.

The working group collates information from bodies responsible for creating and updating the geospatial data sets and relevant metadata, as referred to in the INSPIRE Directive, undertakes an analysis of the situation, is aware of any problems, prepares proposals for resolving problems, and and also participates in the preparation of the annual monitoring indicators and the national report.

3.1.3 Comments on the monitoring and reporting process

On the basis of Cabinet Order No 718 of 20 November 2007 [2], the Ministry of Defence, as the body responsible for coordinating the implementation of the INSPIRE Directive, submitted a report [11] to the Cabinet of Ministers on 21 May 2010 regarding the transposition of the INSPIRE Directive, the current situation and planned activities, when commencing the practical implementation of the INSPIRE Directive. This report also describes the working procedures used, as well as collaboration and coordination between the Latvian authorities and other institutions.
In accordance with Commission Decision of 5 June 2009 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards monitoring and reporting (2009/442/EC) [46], Latvia's national report on the creation and use of the infrastructure for geospatial information in Latvia, 2007-2009 [47] was prepared and submitted to the Council on 12 August 2010, and a summary description of monitoring results for each year was published on the internet on a publicly accessible site [48].
This information was prepared by the LGIA using information provided by all the responsible ministries.

3.2 Quality assurance (Art. 12.2.)

3.2.1 Quality assurance procedures

Holders of geospatial data sets have, for the most part, developed their own internal procedures to ensure the quality of particular geospatial data. These procedures have been implemented using both working process organisation and technical devices for data quality control.

By way of example the processes used by some holders of INSPIRE data theme geospatial data sets to ensure quality are described below.

The Latvian Geospatial Information Agency (LGIA) has undertaken and continues to undertake the following procedures to improve data quality in respect of INSPIRE data themes which are the responsibility of the Ministry of Defence (the LGIA performs the function of the data holder): (coordinate reference systems (Annex I theme 1); geographical grid systems (Annex I theme 2); geographical names (Annex I theme 3); inland hydrography; elevation (Annex II theme 1); land cover (Annex II theme 2) and orthoimagery (Annex II theme 3)):

1. A multi-step geospatial data set quality control mechanism has been implemented at the LGIA. Geospatial data is produced at the LGIA according to specifications that have been developed for each geospatial data set. The specifications set out the requirements for the accuracy of the data in question, as well as the criteria for producing data, methods for obtaining data, the necessary information for attributes and the visualisation rules, and also include the technical schemes for producing data, which provide for continuous data control procedures following the completion of each stage of data production.

2. Quality checking procedures are carried out using automated, manual and field data checking methods. A separate data quality check is also carried out on the end product before it is entered on the LGIA central database, and only data that has undergone a quality check is entered on the database. The raw materials used for each data processing stage (including control procedures), those people undertaking each data processing stage and the data processing time for products such as topographical maps, are recorded in special formulas. Special software devices have been developed which enable the automated inclusion of information taken from these formulas in the metadata.

3. Geospatial data from other data holders (such as the SLS and MA) is used for producing data in order to improve data quality, which falls under the responsibility of the LGIA.

4. The LGIA has also begun work on implementing a quality management system (currently only for those processes which are necessary for obtaining and providing information for aeronautical purposes).

5. The solutions included in the information system, created and maintained by the LGIA, and which is used for creating, processing and disseminating geospatial data, that is to say,i.e. centralised data storage, the possibility of using several data sets easily in one working environment, including other the data of other organisations' data, and the automated cohesion linking of data with those of other organisations ' data (synchronisation of the LGIA database of place names with SLS SARIS data) etc., all help improve the quality of geospatial data.

The State Land Service (SLS) has undertaken and continues to undertake carry out the following procedures to improve data quality in respect of the INSPIRE data themes which are the responsibility of the Ministry of Justice (the SLS performs the functions of the data holder): (administrative units (Annex I theme 4); addresses (Annex I theme 5); cadastral parcels (Annex I theme 6) and buildings (Annex III theme 2)):

1. In order toTo improve data quality for INSPIRE data themes, which fall under the responsibilitywithin the remit of the SLS, a common specification has been developed for spatial data under the responsibility offor which the SLS is responsible., This and it will be implemented in 2013 during the development ofwhile developing the SLS GIS project. Up until now each data set maintained by the SLS had a different specification, which made it difficult to maintain, disseminate and exchange data with other information systems. A common identification system for data held by the SLS will be developed to ensure that spatial data is compatible with other maps and data in other countries.

2. At present there is 100% national coverage for spatial data. Information in respect of administrative boundaries, addresses, cadastral parcels and buildings is available for the entire territoryall of Latvia in respect of administrative boundaries, addresses, cadastral parcels and buildings. Prior to implementing introducing common graphic software for cadastral map data, all land parcels were put into orderorganised in collaboration with local authorities by assigning them cadastral descriptions and determining their jurisdiction.

3. Activities have begun been commenced to ensure the conformity ofthat data reflectswith the actual situation, where possible. Local authorities and owners have been invited to update or

register data in the RESCIS and SARIS held by the SLS, in order to eliminate any non-conformity of data registered in the information system with the actual situation.
   4. Data comparisons with other geospatial sets have begun, in order to update the data registered in the information systems held by the SLS.
   5. Quality control procedures have been implemented for SLS employees to ensure the quality of data, which falls under the responsibility of the SLS.

In addition to the above, the following quality improvement procedures are being undertaken at the SLS:
   1. Cabinet Regulation No 1019 of 27 December 2011 "Regulations for the cadastral survey of land" [12] provides that land parcels should be described according to cadastral survey accuracy, taking into account their priority, that is to say a surveyed, allocated and planned land parcel. They are mutually aligned and serve as an overview of their actual location. Cadastral maps show buildings from cadastral survey data and also buildings from orthoimagery maps.
   2. Automated data quality control is used for land parcels and building data (KRIS GP - Real Estate State Cadastral Information System graphic data software). Since 2012 cadastral map data is held on common graphic software, which provides automatic data quality control, which is both topological and conforms to the specification.
   3. Data quality for addresses and administrative boundaries is ensured with the aid of software that has been developed, as well as by carrying out regular data topology controls when the actual locations of the objects are adjusted. Other data sets available to the SLS are often used when carrying out this control.
   4. A solution has been developed which ensures that SLS specialists receive information on any surveys that have begun when the surveyor has taken information from the SLS (portal kadastrs.lv). This ensures that other surveyors receive information operatively on any surveying works taking place in the vicinity, and enables them to consolidate any measurements, thereby reducing any possible irregularities concerning the boundaries of land parcels.
   5. The surveyors notify the SLS about any buildings that are not on site, as well as any rebuilds that have not been registered in the Real Estate State Cadastral Information System. The SLS makes a record of any non-existent buildings or register any building for the first time on the basis of information provided by the surveyors.

A data quality control mechanism has been implemented and optimised at the Agricultural Data Centre (ADC) in the ADC database for the INSPIRE data themes (agriculture and aquaculture facilities (Annex III theme 9)) which are the responsibility of the Ministry of Agriculture (the ADC performs the functions of the data holder); the ADC database contains all the information on the register of animal holdings, and data is only stored for which a quality check has been carried out.

The technical quality of data held by VSIA "Ministry of Agriculture Real Estate" (MoARE) for INSPIRE data themes (hydrography (Annex I theme 8)) which are the responsibility of the Ministry of Agriculture (the MoARE performs the functions of the data holder), are checked using GIS computer software standard devices. The MoARE collects data in its information system on groups of specialised buildings and devices in order to regulate the land water regime. The MoARE data is checked prior to publication (the data is checked by an employee who has not been directly involved in producing the data, i.e. the four-eyes principle), and this includes comparing data with other data sources (such as LGIA data).

The State Forest Service (SFS) and the State Plant Protection Service (SPPS) perform the functions of the data holder for INSPIRE data themes (land use (Annex III theme 4) which are responsibility of the Ministry of Agriculture. The SFS maintains a forest digital map, and the SPPS prepares soil agro-chemical maps and maintains information on areas infected with harmful organisms and invaded by giant hogweed. The SFS and the SPPS ensure the quality of data in their information systems by checking it against defined data classificators and geometric rules for geospatial objects when data is entered in the central database (data checks and error outputs are automated).

The Rural Support Service (RSS) maintains field register data for INSPIRE data themes (land use (Annex III theme 4)) which are the responsibility of the Ministry of Agriculture (the RSS performs the functions of the data holder) and has approved procedures for producing data. All the data is kept in a common central database, topological data checks are carried out, and security mechanisms are built

into the control devices in order to maintain a high level of data quality. Data editing is carried out in four different locations throughout Latvia and operate on a common network.

VAS "Latvian Maritime Administration" (MA) maintains the quality management system in respect of INSPIRE data themes (hydrography (Annex I theme 8)) which are the responsibility of the Ministry of Transport (the MA performs the functions of the data holder), and the system is maintained in accordance with the requirements of ISO 9001: 2008 and MA procedures, and data production and maintenance, as well as preparation of maps is carried out accordingly.
The quality management system procedures include:
1) Carrying out hydrographic measurements and research;
2) Collecting navigational information and issuing navigational warnings and notices;
3) Navigational technical aids for shipping;
4) Preparing and issuing navigational charts.
Data quality is checked on software programmes, both during the data collection and data compilation process, and in completed mapping products using special analysis programmes. These checks are carried out in accordance with international standards S-4, S-11, S-23, S-44, S-57, S-58, S-60, S-61, S-62, S-63, S-65, S-00, S-100 and S-102, which are developed and maintained by the International Hydrographic Organisation (IHO), and representatives from Latvia also play a part in maintaining and improving these standards. Additional quality checks are carried out by the electronic navigational chart distribution centre PRIMAR [13] according to the needs of the Electronic Chartand Display Information Systems - ECDIS.

The quality of data in the Register of Cultural Monuments Protected by the State maintained by the State Inspectorate for the Protection of Cultural Monuments (SIPCM), in respect of INSPIRE data themes (protected sites (Annex 1 theme 9)) which are the responsibility of the Ministry of Culture (the SIPCM performs the functions of the data holder), has been improved significantly, by clarifying the cadastral descriptions of buildings and by drawing up the boundaries of territorial cultural monuments in vector data format. On the whole the data is produced using the SLS cadastral maps and LGIA orthoimagery maps, and where necessary the boundaries of these territories are marked on-site.
The following procedures are undertaken to ensure the data quality of territorial objects: 1) research of historical materials available in archives; 2) visual inspection of objects (also using technical equipment for archaeological objects to scan and probe earth layers); 3) analysis and correlation of historical, inspection and ownership data obtained, resulting in an objective and justified cultural monument site. An assessment of certain cultural historical values and level of preserved authentic substance of cultural monuments is carried out where necessary, as well as clarification of various data describing a cultural monument (location, date, name etc.).
A two-step quality control is put in place for produced data.

An ISO 9001:2000 quality management system has been implemented at the Civil Aviation Agency and VAS "Latvian Air Traffic" in respect of INSPIRE data themes (transport networks (Annex I theme 7)) which are the responsibility of the Ministry of Transport (VAS "Latvian Air Traffic" (LATR) performs the functions of the data holder), and this system also includes publication of aeronautical charts and keeping records of objects that are of potential danger to aeroplane flights.

3.2.2 Analysis of quality assurance problems

The most significant problem concerning data quality assurance is the limited finances and human resources that can be assigned to quality assurance, and as a result quality checks and error identification methods are simplified and only include the most important quality criteria. It is for this reason that data checks are often used minimally, when undertaking inspections and on-site surveys. In order to resolve these problems, the people responsible for producing data reduce the scope of work to be carried out, and the quality of data is improved gradually by individual items where possible.

The situation concerning the sharing of geospatial information has improved, but there are still some problems because there is low interoperability between cross-geospatial data sets (problem indicated by the SLS and SFS).

A new problem has appeared as a result of the financial crisis, that is to say data users do not have access to basic data that is adequately up-to-date, because data producers do not have sufficient

resources to update data within the scope and time-limit required. For example, budget allocations for the LGIA, which is the largest producer of geospatial data, were reduced by 70% and the number of employees was reduced by 50%. This was a short-tem cost reduction as far as the state budget is concerned, but in the long term it will have a negative impact on the existence and development of the geodetic and mapping sector, because planned investments are not being made to ensure the regular collection, production, maintenance and dissemination of geospatial information data. The additional financing required to collect, produce, maintain and disseminate geospatial information data cannot be obtained by means of paid services, because the financial and economic crisis also had an impact on budget allocations for the largest group of users of this geospatial information, namely state and local authority bodies.

As a result data users (such as the SLS, RSS and local authorities), which use LGIA data to produce their data, are forced to use outdated information, which, in turn, has an impact on the quality of information derived from LGIA data.

By postponing the deadline for implementing the national common geo-portal from 1 September 2012, as provided for in legislation, to 1 November 2013, there is a risk that it will not be possible to ensure the integration of the geo-portal with information systems created by holders of geospatial data sets, for example the services provided for in Article 28(2)(5) of the Law on Geospatial Information, which allows for the immediate use of geospatial information services in information systems, taking into account the fact that the development of a large proportion of state administration bodies' and sectoral institutions' GIS and information systems, which are due to make use of geospatial information, have already been completed or they are at various stages of development.

The development of the national common geo-portal and of the state administration bodies' and sectoral institutions' GIS and information systems is being undertaken autonomously, and therefore, there is a risk concerning further compatibility and opportunities for using geospatial information in a common infrastructure for geospatial information according to the principles laid down in the INSPIRE Directive and the Law on Geospatial Information.

The harmonisation of geospatial data is not ensured in full. That is so say, where information on objects is maintained by different bodies, it is important to determine which of the information is deemed as primary. Various responsible bodies may hold contradictory information on the boundaries of an object, and this impairs sharing of this information.

There are also misunderstandings arising from the ambiguous perception of ((non)classification) of geospatial objects of a similar type by various bodies. As a result specific objects are described differently and are interpreted ambiguously. There is a need to draw up common principles for classifying geospatial objects, which all bodies should follow. The Law on Geospatial Information provides that a national common geospatial object classification system should be used for producing, maintaining and using geospatial information data, however, to-date it has not been possible to implement this common geospatial object classification system, given the resources and time required to undertake research, undertake a common classification impact assessment, and prepare a theoretical basis and data transformation model to ensure the transition to data production according to a common classification throughout Latvia at the level of the information system.

3.2.3 Measures taken to improve quality assurance of the infrastructure

The holders of geospatial data sets are continuing to work on developing (modernising) the information systems to ensure that the relevant geospatial data sets are available electronically to end users, which will facilitate the sharing of data. This will provide feedback between data holders and the public, and improve data quality.

By way of example, the following are a few of the widely used information systems created by the data holders:

1. LGIA project "Creation of the state information infrastructure for geospatial data" [14]; the main objective of this project is to implement a common information system for creating, processing and disseminating geospatial data, which provides support for this data during its entire life cycle, by providing an effective process for handling geospatial data, improving its quality and fostering its use on a national scale; the system will also contain functions to ensure the compliance of data with INSPIRE requirements. Further development and improvement of the information system is being planned.

2. SLS project "Creation of the State Land Service information system for geospatial data" [22]; as part of this project geospatial data to be transferred to INSPIRE is collated and processed

in a centralised INSPIRE geospatial database, which ensures the integrity of data that is correlated, and which has been developed on the basis of a standard software platform and the INSPIRE guidelines.

Geospatial data holders are undertaking the gradual implementation of data quality requirements in the specifications for geospatial data sets and their production technologies. Certain holders of data sets, such as the LGIA and SLS, are developing special technical devices for geospatial data quality control. Quality control devices that already form part of the GIS standard software (such as topological checks, the use of classificators etc.) are used for quality control.

In order to ensure quality, all holders of data sets regularly organise staff training and measures to improve qualifications. As the leading authority in the area of geodetic, mapping and geospatial information, the LGIA regularly participates in the Q-KEN quality working group organised by EuroGeographics [16].

Since 2010 the RSS carries out an annual field register data quality assessment in accordance with Commission Regulation (EC) No 1122/2009 [17].

Since 2011 the CAA and VAS "Latvian Air Traffic" have published a State Aeronautical Information Publication in electronic format, taking into account the requirements of "EUROCONTROL Specification for the Electronic Aeronautical Information Publication (eAIP)" [18], and this includes the publication of aeronautical charts and information on objects that are of potential danger to aeroplane flights.

In order to resolve problems in the geospatial information sector in Latvia as a whole, including quality requirements, and provide an investment for resolving funding problems, there are plans to establish a Geospatial Information Coordination Board in 2013 and commence activities, if the appropriate coordination mechanism is approved by the Cabinet.
In order to coordinate practical issues relating to the implementation of 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 (INSPIRE), the group of contacts established by the Ministry of Defence in 2010 would be transformed into the permanent expert working group of the Geospatial Information Coordination Board.

In order to ensure the operation of the infrastructure for geospatial data, the compatibility of geospatial information and the possibilities for using geospatial information in a common infrastructure for geospatial information, in accordance with the principles laid down in the INSPIRE Directive and the Law on Geospatial Information, there are plans to complete the creation of the national common geo-portal on 1 November 2013 and commence operations in a functional environment.
There are plans to launch the activities of the Geo-portal Consultative Board in order to eliminate any further risks and undertake the necessary measures during the process of completing the development of the Geo-portal and begin its implementation and operation in a functional environment, by achieving the integration and compatibility of state administration bodies' and sectoral institutions' GIS and information systems.

Representatives from the MA participate in meetings of international working groups organised by the International Hydrographic Organisation (IHO), the International Maritime Organisation, the navigational chart distribution centre PRIMAR, the International Association of Lighthouse Authorities (IALA), thereby increasing their knowledge of data quality. Similarly, the level of cartographers' knowledge is also increased through participation in international courses for cartographers organised by the IHO, for which they are awarded certificates. It should be noted that it is not possible to acquire the profession of maritime cartographer or the relevant educational documents in Latvia. Work is continuously undertaken at the MA to develop a common IT and geographic information system, but at present it is only designed for internal use at the MA and is under development.

In order to evaluate the implementation of the common geospatial object classification system and provide the optimal possibilities for its implementation, the LGIA has begun undertaking research and an impact assessment of common classification, as well as preparing a theoretical basis and data transformation model, by assessing the best variant for creating a common classification system.

The LGIA plans to complete its assessment of possibilities for a national common classification system in Latvia, as well as the optimal solution for creating and implementing a national common classification system and its theoretical basis, by 1 October 2014. At the same time the LGIA is planning to develop a data transformation model to ensure that users of the classification are provided with full information on the possibilities of implementing a national common classification system in Latvia, as well as the transition from the classification systems currently in use to a new system.

3.2.4 Quality certification measures

Latvia does not plan to implement a mandatory geospatial data quality certification measure. All holders of geospatial data sets can voluntarily certify the quality management system that has been implemented.

Commission Regulation (EU) No 73/2010 of 26 January 2010 laying down requirements on the quality of aeronautical data and aeronautical information for the single European sky [19], provides that aeronautical data providers shall implement and maintain a quality management system covering their aeronautical data and aeronautical information provision activities.

Certain users such as the MA, regularly undertake internal audits of data production process, as well as external audits commissioned by Lloyd`s Register Quality Assurance Limited. At the MA audits are carried out of any process where there have been significant changes, or where more than two years have elapsed since the previous audit.

4 Functioning and coordination of the infrastructure (Art.13)

4.1 Summary description of the infrastructure for geospatial information (IGI)

The Latvian geospatial information development concept was approved under Cabinet Order No 718 of 20 November 2007 [3] and provides for the creation of an infrastructure for geospatial information (IGI) in Latvia. It provides for the following:

1) The Ministry of Defence is the authority responsible for implementing state policy in the area of geodetic, mapping and geospatial information, and together with holders of geospatial data sets is involved in all matters concerning the creation, maintenance and use of geospatial data, which includes producing and regularly updating geospatial data sets and their metadata, taking into account certain data standards and specifications, as well as creating and implementing a common classification system for geospatial objects, fostering the sharing and re-use of data and services, by laying down standardised regulations for using and accessing geospatial data sets;

2) The Ministry of Environmental Protection and Regional Development is responsible for creating the national common geo-portal, and ensuring its compatibility with geospatial data producers' information systems and interoperability with the Commission's geo-portal.

In accordance with Latvia's geospatial information development concept the Law on Geospatial Information [4] contains a separate section on establishing and operating the IGI, which provides for the creation of a national common geo-portal and provides the following geospatial information services as a minimum:

1) discovery services making it possible to search for geospatial data sets and services on the basis of the content of the corresponding metadata and to display the content of the metadata;

2) view services making it possible, as a minimum, to display, navigate, zoom in/out, pan, or overlay viewable geospatial data sets and to display legend information and any relevant content of metadata;

3) download services, enabling copies of geospatial data sets, or parts of such sets, to be downloaded and, where practicable, accessed directly;

4) transformation services, enabling geospatial data sets to be transformed with a view to achieving interoperability;

5) services allowing geospatial data services to be used directly in information systems.

Until the national common geo-portal has been created, the holders of geospatial data sets shall ensure access to various geospatial data services using their information systems. The list of these services is available in the report on the monitoring indicators for the INSPIRE Directive, 2012.

In light of the fact that Commission Regulation (EU) No 1089/2010 is applicable to the spatial data sets for the Commission's infrastructure for spatial information and the interoperability of services, Latvia has complied directly with the requirements of Commission Regulation (EU) No 1089/2010, thereby implementing the requirements of Articles 5(2) and 7(1) of the INSPIRE Directive.
The metadata for geospatial data sets is due to be published on the national geo-portal to ensure compliance with these requirements. Article 29 of the Law on Geospatial Information lays down an obligation for Latvia's responsible authorities to comply with these requirements, and Article 28(3) of the Law on Geospatial Information specifies the manager of the geo-portal, and Paragraph 3 of Cabinet Order No 718 specifies the bodies responsible for producing, maintaining and updating the geospatial data sets and metadata referred to in the INSPIRE Directive.
Cabinet Regulation No 211 of 22 March 2011 "Regulations on the mandatory content of metadata for geospatial data sets" [7] contains a provision whereby a legal basis must be established for the content and functionality of metadata, which ensures that metadata at the national level is created and maintained as structured information, and allows for geospatial data sets and geospatial information services to be searched, recorded and used.

The practical aspects of creating the IGI are executed in a series of projects co-financed from the Structural Funds, such as:
- The project implemented by the State Regional Development Agency (SRDA): "Creation of a common geospatial information portal and integration of the GIS" [20];
- The project implemented by the Latvian Geospatial Information Agency "Creation of the national infrastructure for geospatial data information" [21];
- The project implemented by the SLS "Creation of the State Land Service information system for geospatial data" [22];
- The project implemented by the State Regional Development Agency "Information system for local authorities' territorial development planning, infrastructure and monitoring – stage 1" [23].

All these projects are being implemented under sub-activity 3.2.2.1.1 "Development of information systems and electronic services" as the supplement to the EU operational programme "Infrastructure and services". The list of priority projects for this sub-activity was approved under Cabinet Order No 584 of 7 October 2008 "Regarding the list of priority projects for the development of electronic government and an information system", which was later adjusted with Cabinet Order No 147 of 15 March 2010 "Regarding the list of priority projects for the development of electronic government and an information society" [14].

4.2 INSPIRE stakeholders

The Ministry of Defence has established a permanent working group for INSPIRE, which involves representatives of all ministries interested in the creation of the infrastructure for geospatial information [24]. A further nine ministries are involved in addition to the Ministry of Defence, namely the Ministry of Environmental Protection and Regional Development, the Ministry of Justice, the Ministry of Agriculture, the Ministry of Transport, the Ministry of the Interior, the Ministry of Education and Culture, the Ministry of Economics, the Ministry of Health and the Ministry of Culture.

Various bodies that are subordinate to these ministries are both holders of geospatial data sets (data producers) and service providers, and they provide access to geospatial information and services for natural and legal persons, as well as local authorities or public authorities, such as the SLS, which is subordinate to the Ministry of Justice, the State Forest Service, Rural Support Service (RSS), Agricultural Data Centre, VSIA "Ministry of Agriculture's Real Estate" and State Plant Protection Service, which are subordinate to the Ministry of Agriculture, VSIA "Latvian Environment, Geology and Meteorology Centre", which is subordinate to the Ministry of Environmental Protection and Regional Development, as well as VAS "Latvian Maritime Administration" (MA), where the Ministry of Transport is the holder of state capital shares.

The Ministry of Defence acts as the coordinating authority, and is responsible for the LGIA, which is one of the most important producers and service providers of geospatial information data.

Users of data and services in the majority of the aforementioned bodies are indirectly interested in the IGI, which has been created as a result of implementing INSPIRE, and they are provided with wider access to geospatial data and services based on this data. Access to data saves the users both time and resources. For example clients of the RSS GIS, who apply for agricultural area payments, and users of the State Forest Service's GIS, such as forest owners and legal possessors; the manager of state forests A/S "Latvian State Forests" is provided with direct access to SFS data, the RSS is provided with data view services, the Latvian University of Agriculture is provided with necessary research information, and territorial planners are provided with information required for preparing the spatial element of plans.

4.3 Obligations of the various stakeholders

The Ministry of Defence has the function [6] of organising and coordinating the implementation of state policy in the area of geodetic, mapping and geospatial information, and under Cabinet Order No 718 of 20 November 2007 [2] it is the designated responsible authority for coordinating implementation of the INSPIRE Directive.

Under Paragraph 3 of Cabinet Order o 718 of 20 November 2007 [2] the ministries and their subordinate bodies are responsible for creating and updating the geospatial data sets and their metadata, taking into account the data themes referred to in the Annexes to the INSPIRE Directive. The following table has been updated according to the updated version of the Latvian geospatial information development concept as at May 2013:

No	Name of the data theme / data set	Annex to the INSPIRE Directive	Ministry responsible	Ministry with joint responsibility
1	Coordinate reference systems	Annex I, theme 1	Ministry of Defence	
2	Geographical grid systems	Annex I, theme 2	Ministry of Defence	Ministry of Environmental Protection and Regional Development and the Ministry of Transport
3	Geographic names	Annex I, theme 3	Ministry of Defence	Ministry of Justice, Ministry of Environmental Protection and Regional Development and the Ministry of Transport
4	Administrative units	Annex I, theme 4	Ministry of Justice	Ministry of Environmental Protection and Regional Development and the Ministry of Transport
5	Addresses	Annex I, theme 5	Ministry of Justice	
6	Cadastral parcels	Annex I, theme 6	Ministry of Justice	
7	Transport networks	Annex I, theme 7	Ministry of Transport	Ministry of Defence and the Ministry of Environmental Protection and Regional Development
8	Hydrography	Annex I, theme 8		
8.1	Marine and port channel hydrography		Ministry of Transport	
8.2	Inland hydrography		Ministry of Defence	Ministry of Environmental Protection and Regional Development and the Ministry of Agriculture
9	Protected sites	Annex I, theme 9	Ministry of Environmental Protection and Regional	Ministry of Culture

No	Name of the data theme / data set	Annex to the INSPIRE Directive	Ministry responsible	Ministry with joint responsibility
			Development	
10	Elevation	Annex II, theme 1	Ministry of Defence	Ministry of Transport
11	Land cover	Annex II, theme 2	Ministry of Defence	Ministry of Justice, Ministry of Environmental Protection and Regional Development and the Ministry of Agriculture
12	Orthoimagery	Annex II, theme 3	Ministry of Defence	
13	Geology	Annex II, theme 4	Ministry of Environmental Protection and Regional Development	
14	Statistical units	Annex III, theme 1	Ministry of Economics	
15	Buildings	Annex III, theme 2	Ministry of Justice	Ministry of Economics and the Ministry of Defence
16	Soil	Annex III, theme 3	Ministry of Environmental Protection and Regional Development	Ministry of Agriculture
17	Land use	Annex III, theme 4	Ministry of Environmental Protection and Regional Development	Ministry of Agriculture and the Ministry of Justice
18	Human health and safety	Annex III, theme 5	Ministry of Health	Ministry of Environmental Protection and Regional Development, Ministry of the Interior and Ministry of Agriculture
19	Utility and governmental services	Annex III, theme 6	Ministry of Environmental Protection and Regional Development	Ministry of Economics, Ministry of Health, Ministry of Education and Science and Ministry of Transport
20	Environmental monitoring facilities	Annex III, theme 7	Ministry of Environmental Protection and Regional Development	Ministry of Health, Ministry of Agriculture and Ministry of Economics
21	Production and industrial facilities	Annex III, theme 8	Ministry of Environmental Protection and Regional Development	Ministry of Economics
22	Agricultural and aquaculture facilities	Annex III, theme 9	Ministry of Agriculture	
23	Population distribution - demography	Annex III, theme 10	Ministry of Economics	
24	Area management (restriction) regulation zones and reporting units	Annex III, theme 11	Ministry of Environmental Protection and Regional Development	Ministry of Agriculture and Ministry of Transport

No	Name of the data theme / data set	Annex to the INSPIRE Directive	Ministry responsible	Ministry with joint responsibility
25	Natural risk zones	Annex III, theme 12	Ministry of Environmental Protection and Regional Development	Ministry of the Interior and Ministry of Agriculture
26	Atmospheric conditions	Annex III, theme 13	Ministry of Environmental Protection and Regional Development	
27	Meteorological geographical features	Annex III, theme 14	Ministry of Environmental Protection and Regional Development	
28	Oceanographic geographical features	Annex III, theme 15	Ministry of Environmental Protection and Regional Development	Ministry of Transport
29	Sea regions	Annex III, theme 16	Ministry of Environmental Protection and Regional Development	Ministry of Transport
30	Bio-geographical regions	Annex III, theme 17	Ministry of Environmental Protection and Regional Development	
31	Habitats and biotopes	Annex III, theme 18	Ministry of Environmental Protection and Regional Development	
32	Species distribution	Annex III, theme 19	Ministry of Environmental Protection and Regional Development	
33	Energy resources	Annex III, theme 20	Ministry of Economics	Ministry of Environmental Protection and Regional Development
34	Mineral resources	Annex III, theme 21	Ministry of Environmental Protection and Regional Development	

4.4 Measures taken to facilitate sharing

The State Administration Structure Law [25] provides that state and local authority bodies may cooperate both on a one-off or permanent basis, by concluding an interdepartmental agreement or a cooperation agreement. This model of cooperation is also used to provide permanent cooperation for sharing geospatial information in compliance with the Law on Geospatial Information [4], which provides that users of geospatial data sets should conclude a cooperation agreement with the holder of the relevant geospatial data set in order to share data sets, or an interdepartmental agreement, and

that the text of the cooperation agreement or interdepartmental agreement should include rules as to how the geospatial datasets are to be used.

In accordance with the Law on Geospatial Information [4] holders of geospatial data sets must provide freely available access to information on the regulations concerning the sharing and re-use of the geospatial data sets concerned. The mandatory requirements for using geospatial data sets are laid down in Cabinet Regulation No 673 of 30 August 2011 "Mandatory content of the rules for using geospatial data sets, and procedures for receiving a permit for use" [7], which specifies uniform model rules of use and model permit forms, in order to simplify and expedite the receipt and utilisation of permits for use of geospatial data sets. These rules are applied on equal terms for both sharing and re-using geospatial data sets.

Users of geospatial data sets and services are obliged to submit an application for a permit for use of geospatial data sets and services in a timely manner.
The Law on Geospatial Information also lays down provisions for the handling of geospatial information in emergency situations, exceptional circumstances or where a state of mobilisation has been declared. In these instances geospatial information is provided free of charge to and at the request of the national armed forces and authorities that perform the tasks set out in civil defence plans. If there is a disaster or a state of emergency has been declared there is provision for public or local authorities to receive or download information from the common geospatial information portal free of charge for the area where the disaster has taken place or where the state of emergency has been declared.

The Law on Geospatial Information [4] provides that an infrastructure for geospatial information is created for sharing geospatial information between authorities and re-using geospatial information in electronic format.
A national common geo-portal is being developed in Latvia to provide users with access to the geospatial data sets and metadata included in the aforesaid infrastructure for geospatial information.

Cabinet Regulation No 668 of 30 August 2011 "Regulations for the national common geospatial information portal" [8] lays down requirements and is the basis for organising cooperation between the manager of the national common geo-portal and holders of geospatial data sets, to ensure access to geospatial data sets and their metadata on the geo-portal.

4.5 Cooperation between shareholders

The permanent working group for INSPIRE has not specified a special cooperation procedure between shareholders. The Ministry of Defence and the LGIA strive to organise their activities concerning the creation of the IGI in such a way so that they are explained to the public and involve all the most important bodies. For example, development of each legislative act concerning the creation of the IGI involves all the most important bodies, who will be implementing these rules (producers of geospatial data sets and service providers). In turn, the project implemented by the SRDA "Creation of a common geospatial information portal and integration of the GIS" [20] involves other stakeholders as project partners, such as the SLS and LGIA.

For the most part geospatial data holders cooperate in exchanging geospatial information on the basis of a cooperation agreement or interdepartmental agreement.

Non-governmental organisations, such as the Latvian Association of Surveyors (LAS) and the Latvian Association of Cartographers and Geodesists (LACG) also participate in the development of policy for the geospatial information sector, representing the interests of private companies. The LAS and LACG also participate in the development of legislation regulating the sector.

Producers of geospatial data participate in international working groups. For example, the LGIA actively participates in EuroGeographics and its projects EuroGlobalMap [29], EuroRegionalMap [30], EuroGeoNames [31] and EuroDEM [32], as well as in the Business Interoperability Knowledge Exchange Network Bi-KEN [33], the geospatial information policy working group Pol-KEN[34] and the Quality Knowledge Exchange Network Q-KEN [16]. LGIA also participates in the European Environment Agency's EIONET NRC land cover workshop on GMES [35], the United Nations Group

of Experts on Geographical Names (UNGEGN) [36], in the work of the Baltic Division of UNGEGN, in the working groups of international associations that resolve geodetic issues – Nordic Geodetic Commission (NKG) [37], and the EUPOS (European Position Determination System) expert group [38].

The MA also participates in the working groups of the International Hydrographic Organisation on subjects closely related to the specifics of data and the production of data for non-navigational needs (such as, IHO MSDI and BSHC MSDI) [39]. The data is also visualised at: www.lhd.lv:8080/MAP.

The LGIA has created and maintains a special internet site in order to explain the requirements of the INSPIRE Directive and to enable stakeholders to follow the latest information on INSPIRE in Latvian: http://www.lgia.gov.lv/LGIA/INSPIRE.aspx.

The Ministry of Environmental Protection and Regional Development (MoEPRD) is the designated manager of the national common geo-portal, and geo-portal is developed under the supervision of the State Regional Development Agency (SRDA). Initially legislation stated that the manager of the geo-portal would create the geo-portal and make it accessible as of 1 September 2012, but this deadline was not complied with due to various delays, mostly related to the implementation of the project "Creation of the common geospatial information portal and cohesion of sectors' GIS with the portal" financed by the ERDF, and progress in organising public procurement procedures.

The following is planned as part of this ERDF project:
1) To create a national common geospatial information portal which ensures the functionality of main geospatial data services; the proposed website is http://www.geolatvija.lv/;
2) Linking geospatial data holders' (cooperation partners') GIS with the national common geo-portal;
3) To implement a geospatial metadata profile and geospatial data exchange standard;
4) To draw up a legal framework for creating geospatial information services;
5) To draw up a strategy for the development of Latvia's geospatial information services and a plan for implementing new e-services.

Several development projects are being implemented to achieve the objectives that have been laid down, and the functionality required is being established within these projects..
1) Work has been undertaken on the development project "Development and implementation of geospatial data interoperability" (GDI) since 23 December 2010. The GDI is a centralised common infrastructure for collecting and processing geospatial data and operating web services, which enables geospatial data from various data holders to be made available to other data users in a standard format. The GDI will be compliant with the requirements of the INSPIRE Directive and will also supply information to external geospatial data systems, namely EU geo-portals and other GIS.
2) Work has been undertaken on the development project "Creating and implementing the national common geospatial information portal" since 31 August 2012. The objective of the project is to create a geo-portal, which will provide users with common access to Latvia's geospatial information, data sets, geospatial information services and metadata. The solution is based on a portal-type interface, which is integrated with external systems that make it possible to obtain the geospatial and metadata required. The functionality of the geo-portal will allow users to browse geospatial information, as well as to order and pay for this information in accordance with the data holders' licensing conditions.

Work on developing the geo-portal is being carried out in two stages:
- Stage 1 – this is for unauthorised users of the geo-portal, who will be provided with access to view geospatial data which may be used without a licence, to select data layers, zoom in/out, pan, overlay viewable layers, search and print. Work on the development of this stage has been completed, and acceptance testing is in progress.
- State 2 – a geo-portal with full functionality, which allows authorised users to order, purchase and use data. It will also allow geospatial data holders to define the type of geospatial data and manage the distribution process (licensing, processing agreements and orders, etc.). The design and development of the functionality of this stage is in progress and is due to be completed on 17 May 2013.

Implementation of the national common geo-portal is due to take place before 1 November 2013.

The geospatial data holders (LGIA, SLS and others) have concluded cooperation agreements with the SRDA to transfer test data for the development of the national common geo-portal.

4.6 Access to services via the INSPIRE geo-portal

In light of the fact that development of Latvia's common geospatial information has not been completed, there is currently no access to services via the INSPIRE geo-portal.

The largest producers of geospatial data, the LGIA and SLS, have begun work on publishing the INSPIRE data sets for which they are responsible from the interface infrastructure for geospatial data, in accordance with the INSPIRE guidelines and using website services that have been developed according to INSPIRE standards.

5 Use of the infrastructure for geospatial information (Art.14)

5.1 Use of the geospatial data services

Geospatial data services have been developed by several public and local authority bodies, some of them are in the development or improvement stage. Various geospatial information browsers or applications have been developed to provide access to information in an electronic environment.

For example:
The LGIA has completed implementation of the project "Creation of the national infrastructure for geospatial information" co-financed by the ERDF, which has resulted in the national infrastructure for geospatial information, by implementing a common information system for producing, processing and disseminating geospatial information. New e-services were created and existing e-services were improved when implementing the project, and these are available on the LGIA website http://map.lgia.gov.lv/.
The LGIA provides electronic access to geospatial data in the following databases:
1.   The map browser (http://kartes.lgia.gov.lv/), where it is possible to view geospatial data sets on various scales, and perform operations such as searching for objects by place names and determining the coordinates for the location of objects;
2.   The state geodetic network information system, which contains the state geodetic network database (http://geodezija.lgia.gov.lv/) and the local geodetic network database (http://vt.lgia.gov.lv/index.php). The database provides access to up-to-date geodetic information for all interested parties. It is possible to select data according to the selection criteria entered, and export the results, prepare geodetic point coordinates in pdf format and view the geodetic points selected by the user on a map;
3.   The database of place names (http://vietvardi.lgia.gov.lv/), where information can be searched on place names and relevant geographic objects in Latvia and in the borderland of neighbouring countries, as well as view maps on various scales. The database of place names contains information on approximately 104 000 geographic objects within Latvia (mainly on objects whose names are described in the 1: 50 000 scale topographical maps issued by the LGIA);
4.   The permanent global positioning base station system "Latvian positioning system" (LatPos) (http://latpos.lgia.gov.lv/). The LatPos common system contains 24 base stations that operate continuously by storing global navigation satellite data that has been picked up, and by providing access to this data correction during post-processing and in real time;
5.   The coordinate conversion calculator, which converts coordinates between different coordinates systems used in Latvia (http://map.lgia.gov.lv/index.php?lang=0&cPath=2&txt_id=8). Conversions can be undertaken both for one point and for several points.

Metadata for geospatial information data produced and maintained by the LGIA, as well as related services (internet services), are available on the website http://metadati.lgia.gov.lv/, and it provides automated searches of geospatial information data and services on various information systems including the national common geo-portal.
A new and more easily accessible way of requesting information is via the website http://e-pieteikumi.lgia.gov.lv/ which contains a system for requesting LGIA electronic data sets and services. On the website clients can request all data produced by the LGIA, as well as LatPos information, and can also order web services (Web MapService (WMS)). It is also possible to apply for a permanent e-services client agreement, which aims to reduce the administrative burden on users of LGIA

geospatial data and services who require these services for a longer period of time, reducing the time taken between requesting a specific service and receiving it.

LGIA also provides geospatial data for the database of geographic names – EuroGeoNames - established by EurogeoGraphics [31] (http://www.eurogeonames.com:8080/RefAppl3/ReferenceApplication/ReferenceApplication.html).

The SLS has developed a data publication site, namely the portal www.kadastrs.lv. On this site all internet users can obtain up-to-date RESCIS and SARIS data for all of Latvia. In addition, this site allows users to view this data on the background of maps maintained by the LGIA, i.e. orthoimages, and the maps are on a scale of 1:2000, 1:10000 and 1:50000. The data publication site has public and authorised sections. The public section contains a limited amount of RESCIS and SARIS data. The SLS has developed eight different web services for providing the geospatial data for which it is responsible to users (information from RESCIS and SARIS, real estate value zoning and administrative boundary data).

The MoARE maintains a publicly accessible website www.melioracija.lv, and fully prepared cadastral data on drainage is published on this website.

The ADC provides public access to geographic information for the register of animal holdings at the website http://pub.ldc.gov.lv/map_nov.php. The register of animal holdings contains information compiled on the location of animal holdings. This register enables people to track the exact location of their herds, as well as undertake other tasks.

The RSS provides public access to geographic information on the field register at the following website http://karte.lad.gov.lv/.
The field register is a geographic information system which contains information compiled on agricultural land, in order to provide common access to data, as well as control of farmers' applications and aid payments. The field register contains a database of parcels with inter-related mapping information and information on their attributes: geographical attachment, identification numbers and area information.

Up-to-date data on immovable cultural monuments in the Register of Cultural Monuments Protect by the State is available on the SIPCM website http://www.mantojums.lv, but over recent years reduced financing has not made it possible to undertake plans to supplement the public catalogue of cultural monuments with textual, visual and geospatial information (descriptions, images and maps), which would provide a significant investment in informing the public on the values of Latvia's cultural heritage.

The SFS maintains the public version of the digital forest map on the internet (http://karte.vmd.gov.lv/). The map shows the boundaries of managed forests, forest blocks, their numbers, the boundaries of state and private forests, forest infrastructure such as roads and rights-of-way, and other geospatial information concerning forests.

The information centre of the Ministry of the Interior has prepared a digital map of registered criminal offences, and is available at: http://www.ic.iem.gov.lv/gis/index.php?lang=lv. This e-service is available free of charge to all interested parties for non-commercial use. The main aim of the e-service is to enable residents, tourists, researchers and other interested parties to receive information on criminal offences committed in Latvia, depicted on geographical maps.
The e-service shows data concerning criminal offences that have been committed and which are on the "Register of criminal offences" and the "Criminal proceedings information system" managed by the information centre of the Ministry of the Interior. As part of the e-service, information is provided on all criminal offences committed in Latvia over a certain period of time, if it is possible to accurately identify the geographical coordinates/address of the site where the crime was committed against SARIS. This e-service has been developed as part of the project "Development of a geographic and analytic information system to restrict the circulation of illegal narcotics", with co-financing from the Community special funding programme "Prevention of and fight against crime".

The Health Inspectorate monitors the quality of drinking water and bathing waters, and collates and reports the results on a national level and submits data to the Commission.

When monitoring the quality of bathing waters, the geographical coordinates of the sampling sites are identified in the ETRS89 system, and they are provided to the Commission using the EIONET (European Environment Information and Observation Network) Reportnet CDR Repository. The organisation contracted to the Commission processes the data provided by Member States and depicts this in the form of geospatial information, which can be viewed. It is anticipated that in 2013 this will be done using Google Earth. At the national level bathing water monitoring stations and operational quality data (swimming allowed, swimming not recommended or swimming prohibited) are shown on Google Maps, and a map containing this information can be viewed.

When monitoring the quality of drinking water, the addresses are identified for the buildings where samples have been taken. The Inspectorate only takes water samples in water supply systems where the water is used by the end-user (from a tap). Water supply systems are identified using administrative NUTS classification codes (Nomenclature of territorial units for statistics) up to the level of the civil parish. The data is provided to the Commission using the EIONET Reportnet CDR Repository, by identifying only the location of the water supply system. The organisation contracted to the Commission processes the data provided by Member States. There are plans to develop a common depiction of data in the form of geospatial information, which is currently not available at either the EU level or national level. Data is collated at the national level in the drinking water monitoring information system (DZUMON), which has been developed as part of the EU PHARE project "Environmental monitoring".

Healthcare statistical data, which falls within the competence of the Ministry of Health (Annex III theme 5 "Human health and safety" to the INSPIRE Directive) is available on the data presentation system (DPS) on the Disease Prevention and Control Centre website, where it is also available as spatial information; the results are depicted on a map of Latvia by statistical region at the NUTS3 level (2009-2011), or by district or town (1989-2008) (two separate systems).

The primary data is obtained from various healthcare sector registers and databases (database of causes of death of Latvian residents, register of patients suffering from certain illnesses, etc.), and then, in accordance with definitions and the algorithms for calculating indicators. relative indicators (morbidity, spread etc.) are calculated and broken down by the various territorial units of Latvia. The definitions and algorithms for calculating the indicators are collated in the publication "Health statistics indicators, definitions, formulas and data sources (lv, en)" (metadata). This publication is updated regularly. The indicators can be viewed on the data presentation system as various tables and diagrams, as well as on a map of Latvia, and the system can assess the indicator trends and their correlation. For example:
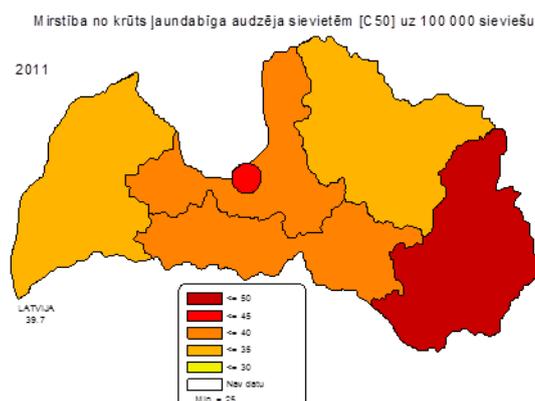
LATVIAN	ENGLISH
Mirstība no krūts ļaundabīga audzēja sievietēm [C 50] uz 100 000 sieviešu	Breast cancer death rates [C 50] per 100 000 women
Nav datu	No data

The National Infectious Diseases Supervision and Monitoring System (VISUMS), which is under the supervision of the Disease Prevention and Control Centre, contains a small GIS module with restricted access. Data on cases of infectious diseases are linked to coordinates from the State Address Register, and from this it is possible to obtain a report on these cases by depicting them on a map of Latvia, for example:
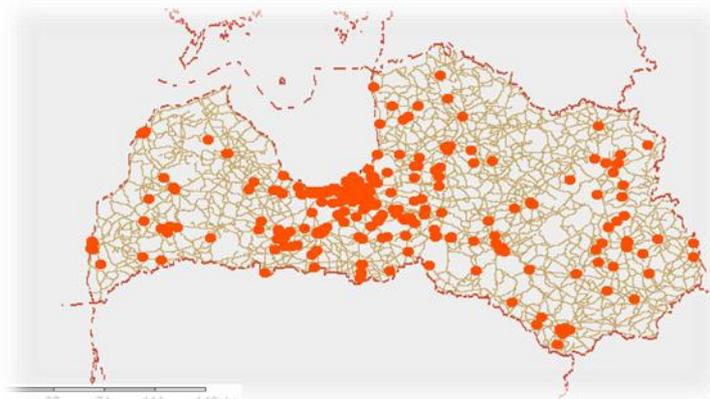
The Central Statistical Board has developed and maintains a public website (http://www.csb.gov.lv/csp/content/?cat=355), where it is possible to view statistical indicators in the form of mapping images using a special computer programme PX-Map.

5.2 Use of the geospatial data sets

Geospatial data sets are used for a wide variety of purposes, mainly for performing the functions and tasks of public and local authority bodies.

The LGIA is one of the largest holders of geospatial data. The data maintained by the LGIA is used for producing and maintaining geospatial information for a large number of other geospatial data sets and sectors. In order to perform their functions and tasks various state administration bodies and enterprises create and maintain geospatial information databases and information system, which require the use of LGIA geospatial data (mainly topographic maps and orthoimages).
LGIA data is used for many national geospatial information systems. For example, RESCIS, SARIS and the burdened territory information system maintained by the SLS; the Nature Data Management System "OZOLS" maintained by the Nature Protection Board; the Field Register geographic information system created by the RSS; the Drainage Cadastral Data Information System held by VSIA "Ministry of Agriculture's Real Estate", as well as for local authorities' territorial planning.

Geospatial data maintained by the SLS is used widely. For example, the SLS administrative territory boundary data is used for marking real estate, undertaking surveying services, developing territorial planning documents, preparing statistical reports to aid in the operative work of the emergency services, and for other purposes.
SLS SARIS data is used in other information systems, including the national census, helping the operative work of the emergency services, providing local authority services, marking real estate, undertaking surveying services, preparing statistical reports, providing logistics services, providing insurance services, and for other purposes.
Information from the SLS RESCIS on land parcels is used in other information systems, such as determining the cadastral value of real estate, administering real estate taxes, marking real estate, providing surveying services, strategic planning of national real estate policy, developing territorial plans, undertaking forest inventories, and for other purposes. Information from RESCIS on buildings is used to provide the public (state administration bodies and residents) with up-to-date information on buildings, building management, territorial building planning, preparing national statistical information, ensuring building processes, determining the cadastral value of real estate, administering real estate taxes, and for other purposes.

Mapping data produced by the Maritime Administrative has been used as part of the pilot project to implement maritime spatial planning in the Baltic Sea (BaltSeaPlan), and the planning will be based on this data. MA data is also used for the project GORWIND (Gulf of Riga as a resource for WIND energy). The MA has concluded an inter-departmental agreement with the Ministry of Defence, the Ministry of Economics, the Ministry of the Environment, the Ministry of Regional Development and Local Government Affairs, the Ministry of Agriculture and the Ministry of the Interior to exchange information, and as part of this the MA, at the request of the ministries, uses the data that it holds to prepare visual materials concerning restrictions on economic activities in the sea.

Data from the Register of Cultural Monuments Protected by the State, which is maintained by the SIPCM, is provided to local authorities on a regular basis for their territorial planning development needs, as well as to planning regions and certain interested bodies (such as the State Forest Service). Data on cultural monuments – buildings protected by the state is used in the RESCIS, which is maintained by the SLS.

5.3   Use of the IGI by the general public

The general public makes use of the publicly available services referred to in sub-section 5.1 of this report.

There is an increase in the general public's interest in publicly available services each year, for example, the visitor statistics for the LGIA map browser (http://kartes.lgia.gov.lv/) show that the browser was opened 131 345 times in 2012 (the number of visitors has grown by more than 10% when compared to 2011). At the end of 2012 a total of 1253 authorised users were registered on the SLS data publication portal www.kadastrs.lv. In 2012 the total number of objects browsed on the portal increased by 25% when compared to 2011, i.e. from 772 000 to 965 000. Similarly, one-off data browsing on the portal www.kadastrs.lv without contractual liabilities, is growing in popularity; last year users browsed the data for texts on 7964 cadastral objects, and also browsed spatial data for a total of 2561 hours.

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There is a growing number of visits to the site www.melioracija.lv maintained by the MoARE; when it first began operating it was viewed around 20-30 times per day, but now the number of daily views is usually around 100.

The ADC GIS is available to all users of the ADC information system. In 2012 the ADC GIS was used 23 607 times. There is no significant increase or decrease in the number of ADC GIS users when compared to 2011, and this could be due to the fact that ADC information is specific and is used by a certain sector of society. In 2012 information on the ADC GIS concerning animal holdings was used in the fight against swine flu, and a list of quarantined animal holdings and their locations was drawn up together with the Food and Veterinary Service; this could be regarded as use for the needs of the general public.

The public has access to data on cultural monuments protect by the state, including geospatial data, at the SIPCM Monument Documentation Centre; for example 402 information requests were made in 2012. The SIPCM provides all interested parties with opinions/statements on the status of a particular object (real estate) from the aspect of cultural heritage, and 366 opinions/statements were issued in 2012. SIPCM data on cultural monuments is widely used for learning as part of study programmes relating to the area of cultural heritage. The public can obtain information from local authorities' territorial planning materials on the location of cultural monuments in a particular area.

5.4 Cross-border use

The LGIA has participated in projects managed by EuroGeographics, such as EuroGlobalMap [29], EuroRegionalMap [30], EuroGeoNames [31] and EuroDEM [32], by providing data that has been produced for Latvia according to the specifications drawn up for the projects in question.

The SLS has participated in the EuroBoundaryMap project [40] managed by EuroGeographics, by providing information on textual and spatial data on administrative territories and their territorial divisions in Latvia, as well as information on changes to administrative divisions.

The LGIA regularly exchanges topographical mapping information with Lithuanian and Estonian authorities operating the area of geodetics and mapping (the Lithuanian Land Service and the Estonian Land Service).

The Latvian Civil Aviation Agency cooperates with the relevant services in Estonia and Lithuania on in sharing airspace flight information region (FIR) border data.

The Disease Prevention and Control Centre collates and prepares statistical data for the health and healthcare of the Latvian population (as a common territorial unit - NUTS2) according to EUROSTAT and WHO (World Health Organisation) definitions, and submits this data to these bodies once a year. The WHO processes this data and enters it in the European Health for All Database (HFA-DB) http://www.euro.who.int/en/what-we-do/data-and-evidence/databases/european-health-for-all-database-hfa-db2.
Data on cases of certain infectious diseases (without any personal data) is also transferred to the TESSy system of the European Centre for Disease Prevention and Control (ECDC). The statistical region is specified for data concerning certain diseases (NUTS3).

5.5 Use of transformation services

At present transformation services are not used widely. At the LGIA the transformation of geospatial data sets between different coordinates systems and national data transformation is being tested, so that they comply with technical specifications of the data themes listed in Annex I to the INSPIRE Directive.

6   Data sharing arrangements (Art.15)

6.1 Data sharing arrangements between public authorities

The State Administration Structure Law [25] provides that public and local authorities may cooperate both on a one-off or permanent basis, by concluding an interdepartmental agreement or a cooperation agreement. This model of cooperation is also used to provide permanent cooperation for sharing geospatial information in compliance with the Law on Geospatial Information [4], which provides that users of geospatial data sets should conclude a cooperation agreement with the holder of the relevant geospatial data set in order to share data sets, or an interdepartmental agreement, and that the text of the cooperation agreement or interdepartmental agreement should include rules as to how the geospatial datasets are to be used.

Cabinet Regulation No 673 of 30 August 2011 "Mandatory content of the rules for using geospatial data sets, and procedures for receiving a permit for use" [7] sets out the licensing procedures for geospatial data, and according to this Regulation the procedures for receiving licences is standardised, thereby fostering the sharing of geospatial data sets between public authorities. The Regulation specifies uniform model rules of use and model permit forms, in order to simplify and expedite the receipt and utilisation of permits for use of geospatial data sets. These rules are applied on equal terms for both sharing and re-using geospatial data sets. Users of geospatial data sets and services are obliged to submit an application for a permit for use of geospatial data sets and services in a timely manner.

For example:

LGIA geospatial data sets and services are used by all local authorities (there were 34 requests in 2010, 88 in 2011 and 44 in 2012) and many public authorities (there were 10 requests in 2010, 28 in 2011 and 20 in 2012). The data most requested are orthoimages (approximately 22% of the total volume of requests), topographical data on a scale of 1:10 000 (approximately 17%) and digital terrain models (approximately 4%). The public authorities that make most use of LGIA data are the RSS, SLS and SFS. Data is transferred to public and local authorities on the basis of a licensing agreement or an interdepartmental agreement.

The LGIA regularly organises information seminars for local and public authorities, in order to provide users with the latest information concerning the production of LGIA geospatial data and services.

The LGIA also collects statistics on the use of the map browser at public authorities; these are mostly used by bodies subordinate to the Ministry of the Interior (MoI), the Ministry of Agriculture (MoA) and the MoEPRD. For example, the browser was opened 2600 times in 2012 by bodies subordinate to the MoI, 1852 times by the MoA and 1668 times by the MoEPRD. The map browser is also used considerably by local authorities and higher education establishments.

The MA and LGIA provide each other with the necessary data sets on the basis of a cooperation agreement, upon request and free of charge.

The SLS transfers SARIS and RESCIS data to 26 public authorities and all 119 local authorities, to help them perform their functions and tasks. In turn, the SLS receives data from nine public authorities and 119 local authorities to help it perform its functions. Cooperation takes place free of charge on the basis of an interdepartmental agreement or a cooperation agreement.

The MoARE provides the RSS and Ministry of Economics with access to drainage cadastral data in on-line mode.

6.2 Data sharing arrangements between public authorities and Community institutions and bodies

Cabinet Regulation No 673 of 30 August 2011 "Mandatory content of the rules for using geospatial data sets, and procedures for receiving a permit for use" [16] has been drawn up in accordance with Commission Regulation (EU) No 268/2010 of 29 March 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards the access to spatial data sets and services of the Member States by Community institutions and bodies under harmonised conditions [44], and therefore, it can also be used for sharing geospatial data sets between public authorities and Community institutions and bodies.

Examples of sharing:
LGIA has produced data on the territory of Latvia for the EuroGeographics projects EuroGlobalMap (EGM – topographical data set on a scale of 1:1000000), EuroRegionalMap (ERM – topographical data set on a scale of 1:250000), EuroDEM (digital terrain model), which is then disseminated using the EuroGeographics infrastructure (http://www.eurogeoinfo.eu). Use of this infrastructure also means that information is disseminated on the data set procured by the SLS for the EuroGeographics project EuroBoundaryMap (EBM). The SLS has produced information for the EBM project on the administrative divisions in Latvia and changes to these. The SLS has also produced information via the EBM project on Latvia's administrative divisions and their boundaries for the EuropeanLocationFramework (E.L.F) project. Given that data on administrative boundaries forms part of the data set, which, in accordance with the INSPIRE Directive, must be made available to members of the Community, INSPIRE Directive partners should, in future, transfer this information via the geo-portal, which will be compliant with INSPIRE requirements.

Community institutions and bodies can make use of Latvia's geospatial data holders' e-services, which are free of charge, such as the LGIA map browser (http://map.lgia.gov.lv/) and the Maritime Administration's free view and search services for charts and navigational devices (www.lhd.lv:8080/MAP) etc.

6.3 Barriers to sharing and actions taken to overcome those barriers

One of the most significant problems preventing any improvement to the sharing of geospatial data sets can be attributed to the fact that work has not begun on the national common geo-portal, which is due to be put into operation by 1 November 2013.

The second most important problem is the situation stemming from the financial crisis, which means that it is not possible to produce and update geospatial information data to the extent required for the performance of the functions and tasks of the central and local government authorities. At present the funding required for producing and updating this geospatial information is not provided for in the budgets of the institutions requiring geospatial information data to perform their functions and tasks.

In view of the existing financial situation, provisions are being included in the Law on Geospatial Information, whereby holders of geospatial data sets provide geospatial information data in accordance with the amount of financing allocated from the state or local authority budget, and holders of geospatial data sets may apply a charge for the re-use of geospatial information and for the use of geospatial information services in accordance with their price schedules for public chargeable services. Similarly, the Law on Geospatial Information contains a provision that in the absence of budget funding allocated to a body for the purpose of obtaining, producing and maintaining geospatial information or providing a certain geospatial information service, the body shall apply a charge according to its price schedule for sharing geospatial information or receiving geospatial information services in order to perform the functions and tasks of state administration.

In order to resolve this situation, holders of geospatial data actively seek funding from the state budget in order to produce and maintain data sets, and also plan to attract financing from the Structural Funds (for example, the LGIA plans to attract financing from the ERDF for overall laser scanning of the entire territory of Latvia, which would ensure the production of high quality terrain model data).

The services developed for implementing the INSPIRE Directive are not entirely suitable for the spatial analysis and modelling of data. Therefore, when implementing new projects that use spatial data, considerable investment is made to harmonise spatial data. The requirements of the INSPIRE Directive concerning the scope and structure of spatial data should be clarified, in order to provide the Member States with high quality spatial data.

There continues to be a variety in the format and structure of geospatial data in Latvia. This problem will be reduced with the implementation of the national common geo-portal, which will encourage different holders of geospatial data to standardise and harmonise their services, including more wide-spread use of network services. The situation will also be improved by developing the classification system for geospatial objects, and its implementation for producing, maintaining and using geospatial data information is specified in the Law on Geospatial Information. At present work is being carried out at the LGIA on developing a research and transformation model of solutions for implementing this classification system, which will ensure the transition to producing data according to a common classification.

7 Cost and benefit aspects (Art.16)

7.1 Costs relating to the implementation of the INSPIRE Directive

It is difficult to determine the precise costs directly relating to the implementation of the INSPIRE Directive, because they are not recorded separately and are included in the joint expenditure of public and local authority bodies. A separate costs and benefit analysis relating to the implementation of the INSPIRE Directive has not been undertaken in Latvia to-date. An assessment used by the Commission when preparing the proposal for the INSPIRE Directive will be used during the process of harmonising the INSPIRE Directive.

Tasks relating to monitoring, reporting and coordinating the implementation of the INSPIRE Directive are currently being undertaken by using existing human resources and budget allocations, without

establishing any new bodies and co-opting any additional employees. In turn work relating to the production of metadata, harmonisation of geospatial data and development of computer network services, including the creation of the national common geo-portal, is being undertaken as part of separate projects. The anticipated costs of these projects are set out in Cabinet Order No 147 of 15 March 2010 "Regarding the list of priority projects for the development of electronic government and an information society" [14].

7.2 **Benefits observed**

This report does not contain information on benefits observed, given that the creation of the IGI is on-going, but information has been collated on potential benefits which the IGI may provide.

One of the main benefits is the availability of geospatial data sets and access to them in electronic format, which is a prerequisite for more wide-spread use of geospatial data in various sectors of the economy and the state administration. The electronic environment will directly:
- enable more effective management of the production of geospatial data sets, by improving data quality and reducing the duplication of data at different state administration bodies, and
- provide an IT infrastructure for developing and providing various services both to the general public and the state administration.

The benefits from the IGI will be indirect and difficult to assess in monetary terms, because it will not be possible to calculate the exact costs which might arise, if working methods and technologies when working with geospatial information are not altered.

The national common geo-portal will serve as a common access point to geospatial data sets and geospatial data services, by providing faster and more effective access to them and use, which meet the needs of users. Use of the geo-portal infrastructure will make it possible to develop new information systems or developing existing information systems designed for processing geospatial data more effectively and with lower costs. In turn this will open the way to developing new electronic services.

8 Conclusions

A legal, methodological and technical basis has been developed for implementing the IGI in Latvia, and information has been gathered on the bodies involved, where coordination between these bodies is of significant importance when developing the IGI. The Law on Geospatial Information [4] entered into force on 13 January 2010, and this Law transposes the requirements of the INSPIRE Directive and lays down the fundamental principles for obtaining, maintaining and using geospatial information, by specifying requirements such as the mandatory collection of metadata for geospatial data sets, standardised regulations for using geospatial data sets, by defining the key national geospatial information data, etc. Several important Cabinet Regulations have been developed for the successful implementation of the IGI, based on the delegations included in the Law on Geospatial Information, as follows:
1) Cabinet Regulation No 211 of 22 March 2011 "Regulations on the mandatory content of geospatial data sets" [6];
2) Cabinet Regulation No 673 of 30 August 2011 "Mandatory content of the rules for using geospatial data sets, and procedures for receiving a permit for use" [7]
3) Cabinet Regulation No 668 of 30 August 2011 "Regulations for the national common geospatial information portal" [8];
4) Cabinet Regulation No 50 of 10 January 2012 "Regulations for information on place names" [41];
5) Cabinet Regulation No 281 of 24 April 2012 "Regulations for highly detailed topographical information and their central databases" [42];
6) Cabinet Regulation No 497 of 24 July 2012 "Regulations for the local geodetic network" [43].

A permanent working group has been established of contact persons at the bodies with joint responsibility, and the main purpose of this working group is to exchange information and coordinate

plans for obtaining and maintaining geospatial data, as well as for creating and developing geospatial services.

Development of the national common geo-portal and its cohesion with sectors' GIS is being implemented by means of the project co-financed from the European Regional Development Fund [20] and managed by the SRDA, and it is due to be completed on 1 November 2013.

During this stage of developing the IGI it is very important for specialists from the ministries and their subordinate bodies to become involved and participate in the preparation of the Commission Regulation on implementing the INSPIRE Directive with respect to the interoperability of spatial data sets and services (data themes in Annexes II and III to the INSPIRE Directive), as well as coordinate their plans as far as their activities when developing and maintaining geospatial data sets and metadata are concerned, in order to ensure access on the common geospatial information portal, and this includes implementation of the projects referred to in sub-section 4.1 of this report.

In light of the above it can be concluded that Latvia is continuing to implement the requirements of the INSPIRE Directive successfully.

9   Annexes

9.1   List of organisations – names and contact information

1. Ministry of Defence (www.mod.gov.lv), Kr. Valdemāra 10/12, Riga, LV–1473, tel: +371-67335184, fax: +371-67212307, email: kanceleja@ mod.gov.lv
2. Latvian Geospatial Information Agency (www.lgia.gov.lv), O.Vācieša iela 43, Riga, LV-1004, tel: +371-28655590, fax: +371-29370505, email: info@lgia.gov.lv
3. State Regional Development Agency (www.vraa.gov.lv), Elizabetes iela 19, Riga, LV-1010, tel: +371-67079000, fax: +371-67079001, email: pasts@vraa.gov.lv
4. State Land Service (www.SLS.gov.lv), 11.novembra krastmala 31, Riga, LV-1050, tel: +371-67038608, fax:+371-67038829, email: SLS@SLS.gov.lv
5. Ministry of Environmental Protection and Regional Development (www.varam.gov.lv), Peldu iela 25, Riga, LV-1494, tel: +371-67026533, fax: +371-67820442, email: pasts@varam.gov.lv
6. Latvian Environmental, Geology and Meteorology Centre (www.lvgmc.lv), Maskavas ielā 165, Riga, LV-1019, tel: +371 67 032 600, fax: +371 67 145 154, email: lvgmc@lvgmc.lv
7. Ministry of Agriculture (www.zm.gov.lv), Republikas laukums 2, Riga, LV-1981, tel: +371-67027010, fax: +371-67027512, email: zm@zm.gov.lv
8. Rural Support Service (www.lad.gov.lv), Republikas laukums 2, Riga, LV-1981, tel: +371-67027542, fax: +371-67027120, email: lad@lad.gov.lv
9. State Forest Service (www.vmd.gov.lv), 13.janvāra iela 15, Riga, LV-1932, tel: +371-67226600, fax: +371-67211176, email: vmd@vmd.gov.lv
10. State Plant Protection Service (www.vaad.gov.lv, Lielvārdes iela 36/38, Riga,.LV-1006, tel +371-67027098, fax: +371-67027302 , email: info@vaad.gov.lv
11. Ministry of Transport (www.sam.gov.lv), Gogoļa iela 3, Riga, LV-1743, tel: +371-67028201, fax: +371- 67028028 , email: satiksmes.ministrija@sam.gov.lv
12. VAS "Latvian State |Roads" (www.lvceli.lv), Gogoļa iela 3, Riga, LV-1050, tel: +371-67028169, fax: +371-67028171, email: lvceli@lvceli.lv
13. VAS "Latvian Railways" (www.ldz.lv), Gogoļa iela 3, Riga, LV-1547, tel: +371-1181, fax: +371-67820231, email: pr@ldz.lv
14. V/A "Civil Aviation Agency" (www.caa.lv), Airport "Riga" 10/1, Mārupe District, LV-1053, tel: +371-67830936, fax: +371-67830967, email: latcaa@latcaa.gov.lv
15. VAS "Latvian Maritime Administration" (, www.lhd.lv, www.lja.lv), Trijādības iela 5, Riga, tel: +371- 67062101, fax: +371- 67860082, email: lja@lja.lv
16. Ministry of Economics (www.em.gov.lv), Brīvības iela 55, Riga, LV – 1519, tel: +371-67013101, fax: +371-67280882, email: pasts@em.gov.lv
17. Central Statistical Board (www.csb.lv), Lāčplēša iela 1, Riga, LV – 1301, tel: +371-67366850, fax: +371-67830137, email: csb@csb.gov.lv

18. State Inspectorate for the Protection of Cultural Monuments (www.mantojums.lv), Mazā Pils iela 19. Riga, LV-1050, tel: +371-67229272. fax: +371-67228808, email: vkpai@mantojums.lv
19. Ministry of the Interior (www.iem.gov.lv), Čiekurkalna 1.līnija 1, korp.2, Riga, LV-1026, tel: +371-67219263, fax:+371 67829686, email: kanceleja@iem.gov.lv
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