



INSPIRE

Infrastructure for Spatial Information in Europe

Member State Report: Bulgaria, 2013

Title	Member State Report: Bulgaria, 2013
Author	Ministry of Transport, Information Technology and Communications
Date	15 May 2013
Subject	Report on the status of the infrastructure for spatial information in Bulgaria
Status	Final version
Publisher	Ministry of Transport, Information Technology and Communications
Type	Text
Description	Report from Bulgaria to the European Commission on the application of Directive 2007/2/EC (INSPIRE) 2013
Contributor	Executive Agency for Electronic Communication Networks and Information Systems
Format	DOC
Source	Ministry of Transport, Information Technology and Communications
Rights	Ministry of Transport, Information Technology and Communications
Identifier	INSPIRE_Report_Bulgaria_2013
Language	BG
Relation	
Coverage	

Version number	Date	Modified by	Comments

Table of Contents:

1. Introduction	5
2. Coordination and quality assurance (Article 12)	6
2.1. Coordination (Article 12(1)).....	6
2.1.1. Member State contact point	6
2.1.2. Coordination structure	7
2.1.3. Comments on the monitoring and reporting process.	10
2.2. Quality Assurance (Article 12(2)).....	11
3. Functioning and coordination of the infrastructure (Article 13).....	11
3.1. General overview description of the SDI	11
3.2. INSPIRE Stakeholders.....	12
3.3. Role of the various stakeholders	13
3.4. Measures taken to facilitate sharing	14
3.5. Stakeholder cooperation.....	15
3.6. Access to services through the INSPIRE Geoportal	15
4. Usage of the infrastructure for spatial information (Article 14).....	15
4.1. Use of spatial data services in the SDI.....	15
4.2. Use of the spatial datasets	16
4.3. Use of the SDI by the general public	18
4.4. Cross-border use	19
4.5. Use of transformation services.....	20
5. Data sharing arrangements (Article 15).....	20
5.1. Data sharing arrangements between public authorities	20
5.2. Data sharing arrangements between public authorities and Community institutions and bodies	20
5.3. Barriers to the sharing and the actions taken to overcome them	21
6. Cost / Benefit aspects (Article 16).....	22
6.1. Costs resulting from implementing the INSPIRE Directive	22
6.2. Benefits observed	24
7. Annexes.....	26

1. Introduction

This report of the Republic of Bulgaria has been drawn up in accordance with Article 21(2) 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). It is based on Commission Decision 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 follows the template for reporting on INSPIRE provided by the European Commission. The report describes the status of the establishment and development of the infrastructure for spatial information in Bulgaria. The report details the coordination structures in Bulgaria, the tasks, the participants' objectives and their working methods and, particularly, the actions undertaken in Bulgaria in response to the INSPIRE Directive.

The report has been drawn up by the Ministry of Transport, Information Technology and Communications, which is in charge of transposing Directive 2007/2/EC INSPIRE in Bulgaria, and by the Executive Agency 'Electronic Communication Networks and Information Systems', which is in charge of the development and maintenance of a national portal for spatial data and which is the a national contact point. The report has been approved by the Interdepartmental Council on Spatial Information supporting the minister for transport, information technology and communication in fulfilment of the obligations relating to the development of the infrastructure for spatial information.

2. Coordination and quality assurance (Article 12)

2.1. Coordination (Article 12(1))

2.1.1. Member State contact point

Name and contact information

Member State contact point	
Name of public authority	Ministry of Transport, Information Technology and Communications
Contact information:	
Postal address	Sofia, 1000, 9 Dyakon Ignatiy Str.
Telephone number	+3592 940 93 01;
Fax number	+3592 940 98 24;
e-mail:	
Organisation's website URL	www.mtirc.government.bg
Contact person (if available)	Ivan Stanev – director of the 'Electronic Management' Directorate
Telephone number	02 949 2992
e-mail:	istanev@mtirc.government.bg
Contact person – substitute (if available)	
Telephone number	
e-mail:	

Role and responsibilities

According to the national Spatial Data Access Act (ZDPD) in force as of 9 March 2010, transposing 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), (OJ, L 108/1 of 25 April 2007), the minister for transport, information technology and communications:

- pursues the state policy in the field of the infrastructure for spatial information;
- performs the functions of a national contact body with the European Commission on issues related to the harmonisation of the conditions for access to the national spatial data on the part of the European Union;
- drafts and submits documents and reports required by the European Commission, including periodical reports that reflect the execution of his control functions;
- submits to the European Commission reports with up-to-date information on the establishment, maintenance and use of the national infrastructure for spatial information.

While exercising his powers, the minister for transport, information technology and communications is assisted by:

- The Executive Agency 'Electronic Communication Networks and Information Systems';
- The Interdepartmental Council on Spatial Information.

2.1.2. Coordination structure

Name and contact information

Coordinating structure supporting the member state contact point (MSCP)	
Name of the coordinating structure	Executive Agency 'Electronic Communication Networks and Information Systems'
Contact information:	
Postal address	Sofia, 1000, 6 Gurko Str.
Telephone number	+359 949 21 15
Fax number	+359 949 87 87
e-mail:	
Organisation's website URL	www.esmis.government.bg
Contact person (if available)	Lilyana Turnalieva - Tsoleva
Telephone number	+3592 949 28 05;
e-mail:	lturnalieva@esmis.government.bg
Contact person – substitute (if available)	
Telephone number	
e-mail:	
Date and period of mandate	

Role and responsibilities

The Executive Agency 'Electronic Communication Networks and Information Systems' is a secondary administrator of the budget funds of the Ministry of Transport, Information Technology and Communications. Since the Spatial Data Access Act entry into force in 2010, it is the obligation and responsibility of the Executive Agency to establish and maintain a national portal for spatial data, which shall be accessible from all state structures and from the European geo-portal. The national policy for development of the spatial information infrastructure is defined and coordinated by the Ministry of Transport, Information Technology and Communications.

The 'Control and Maintenance of Information Systems and Centres' Directorate of the Executive Agency has the following obligations relevant to the development of the spatial information infrastructure:

- to participate in the development and implementation of the concept for establishing a National Portal for spatial data and to ensure its maintenance;
- to support and consult the specialised directorates in the state structures as regards the activities related to spatial data;
- to organise and carry out the activities related to the establishment and maintenance of the necessary registers and datasets for the spatial data in the National Portal for spatial data;
- to carry out activities related to observing the information security requirements;

- to establish contact and cooperation with other similar European structures working in the field of spatial data and global environmental monitoring and security and to participate in the operations of the European Commission Committee on the same matters;
- to ensure the effective functioning of the agency's information system and its integration to the information systems of other ministries and administrations;
- to maintain and provide a special testing environment for carrying out checks on the information systems conformity with the requirements for interoperability and information security.

The Executive Agency maintains a web site page in English and Bulgarian where the documents on the development of the national infrastructure for spatial information are published (Directive 2007/2/EC, the Spatial Data Access Act, the regulations for application of the directive, the specification of data on the themes from the directive annexes, guidelines for application, etc.). The reports and tables related to the monitoring and reporting of the directive implementation progress are also published on this page.

The web site address is: <http://www.esmis.government.bg/en/page.php?c=45>

The minister for transport, information technology and communications is supported by an Interdepartmental Council on Spatial Information established by virtue of his order RD – 08–476/14 September 2010. The council operations are directed by the minister for transport, information technology and communications or by a deputy minister authorised by him. The Interdepartmental Council consists of 14 members, a chair and two deputy chairs. The members of the Interdepartmental Council include representatives of state structures and third parties responsible for the collection, updating and provision of spatial data services.

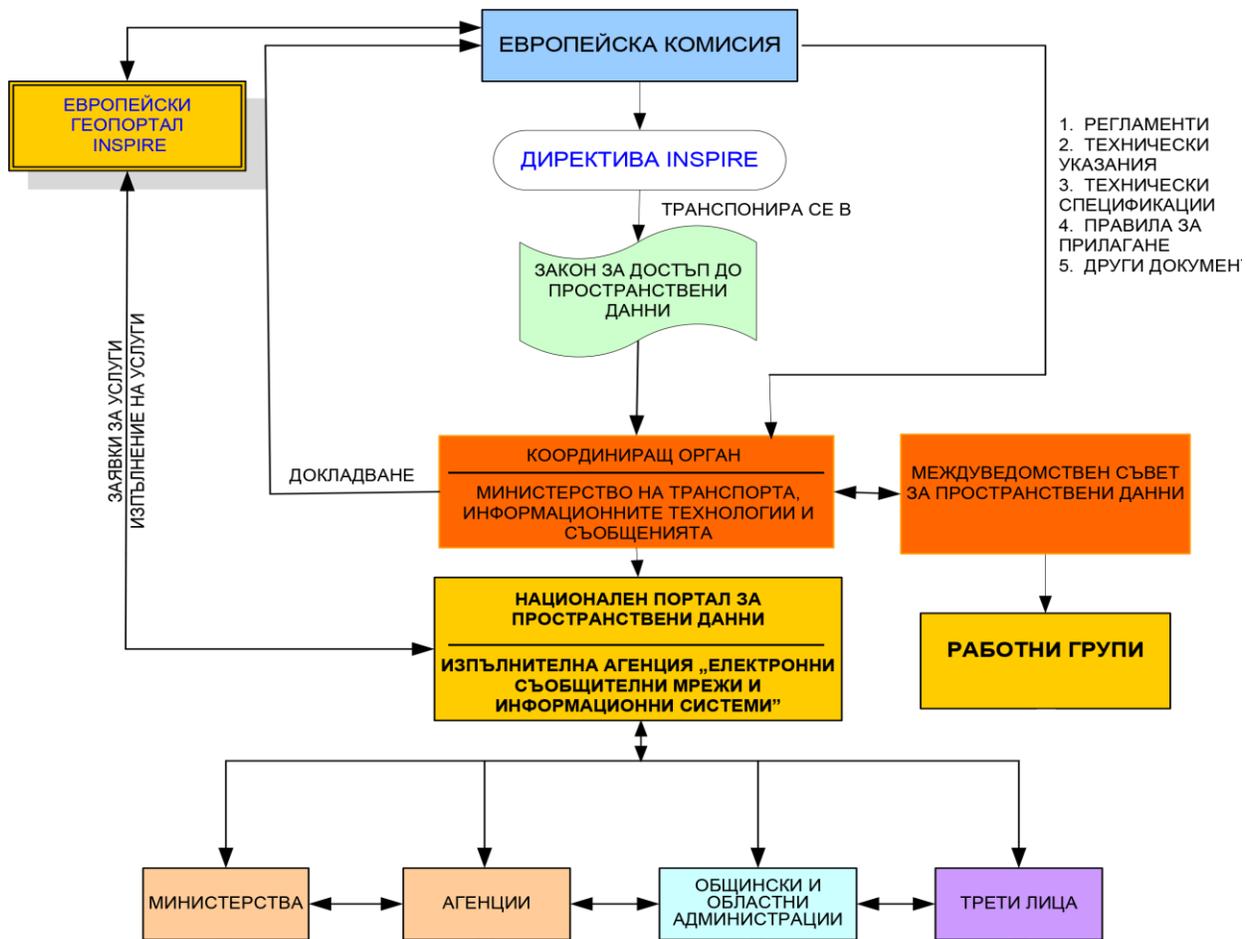
The Interdepartmental Council on Spatial Information exercises its functions related to taking consensus decisions on the establishment, introduction, development, maintenance and use of the spatial data infrastructure in accordance with the regulations for its operations adopted by the Bulgarian Council of Ministers. The Interdepartmental Council sets up expert working groups for the specific tasks on the themes from the directive annexes, which deal with the technical issues related to laying down general rules, mandatory for all administrators and creators of spatial data, who have the obligation to create metadata and harmonise them according to the European rules and regulations. At this stage, however, the operations of these groups are slow and insufficiently efficient.

Organisational structure

At present, the national coordinating structure for establishing the spatial data infrastructure in Bulgaria is the Ministry of Transport, Information Technology and Communications via the minister. At this stage, the national legislation does not require the establishment of other district and municipal level coordinating structures and the relations with third parties are not detailed.

Currently there are no clearly defined relations with third parties that are willing to provide spatial information services according to the INSPIRE Directive requirements.

The organisational structure for establishment of the infrastructure for spatial information according to the national Spatial Data Access Act is shown on ***Fig. 1.***

**Fig. 1.**

BG	EN
Европейска комисия	European Commission
Европейски геопортал INSPIRE	European INSPIRE geoportal
Заявки за услуги	Inquiries for services
Изпълнение на услуги	Rendering services
Директива INSPIRE	INSPIRE Directive
Транспонира се в	It is transposed in
Закон за достъп до пространствени данни	The Spatial Data Access Act
1. Регламенти 2. Технически указания 3. Технически спецификации 4. Правила за прилагане 5. Други документи	1. Regulations 2. Technical instructions 3. Technical specifications 4. Rules for application 5. Other documents
Докладване	Reporting
Координиращ орган	Coordinating body
Министерство на транспорта, информационните технологии и съобщенията	Ministry of Transport, Information Technology and Communications
Междуправителен съвет за пространствени	Interdepartmental Council on Spatial

данни	Information
Национален портал за пространствени данни	National Portal for Spatial Data
Изпълнителна агенция „Електронни съобщителни мрежи и информационни системи”	Executive Agency ‘Electronic Communication Networks and Information Systems’
Работни групи	Working groups
Министерства	Ministries
Агенции	Agencies
Общински и областни администрации	Municipal and district administrations

Overview of working practices and procedures

At present, there are few practices and procedures the coordinating body has implemented for initiating actions on the application of the directive and the national Spatial Data Access Act by the state structures that administer spatial data and provide services with these data.

2.1.3. Comments on the monitoring and reporting process.

The obligations under the monitoring and reporting procedure in accordance with Article 21 of Directive 2007/2/EC are vested to the minister for transport, information technology and communications or to state structures authorised by him in accordance with the national Spatial Data Access Act.

The Executive Agency 'Electronic Communication Networks and Information Systems', which is under the administrative management of the minister for transport, information technology and communications, implements the necessary actions according to the requirements for monitoring and reporting of the application progress of Directive 2007/2/EC. The records and reports prepared are coordinated within the European Affairs Coordination Mechanism and approved by the minister. Then, then they are sent to the controlling European authority according to the specified procedure.

The monitoring procedure was prepared and implemented by the 'Spatial Data' Department of the 'Control and Maintenance of Information Systems and Centres' Directorate in 2010. For this purpose, detailed spreadsheets were drawn up, which were sent by the competent ministers to all public structures that maintain spatial data. They were required to fill in the information about the spatial data available corresponding to the themes listed in the directive annexes, the metadata available and the services.

The filled in tables provided information about the state structures storing spatial data, the contact persons, the number of spatial datasets, the formats, the geographic scope, the presence of metadata, the provision of data services, the types of services, the communication infrastructure for provision of services, etc.

These data were used for the monitoring for year 2010 and 2011.

The data from the filled in tables were analysed and gave clarity as to the status of spatial data in the country, their quantity and quality and the available information systems used for their processing and provision of services.

The conclusions were as follows:

- The spatial datasets corresponding to the themes of the directive annexes are administered by different state structures.
- There are no rules and arrangements for spatial data exchange between the administrators of spatial information.
- Very few spatial data services have been provided.
- There are no defined criteria for the quality of data, except for the data related to the application of the requirements of different EU Directives, such as the Water Framework Directive 2000/60/EC.
- A large number of thematic portals providing spatial data services have been created.
- No spatial data services relating to the requirements of the INSPIRE Directive have been provided.
- The information and services metadata administered by the Executive Environment Agency have been harmonised with the INSPIRE Directive.

2.2. Quality Assurance (Article 12(2))

Each public structure is responsible for the quality of the spatial data and services administered by this structure.

At present, there is no controlling mechanism for monitoring the quality of network services.

3. Functioning and coordination of the infrastructure (Article 13)

3.1. General overview description of the SDI

The current organisation of reporting on the establishment of the spatial data infrastructure in Bulgaria is presented in Fig.1. This organisation is reflected in the national Spatial Data Access Act, which will undergo some changes that have become necessary in the course of its application.

The spatial information is decentralised, created, stored and administered by different state structures pursuant to special national laws and EU directives.

The analyses of the spatial data available indicate that much of these do not comply with the Directive. At the same time there is a large amount of other information that covers national needs and is used for administrative electronic services in accordance with the national Electronic Government Act (ZEU).

Many holders of spatial data have developed their own thematic portals, by means of which they make those data available for the provision of services.

The first and major task of each state administration responsible for the application of the directive and national laws on spatial data infrastructure and on the electronic government will be to define the data that meet the directive specifications and to apply the provisions for interoperability.

Some state structures, such as the Geodesy, Cartography and Cadastre Agency, the Executive Agency for the Environment, the Directorate-General for Agriculture and Land Relations of the Ministry of Agriculture and Food, the Pushkarov Institute for Soil Science,

Agricultural Technology and Plant Protection, and the Military Geographical Service of the Ministry of Defence, have started projects funded by the EU to align the spatial data available with the Directive's requirements concerning interoperability of data and services.

The Executive Agency for Electronic Communication Networks and Information Systems is developing an information and communication platform under a project funded by the European Union. The purpose of the platform is to achieve interoperability of spatial data and services and give government bodies and citizens access to them. The objective of the project is to create a prototype of a national portal for access to spatial data as a major component of the spatial data infrastructure that shall provide harmonised services with interoperable spatial data from different providers. The national portal for spatial data will provide metadata; it will implement services related to finding and analysing data and will have an interface with the European portal.

The implementation of this project will complete the following important tasks related to the development of the national spatial data infrastructure:

- All stakeholders in the process and their roles will be identified.
- A draft national strategy for establishment of the spatial data infrastructure will be drawn up, which will be presented for public discussion and will be adopted by the Council of Ministers.
- Metadata of spatial datasets and services validated through the European portal will be published.
- Major services for finding and visualisation corresponding to the directive requirements will be implemented.
- A design for the full development of the national portal for spatial data will be drawn up, with specified deadlines and estimated budget.

The project for development of a national spatial data portal is expected to be completed by May 2014.

3.2. INSPIRE Stakeholders

The stakeholders in the development of the spatial data infrastructure identified so far are listed below:

- Road Infrastructure Agency;
- Geodesy, Cartography and Cadastre Agency;
- East Aegean Sea River Basin Directorate;
- River Basin Directorate;
- West Aegean Sea River Basin Directorate – Blagoevgrad;
- Military Geographical Service;
- Geological Institute – Bulgarian Academy of Science;
- 'Agriculture, Forestry and Land Relations' Directorate General;
- 'Pirin National Park' Directorate;
- 'Rila National Park' Directorate;
- 'Central Balkan National Park' Directorate;
- Black Sea River Basin Directorate of the Ministry of the Environment and Water;
- State Fund for Agriculture;
- Bulgarian Ports Infrastructure Company;
- Executive Agency on Forests;

- Executive Environment Agency;
- Executive Agency 'Exploration and Maintenance of the Danube River';
- Institute of Soil Science, Agrotechnologies and Plant Protection 'N. Pushkarov';
- Ministry of Interior – Fire Safety and Civil Protection Chief Directorate – Sector 'Centre for Aerospace Observations';
- Ministry of Health;
- Ministry of Agriculture and Food;
- Ministry of Economy, Energy and Tourism;
- Ministry of Regional Development and Public works;
- Ministry of Transport, Information Technology and Communications;
- State-owned enterprise 'National Railway Infrastructure Company'.

The obligations and responsibilities of the parties concerned with the development of the spatial data infrastructure are laid down in the Spatial Data Access Act, particularly:

- publication of metadata about spatial datasets and services on the national portal for spatial data;
- provision of spatial data services through the national portal for spatial data;
- aligning the spatial data available with the standards required by the provision for interoperability in the INSPIRE Directive;
- development of interoperable spatial data services.

3.3. Role of the various stakeholders

The state structures that administer spatial data and provide services with them take the role of administrators, users and generators of spatial data at the same time.

The district administration, which is a local state structure, and the municipal administration, governing a certain territory in its capacity as a stakeholder in the development of the spatial data infrastructure, are only users of spatial information.

The role of third parties as stakeholders in the spatial data infrastructure is not clearly defined yet. Spatial datasets with the respective interpretation owned by third parties are published in their own portals or in web sites and portals of state structures, depending on their significance (national or local).

At present, the following roles of concerned state structures have been identified in relation to the provision of data and metadata and the development of the infrastructure for spatial information:

- 1) The Geodesy, Cartography and Cadastre Agency (AGKK) of the Ministry of Regional Development and Public Works, with the following roles in the spatial data infrastructure: coordinating body for the cadastre information in the Republic of Bulgaria, providing metadata and spatial data; data user; data generator; provider of services with spatial cadastre data to citizens;
- 2) The River Basin Directorates of the Ministry of the Environment and Water fulfil the following functions in the spatial data infrastructure: coordinating body for data about the water in different regions in Bulgaria, providing metadata and spatial data; data user; data generator; providers of services with spatial data about water to citizens;
- 3) The Executive Environment Agency of the Ministry of the Environment and Water fulfils the function of a coordinating body for environmental data in the Republic of Bulgaria; it

- provides metadata and spatial data; it is a data user; it is a data generator; it provides services with spatial environmental data to the citizens;
- 4) Institute of Soil Science, Agrotechnologies and Plant Protection 'N. Pushkarov' (IPAZR 'N. Pushkarov') of the Ministry of Agriculture and Food fulfils the function of a coordinating body for spatial data about the soils in Bulgaria; it provides metadata and spatial data; it is a soil data user; it is a generator of data and it provides services to citizens with spatial soil data;
 - 5) The Military Geographical Service of the Ministry of Defence fulfils the function of a coordinating body for spatial data; it provides metadata and spatial data; it is a data user; it is a generator of data about aerophoto and satellite images, etc. for the needs of the office;
 - 6) The State Fund for Agriculture of the Ministry of Agriculture and Food fulfils the function of a user, generator of data and provider of interdepartmental spatial data about agricultural land concerning direct payments under the Rural Development Programme in the Republic of Bulgaria.
 - 7) The Ministry of Agriculture and Food – 'Agriculture and Land Relations' Directorate General, 'Agricultural Land Plots Identification' Department fulfils the function of a coordinator, user, generator of data and service provider for spatial data about agricultural land.
 - 8) The state-owned enterprise 'National Railway Infrastructure Company' fulfils the function of an administrator, user and generator of spatial data about the railway infrastructure and the company property.

More detailed and specific information on the roles of the stakeholders at different levels of management in the development of the spatial data infrastructure will be identified in stages upon implementation of certain network services through the national portal for spatial data.

3.4. Measures taken to facilitate sharing

Currently no specific measures have been undertaken at national level to promote the exchange of spatial datasets and services between the public structures.

Some state structures develop and implement projects financed from the EU funds for development of information systems and portals designed to provide public access to the spatial data administered by them and to support the provision of the services related to the spatial data.

Examples of such projects are:

- 1) The Military Geographical Service of the Ministry of Defence implements a project entitled 'Development of an Information System for Providing Public Access to the Spatial Data and Services of the Ministry of Defence'.
- 2) The Geodesy, Cartography and Cadastre Agency of the Ministry of Regional Development and Public Works implements a project entitled 'Upgrading the Existing Information Systems and Development of E-Services by AGKK for Better Administrative Service'. The project is related to the introduction of new administrative services related to the use of the spatial data and spatial infrastructure through geo-portals for institutions, local structures and organisations, map publishers, citizens and companies. Another project financed with EU funds is: 'Upgrading the Existing Information Systems and

Development of E-Services by AGKK for Better Administrative Service'. The project aims to upgrade the information system for specialised data and to provide electronic administrative services for the 'A' and 'B' protection zones at the Black Sea Coast. It will also establish a register of geographic names and will align the spatial data available with the requirements of INSPIRE.

- 3) The Bulgarian Ports Infrastructure Company of the Ministry of Transport, Information Technology and Communications has introduced a pilot monitoring system for studies in the aquatory of the ports in the city of Burgas at the Black Sea and city of Bar at the Adriatic Sea in Montenegro designed to prevent pollution of the sea water, air and soil and to support the conservation of all natural resources at the port regions located close to the coastal areas.
- 4) The Executive Agency 'Electronic Communication Networks and Information Systems' of the Ministry of Transport, Information Technology and Communications is implementing a project entitled 'Establishment of an Information and Communication Platform for Achieving Interoperability of the Spatial Data and Services and Provision of Access to the State Administration and the Citizens' for the development of a national portal for spatial information.
- 5) The National Railway Infrastructure Company of the Ministry of Transport, Information Technology and Communications is implementing a project entitled 'Expansion of the Functional Scope of the GIS of State-owned Enterprise National Railway Infrastructure Company', which plans to develop a module (or modules) for provision of geographic information to other systems in accordance with the European and national legislation.
- 6) The Ministry of Health has developed thematic and regional portals for provision of spatial data services.

3.5. Stakeholder cooperation

3.6. Access to services through the INSPIRE Geoportal

The access to services through the INSPIRE portal in accordance with Article 15(2) of Directive 2007/2/EC will be provided upon completion of the project 'Establishment of an Information and Communication Platform for Achieving Interoperability of the Spatial Data and Services and Provision of Access to the State Administration and the Citizens' financed with EU funds and implemented by the Executive Agency 'Electronic Communication Networks and Information Systems' of the Ministry of Transport, Information Technology and Communications.

4. Usage of the infrastructure for spatial information (Article 14)

4.1. Use of spatial data services in the SDI

At present, there is partial identification of spatial datasets and services using them and no general or specific indicators have been taken into account.

4.2. Use of the spatial datasets

This section provides examples for use of spatial datasets administered by state structures for national purposes and for purposes related to protection of the environment and water as required by the European directives.

The data in these examples do not meet the standards of the directive and are not interoperable according to the provisions of the directive.

- 1) The River Basin Directorates of the Ministry of the Environment and Water:
 - defining the borders of the surface water bodies in accordance with the Water Framework Directive 2000/60/EC;
 - defining the borders for water protection zones according to the national Water Act;
 - development of programmes for water monitoring and monitoring of the water protection zones in accordance with the Water Act and the Water Framework Directive 2000/60/EC;
 - development of a River Basin Management Plan with a Programme of Measures and maps, according to the requirements of the Water Act and the Water Framework Directive 2000/60/EC;
 - assessment of the eligibility of investment projects under the River Basin Management Plan that is currently in force;
 - preliminary flood risk assessment in accordance with the EU Floods Directive;
 - electronic reporting in WISE according to the requirements of Directive 2007/60/EC;
 - provision of Data for developing the Danube River Basin Management Plan (DRBMP) in the framework of the International Commission for the Protection of the Danube River (ICPDR);
 - defining regions with significant potential flood risk according to the EU Floods Directive and development of a Flood Risk Management Plan.

- 2) Executive Environment Agency:
 - A National Biodiversity Monitoring System has been developed with a web application.
 - An Information System of permits and water management monitoring has been developed.
 - A Unified Information System for data exchange from water monitoring has been developed.
 - A National Database of the surface cover of Bulgaria has been developed under the European project 'CORINE Land Cover'.
 - A National Environmental Monitoring System has been developed in the Ministry of the Environment and Water.
 - A National Biodiversity Monitoring System has been developed.
 - Development of the National Report on the Environment Status and Protection in the Republic of Bulgaria.

- 3) Institute of Soil Science, Agrotechnologies and Plant Protection 'N. Pushkarov' (IPAZR 'N. Pushkarov');

- Developed soil portal GS Soil under a project (No ECP 318004) ‘Assessment and Strategic Development of INSPIRE Compliant Geodata-Services for European Soil Data’, in which the institute participated in 2011. Two national digital soil maps and soil datasets and maps have been published as part of the project.
 - Provides spatial data to the Ministry of Agriculture and Food about the soils in the land plots for the needs of the agricultural subsidies.
 - Provides data about the soils and assessment of the erosion factors and risks related to the application of the Nitrates Directive in Bulgaria.
 - Provides soil spatial data for the project: Weather Driven Natural Hazards – WDNH, Action 4336. Task: ‘Soil database and accompanying information about the Bulgarian part of the water catchment area of the Danube River’.
 - Provides soil data in the framework of the project ‘Capacity-Building for Sustainable Land Management in Bulgaria’ under the United Nations Development Programme and the Global Environment Facility, 2005-2007.
 - Provides soil spatial data for development of maps about the risk of droughts and the need of irrigation for corn under the project ‘Drought Management Centre for South-eastern Europe’.
- 4) Military Geographical Service of the Ministry of Defence:
- Development of aero-navigation map for the needs of the Air Traffic Management;
 - Development of maps in fulfilment of Bulgaria's commitment as a NATO member state;
 - Development of maps in fulfilment of the Geodesy and Cartography Act;
- 5) Geodesy, Cartography and Cadastre Agency of the Ministry of Regional Development and Public Works:
- Provision of data from the cadastre maps and the data from the national geo-map stock, provision of data about properties and buildings, provision of topographic maps, data about spatial and vertical geodetic networks; provision of data needed for the implementation of the Common Agricultural Policy, for the energy and transport policy, for security policies, the marine policy, for the air and emissions policy, for the waste policies, for the policies related to coastal marine waters, for biodiversity policies, for implementation of horizontal policies, such as public access to environmental information, environmental responsibility, environmental impact assessments and strategic environmental assessment, etc.
- 6) State Fund for Agriculture of the Ministry of Agriculture and Food:
- An Integrated Administration and Control System has been developed that uses spatial data provided from the system for identification of agricultural land plots in the framework of the Common Agricultural Policy under the Rural Development Programme.
 - An information system with spatial data has been developed for the needs of the Natura 2000 payments under the Rural Development Programme.
- 7) Bulgarian Academy of Science – Geological Institute

- A digital geological map of the Republic of Bulgaria has been developed on a scale of 1:500000.
 - A digital geological map of the Republic of Bulgaria has been developed on a scale of 1:100000.
 - A digital geological map of the Republic of Bulgaria has been developed on a scale of 1:50000.
- 8) The Executive Agency 'Electronic Communication Networks and Information Systems' of the Ministry of Transport, Information Technology and Communications through a public-private partnership:
- Simulation models of floods for the rivers on the territory of the Republic of Bulgaria have been developed.
 - Digital models of the river valleys of certain number of rivers on the territory of the Republic of Bulgaria have been developed.
 - Maps of large fires in the country from 2007 based on satellite images from SpotImage and DMCII have been developed.
 - Maps of soil waterlogging in the region of city of Ruse have been created.
- 9) Agency of Sustainable Development and Eurointegration – Ecoregions and the Remote Sensing Application Centre (ReSAC) (a non-governmental organisation):
- A database of land cover has been created based on a globally recognised LCCS methodology for the entire territory of Bulgaria (<http://bsdi.asde-bg.org/lccs.php>).
- 10) State-owned enterprise 'National Railway Infrastructure Company'
- A Geographic Information System has been developed for the needs of the state-owned enterprise 'National Railway Infrastructure Company'. The GIS system includes:
 - Database about the railway infrastructure and its elements;
 - Aerophotographing of the railway infrastructure;
 - Digital 3D models of the railway infrastructure relief;
 - Database about the cadastre sites (properties, buildings and independent sites within them), owned by the state-owned enterprise 'National Railway Infrastructure Company'.

4.3. Use of the SDI by the general public

This section provides examples of state structures that offer spatial datasets for use by the general public:

- 1) The River Basin Directorates of the Ministry of the Environment and Water:
- Maps for informing the public have been developed in accordance with the Water Act, the Water Framework Directive 2000/60/EC and the Floods Directive; they are published on the internet page for public discussions and consultations;
 - Provision of spatial and other data about surface and ground water bodies, water abstraction and water use points, monitoring through the portal of MOEW - <http://eea.government.bg/wp/public/>, accessible to the public;

- 2) Executive Environment Agency:
 - A wide range of specialised newsletters have been published, such as daily newsletters about the air quality and the radiation level, quarterly newsletters, etc. (<http://eea.government.bg/bg/output/index.html>).
- 3) Geodesy, Cartography and Cadastre Agency of the Ministry of Regional Development and Public Works:
 - A thematic portal for access to cadastre data has been developed.
- 4) State Fund for Agriculture of the Ministry of Agriculture and Food:
 - A system for individual inquiries by direct payments has been developed.
 - A system for cadastre properties declared by direct payments has been developed.

4.4. Cross-border use

This section provides examples about provision of spatial data for cross-border use:

- 1) The River Basin Directorates of the Ministry of the Environment and Water:
 - Provides spatial data (DanubeGIS) that can be used by authorised bodies in countries from the Danube basin for activities and projects related to the Danube River and also for the needs of cross-border harmonisation with the neighbouring countries.
 - Provides spatial data for development of maps of the threat and risk of floods for the Danube River in the framework of the international project 'DanubeFloodrisk'.
 - The data reported via WISE under Directive 2000/60/EC and Directive 2007/60/EC are used for the coordination and exchange of information between neighbouring countries at different stages of the development and updating of the River Basin Management Plan and the Flood Risk Management Plan.
 - Provides spatial data for carrying out monitoring of ground and surface waters with Romania and Turkey.
 - Provides spatial data for the development of flood risk management plans with Romania and Turkey.
- 2) The Executive Environment Agency of the Ministry of the Environment and Water:
 - National Database of the surface cover of Bulgaria developed under the European project 'CORINE Land Cover'.
- 3) Institute of Soil Science, Agrotechnologies and Plant Protection 'N. Pushkarov' (IPAZR 'N. Pushkarov'):
 - Provides spatial data for development of a soil map in the region of Bulgaria and Romania (test).
- 4) Geodesy, Cartography and Cadastre Agency of the Ministry of Regional Development and Public Works:
 - Prepares and presents spatial data in relation to AGKK's membership in international geodetic organisations and organisations dealing with spatial data: it

prepares data about Republic of Bulgaria in EuroBoundaryMap and EuroRegionalMap.

4.5. Use of transformation services

At this stage, no transformation services according to the requirements of the directive have been used.

5. Data sharing arrangements (Article 15)

5.1. Data sharing arrangements between public authorities

The purpose of the data sharing arrangements is to improve, regulate and facilitate data exchange between the national public administrations at all levels of management and the European Commission departments.

At present, there are no general principles of such arrangements in place. Each state structure drafts bilateral contracts and agreements with a defined validity period in case of a need of data. It is particularly important to develop such arrangements for provision of public spatial data and services to the private sector, which will carry out individual actions for the purpose of creating added value.

5.2. Data sharing arrangements between public authorities and Community institutions and bodies

This section provides examples about different arrangements between public authorities for provision of spatial data:

- 1) Executive Environment Agency (IAOS):
 - An Agreement between IAOS and the Registry Agency for provision of the national database of the BULSTAT register pursuant to Order RD-01-273/11 August 2005.
 - IAOS shall provide and/or receive spatial information from the structures of the Ministry of the Environment and Water, the Executive Agency on Forests (IAG), the Ministry of Agriculture and Food (MZH), the National Statistical Institute (NSI) and others. The public web applications with spatial information are also designed for scientific and academic organisations and for the general public. The data are provided without any restrictions and according to the provisions of the Public Information Access Act.
- 2) Military Geographical Service
 - Agreement between the Ministry of Defence of the Republic of Bulgaria and Sofia Municipality for cooperation and data exchange;

- Plan for interaction between the Military Staff and the 'Geodesy and Cartography' Sector at the 'Border Police' National Service;
 - Agreement between the Ministry of Defence and the National Statistical Institute for cooperation and data exchange.
 - Framework Contract between the Ministry of Defence of the Republic of Bulgaria and the Bulgarian Academy of Science;
 - Framework Agreement between the Ministry of Agriculture and Food and the Ministry of Defence for cooperation and data exchange;
- 3) The Geodesy, Cartography and Cadastre Agency of the Ministry of Regional Development and Public Works
- Agreements with the Ministry of Agriculture and Food, the State Fund for Agriculture, district and municipal administrations for provision of data from the cadastre map.
- 4) State Fund for Agriculture of the Ministry of Agriculture and Food:
- Memorandum of Cooperation between the State Fund for Agriculture and the Geodesy, Cartography and Cadastre Agency.
 - 'Data Exchange Policy' between the Ministry of Agriculture and Food and the State Fund for Agriculture.
- 5) State-owned enterprise 'National Railway Infrastructure Company'
- Contract between the Geodesy, Cartography and Cadastre Agency and the state-owned enterprise 'National Railway Infrastructure Company' for: provision of data from the cadastre map and registers available in digital form; provision of excerpts of data on paper about real estate properties; carrying out the inquiries under Article 55(3) of the Cadastre and Property Register Act; provision of services under Article 52(5) and Article 56(2) of the Cadastre and Property Register Act and plotting in the cadastre.
 - Contract between the Ministry of Transport, Information Technology and Communications and the Ministry of Agriculture and Food for provision of information from the map of restored property (KVS) in digital form for the purpose of maintaining the railway infrastructure sites and improving the effectiveness and servicing of the property provided to the state-owned enterprise 'National Railway Infrastructure Company' for administration and management.
- 6) Agreement between the Ministry of Agriculture and Food and the Ministry of Transport, Information Technology and Communications for provision of cadastre data on the agricultural and forestry stock.

5.3. Barriers to the sharing and the actions taken to overcome them

At this stage, we are not capable of providing a list of barriers to the sharing of spatial datasets and services between the public authorities and from the public authorities to the EU institutions and bodies.

6. Cost / Benefit aspects (Article 16)

6.1. Costs resulting from implementing the INSPIRE Directive

At present, the requested estimation of costs according to Article 16(a) of Directive 2007/2/EC resulting from its implementation cannot be evaluated due to the following reasons:

- Lack of reporting rules related to the application of the national Spatial Data Access Act and Directive 2007/2/EC in the development of the spatial data infrastructure elements.
- Lack of distinct expert staff in the state structures to deal exclusively with the issues related to the development of the spatial data infrastructure elements according to the respective spatial data themes.
- The projects supported by EU funding implemented by the state structures include activities satisfying the national needs of spatial data services, in addition to the implementation of activities related to the application of the directive requirements for achieving interoperable data and services.
- Lack of clarity as to the level of compliance of the national spatial data specifications with the directive data specifications and the necessary financial resources for achieving interoperable data and services.
- No horizontal measures related to the application of Directive 2007/2/EC have been implemented;

The project 'Establishment of an Information and Communication Platform for Achieving Interoperability of the Spatial Data and Services and Provision of Access to the State Administration and the Citizens' implemented by the Executive Agency 'Electronic Communication Networks and Information Systems' of the Ministry of Transport, Information Technology and Communications plans development of the abovementioned analyses and further analyses and will present an indicative budget for the development of the national spatial data infrastructure elements during the next programme period.

At present, we have information about the respective costs planned for the implementation of projects; however, the costs specifically related to the implementation of the requirements of Directive 2007/2/EC are not differentiated.

Below are some sample project budgets (in BGN), which also include activities related to implementation of the requirements of Directive 2007/2/EC:

1. The Executive Agency 'Electronic Communication Networks and Information Systems' of the Ministry of Transport, Information Technology and Communications for development of a national portal for spatial data, datasets with metadata, catalogues and network services rendered.

Estimation of expected costs related to the implementation of the Spatial Data Access Act:

1.1. *IT infrastructure (hardware and key software components, upgrade) – BGN 157 000.*

1.2. *Software developments for metadata for data and services within the scope of the INSPIRE Directive, which are indicated in the tables on monitoring; Interoperability of*

data/harmonisation of data, falling within the scope of the INSPIRE Directive, which are indicated in the tables on monitoring; Network Services, falling within the scope of the INSPIRE Directive, which are indicated in the tables on monitoring – BGN 1 216 000.

1.3. Coordination and horizontal measures:

- *Supporting activities – BGN 150 000.*

2. *The Geodesy, Cartography and Cadastre Agency of the Ministry of Regional Development and Public Works*

2.1. *Evaluation of costs (estimation for the last 3 years) related to the application of the Spatial Data Access Act*

2.1.1. *IT infrastructure (hardware and key software components) – BGN 91 000.*

2.1.2. *Software developments – BGN 534 000*

2.1.3. *Yearly maintenance – BGN 308 000*

2.2. *Estimation of expected costs related to the implementation of the Spatial Data Access Act*

2.2.1. *IT infrastructure (hardware and key software components, upgrade) – BGN 375 000.*

2.2.2. *Software developments, including the ones for metadata for data and services within the scope of the INSPIRE Directive, which are indicated in the tables on monitoring; Interoperability of data/harmonisation of data, falling within the scope of the INSPIRE Directive, which are indicated in the tables on monitoring; Network Services, falling within the scope of the INSPIRE Directive, which are indicated in the tables on monitoring – BGN 2 292 000.*

2.2.3. *Yearly maintenance – BGN 502 000*

3. *Executive Environment Agency:*

3.1. *Evaluation of costs (estimation for the last 3 years) related to the application of the Spatial Data Access Act*

3.1.1. *IT infrastructure (hardware and key software components, upgrade) – BGN 13 500.*

3.1.2. *Software developments – BGN 83 680*

3.1.3. *Yearly maintenance – BGN 36 746*

3.2. Estimation of expected costs related to the implementation of the Spatial Data Access Act

3.2.1. *IT infrastructure (hardware and key software components, upgrade) – BGN 50000.*

3.2.2. *Software developments, including the ones for metadata for data and services within the scope of the INSPIRE Directive, which are indicated in the tables on monitoring; Interoperability of data/harmonisation of data, falling within the scope of the INSPIRE Directive, which are indicated in the tables on monitoring; Network Services, falling within the scope of the INSPIRE Directive, which are indicated in the tables on monitoring – BGN 540000.*

6.2. Benefits observed

At present, the study and analyses carried out by the minister for transport, information technology and communications for the purpose of defining the benefits from using the spatial data and related services are not linked to quantitative measures.

The summarised results of these studies can be outlined as follows:

Performance

Increased performance due to the better data sharing, time saved for internal inquiries, internal processes and services to the public, better reuse of existing datasets (less need of new data collection), reported by the following state structures:

- Executive Environment Agency and the River Basin Directorates of the Ministry of the Environment and Water;
- Geodesy, Cartography and Cadastre Agency;
- State Fund for Agriculture
- Institute of Soil Science, Agrotechnologies and Plant Protection ‘N. Pushkarov’;
- ‘Agriculture, Forestry and Land Relations’ Directorate General of the Ministry of Agriculture and Food;
- Military Geographical Service of the Ministry of Defence;
- Ministry of Health;
- Ministry of Economy, Energy and Tourism;
- Geological Institute of the Bulgarian Academy of Science;

Improved work performance as a result of improved organisational structures and decrease in the costs for information management, time saved for internal processes and providing services to the public and better reuse of existing datasets (less need of new data collection) reported by:

- Geodesy, Cartography and Cadastre Agency;
- ‘Agriculture, Forestry and Land Relations’ Directorate General of the Ministry of Agriculture and Food;
- State Fund for Agriculture

- Military Geographical Service of the Ministry of Defence;
- Ministry of Health;
- Executive Environment Agency and the River Basin Directorates of the Ministry of the Environment and Water;

All state institutions report higher motivation of the government officers and experts as a result of the improved career development opportunities.

Efficiency

Improved efficiency in the reporting under the European environmental legislation has been observed in the following state structures:

- Executive Environment Agency and the River Basin Directorates of the Ministry of the Environment and Water;
- Institute of Soil Science, Agrotechnologies and Plant Protection ‘N. Pushkarov’.

Improved inter-institutional cooperation (between different organisations) as a result of improved awareness on the benefits from providing spatial data services is reported at:

- Executive Environment Agency and the River Basin Directorates of the Ministry of the Environment and Water;
- Geodesy, Cartography and Cadastre Agency;
- Ministry of Economy, Energy and Tourism;
- Bulgarian Academy of Science – Geological Institute;
- ‘Agriculture, Forestry and Land Relations’ Directorate General of the Ministry of Agriculture and Food;
- Military Geographical Service of the Ministry of Defence.

Broader benefits

All state structures mentioned above and the Ministry of Transport, Information Technology and Communications as a coordinating body for the introduction of the directive and application of the national Spatial Data Access Act report that the provision of spatial data services leads to better transparency of the state administration actions, wider involvement of the public and better opportunities for the business to offer new services and innovative solutions.

7. Annexes

List of organisations – names and contact details

Spatial Data Administrators										
Coordination structure	Postal address	Phone No/ fax	e-mail:	Website:	Contact person	Phone No	e-mail:	Contact person	Phone	e-mail:
Ministry of Agriculture and Food, 'Agriculture, Forestry and Land Relations' Directorate General, 'Land Plots Identification' Department	city of Sofia, 1040, 55 Hristo Botev Blvd.	+359 29851144 3.	Lailieva@mzh.government.bg		Lyuba Ilieva	+359 298511 443.				
Institute of Soil Science, Agrotechnologies and Plant Protection 'N. Pushkarov' (IPAZR 'N. Pushkarov')	city of Sofia, 1080 7 Shose Bankya Str.	+359 28246141 / 28248937	soil@mail.bg	http://www.is-s-poushkarov.org/	Prof. Dr Totka Trifonova – Director	+359 282461 41	tmitova@mail.bg	Ass. Prof. Milena Kercheva, PhD	+359 88711 7854	
Ministry of Economy, Energy and Tourism	1052 Sofia, 8 Slavyanska Str.	+359 29407001 / 29872190	e-docs@mee.government.bg	www.mi.government.bg	Valeri Trendafilov	+359 292631 44	v.trendafilov@mee.government.bg			
River Basin Directorate	city of Pleven, 60 Chataldzha Str.	+359 64885100 / 64803342	dunavbd@bd-dr.org	www.bd-dunav.org	Rumeliya Petrova	+359 648851 22	rumeliya.petrova@bddr.org			
East Aegean Sea River Basin Directorate	city of Plovdiv, 35 Yanko Sakazov Str.	+359 32604720 / 32604721	bd_plovdiv@abv.bg	http://www.bd-ibr.org/	Vasil Uzunov	+359 326047 55	bd_plovdiv@abv.bg	Yanka Yordanova	+359 32604 752	bd_plovdiv_floods@abv.bg
'Pirin National Park' Directorate	2770.	+359 74988203 / 074988202	pirin_np@abv.bg	http://pirin.bg	Strahil Hristov	+359 749882 03	hristov@pirin.bg	Elena Topuzova	+359 74988203	elenagis@abv.bg

Spatial Data Administrators										
Coordination structure	Postal address	Phone No/ fax	e-mail:	Website:	Contact person	Phone No	e-mail:	Contact person	Phone	e-mail:
'Rila National Park' Directorate	city of Blagoevgrad, 12 V Bistritsa Str.	+359 73880537 / 73881023	office@rilanationalpark.bg	www.rilanationalpark.bg	Tatyna Bacheva	+359 887343 463	tmaleshevska@rilanationalpark.bg			
'Central Balkan National Park' Directorate	city of Gabrovo 5300, Bodra smyana Str.	+359 66801277	office@centralbalkan.bg	www.centralbalkan.bg	Gencho Iliev	+359 668012 85	giliev@centralbalkan.bg			
West Aegean Sea River Basin Directorate – Blagoevgrad	city of Blagoevgrad 66 D. Solunski Blvd.	+359 73889471 13	www.wbd.bg		Nikolay Olev	+359 738894 7113	nikolaj@wabd.bg			
Executive Environment Agency:	1618 Sofia, 136 Tsar Boris III Blvd.	+359 29559011 / 29559015	ncesd@eea.government.bg	eea.government.bg	Valya Zhelyazkova	+359 294064 19	zhelyazkova@eea.government.bg	Doychin Delichev	+359 29406 412	kadastre@eea.government.bg
Agency of Geodesy, Cartography and Cadastre	city of Sofia, Pavlovo quarter, 1 Musala Str.	+359 28188383	acad@cadastr.e.bg		Stefan Petrov	+359 281883 83 / 29555333	acad@cadastr.e.bg			
Black Sea River Basin Directorate of the Ministry of the Environment and Water	city of Varna, 33 Al. Dyakovich Str.	+359 52631447 / 52631448	bdvarna@bsbd.org	www.bsbd.org		+359 526314 47	bdvarna@bsbd.org			
Geological Institute – Bulgarian Academy of Science	Sofia, 'Acad. G. Bonchev' Str., bl. 24	+359 28723563 / 28724638	geolinst@geology.bas.bg	http://www.geology.bas.bg	Plamen Ivanov	+359 297922 41	plivanov62@geology.bas.bg	Nikolay Dobrev	+359 29792 292	ndd@geology.bas.bg

Spatial Data Administrators										
Coordination structure	Postal address	Phone No/ fax	e-mail:	Website:	Contact person	Phone No	e-mail:	Contact person	Phone	e-mail:
Military Geographical Service	city of Sofia, 1606 34 Tottleben Blvd.	+359 29224170 / 29224181	mts@md.gov ; mgs@md.gov		Colonel Petar Tsochev Danchev	+359 29224171	mts@md.gov ; mgs@md.gov	Lieutenant-colonel Mariyan Mateev Markov	+359 67062109	cmcb@gmail.com
State Fund for Agriculture	Sofia, 1618, 136 Tsar Boris III Blvd.	+359 28187100	dfz@dfz.bg	www.dfz.bg	Ivan Karchev	+359 28187238				
Ministry of Health;	Sofia-1000, 5 Sv. Nedelya Sq.	+359 29301152 / 29811833	http://www.mh.government.bg		Mariana Gugutkova	+359 29301377	mgugutkova@mh.government.bg			
Ministry of Interior – Fire Safety and Civil Protection Chief Directorate – Sector 'Centre for Aerospace Observations'										
Bulgarian Ports Infrastructure Company	Sofia, 1574, 69 Shipchenski prohod Blvd.	+359 28079999 / 28079966	office@bgports.bg		Miroslav Petrov					