

Ministry of Interior

THE PROVISION OF SERVICES FOR THE IMPLEMENTATION OF DIRECTIVE 2007/2/EC (INSPIRE) IN THE REPUBLIC OF CYPRUS, IN ACCORDANCE WITH LAW N.43(I)/2010

*Strategic Plan for the Implementation of the
INSPIRE Directive in Cyprus*

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ADVISORY





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List of Key Acronyms

CRS - Coordinate Reference Systems

DLS - Department of Lands and Surveys

EC - European Commission

eGIS - electronic Geographic Information System

ECJ - European Court of Justice

EAC - Electricity Authority of Cyprus

EAGGF - European Agricultural Guidance and Guarantee Fund

EU – European Union

GIS - Geographic Information System

GIF - Graphics Interchange Format

GML - Geography Markup Language

INSPIRE - Infrastructure for Spatial Information in Europe

IR - Implementing Rules

IMC - INSPIRE Management Council

JPEG - Joint Photographic Experts Group

LIMC - Land Information Management Council

PNG - Portable Network Graphics

WFS - Web Feature Service



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Executive Summary

Executive Summary

Overview

Increased pressure on public and private finances and the evolving regulatory environment render digitization as one of the most important tools to modernize the public sector while decreasing the number of human resources needed to provide services and carry out administration. Furthermore, compliance with relevant directives and the use of digital solutions can help promote innovation and increase productivity in our society. Digitization is thus a key tool for solving the many challenges that will face Cyprus over the next few years.

At the same time, the Ministry of Interior and other stakeholders see significant challenges in coming years in transforming processes and improving data handling across administrative levels. Meeting these challenges will require clear agreement on principles like; the use of shared data, allocation of responsibilities among authorities, use and leverage of appropriate technology infrastructure and smooth access to information and internet services. Such principles are part of the foundation for developing the national Spatial Data Infrastructure (SDI), support enhanced cooperation across public authorities and also set the basis to achieve compliance with the Implementation of Directive 2007/2/EC (INSPIRE) in the Republic of Cyprus. The INSPIRE (Infrastructure for Spatial Information in Europe) Directive (2007) mandates all European Union Member States to share environmentally related datasets so they can be easily accessed by other public organizations in their own country, surrounding European countries, and by the European Commission (EC) for Europe-wide policy making.

Due to the complexity of the matter involving elements of policy, governance, resources, data, metadata, technology and services and due to the delays faced in complying with the Directive, the implementation of INSPIRE for Cyprus requires a phased approach and hence divided into the following two distinct phases: Phase 1 – Publishing data as it is now without having to change the data itself at this stage and Phase 2 – Focused on making data INSPIRE compliant and conformant and publishing INSPIRE Annex I, II and III compliant data. The overall approach comprises eight (8) Steps to Compliance and a series of strategic implementation actions to enable these steps. These are detailed in the following pages.

The Current State

The INSPIRE Directive was transposed in the national law of the Republic of Cyprus with the enactment of Law N.43 (I) / 2010 on 14 May 2010 (see Official Gazette No.4241). The law aims at harmonization with Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007, establishing an infrastructure for geospatial information/data area on which Cyprus has and/or exercises jurisdiction. It also contains the management structure under the to be applied leadership of the Ministry of Interior.

However, with regards to the areas of implementation of the INSPIRE Directive it is evident that it is being implemented across the different stakeholders with significant delays, and non-uniformity. In general, it is now clear that the involvement and participation of most government departments and agencies in the creation of an integrated geospatial data infrastructure is very difficult and much more time consuming than initially estimated. Even though, a large volume of digital information was collected compliance with the INSPIRE directive has not been a part of the development or priorities.

The most promising initiative, towards publication of data, is the one by the Department of Lands and Surveys (DLS) that has initiated a project for the development of the DLS Portal which is indented to be the main “gateway”, through which spatial and other related data, are published, made available and utilized to facilitate the delivery of on-line harmonized services to citizens and interested entities, including services relevant to the INSPIRE Directive.

Executive Summary

The Current State

The first Geoportal that will make the first eGIS services online for Cyprus is currently being created, based on the use of cloud services. However, the data to be published are clearly not at the level of maturity or INSPIRE compliance required. As a result, it is evident that the initial problems that led to the creation of INSPIRE still exist in Cyprus. Based on the current status of the progress achieved and the level of awareness, knowledge, collaboration and implementation demonstrated it is clear that five INSPIRE objectives developed to tackle the issues are relevant and little has been achieved in practical terms. Overall it can be concluded that the main obstacles to the implementation of INSPIRE, based on the current state, are the technical complexity and the ownership of enforcement, communication and coordination of the implementation of the directive.

The Desired Future State

It is now more than ever evident that technology alone does not transform government, but government cannot transform to meet modern citizens' expectations without it. As such the Desired Future State is to achieve compliance with the INSPIRE Directive while at the same time enabling government services through is technology, data sharing and provision of e-services. There are a number of drivers and benefits in implementing INSPIRE that relate to strengthening policy in the areas of e-government and geo-information, leading to more and open services for a larger network for data providers, more efficient use and cross-border use for users, new products and releases for software providers and in general new opportunities for organizations. Based on the above, the relationship between costs and benefits, including the non-monetary benefits, turns out to be a positive one and compliance becomes a need rather than an obligation. However, it should be clear that INSPIRE compliance requires the publishing of data and services in line with INSPIRE specific and basic requirements. It does not require the development of a complete National Spatial Data Infrastructure with an enhanced user interface catering.

The Desired Future State design comprises the implementation Vision and the relevant Principles based on which specific implementation Actions are defined, aiming to facilitate the Steps to Compliance and to generate the desired benefits. Based on the insights from the Current State and the defined Drivers for the INSPIRE implementation the implementation approach Vision has been defined as:

“The complete implementation of INSPIRE in Cyprus thus delivering a transformation in spatial data management, data interoperability and data sharing across the wider public sector, supported by better integration with accessible information services. As a result, providing citizens will access to the information they need in their daily lives, whether at home, in business, in research or in government thus exploiting the full value of Cyprus' spatial information.”

To achieve the objectives defined by the Vision, the defined Strategic Actions have been categorized under the following principles that are also in line with the INSPIRE Directive principles and objectives:

- Leadership & Governance;
- Collaboration & Communication;
- Technical Infrastructure;
- Data Preparation & Collection;
- Resources & Capacity Building;
- Standardization.

The Actions shall be implemented based on a Roadmap that will consider the capabilities in place, the necessary roles and responsibilities, resources and funding and the applicable risks.

Executive Summary

The Implementation Approach

The implementation approach for executing the Strategic Plan shall be based on establishing the necessary governance model, defining a pragmatic implementation roadmap and assigning the required resources. The governance model and the implementation roadmap are addressed by the Strategic Plan. *However, resources must be allocated and assigned by the Government, the Ministry of Interior and the stakeholders in general.*

The Management Council as defined by the law, must undertake the responsibility to implement the Strategic Plan. The same governance model that will be used to monitor and execute day to day activities for the implementation of the INSPIRE Directive can be used to implement the Strategic Plan. Such a model defines the need for a governance body, stakeholder involvement, resource allocation and a monitoring and communication process. The model defines the need for Liaisons to be assigned at each stakeholder and a dedicated INSPIRE Operational Team to be established.

The roadmap for implementation of the Strategic Plan defines the timeline of the execution of the required Strategic Actions also in comparison to the INSPIRE Directive deadlines. In addition an analysis of the required financial resources required to implement the Plan, has been developed in support of the roadmap for implementation and the relevant challenges and risks identified have been documented. Most challenges relate to the lack of resources, funds and the current state and availability of data.



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Introduction

Introduction

Project Background

The Ministry of the Interior of the Republic of Cyprus, based on the Law N.43(I)/2010, has undertaken a coordinating role in the implementation of the INSPIRE Directive in Cyprus, while the Department of Lands and Surveys, the Department of Information Technology Services, and the Department of Environment have undertaken a leading role in its organization and implementation. The Ministry of Interior as the Competent Contracting Authority, announced Open Tender Number 13/2014 for the provision of services for the Preparation of a Strategic Plan and basic e-services and web hosting for the Implementation of Directive 2007/2/EC (INSPIRE) in the Republic of Cyprus, in accordance with law N.43(I)/2010.

The main purpose of the Contract is to prepare a «Strategic Plan» for the overall implementation of Directive 2007/2/EC (INSPIRE) in the Republic of Cyprus, including cost estimates, in accordance to law N.43(I)/2010, and to deliver the «basic GIS e-services» required by the Directive.

The goal is for all basic stakeholders (i.e. interested Government Departments and semi-government organizations) to be allowed to use internet-based (cloud) services as a means to conform with the implementation rules of Directive 2007/2/EC (INSPIRE) in the Republic of Cyprus, for a period of one to five years. The project, following a tender process, has been awarded for delivery to the consortium comprised of KPMG Limited and Geomatic Technologies.

The INSPIRE Directive

The INSPIRE (Infrastructure for Spatial Information in Europe) Directive (2007) mandates all European Union Member States to share environmentally related datasets so they can be easily accessed by other public organizations in their own country, surrounding European countries, and by the European Commission (EC) for Europe-wide policy making. It is based on the principle that data should be collected only once and kept where it can be maintained most effectively and providing seamless interoperable spatial information from different sources across Europe.

The regulations apply to all public authorities in Cyprus who hold electronic environmental spatial data which relates to one of the 34 INSPIRE themes (refer to Table 1 in Appendix 1). Initially data holders are required to identify if their existing or proposed datasets fall into any of the INSPIRE themes. When data falls into an INSPIRE theme, the organization or department will come under the INSPIRE network. They will then be bound by INSPIRE regulations with various compliance steps applying. Following that, the organization must create and make available INSPIRE compliant metadata 'data about data', e.g. data creation, owner etc. These shall be published through an INSPIRE compliant data portal for Cyprus, created and managed by a designated authority that will provide the necessary technical services required to meet INSPIRE regulations, i.e. metadata discovery, view, transformation, download, and invoke services. In addition it will provide monitoring capabilities. Organizations or departments in the INSPIRE network must be able to link to the portal via web services. Organizations or departments must facilitate access to and enable the use of their datasets, as well as services complying with INSPIRE conditions. They must also ensure licensing / usage agreements are in place that do not restrict the use of their data. INSPIRE regulates that the limitation of public access should only happen in certain circumstances, e.g. data protection contravention or where public, national or international security would be adversely affected.

Failure for organizations or departments to adhere to the INSPIRE Directive will result in infraction proceedings. Monitoring should follow a quantitative approach and should take place annually with statistics feeding to Cyprus, then to Europe.

Introduction

The INSPIRE Principles

INSPIRE is based on a number of principles. The key principles are the following:

- Data should be collected only once, kept where it can be maintained most effectively, and be readily and transparently available;
- It should be possible to combine seamless spatial information from different sources across Europe and share it with many users and applications;
- Geo-information needed for good governance at all levels should be readily and transparently available;
- It should be easy to find what geographic information is available, how it can be used to meet a particular need, and under which conditions it can be acquired and used.

INSPIRE Regulations apply only to relevant spatial data sets, i.e. data:

- With a geographic reference – information that identifies the geographic location of features, e.g. address or a building;
- Held by a public authority, third party or others working on behalf of either;
- Relating to an area where the Republic of Cyprus has or exercises jurisdictional rights;
- In electronic format; and
- Relating to one of the 34 INSPIRE themes.

These Regulations apply to all public authorities, including those carrying out public administration functions, those with responsibilities, or the role of delivering services relating to the environment. Cyprus transposed the Directive in 2010 and is now legally mandated to adhere to the Directive. INSPIRE legislation does not require the creation of new datasets, but it states, if new datasets are created they must meet INSPIRE standards. Failure to do so will result in infraction proceedings. These are the legal processes by which the European Commission takes a Member State to the European Court of Justice (ECJ) for breach of its obligations under the EC treaty and normally results in the Member State being fined.

A key element for the implementation of the directive is the establishment of the required infrastructure. The INSPIRE Directive lays down general rules to establish an Infrastructure for Spatial Information in Europe for the purposes of Community environmental policies and policies or activities which may have an impact on the environment. These include Implementing Rules (IR, legal acts) for:

- Metadata;
- Interoperability of spatial data sets and services;
- Services (discovery, view, download, transform, invoke);
- Data and Service sharing (policy); and
- Monitoring & reporting.

Introduction

Steps to Compliance

Due to the complexity of the matter involving elements of policy, governance, resources, data, metadata, technology and services and due to the delays faced in complying with the Directive, the implementation of INSPIRE for Cyprus requires a phased approach and hence divided into the following two distinct phases:

- Phase 1 – Publishing data as it is now without having to change the data itself at this stage. This can be data in scope of the INSPIRE Regulations or other location data; and
- Phase 2 – Publishing INSPIRE Annex I, II and III compliant data. Focused on making data INSPIRE compliant and conformant.

Phase 1 encompasses the publishing of existing data for INSPIRE Annex I, II and III Themes, and also additional data voluntarily, in their existing form. For Annex I, II and III datasets the following network services establish must be established:

- Discovery Service, metadata about published data and services;
- View Service, a map (spatially referenced image) of data;
- Download Service, the retrieval of the dataset itself; and
- Capability to use Coordinate Transformation Services, the conversion of data to another INSPIRE specified Coordinate System.

Phase 2 encompasses the publishing existing and new data in a form that complies with the INSPIRE Data Specifications. Strictly this phase only applies to datasets that come under the INSPIRE Regulation by theme which are supported by the associated data specification.

The steps to achieve compliance are depicted in the diagram below:

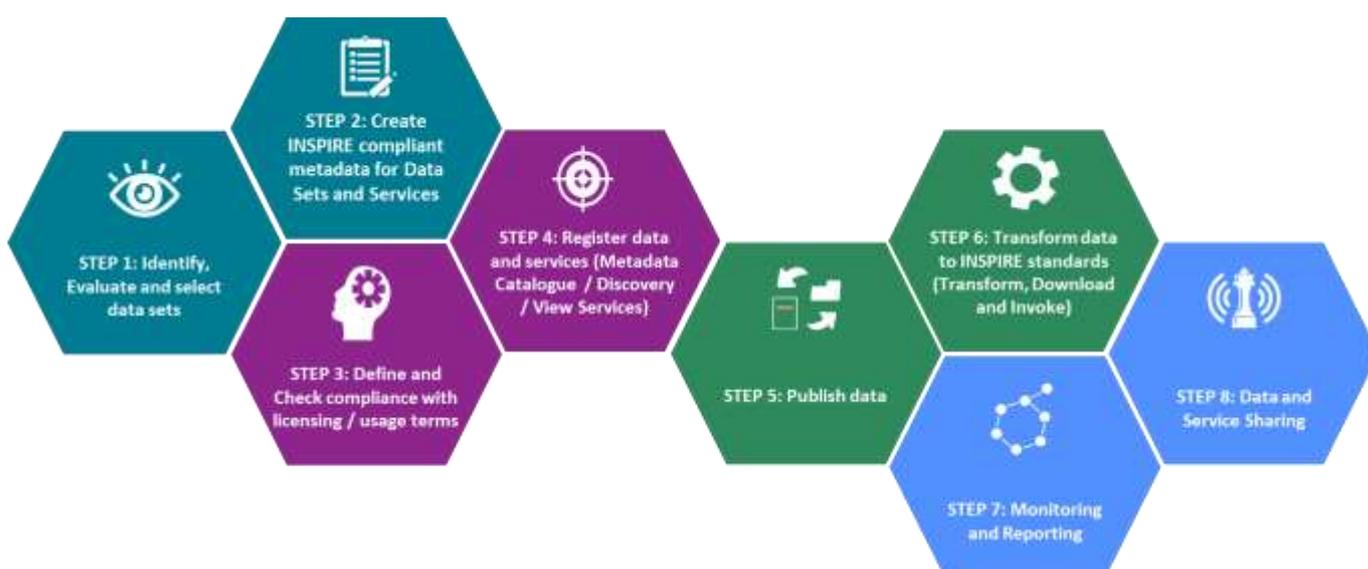


Figure 1: Steps to INSPIRE compliance

The above steps are the baseline target to achieve through the implementation of the “Strategic Plan”. Each step is detailed in the following pages and these are considered when defining the Strategic Principles and the relevant Actions in the following sections.

Introduction

Steps to Compliance



Step 1 - Identify, Evaluate and select data sets

The INSPIRE regulations define and describe 34 data themes divided into three annexes. The scope of the data themes are defined down to feature level through detailed data specifications. The list defines a minimum set of data sets. It is within the responsibility of each stakeholder / authority to decide which datasets to publish under statutory duty. The regulations cover existing spatial data sets and do not require the creation of new data sets. However, any new data sets created in the future will have to comply with INSPIRE regulations. There is no requirement to transfer data that is not held electronically into an electronic format.

Using the INSPIRE data themes each stakeholder / authority should evaluate its data catalogue/inventory to identify data within scope of INSPIRE. Authorities should then select relevant data topics and data sets to be shared. Each Data Owner must have an Inspire code. The spatial data sets may be in physical forms or distributed as service and must provide data and metadata of the spatial data sets or if spatial data sets are obtained as services, then metadata about the service.

Special care must be taken for the Title of the Spatial Data Set. The frequency of updating the publication of the data to INSPIRE and of updating the INSPIRE metadata must also be defined. If format and the content of the received data is not in GIS format then it must be transformed to one (shapefile, geodatabase etc). Special care must also be taken for the conversion and a conversion model must be implemented. It may be necessary to create more than one GIS featureclass in order to transfer completely the information of the initial format to the GIS one.

For Annex I and II data owners detailed data specifications are available to view on <http://INSPIRE.jrc.ec.europa.eu/index.cfm/pageid/2>.



Step 2 - Create INSPIRE compliant metadata for Data Sets and Services

Metadata is the data about the datasets and services which are required to be published under INSPIRE regulations. Metadata provides the means for data users to discover what data exists and what services are available, or vice versa. Two types of discovery metadata must be created; metadata for the dataset being published and metadata for the network services being used to publish the data. For the spatial data sets the following Data Set Identification Details are required:

- Title;
- Data Ownership Details;
- Data Type and Format;
- Data Spatial / Geometric Compatibility;
- Data Resolution – equivalent scale;
- Projection;
- Date of Creation;
- Restrictions;
- Size;
- Update Frequency;
- Responsible for Communication.

Introduction

Steps to Compliance



Step 3 - Define and Check compliance with licensing / usage terms

Authorities / stakeholders must ensure they comply with relevant licensing / usage arrangements before publishing the data. If data are not bound by any third party or internal government licensing / usage restrictions, it should be published as open data. When data is published, it should be stated how the data can be used and shared.



Step 4 - Register data and services (Metadata Catalogue / Discovery / View Services)

Discovery metadata records must be registered for data publishing and discovery by registering the organization (for discovery) so that the authority data and services can be searched externally:

- Publishing discovery metadata records for data and services to a harvest location (e.g. on a website), from which the resources can be machine-accessed from the Internet.
- Registering the harvest location with a relevant portal.
- Collection (sometimes known as 'harvesting'): relevant portal collects the metadata records from the registered location, makes them available within the portal environment, and for further collection (e.g. on to Europe).

Once collected, the individual data and service discovery metadata records must be validated. If the validation is successful, the metadata record will be visible within the relevant portal.



Step 5 – Publish Data

Under INSPIRE it is not sufficient to just publish the dataset on a website or to provide an interactive map. INSPIRE specifies network services to directly stream data into other applications that:

- Allow datasets to be searchable (Discovery Service): A discovery service enables searches of online meta data catalogue;
- Allow datasets to be visualized (View Service): A view service is a publically-accessible network service which provides an image of part of a spatial data set in response to user-defined requests defined by Open Geospatial Consortium Standards. It presents a snapshot of spatial data as an image (GIF, JPEG or PNG). INSPIRE View Services must be compliant with the INSPIRE Regulation on Network Services; and
- Provide access to data content (Download Service): A download service is a network service that provides access to the underlying data. INSPIRE Download Services must be compliant with the INSPIRE Regulation on Network Services. There are three types of download service:
 - Two providing pre-defined datasets:
 1. Atom feed delivering pre-defined datasets; and
 2. WFS delivering pre-defined datasets.
 - One providing direct access download:
 3. WFS providing direct access to features.

Introduction

Steps to Compliance



Step 6 - Transform data to INSPIRE standards (Transform, Download and Invoke)

In Phase 2 of the INSPIRE program, the data must be transformed to INSPIRE standards (Transform, Download and Invoke) so that it is comparable with data from other public sector organizations. The INSPIRE data specifications describe the requirements for each of the 34 data themes. The transformation service maps existing data schema to the new INSPIRE data schema. This can be done by either changing the database to meet INSPIRE structures at source or by transforming it before publication. Transformation Services can be categorized into different areas of functionality by transforming:

- Data formats (e.g. from a proprietary format such as shape files to GML).
- Coordinate reference systems (CRS) (e.g. from the national grid to latitude and longitude).
- Data from a source logical schema to the INSPIRE logical schema (based on data specification models) (e.g. referring the name of one data column to a different standardized name).

Once the data has been transformed, the metadata entries are updated and published.

To implement harmonization it is necessary to create a map (matching table) between the original data and the transformed ones. To create this matching table organizations must:

- Decide to which Inspire Data Theme (target) the Data Set corresponds;
- Analyze the data model of the original Spatial Data Set (source);
- Decide how the model (details in fields) of the target Data Set will be implemented;
- Define the mapping by implementing the matching table. This matching may contain:
 - Mapping of the fields of the source to the fields of the target. This mapping may be just the rename of the field, a combination of the fields or conditional assignment of values to the target field from a lookup table;
 - Constant values, such as the Inspire code of Cyprus, of Data Owner;
 - Empty fields. (note that the “null” field is different from “empty”).



Step 7 – Monitoring and Reporting

Member States are required to monitor and report on INSPIRE compliance. Monitoring tools must cover metadata, spatial data sets, services including network services, and data sharing. EU monitoring follows a quantitative approach and takes place annually. Reporting covers more qualitative aspects of INSPIRE and takes place every 3 years.



Step 8 – Data and Service Sharing

Data Publishers must facilitate access to and use of datasets and services complying with INSPIRE conditions. They must ensure appropriate rights management and licensing agreements are in place that do not restrict the use of data.

Introduction

The Current Document

The current document defines the Strategic Plan for the INSPIRE implementation in Cyprus. The purpose of the document is to set the basis of the strategic approach to implementation and based on the insights gathered from the Current State review focusing on the current environment, what has been achieved, the state of the progress in achieving compliance by each stakeholder and the challenges and limitations identified, to define the Desired Future State and the required actions.

The Desired Future State comprises the implementation Vision and the relevant Principles based on which specific implementation Actions are defined, aiming to facilitate the Steps to Compliance and to generate the desired benefits. The Actions shall be implemented based on a Roadmap that will consider the capabilities in place, the necessary roles and responsibilities, resources and funding and the applicable risks.

The Strategic Plan Actions have been developed under each of the following defined Strategic Principles:

- Leadership & Governance;
- Collaboration & Communication;
- Technical Infrastructure;
- Data Preparation & Collection;
- Resources & Capacity Building;
- Standardization.

This document is merely, as defined by its title, a documented Strategic Plan. *It is up to the Ministry of Interior and the INSPIRE Management Council (as also detailed in the following chapters of this document) to adopt the plan, establish the required governance and processes and to identify resources to implement it.*



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Insights From The Current State

Insights From The Current State

The Current Environment

As per the European Union (EU) evaluation reports, the implementation of the INSPIRE Directive across the European Union (EU) has reached past the halfway stage with generally positive outcomes in most member countries. However, Cyprus has fallen behind and has missed most deadlines defined by the Directive.

The INSPIRE Directive was transposed in the national law of the Republic of Cyprus with the enactment of Law N.43 (I) / 2010 on 14 May 2010 (see Official Gazette No.4241). The law aims at harmonization with Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007, establishing an infrastructure for geospatial information/data area on which Cyprus has and/or exercises jurisdiction. It also contains provisions for the availability, quality and organization of information, access to it and sharing it.

The Ministry of Interior of the Republic of Cyprus has taken on a coordinating role in the implementation of the INSPIRE Directive in Cyprus, while the Department of Lands and Surveys, the Department of Information Technology Services and the Department of Environment, have taken a leading role in organizing and implementing the Directive. Also, and by Council of Ministers decision No. 41.657 dated 13/10/1994, a Land Information Management Council (LIMC) was established, which is chaired by the Permanent Secretary of the Ministry of Interior and ten other members representing key ministries, government departments and large organizations of the broader public sector. Under the legislation, provision is made for the creation of a Management Council, a Management Team, Technical Committees and Working Groups.

As stated in the latest country report for Cyprus “It should be noted that the case of Cyprus, the implementation of the INSPIRE Directive has a peculiarity. A very large part of the infrastructure for geospatial information has already been developed within the establishment and functioning of the Integrated Land Information System at the Department of Lands and Surveys. The system was designed in such a way as to operate and meet both the internal needs of the Department of Lands and Surveys (DLS), as well as the needs of other Departments, Ministries, Services and individuals. This system has been operating on an island-wide basis since 1997. The Land Information System (LIS) is continuously updated and upgraded from time to time to keep up with the evolution of technology and also to meet new needs. There are geospatial data covering the whole country at various levels of information and with various accuracies. Direct access to data is given to other Government Departments either through the Government node or through web services. Additionally, digital geospatial data are provided on a daily basis to any interested party on payment of the prescribed fees. Government agencies and departments do not pay any fees.”

The report also states that the “old technology used, the storage method and data interface as well as the operation of the LIS in a truly online environment did not make easy the immediate compliance with the requirements of the Directive on a technological, administrative and institutional level. Furthermore, the serious economic crisis plaguing Cyprus in recent years has made this task even more difficult. Until recently, the geospatial information produced at the LIS was based on standards that were developed and adopted in the 1990s. It should be noted that the Department of Lands and Surveys is the official Land and Cartography Organization in Cyprus. The geospatial information generated relate to cadastral, mapping, surveying, geodetic, photogrammetry and other information, which comply with common rules and technical specifications. Uniform projection systems and coordinates are used which make the interface of geospatial information easier.” Since the report was issued, DLS has moved to initiate a project for the development of the DLS Portal which is indented to be the main “gateway”, through which spatial and other related data, are published, made available and utilized to facilitate the delivery of on-line harmonized services to citizens and interested entities, including services relevant to the INSPIRE Directive.

Insights From The Current State

The Current Environment

With regards to the areas of implementation of the INSPIRE Directive it is evident that INSPIRE is being implemented across the different stakeholders with delays, and non-uniformity. More specifically:

Transposition

As expressed before, the INSPIRE Directive was transposed in the national law of the Republic of Cyprus with the enactment of Law N.43 (I) / 2010 on 14 May 2010 (see Official Gazette No.4241). The law aims at harmonization with Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007, establishing an infrastructure for geospatial information/data area on which Cyprus has and/or exercises jurisdiction.

Coordination

At the national level, significantly greater efforts are needed to strengthen the level of participation in the INSPIRE process of sub-national and local-level stakeholders, including also measures for capacity building. More efforts are also needed for measures on, awareness, education and training able to create the skills necessary to implement INSPIRE, and exploit the opportunities created by the achieved interoperability framework in Europe.

Metadata

The key problems associated with metadata are the complexity of specifications and lack of tools and lack of clarity of who is responsible. In general metadata does not exist for most data sets relevant to INSPIRE.

Network Services

Currently discovery and view services are not available. The only initiatives under way are the development of the DLS Portal and an initiative by the Electricity Authority of Cyprus (EAC) that its at the infancy stage. The major barriers are about the costs of setting up web services, particularly for small organizations, the lack of awareness and resources, and the lack of INSPIRE-customized software.

Monitoring and Reporting

The yearly Monitoring tables and the 3-yearly reports are the main source of evidence to evaluate the progress in the implementation of INSPIRE. Monitoring tables and reports have been submitted, but at times with delay. The content of the reports focusses more on planned activities rather than achievements and progress made.

In general however, it is now clear that the involvement and participation of other government departments and agencies in the creation of an integrated geospatial data infrastructure is very difficult and much more time consuming than initially estimated. Even though, other peripheral systems were created and a large volume of digital information was collected and most of the data generated were based on the infrastructure for geographical data of the Department of Lands and Surveys and the same projection system and coordinates were adopted, compliance with the INSPIRE directive has not been a part of the development or priorities. In addition, other systems have followed their own specifications, in order to meet quickly specific internal needs, thus resulting in lack of compatibility.

Insights From The Current State

The Current Environment

Based on the above, and other than the efforts made by the DLS and the Council at a high level, it is evident that the initial problems that led to the creation of INSPIRE still exist in Cyprus. The five INSPIRE objectives developed to tackle the issues aim to: document spatial data and services, establish more internet based services, facilitate access to spatial data by improving interoperability, arrange for public authorities to have better access to spatial data and services, and improve the structures and mechanisms for the coordination of spatial information. Based on the current status of the progress achieved and the level of awareness, knowledge, collaboration and implementation demonstrated it is clear that these objectives are relevant and in practical terms a lot remains to be achieved.

Overall it can be concluded that the main obstacles to the implementation of INSPIRE, based on the current state, are the technical complexity and the ownership of enforcement, communication and coordination of the implementation of the directive. Specific issues identified are listed on the following pages.

What Has Been Achieved

In general the key, actions that have achieved some progress are the following:



Land Information Management Council (LIMC) Establishment

- LIMC has been established (in 1994), is chaired by the Permanent Secretary of the Ministry of Interior and includes ten other members of the broader public sector.



National Law Transposition

- The INSPIRE Directive was transposed in the national law of the Republic of Cyprus with the enactment of Law N.43 (I) / 2010 on 14 May 2010 (see Official Gazette No.4241).
- INSPIRE Implementation Strategy Development.



INSPIRE Management Council (IMC) Establishment

- The INSPIRE Council has been established (in 2010), is chaired by the Permanent Secretary of the Ministry of Interior and includes six other members of the broader public sector.
- Has initiated the preparation of a comprehensive Strategic Plan for the implementation of the INSPIRE program and the implementation of eGIS services through an assigned consultancy project (13/2014)



Ministry Initiative to Engage Stakeholders and Create a Catalogue of Geospatial Data

- Initiative to develop a catalogue of information on sets of geospatial data and the geospatial services produced and maintained by the competent institutions of the country.



DLS Initiative for Spatial Infrastructure

- Development of the DLS Portal which is intended to be the main “gateway”, through which spatial and other related data.

Insights From The Current State

Relevant Stakeholders

Based on the current state analysis and the stakeholder list prepared by the IMC, the following have been identified as the key relevant stakeholders, with regards to INSPIRE relevant spatial data:

Ref. No,	Stakeholder	Description
1.	Analysis and Statistics Office of Cyprus Police	Government department of Cyprus Police responsible for conducting analyses on crime, as well as for collecting, maintaining, processing and analysing statistical data, contained in the various police data bases or other electronic records, to support the prevention and investigation of crime by providing specialized crime analyses. Moreover, it is responsible for supporting the administrative work of the Command of the Police and of the Divisional Commanders by providing updated statistical data and analyses. Main areas of focus include: crime analysis and serious crime analysis, statistical data on serious crime, narcotics, minor offences, traffic accidents, illegal immigration and other general statistics (e.g. suicides, alcoholic drinks, loudspeakers, shop opening hours, closing hours for places of recreation, various campaigns such as campaigns against illegal gambling.)
2.	Cyprus Agricultural Payments Organization	Autonomous public organisation responsible for the payment and management of the Payments Funds (all the European Agricultural Guidance and Guarantee Fund -EAGGF-related and national funds for the purposes of subsidiary agriculture) to support farming and rural areas, the prevention of and the fight against irregularities concerning EAGGF and the recovery of unduly paid amounts concerning the EAGGF Fund.
3.	Cyprus Telecommunications Authority	Semi-government organization providing, maintaining and developing a comprehensive telecommunications service at a national and international level.
4.	Department of Environment	Governmental department under the Ministry of Agriculture, Rural Development and Environment responsible for environmental matters including the sustainable development, nature protection and climate action and the coordination with other competent agencies/departments.
5.	Department of Forests	Governmental department under the Ministry of Agriculture, Natural Resources and Environment responsible for the formulation and implementation of the forest policy, the formulation and enforcement of the forest legislation, the management of state forests as well as the running of the Cyprus Forestry College.
6.	Department of Lands and Surveys	Governmental department under the Ministry of Interior that manages the major land matters of Cyprus regarding surveying including maintenance of the state survey infrastructure, mapping, investigation into title, registration, conveyance, valuations, conservation and management of State Lands, compulsory acquisition/requisitions and encumbrances. It administers statutes providing services for the property rights of individuals effectively and efficiently within a unified coordinated structure, with distinct branches in Tenure, Registration, Valuation, Management of State Lands, Survey, Cartography and Administration. The Department acts as the Official Cartographic Organization of the Republic for the compilation, production and issue of maps and plans for which the state copyright is reserved through its Cartography Branch, and represents Cyprus in various Cartographic bodies throughout the world.

Insights From The Current State

Relevant Stakeholders

Based on the current state analysis and the stakeholder list prepared by the IMC, the following have been identified as the key relevant stakeholders, with regards to INSPIRE relevant spatial data:

Ref. No.	Stakeholder	Description
7.	Department of Labour Inspection	Governmental department responsible for the improvement of the Occupational Health and Safety standards, for ensuring a satisfactory level of air quality and of the environment in general and safeguarding the employees, the public and the environment against ionized radiation hazards and chemical substances.
8.	Department of Meteorology	Governmental department under the Ministry of Agriculture, Rural Development and Environment responsible for the operation of a network of meteorological stations for the collection of data required for application purposes, the issue of regular weather forecasts and dissemination of these forecasts to the general public through the mass information media, the provision of meteorological services, weather forecasts, warnings and other information, for the needs of civil aviation., the Issue of weather forecasts and warnings for shipping and other marine activities in the sea area around Cyprus, the processing, classification and publication of meteorological data and the publication of reports on weather and climate and supply of meteorological information and consultative services for the needs of the Cyprus community and in particular for applications to agriculture, conservation and management of water resources, engineering studies and constructions, tourism and industry, renewable energy sources, environmental studies.
9.	Department of Public Works	Governmental department under the Ministry of Transport, Communications and Work the main activities of which focuses on the transport sector and in particular in the areas of a) land transport, that focuses on road design-management-maintenance, traffic management, transport planning, intelligent transport, public transport, urban sustainable mobility planning etc. b) sea transport, that focuses on management, planning and port development and c) air transport, that focuses on the management, planning and airport development.
10.	Department of Town Planning and Housing	Governmental department under the Ministry of Interior responsible for the urban and spatial planning via the implementation of the Town and Country Planning Law. The Department is made up of three main Sections, those of Housing, Planning and Development Control. The Housing Section undertakes the planning, design and management of public housing, at present almost exclusively serving refugees displaced by the 1974 Turkish invasion. The Development Control Section includes the Sectors of Plan Implementation and Planning Enforcement, and provides the administrative umbrella for five of the nation's nine independent Local Planning Authorities (District Offices). The Planning Section consists of various policy and project-oriented sectors. The Department also includes the sectors of Planning Schemes and Architectural Heritage Preservation, as well as supporting administration, while it provides personnel and advice to the Nicosia Master Plan, a bi-communal institution involving both the Greek - and Turkish - Cypriot communities of the divided capital of Cyprus.
11.	Game and Fauna Service	Governmental department responsible for the protection, development, research and management of game and other kinds of Cypriot fauna.
12.	Geological Survey Department	Technical advisor to the government on issues relating to groundwater, mineral resources and the protection of the built and natural environment. The main Sections of the Department are those of the Hydrogeology, Engineering Geology, Economic Geology, Regional Geology, Geophysics and Seismology and, Environmental Geology.
13.	Larnaka Water Board	A semi-government non-profit organization responsible for the water supply within the municipal boundaries of the city of Larnaka and the tourist area of Larnaka-Dhekelia

Insights From The Current State

Relevant Stakeholders

Based on the current state analysis and the stakeholder list prepared by the IMC, the following have been identified as the key relevant stakeholders, with regards to INSPIRE relevant spatial data:

Ref. No.	Stakeholder	Description
14.	Mines Service	The Mines Service is the competent authority under Ministry of Agriculture, Rural Development and Environment responsible of the administration of the Mines and Quarries Law and Regulations and the Explosive Substances Law and Regulations. It is also adviser of the State on technical subjects which are related to the Country mineral wealth and a contact with mining companies and prospectors.
15.	Sewerage Board of Limassol	Public utility organization responsible for the construction, operation and maintenance of the central sewerage system for the collection and treatment of municipal wastewater of the Greater Limassol area, as well as the mines construction of the basic infrastructure of the storm water drainage system.
16.	Statistical Service of Cyprus	<p>Governmental department under the Ministry of Finance responsible for the compilation and the publication of the majority of the official statistical data in Cyprus. The department has the exclusive responsibility for the choice of methodology, technique, definitions and procedures for the realization of the programmes of statistical activities, as well as for the publication of the statistical data produced.</p> <p>The Service is mainly concerned with the initiation, organisation and carrying out of various censuses, surveys and statistical enquiries of an economic, demographic, social or environmental content and the publication of the results with the intention both, of assisting the government in policy-making and planning of the activities and the statistical information of the private sector the general public.</p>
17.	Water Development Department	Governmental department responsible for implementing the water policy of the Ministry of Agriculture, Rural Development and Environment, to provide effective protection, rational development and sustainable management of water resources in Cyprus. The department implements the necessary measures to prevent the qualitative and quantitative deterioration of water bodies from contamination, pollution and uncontrolled exploitation. It is also responsible for the undertaking of feasibility studies, design, implementation, operation and maintenance of infrastructure, such as dams, ponds, irrigation, domestic water supply and sewerage schemes, water and wastewater treatment and recycling systems, as well as desalination plants.
18.	Electricity Authority of Cyprus	Semi-governmental organization responsible for the generation, transmission and distribution of electricity in Cyprus.

Insights From The Current State

Identified Spatial Data Sets

Based on the current state analysis and the list of relevant stakeholders, the following is a list of ISNPIRE relevant data sets identified:

Ref. No.	Stakeholder	Datasets	INSPIRE Annex
1.	Analysis and Statistics Office of Cyprus Police	<ul style="list-style-type: none"> ▪ Location of all police stations ▪ Police district department boundaries ▪ Station boundaries 	Annex I
2.	Cyprus Agricultural Payments Organization	<ul style="list-style-type: none"> ▪ Agricultural plots with crop reference 	Annex II
3.	Cyprus Telecommunications Authority	<ul style="list-style-type: none"> ▪ Manholes and Joint Boxes ▪ Duct Routes ▪ Routes of buried cables ▪ Poles ▪ Base stations 	Annex III
4.	Department of Environment	<ul style="list-style-type: none"> ▪ Natura 2000 network ▪ Forest Areas - Density ▪ Forest Areas - Tree Cover ▪ Corine Land Cover Changes 2006-2012 ▪ Corine Land Cover 2000 - CLC 2000 ▪ Corine Land Cover 2006 - CLC 2006 ▪ Corine Land Cover 2012 - CLC 2012 ▪ Corine Land Cover Sensitive areas on Desertification ▪ Changes 2000-2006 ▪ Wetlands ▪ Water bodies ▪ Soil Sealing ▪ Imperviousness ▪ Permanent Sampling Habitat Areas - Monitoring Scheme ▪ Permanent Sampling Habitat Areas - Monitoring Scheme - Shelters ▪ Bat ▪ Industrial Emissions ▪ Directive Permit ▪ Bathing Waters Areas ▪ Noise Maps ▪ Biogeographical Areas ▪ Bioclimatic Zones ▪ Habitats Distribution ▪ Habitats Distribution ▪ Habitats Range ▪ Habitats ▪ Grassland Cover ▪ Species Distribution ▪ Species Distribution ▪ Species Range ▪ Amphibians ▪ Mammals ▪ Plants ▪ Serpents 	Annex II Annex III
5.	Department of Forests	<ul style="list-style-type: none"> ▪ Hydrographic Network ▪ National Forest Parks ▪ Nature Reserves ▪ State Forest ▪ Protected Habitats (Article 17 Natura Directive) ▪ Protected Species (Article 17 Natura Directive) ▪ Lara, Toxeftra Marine Protected Area ▪ State Forest Stratification 	Annex I

Insights From The Current State

Identified Spatial Data Sets

Based on the current state analysis and the list of relevant stakeholders, the following is a list of INSPIRE relevant data sets identified:

Ref. No.	Stakeholder	Datasets	INSPIRE Annex	
6.	Department of Lands and Surveys	<p><u>Survey - Cadastral Data</u></p> <ul style="list-style-type: none"> District names Municipality/Community names Quarter names Localities District Boundaries Municipality/Community Boundaries Quarter Boundaries Cadastral parcels Cadastral buildings Parcel grid <p><u>Photogrammetry-Hydrography Data</u></p> <ul style="list-style-type: none"> Coordinate Reference Systems: Parameters of CGRS93 Geographical grid systems: parameters of LTM Contour Lines (Cyprus-1963) Contour Lines (Free areas of Cyprus 1993) Orthophoto Imagery (1963) Black & White - whole Cyprus) Orthophoto Imagery (1993) Black & White - Free areas of Cyprus) Orthophoto Imagery 50cm (2008 Colour - Free areas of Cyprus) Orthophoto Imagery 10cm (2014 Colour - Free areas of Cyprus) Orthophoto Imagery 50cm (2014 Colour - Free areas of Cyprus) 	<p><u>Cartography Data</u></p> <ul style="list-style-type: none"> Development Plan Areas Planning Zones Coastal Protection Zones Postal Code Areas Landmark Areas Landmark Points Building Footprints Road Network <p>Satellite Imagery</p> <ul style="list-style-type: none"> 50cm (2004 Colour - Free areas of Cyprus) Colour - Free areas of Cyprus Satellite Imagery (2009) Colour - Free areas of Cyprus) Satellite Imagery (2010) Colour - Free areas of Cyprus - Sporadic) Satellite Imagery (2011) Colour - Free areas of Cyprus - Sporadic) Satellite Imagery (2012) Colour - Free areas of Cyprus - Sporadic) Satellite Imagery (2013) Colour - Free areas of Cyprus - Sporadic) <p>DTM (1963)</p> <ul style="list-style-type: none"> DTM (1993) DTM (2014) DSM (2014) Geodetic Points of CGRS93 (PSM 1,2,3) (1993) Photo Line (2007-2009) Photo Point (1993) Chart Datum Base Line Territorial Sea Contiguous Zone Exclusive Economic Zone Shore Shoreline Construction 	Annex I Annex II Annex III

Insights From The Current State

Identified Spatial Data Sets

Based on the current state analysis and the list of relevant stakeholders, the following is a list of ISNPIRE relevant data sets identified:

Ref. No.	Stakeholder	Datasets	INSPIRE Annex
6.	Department of Lands and Surveys (Continued)	<p><u>European Databases- Eurogeographics</u></p> <ul style="list-style-type: none"> ▪ EGM-BND-POLBND A ▪ EGM-BND-POLBNDL ▪ EGM-HYDRO-COASTL ▪ EGM-HYDRO-DAML ▪ EGM-HYDRO-ISLANDA ▪ EGM-HYDRO-LAKERESA ▪ EGM-HYDRO-LANDMASKA ▪ EGM-HYDRO-SEAA ▪ EGM-HYDRO-SPRINGC ▪ EGM-HYDRO-WATRCRSL ▪ EGM-HYDRO-WATRCRSA ▪ EGM-HYDRO-SHOREL ▪ EGM-HYDRO-HYNODEC ▪ EGM-TRANS-AIRFLDP ▪ EGM-TRANS-FERRYC ▪ EGM-TRANS-FERRYL ▪ EGM-TRANS-ROADL ▪ EGM-TRANS-FERRYL ▪ ERM-BND-POLBND A ▪ ERM-BND-POLBNDL ▪ ERM-HYDRO-COASTL ▪ ERM-HYDRO-ISLANDA ▪ ERM-HYDRO-SEAA ▪ ERM-HYDRO-SEASTRTL ▪ ERM-HYDRO-AQUEDCTL ▪ ERM-HYDRO-LAKERESA ▪ ERM-HYDRO-SPRINGC ▪ ERM-HYDRO-RAPIDSC ▪ ERM-HYDRO-WATRCRSL ▪ ERM-HYDRO-WATRCRSA ▪ ERM-HYDRO-DAMC ▪ ERM-HYDRO-DAML ▪ ERM-HYDRO-LANDMASKA ▪ ERM-HYDRO-SHOREL ▪ ERM-NAME-GNAMEL ▪ ERM-MISC-EXTRACTP ▪ ERM-MISC-INDPRODP ▪ ERM-MISC-POWERP ▪ ERM-MISC-LANDMRKP ▪ ERM-MISC-BUILD P ▪ ERM-MISC-TOWERP ▪ ERM-MISC-INDPRODP ▪ ERM-MISC-POWERL ▪ ERM-MISC-CTOWERP ▪ ERM-MISC-PARKA ▪ ERM-POP-BUILTUPA ▪ ERM-POP-BUILTUPP ▪ ERM-POP-URBANP ▪ ERM-TRANS-INTERCC ▪ ERM-TRANS-ROADL ▪ ERM-TRANS-MISAEROP ▪ ERM-TRANS-LEVELCC ▪ ERM-TRANS-FERRYL ▪ ERM-TRANS-FERRYC ▪ ERM-TRANS-HARBORL ▪ ERM-TRANS-HARBORA ▪ ERM-TRANS-AIRFLDC ▪ ERM-TRANS-AIRFLDA ▪ ERM-TRANS-RUNWAYL ▪ ERM-VEG-SOILA ▪ ERM-VEG-VEGA ▪ ERM-POI-GOVSERVP ▪ ERM-POI-FACILP ▪ EBM-BasicGeometry-EBM_A ▪ EBM-AdministrativeUnits-AdministrativeBoundary ▪ EBM-AdministrativeUnits-AdministrativeUnit_1 ▪ EBM-AdministrativeUnits-AdministrativeUnit_2 ▪ EBM-AdministrativeUnits-AdministrativeUnit_3 ▪ EBM-AdministrativeUnits-ResidenceOfAuthority ▪ EBM-StatisticalUnits-NUTS_1 ▪ EBM-StatisticalUnits-NUTS_2 ▪ EBM-StatisticalUnits-NUTS_3 ▪ EBM-StatisticalUnits-LAU_1 ▪ EBM-StatisticalUnits-LAU_2 	Annex I Annex II Annex III
7.	Department of Labour Inspection	<ul style="list-style-type: none"> ▪ Pending Information 	
8.	Department of Meteorology	<ul style="list-style-type: none"> ▪ ActiveRainfallStations ▪ RainfallStations_Jointed Total Rainfall ▪ SPI_1month_Dec2014 	Annex III
9.	Department of Public Works	<ul style="list-style-type: none"> ▪ Road Network 	Annex I

Insights From The Current State

Identified Spatial Data Sets

Based on the current state analysis and the list of relevant stakeholders, the following is a list of ISNPIRE relevant data sets identified:

Ref. No.	Stakeholder	Datasets	INSPIRE Annex
10.	Department of Town Planning and Housing	<ul style="list-style-type: none"> Planning Zones (currently not in digital format) Land Use (currently not in digital format) 	Annex III
11.	Game and Fauna Service	<ul style="list-style-type: none"> Permanent Game Reserve Areas Game Reserve Areas (No Hunting Areas) Special Protection Areas - SPAs.(Part of Natura 2000 sites) 	Annex I Annex III
12.	Geological Survey Department	<ul style="list-style-type: none"> Geomorphosites Geology Road Network Geomorphology Nitrate Vulnerable zones Geological Hazard Areas Earthquakes Epicenters Known Minerals Resources 	Annex I Annex II Annex III
13.	Larnaka Water Board	<ul style="list-style-type: none"> Air Valves Reducer End Cap Strap Tee Bend Cupling Sluice Valves Wash Out Strainer Pressure Reduce Valve Fire Hydrants Area Meters House Meters Trunk Pipes Distribution Pipes House Pipes Tunks Pits 	Annex III
14.	Mines Service	<ul style="list-style-type: none"> Prospecting Permits Mining Permits Quarry Permit Cement Plants Permits 	Annex III
15.	Sewerage Board of Limassol	<ul style="list-style-type: none"> Sewers Manholes Drains Drain Manholes Gullies House Connections Pumping Stations Treatment Plant 	Annex III
16.	Statistical Service of Cyprus	<ul style="list-style-type: none"> Population Characteristics and Activity Levels (aggregated by district) Population Characteristics and Activity Levels (aggregated by Municipality and Community) Population Characteristics and Activity Levels (aggregated by Quarter) Population Characteristics and Activity Levels (aggregated by postal Area) 	Annex III

Insights From The Current State

Identified Spatial Data Sets

Based on the current state analysis and the list of relevant stakeholders, the following is a list of ISNPIRE relevant data sets identified:

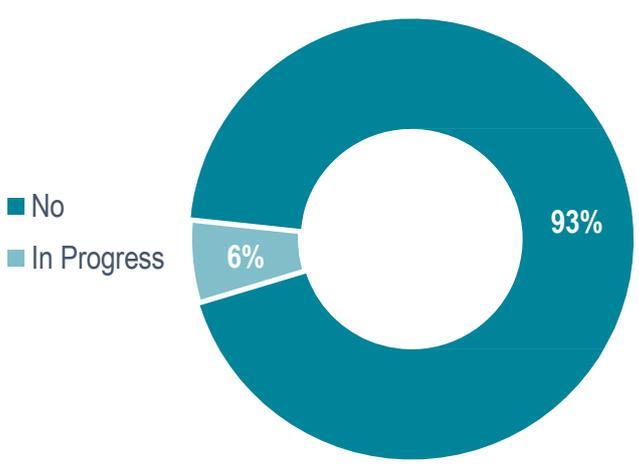
Ref. No.	Stakeholder	Datasets	INSPIRE Annex	
17.	Water Development Department	<ul style="list-style-type: none"> ▪ Catchment Areas (Water Framework Directive) ▪ Sub Catchment Areas ▪ Natural Lake Water bodies (Water Framework Directive) ▪ Impounded River Water bodies (Water Framework Directive) ▪ Rivers Water Bodies (Water Framework Directive) ▪ Groundwater Bodies (Water Framework Directive) ▪ Groundwater Monitoring Stations (Water Framework Directive) ▪ Surface Water Monitoring Stations - Rivers (Water Framework Directive) ▪ Surface Water Monitoring Stations - Natural Lakes (Water Framework Directive) ▪ Surface Water Monitoring Stations - Impounded River (Water Framework Directive) ▪ Waste Water Treatment Plants (UWWTD) ▪ Agglomerations ▪ Catchment Areas (Water Framework Directive) ▪ Areas of Potentially Significant Flood Risk ▪ Floodplain - 20 years ▪ Floodplain - 100 years ▪ Floodplain - 500 years ▪ Springs ▪ Rivers Network (stream orders) ▪ Reservoirs ▪ Dams Catchment Areas ▪ Aquifers ▪ Surface Water Monitoring Stations - Rivers (National Network) ▪ Surface Water Monitoring Stations - Natural Lakes (National Network) 	<ul style="list-style-type: none"> ▪ Surface Water Monitoring Stations - Reservoirs (National Network) ▪ Desalination Plants ▪ Water Treatment Plants ▪ Wastewater Treatment Plants ▪ Hydrological Regions ▪ Sewerage Works Boundaries ▪ Irrigation Boundaries (GWPs) ▪ Water Supply Boundaries ▪ Reused Water Discharge Points ▪ Surface Water Protection Zones (Dams - Potable) ▪ Protection Zones of Ground Water Sources for water supply (drilling) ▪ Water Supply Network ▪ Water Supply Pumping Stations ▪ Water Reservoirs ▪ Irrigation Network ▪ Irrigation Reservoirs ▪ Irrigation Project Pumping Stations 	<p>Annex I Annex II Annex III</p>
18.	Electricity Authority of Cyprus	<ul style="list-style-type: none"> ▪ Pending Information 		

Insights From The Current State

Level of Maturity to INSPIRE Compliance

Based on the current state analysis and the list of relevant stakeholders, the following is an overview of the current level of maturity with regards to INSPIRE compliance:

Data transformed to INSPIRE standards?



Duration to complete activity?

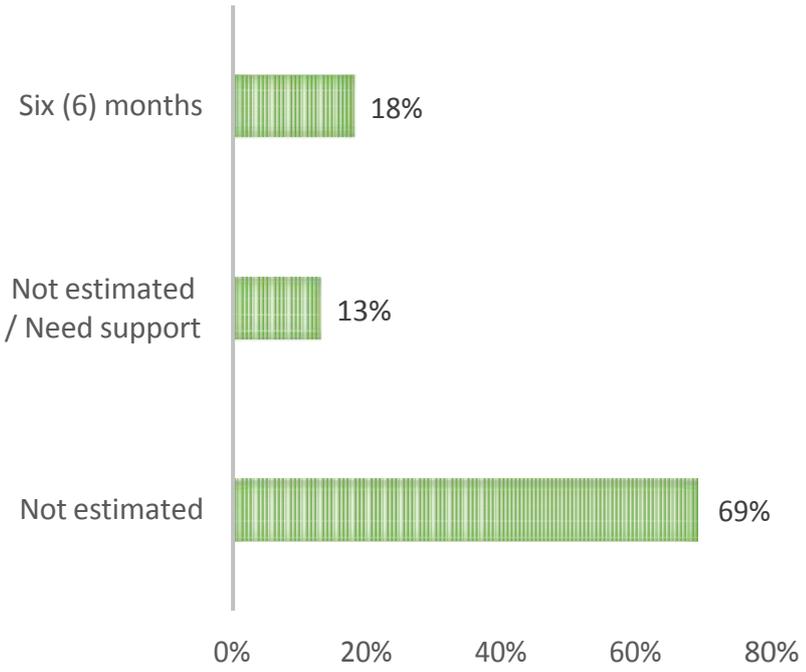
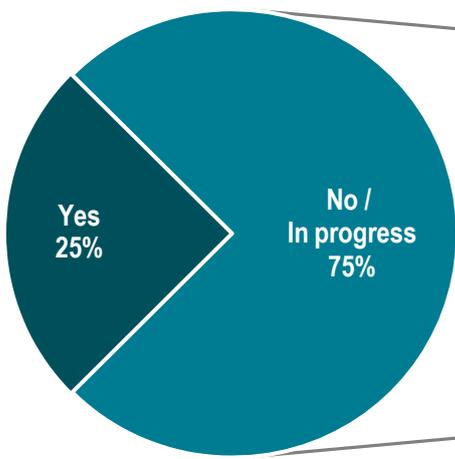


Figure 2: Stakeholders Data Compliance Analysis

Metadata for available data sets created?



Duration to complete activity?

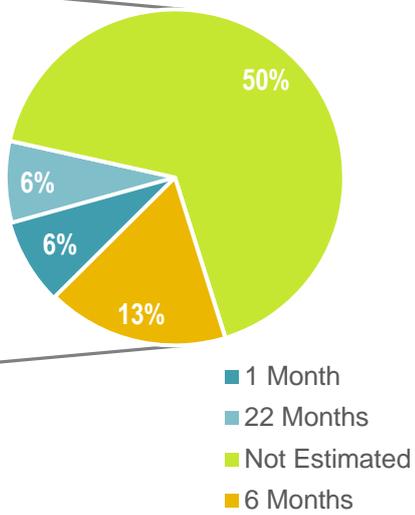


Figure 3: Stakeholders Metadata Compliance Analysis

In addition to the above, it should be noted that as part of the first cycle of publishing of data via the established e-GIS services, a significant percentage of the identified datasets have been made available in as-is format and mature datasets (i.e. Eurodatabase datasets) have been made available as per INSPIRE specifications.

Insights From The Current State

Level of Maturity to INSPIRE Compliance

Based on the current state analysis, the following is an overview of the current level of maturity with regards to INSPIRE compliance, as provided by the stakeholders own estimations:

Ref. No.	Stakeholder	Data transformed as per INSPIRE standards	INSPIRE compliant metadata for Data Sets and Services	Activities started to transform data to INSPIRE standards and generate metadata	Estimation of time needed to transform data to INSPIRE standards	Estimation of time needed to create INSPIRE compliant metadata for Data Sets and Services
1.	Analysis and Statistics Office of Cyprus Police	No	No	In progress	1 month	1 month
2.	Cyprus Agricultural Payments Organization	No	No	No	Not provided	Not provided
3.	Cyprus Telecommunications Authority	No	No	In progress	Not provided	Not provided
4.	Department of Environment	No	No	No	Not provided	Not provided
5.	Department of Forests	No	No	No	Not provided	Not provided
6.	Department of Lands and Surveys	Specific subset of data sets	Specific subset of data sets	In progress	6 months	6 months
7.	Department of Labour Inspection	No	No	No	Not provided	Not provided
8.	Department of Meteorology	No	No	No	Not provided	Not provided
9.	Department of Public Works	No	No	No	Not provided	Not provided
10.	Department of Town Planning and Housing	No	No	No	22 months	22 months
11.	Game and Fauna Service	No	No	No	Not provided	Not provided
12.	Geological Survey Department	No	No	In progress	Not provided	Not provided
13.	Larnaka Water Board	No	No	No	Not provided	Not provided
14.	Mines Service	No	No	No	Not provided	Not provided
15.	Sewerage Board of Limassol	No	No	No	Not provided	Not provided
16.	Statistical Service of Cyprus	No	No	No	6 months	6 months
17.	Water Development Department	No	No	No	Not provided	Not provided
18.	Electricity Authority of Cyprus	No	No	No	Not provided	Not provided

Insights From The Current State

Key Challenges and Limitations Identified

The analysis of the current status of the implementation of the INSPIRE directive has resulted in the identification of a number of challenges and limitations that are applicable with regards to the successful implementation of the law. These challenges stem mostly from the ineffective ownership, communication, coordination and enforcement of the required implementation activities and of the technical complexity. More specifically the following key challenges and limitations have been identified:

- Failure on the part of competent bodies to take the appropriate decisions on the policies required and to delegate and monitor responsibilities;
- Lack of governance and operational processes and co-ordination.;
- Lack of management commitment at most levels of the management structure and at stakeholders;
- Refusal on the part of data producers to participate;
- Lack of awareness about the directive, its purpose and responsibilities;
- Lack of knowledge of the current environment;
- Lack of technical interoperability;
- Lack of collaboration and communication resulting in a silo world;
- Duplication of datasets;
- Data policy restrictions, pricing, copyright, access rights, licensing policy;
- Incompatible information and incompatible information systems;
- Lack of data;
- High complexity of services and data specifications;
- Diversity of existing information systems, difficult change to new technology;
- Lack of standards and their use;
- Additional (specific) technical and infrastructure resources are required, lack of appropriate tools
- Quality of data, metadata and services;
- Lack of human resources, capacity and knowledge
- Low cooperation between institutions and organizations, administrative and organizational barriers, lengthy procedures, bureaucracy;
- Lack of INSPIRE geo portal and use of services.

In summary the above challenges and limitations point to one key conclusion: the lack of infrastructure as defined by INSPIRE. Without a coordinated framework as “minimum common denominator for all stakeholders” the problems will persist.



Ministry of Interior

**THE PROVISION OF SERVICES FOR THE
IMPLEMENTATION OF DIRECTIVE 2007/2/EC
(INSPIRE) IN THE REPUBLIC OF CYPRUS, IN
ACCORDANCE WITH LAW N.43(I)/2010**

The Future State

The Future State

The Drivers, the Business Imperative and the Benefits

Twenty first century government is enabled by technology, data sharing and provision of services. Change is delivered by this approach and customer and corporate services are dependent on this. Moreover modern governments with serious transformational intent see technology and data sharing as a strategic asset and not just a tactical tool. Technology alone does not transform government, but government cannot transform to meet modern citizens' expectations without it. There are a number of drivers and benefits in implementing INSPIRE. These are depicted and explained further below:

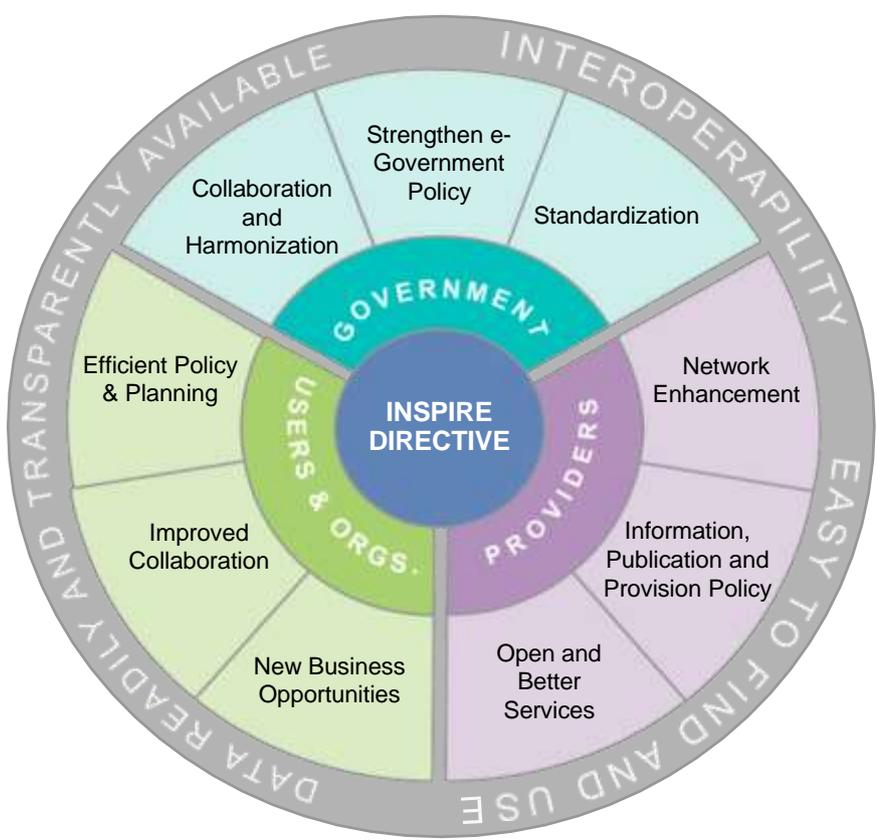


Figure 4: INSPIRE Implementation Drivers and Benefits

The main derived strategic driver that INSPIRE provides is to **strengthen policy in the areas of e-government and geo-information**. The principles underpinning e-government and INSPIRE are fully aligned. The Directive is being introduced by means of an act of government which will ensure that projects are prioritized, provides standards and places national developments and policy which relates to geo-information in a broader international context. Furthermore, INSPIRE triggers collaboration and harmonization between different layers of government and other relevant authorities.

For data providers, INSPIRE leads to a more open service which partners, national and international organizations can use. This may lead to modifications in information policy or the creation of publication and provision policy. It will also lead to better services profiling and a larger network and improved internal data processes (description of data sets, production process, data quality, publication, etc.).

For users, use of the INSPIRE Directive leads to more efficient policy and planning, especially in cross-border areas and also to improved EU / national / regional coordination / collaboration among public sector organizations and international communities.

The Future State

The Drivers, the Business Imperative and the Benefits

For software providers, INSPIRE influences the release policy. These providers may include their INSPIRE software in the standard software package or may offer separate extensions.

For service providers, the focus is on defining implementation routes, reviewing architectures for INSPIRE and delivering knowledge-sharing sessions.

Finally, INSPIRE offers **new opportunities for organizations** to build their own, specific data portals linked to INSPIRE portals and to use the INSPIRE data for added-value services (including business / research opportunities, innovative apps, services on cross-border, etc.).

Based on the above, the relationship between costs and benefits, including the non-monetary benefits, turns out to be a positive one.

The Future State Vision and Principles

The Desired Future State comprises the implementation Vision and the relevant Principles based on which specific implementation Actions are defined, aiming to facilitate the Steps to Compliance and to generate the desired benefits. The Actions shall be implemented based on a Roadmap that will consider the capabilities in place, the necessary roles and responsibilities, resources and funding and the applicable risks.

Based on the insights from the Current State and the defined Drivers for the INSPIRE implementation the following is the implementation Vision:

“THE COMPLETE IMPLEMENTATION OF INSPIRE IN CYPRUS THUS DELIVERING A TRANSFORMATION IN SPATIAL DATA MANAGEMENT, DATA INTEROPERABILITY AND DATA SHARING ACROSS THE PUBLIC SECTOR, SUPPORTED BY BETTER INTEGRATION WITH ACCESSIBLE INFORMATION SERVICES. AS A RESULT, PROVIDING CITIZENS WILL ACCESS TO THE INFORMATION THEY NEED IN THEIR DAILY LIVES, WHETHER AT HOME, IN BUSINESS, IN RESEARCH OR IN GOVERNMENT THUS EXPLOITING THE FULL VALUE OF CYPRUS’ SPATIAL INFORMATION.”

The above will allow to:

- Know what data we have, make it available and avoid duplicating it;
- Use common reference data so we are able to talk the same “language” and know that we are referring to the same places;
- Share spatial information easily through a common infrastructure of standards, technology and business relationships.

The Future State

The Future State Vision and Principles

The Strategic Plan Actions have been developed under each of a number of Strategic Principles required to address the current issues identified and also to achieve the implementation of the Steps to Compliance. The Principles have been developed by defining the areas of improvement needed in order for stakeholders to: *better understand what data they have, to develop and disseminate metadata, to use common reference systems, to share location-related information through a common infrastructure of standards, technology and business relationships, to have the appropriate skills, both among geographic professionals and among other professional groups, to develop and maintain education and awareness at all levels and to have strong leadership and governance to drive through change including the implementation of this Strategic Plan and the implementation of INSPIRE.*

The defined Strategic Principles are depicted in the following diagram:



Figure 5: INSPIRE Implementation Strategic Principles

The Strategic Principles and related Strategic Actions are defined and analyzed on the following pages.

The Future State

The Future State Vision and Principles

The following are the Strategic Plan Actions developed under each of a number of Strategic Principles:



Figure 5: INSPIRE Implementation Strategic Actions

The Strategic Principles and related Strategic Actions are defined and analyzed on the following pages.

The Future State

Future State Design

The design analysis of the defined Strategic Principles and related Strategic Actions for the implementation of the INSPIRE Directive in Cyprus is provided below:



Principle Description and Rationale

A strong leadership and governance structure and mechanisms are required to overcome the challenges faced the past years, to drive through change and achieve the implementation of this Strategic Plan.

A strong and effective governance body and mechanism with the authority to enforce policies and perform continuous monitoring of their proper implementation, will ensure that accountabilities are established and that progress is truly monitored and measure.

Design Analysis

A strong governance mechanism requires that established legal frameworks are enforced and monitored by an impartial body. Under such a mechanism, consensus regarding the objectives and required outcome should be achieved, stakeholders should be made to feel included by obtaining value and outcomes must be facilitated based on reasonable timeframes. Relevant information should be provided in easily understandable forms and should be freely available and directly accessible to all stakeholders. At the same time, stakeholders and participants in general must be held accountable against their defined responsibilities, decisions or actions.

The Ministry of Interior of the Republic of Cyprus has taken on a coordinating role in the implementation of the INSPIRE Directive in Cyprus, while the Department of Lands and Surveys, the Department of Information Technology Services and the Department of Environment, have taken a leading role in organizing and implementing the Directive. Also, a Land Information Management Council (LIMC) was established, which is chaired by the Permanent Secretary of the Ministry of Interior and ten other members representing key ministries, government departments and large organizations of the broader public sector. Under the legislation, provision is made for the creation of a Management Council, a Management Team, Technical Committees and Working Groups. However, and as stated before, this governance model, due to lack of resources and management commitment, has not been efficient or effective in energizing stakeholders and achieving progress. As such, a new or a refreshed approach is required.

The **Management Council** and **Management Team** must be empowered to perform their duties by obtaining the required resources and establishing the operational teams that will be dedicated to the necessary tasks. If this is not possible, a new entity responsible should be established that will undertake specifically the implementation of the Directive and the realization of the potential benefits.

A key **Operational Team** that facilitates, undertakes and supports the day to day activities that are needed to achieve progress and compliance is necessary. Their role must include the development of business procedures, facilitate data gathering, execute quality assurance and support the delivery of data and services that are as up-to-date and reliable as possible. Emphasis should be placed on streamlining and automation, and encompasses methods of case processing.

The Future State

Future State Design

The design analysis of the defined Strategic Principles and related Strategic Actions for the implementation of the INSPIRE Directive in Cyprus is provided below:



Principle Description and Rationale

A strong leadership and governance structure and mechanisms are required to overcome the challenges faced the past years, to drive through change and achieve the implementation of this Strategic Plan.

A strong and effective governance body and mechanism with the authority to enforce policies and perform continuous monitoring of their proper implementation, will ensure that accountabilities are established and that progress is truly monitored and measure.

Design Analysis

The following are the Strategic Actions required to fulfil the Future State Design principle:

Item: 1	Action Title: Establish and Empower the Focused Management Body
Description:	<p>The Management Council and Management Team must be empowered to perform their duties by obtaining the required resources and establishing the operational teams that will be dedicated to the necessary tasks. Clearly the Management Council as defined by the law, must undertake the responsibility to implement the Strategic Plan. However, if this is not possible, a new entity responsible should be established that will undertake specifically the implementation of the Directive and the realization of the potential benefits.</p> <p>The Strategic Plan implementation approach requires a solid governance model with clear roles and responsibilities. The same governance model that will be used to monitor and execute day to day activities for the implementation of the INSPIRE Directive should implement the Strategic Plan.</p>
Resources:	<p>The focused Management Council must comprise the relevant stakeholders as defined by the established legislation and shall act as the monitoring entity, ultimately liable for the implementation of the Strategic Plan and for achieving compliance.</p> <p>The Management Team must have the day to day responsibility for delivering the implementation of the Strategic Actions but must however be provided with the required resources (refer to the following pages) while at the same time be held accountable for the implementation of the Strategic Plan and for allocating part of their time to this task.</p> <p>At a minimum, the Management Team should meet on a monthly basis and the Management Council should meet on a quarterly basis, during the period of the implementation of the Strategic Plan. The Management Team must be able to escalate issues or conflicts to the Management Council at any time and request for an unscheduled meeting to take place.</p> <p><i>The structure, roles and responsibilities of the necessary Governance Model are detailed in section: Implementation Strategy - Governance, Roles And Responsibilities, of this document.</i></p>
Stakeholders:	<p>The key stakeholder(s) involved in implementing this action is the Council of Ministers.</p>

The Future State

Future State Design

The design analysis of the defined Strategic Principles and related Strategic Actions for the implementation of the INSPIRE Directive in Cyprus is provided below:



Principle Description and Rationale

A strong leadership and governance structure and mechanisms are required to overcome the challenges faced the past years, to drive through change and achieve the implementation of this Strategic Plan.

A strong and effective governance body and mechanism with the authority to enforce policies and perform continuous monitoring of their proper implementation, will ensure that accountabilities are established and that progress is truly monitored and measure.

Design Analysis

The following are the Strategic Actions required to fulfil the Future State Design principle:

Item: 2	Action Title: Establish a Dedicated INSPIRE Operational Team
Description:	<p>A dedicated INSPIRE Operational Team is required to be established. Without this team, the Council will not be able to implement the Strategy and the same delays demonstrated in the past will occur. The stakeholders (data providers) require the day to day and continuous support and guidance at the operational level. This can be provided by operational individuals that are close to the subject.</p> <p>The Team shall act as the operational body that implements the defined processes on a daily basis and is the central focus of activity and progress. Its mandate shall be to exercise supervision of and participate in the standardized process for data identification, preparation and gathering (including quality assurance), to implement communication plan and processes, to deliver awareness and training sessions, to implement issue resolution process and provide support to stakeholders, to execute progress monitoring and reporting, interact with stakeholder liaisons and technical working teams.</p>
Resources:	<p>The Team should comprise at a minimum 2-3 individuals that must be assigned to this role for the period of applicability of the specific action. It is suggested that the individuals ae assigned to this role for a period of at a minimum one year, during which their primary responsibilities would be to execute the activities listed above. The resources must possess the knowledge and skills to provide support to the stakeholders regarding the INSPIRE Directive.</p> <p><i>The positioning of the Team in the structure, roles and responsibilities are detailed in section: Implementation Strategy - Governance, Roles And Responsibilities, of this document.</i></p>
Stakeholders:	<p>The key stakeholder(s) involved in implementing this action is the Management Team, the INSPIRE Council and the Council of Ministers.</p>

The Future State

Future State Design

The design analysis of the defined Strategic Principles and related Strategic Actions for the implementation of the INSPIRE Directive in Cyprus is provided below:



Principle Description and Rationale

A strong leadership and governance structure and mechanisms are required to overcome the challenges faced the past years, to drive through change and achieve the implementation of this Strategic Plan.

A strong and effective governance body and mechanism with the authority to enforce policies and perform continuous monitoring of their proper implementation, will ensure that accountabilities are established and that progress is truly monitored and measure.

Design Analysis

The following are the Strategic Actions required to fulfil the Future State Design principle:

Item: 3	Action Title: Establish a Quality Assurance Process
Description:	Based on the current state analysis, it is evident that a quality assurance process is required to be implemented to ensure that data gathered, processed and published is accurate and of the necessary level of quality. This process shall entail the checks and evaluation of the submitted stakeholders data, that shall be performed by the Operational Team members. Any data quality issues identified must be forwarded to the data provider for action.
Resources:	The process shall be implemented by the INSPIRE Operational team members and data provider stakeholders shall participate.
Stakeholders:	The key stakeholder(s) involved in implementing this action are the INSPIRE Operational team members and the data providers.

The Future State

Future State Design

The design analysis of the defined Strategic Principles and related Strategic Actions for the implementation of the INSPIRE Directive in Cyprus is provided below:



Principle Description and Rationale

A strong leadership and governance structure and mechanisms are required to overcome the challenges faced the past years, to drive through change and achieve the implementation of this Strategic Plan.

A strong and effective governance body and mechanism with the authority to enforce policies and perform continuous monitoring of their proper implementation, will ensure that accountabilities are established and that progress is truly monitored and measure.

Design Analysis

The following are the Strategic Actions required to fulfil the Future State Design principle:

Item: 4	Action Title: Establish a Program for Raising and Enhancing Awareness
Description:	<p>A significant challenge that has been identified during the current state analysis is the lack of awareness and knowledge regarding the specifics of the INSPIRE Directive. A process must be established that will entail an organized, structured and coherent awareness approach addressing the different stakeholders. Awareness activities should include:</p> <ol style="list-style-type: none"> 1) Periodic awareness sessions at identified stakeholders, by utilizing the prepared INSPIRE presentations; 2) Continuous education and sharing of information regarding developments and changes with regards to the Directive and its implementation within the European Union by member states; 3) Presentation of case studies (i.e. Use Case development) from other member states demonstrating specific applicability and benefits from the utilization of the published data and services by users and other entities. Use cases and benefits analysis can be communicated to stakeholders and the public on a periodic basis; and 4) Continuous support for clarifications and provision of direction to stakeholders. <p>During the execution of the above activities, any problems and challenges faced by stakeholders identified must be brought to the attention of the Management Team and the Council.</p>
Resources:	<p>The awareness approach and the relevant activities shall be implemented by the INSPIRE Operational Team in cooperation with the different stakeholders, under the monitoring and supervision of the Management Team.</p>
Stakeholders:	<p>The key stakeholder(s) involved in implementing this action are the INSPIRE Operational Team and the data providers.</p>

The Future State

Future State Design

The design analysis of the defined Strategic Principles and related Strategic Actions for the implementation of the INSPIRE Directive in Cyprus is provided below:



Principle Description and Rationale

Collaboration among the main actors in the spatial / geo data field should be underpinned by their shared understanding of the importance of spatial data and the recognition, that the benefits of basing their work on a collective infrastructure offsets the expenses involved in building and maintaining it.

Collaboration must be facilitated and should be based on common components and binding agreements. Communication should be continuous and transparent.

Design Analysis

Collaboration can be based on a cross-sector, shared agreement and commitment model for the INSPIRE Directive and in general for the Spatial Data Infrastructure (SDI) for the entire public sector, in line with the relevant legislation. This assumes that the common components are in place. The common components (e.g. infrastructure) are addressed as part of the different Strategic Principles and Strategic Actions design.

The Management Council and the INSPIRE Operational Team should strive to ensure that the INSPIRE principles are followed both during the implementation of INSPIRE and in the subsequent period. This assumes clear communication of progress, achievements but also issues so that resolution procedures can be initiated. In addition, until INSPIRE is fully implemented in 2019, there is a risk that in order to ensure accessible geographic information, new geodata sets and internet services may be established that do not build on or further develop the national infrastructure. Efforts should thus be made to ensure that data and services are not developed for narrow, project-oriented purposes but are established and maintained at both national and international levels from a collective perspective in accordance with the basic principles of INSPIRE.

The Management Council must establish and facilitate a process for national cooperation and coordination as required by INSPIRE, in line with the existing legislation but also effective in practical terms. This should define the way in which the data providers are involved in the implementation.

The Future State

Future State Design

The design analysis of the defined Strategic Principles and related Strategic Actions for the implementation of the INSPIRE Directive in Cyprus is provided below:



Principle Description and Rationale

Collaboration among the main actors in the spatial / geo data field should be underpinned by their shared understanding of the importance of spatial data and the recognition, by individual data owners, that the benefits of basing their work on a collective infrastructure offsets the expenses involved in building and maintaining it.

Collaboration must be facilitated and should be based on common components and binding agreements. Communication should be continuous and transparent.

Design Analysis

The following are the Strategic Actions required to fulfil the Future State Design principle:

Item: 5	Action Title: Establish cross-sector, shared agreement and commitment model for the INSPIRE Directive for the entire public sector stakeholders
Description:	The Management Council should define, formalize and establish a shared agreement and commitment statement for all involved stakeholders. The agreement must address the responsibilities of the stakeholders and their commitment to share the available and relevant information in the format required. The agreement must also define the service level to be established including frequency of data refreshing, response times and acceptable error levels. Each stakeholder shall accept the agreement formally and shall identify the individual(s) responsible for the agreement. The agreement must be reviewed and revised periodically.
Resources:	The activity requires the time of the Management Council and the Management Team.
Stakeholders:	The key stakeholder(s) involved in implementing this action are the Management Council and the Management Team.

The Future State

Future State Design

The design analysis of the defined Strategic Principles and related Strategic Actions for the implementation of the INSPIRE Directive in Cyprus is provided below:



Principle Description and Rationale

Collaboration among the main actors in the spatial / geo data field should be underpinned by their shared understanding of the importance of spatial data and the recognition, by individual data owners, that the benefits of basing their work on a collective infrastructure offsets the expenses involved in building and maintaining it.

Collaboration must be facilitated and should be based on common components and binding agreements. Communication should be continuous and transparent.

Design Analysis

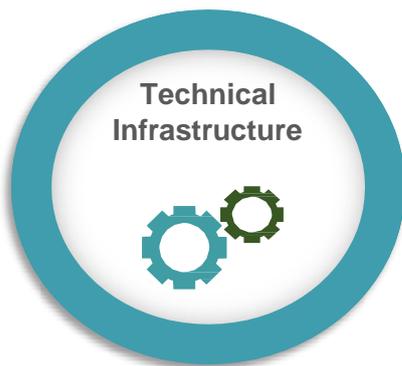
The following are the Strategic Actions required to fulfil the Future State Design principle:

Item: 6	Action Title: Implement a Communication and Issue Resolution Process
Description:	<p>The Management Council and the INSPIRE Operational Team should strive to ensure that the INSPIRE principles are followed both during the implementation of INSPIRE and in the subsequent period. This assumes clear communication of progress, achievements, but also issues so that resolution procedures can be initiated.</p> <p>The Management Council must establish and facilitate a process for national cooperation and coordination as required by INSPIRE, in line with the existing legislation but also effective in practical terms. This should define the way in which the data providers are involved in the implementation, how progress is communicated and how issues are resolved.</p>
Resources:	<p>The process shall be defined by the Management Council and Management Team and shall be implemented by the Operational Team.</p>
Stakeholders:	<p>The key stakeholder(s) involved in implementing this action are the Management Council, the Management Team and the Operational Team.</p>

The Future State

Future State Design

The design analysis of the defined Strategic Principles and related Strategic Actions for the implementation of the INSPIRE Directive in Cyprus is provided below:



Principle Description and Rationale

One of the main obstacles to the implementation of INSPIRE, is the technical complexity with regards to the infrastructure required, the relevant cost and the resources to run and maintain such an environment.

The existence of a technical infrastructure that can be leveraged by all stakeholders shall act as an agent for achieving progress.

Design Analysis

A shared technical infrastructure required for INSPIRE must incorporate the technical components to ensure that the relevant data and services are integrated into the shared foundation for eGovernment, are accessible on a 24-hour basis, are operated securely and efficiently and meet users' requirements. Furthermore, such an infrastructure can be leveraged to develop the national SDI for Cyprus (note that the INSPIRE Geoportal requirements are specific to publish of data and services). As such the infrastructure should comprise the following:

- Geodata themes, which are collections of geodata that are sorted by application. Examples include the transport network, hydrography and buildings. These themes must be available as geodata sets and services.
- Metadata, which are information that describe geodata sets and services, making it possible to find, display and use them.
- Shared infrastructure services, which consist of a set of internet services that allow access to documented geodata and to metadata from distributed sources of data.

The above must operate and be delivered based on (addressed by the other Strategic Principles and Actions):

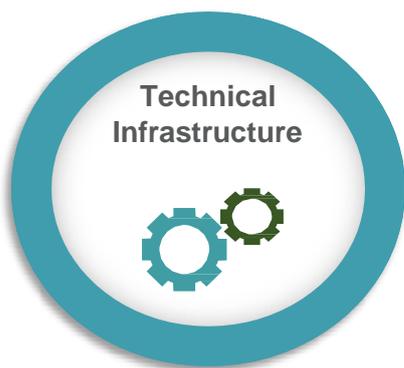
- Standards, which are common rules, conditions, guidelines or characteristics of data.
- Collaboration between central, local, and regional authorities, academic institutions and private businesses in order to ensure that users' requirements are met.
- Binding agreements between public bodies regarding the national SDI.

Based on the current environment, to efficiently achieve the above an existing technical infrastructure that fulfills the requirements, supported by the necessary national level decisions and agreements, must be leveraged. An example of such an infrastructure is the DLS Portal currently under implementation.

The Future State

Future State Design

The design analysis of the defined Strategic Principles and related Strategic Actions for the implementation of the INSPIRE Directive in Cyprus is provided below:



Principle Description and Rationale

One of the main obstacles to the implementation of INSPIRE, is the technical complexity with regards to the infrastructure required, the relevant cost and the resources to run and maintain such an environment.

The existence of a technical infrastructure that can be leveraged by all stakeholders shall act as an agent for achieving progress.

Design Analysis

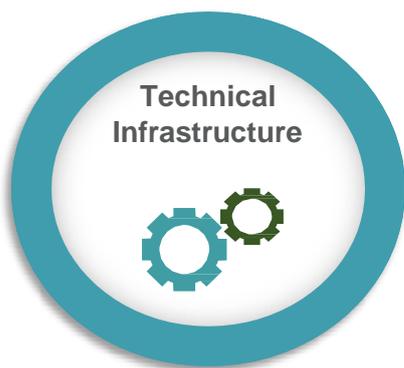
The following are the Strategic Actions required to fulfil the Future State Design principle:

Item: 7	Action Title: Identify and Leverage Existing Compliant Technical Infrastructure
Description:	<p>Based on the current environment, to efficiently achieve the requirements of the INSPIRE directive with regards to the necessary technical infrastructure, an existing technical infrastructure that fulfills the requirements, supported by the necessary national level decisions and agreements, must be leveraged.</p> <p>The available infrastructures currently are the DLS Portal currently under implementation and the cloud based eGIS services developed under project 13/2014.</p> <p>The Management Council must decide which of the existing technical infrastructures will be adopted from long term deployment of the INSPIRE Geoportal and relevant services. It is recommended that the DLS Portal shall be utilized as the central government portal for publishing GIS relevant data and associated services for long term purposes. This is also because a very large part of the infrastructure for geospatial information has already been developed within the establishment and functioning of the Integrated Land Information System at the Department of Lands and Surveys, it is efficient to consider that the additional data from other stakeholders shall be integrated to the DLS data and shall hence enhance the overall set of available and published data.</p>
Resources:	<p>The resources needed are the technical resources of the DLS Portal and time for training of users and administrators.</p>
Stakeholders:	<p>Management Council, DLS leadership. The Department of Information Technology Services. All stakeholders to provide data and publish services.</p>

The Future State

Future State Design

The design analysis of the defined Strategic Principles and related Strategic Actions for the implementation of the INSPIRE Directive in Cyprus is provided below:



Principle Description and Rationale

One of the main obstacles to the implementation of INSPIRE, is the technical complexity with regards to the infrastructure required, the relevant cost and the resources to run and maintain such an environment.

The existence of a technical infrastructure that can be leveraged by all stakeholders shall act as an agent for achieving progress.

Design Analysis

The following are the Strategic Actions required to fulfil the Future State Design principle:

Item: 8	Action Title: Issue a National Level Policy for the Utilization of a Shared Infrastructure
Description:	<p>The selection of the shared infrastructure is not enough to ensure the maximum utilization and publishing of data. It must be made clear that the use of a specific infrastructure (e.g. the DLS Portal) is a national policy of the government and as such all stakeholders must comply with this.</p> <p>The Management Council should draft and suggest a legislation to be ratified by the authoritative bodies to establish the selected technical infrastructure for the INSPIRE Geoportal.</p>
Resources:	The Management Council must undertake this task.
Stakeholders:	Management Council, Council of Ministers, House of Representatives.

The Future State

Future State Design

The design analysis of the defined Strategic Principles and related Strategic Actions for the implementation of the INSPIRE Directive in Cyprus is provided below:



Principle Description and Rationale

One of the main obstacles to the implementation of INSPIRE, is the technical complexity with regards to the infrastructure required, the relevant cost and the resources to run and maintain such an environment.

The existence of a technical infrastructure that can be leveraged by all stakeholders shall act as an agent for achieving progress.

Design Analysis

The following are the Strategic Actions required to fulfil the Future State Design principle:

Item: 9	Action Title: Develop a Supporting Mobile Application that will Demonstrate the Benefits of Data Sharing and Publication
Description:	<p>The deployment of the technical infrastructure and the publication of data shall entail the beginning of facilitating the sharing off data and the utilization of such data for different academic, research and / or business use, etc.</p> <p>The Management Council should consider developing a mobile application that will provide all the information to end users about ISNPIRE, its benefits and the details of the available data, but should also incorporate specific user application that shall demonstrate the usefulness of the data and of the facility to share the data.</p> <p>Example use cases can be defined as per thematic area or by data provider. The user applications should be relevant to the general population and should leverage the services and data provided via the INSPIRE Geoportal.</p>
Resources:	The Management Council must assign this task to the INSPIRE Management Team and Operational Team. External Services may be required.
Stakeholders:	Management Council, Management Team, INSPIRE Operational Team, Service Provider.

The Future State

Future State Design

The design analysis of the defined Strategic Principles and related Strategic Actions for the implementation of the INSPIRE Directive in Cyprus is provided below:



Principle Description and Rationale

The process of identifying, preparing, collecting and publishing data with quality, by the different stakeholders, is a significant challenge that requires effort and control at different levels.

This process must be streamlined, significant decisions regarding how data is managed, prepared / transformed and assessed for quality must be taken and relevant procedures and responsibilities established.

Design Analysis

There is a need to use and develop standardized processes, tools and new methods of data collection in order to be able to utilize existing and new data sources and ensure the necessary currency and quality of data. The timely updating of spatial information is a precondition for its use in many public sector activities.

Continual recording of spatial changes as they are processed and registered and transformation at the source, will contribute significantly to quality and a high currency of data. Continual updating of spatial information as an integral part of public administration will ensure that the shared foundation will continuously have a currency which is in keeping with the tasks it must support. This should include earth observations and orthophotos, an integral part of maintaining the SDI.

It should also be noted that since a very large part of the infrastructure for geospatial information has already been developed within the establishment and functioning of the Integrated Land Information System at the Department of Lands and Surveys, it is efficient to consider that the additional data from other stakeholders shall be integrated to the DLS data and shall hence enhance the overall set of available and published data.

The support for facilitating the data collection processes and the quality assurance can be assumed by the dedicated INSPIRE Operational Team addressed in the previous pages, the local tools to prepare and transform the data at the source shall be utilized by the designated resources at each stakeholder and the technical infrastructure to be utilized to gather and publish the data can be the infrastructure designated for shared services by the public sector entities as defined also in the previous pages (e.g. the DLS Portal).

In addition the process to identify, prepare, collect and publish data must be performed in line with the Steps to Compliance and the INSPIRE implementation roadmap deadlines.

The Future State

Future State Design

The design analysis of the defined Strategic Principles and related Strategic Actions for the implementation of the INSPIRE Directive in Cyprus is provided below:



Principle Description and Rationale

The process of identifying, preparing, collecting and publishing data with quality, by the different stakeholders, is a significant challenge that requires effort and control at different levels.

This process must be streamlined, significant decisions regarding how data is managed, prepared / transformed and assessed for quality must be taken and relevant procedures and responsibilities established.

Design Analysis

The following are the Strategic Actions required to fulfil the Future State Design principle:

Item: 10	Action Title: Develop Standardized Process for Data Identification, Preparation and Gathering
Description:	<p>A set of standardized processes and tools for Data identification, Preparation and Gathering must be developed, acquired and established. These should be documented, communicated to the stakeholders (data providers) and training sessions should be delivered to ensure that they are understood.</p> <p>The processes should define responsibilities, cycles of execution, the tools to utilize and the interface points between the stakeholders, the INSPIRE Operational Team, the Management Team and the Management Council.</p> <p>For Step 1 of the compliance process Desktop tools, the INSPIRE directive and technical specifications and other existing tools used by the stakeholders can be utilized.</p> <p>For Steps 2, 3, 6 of the compliance process tools like the INSPIRE metadata editor (http://inspire-geoportal.ec.europa.eu/editor/), the INSPIRE metadata validator (http://inspire-geoportal.ec.europa.eu/validator2/), the Stetl (https://stetl.readthedocs.org/en/latest/index.html) and HUMBOLDT Alignment Editor - HALE (http://www.esdi-community.eu/projects/hale) can be utilized.</p> <p>For Steps 4, 5 and 8 of the compliance process tools like Deegree (http://www.deegree.org/) and Geocatalog / DLS Portal tools can be utilized.</p>
Resources:	<p>The set of procedures, the communication process and the training should be developed and delivered by the INSPIRE Operational Team and should be approved and monitored by the Management Team and the Management Council.</p>
Stakeholders:	<p>INSPIRE Operational Team, Management Team, Management Council, stakeholders (data providers).</p>

The Future State

Future State Design

The design analysis of the defined Strategic Principles and related Strategic Actions for the implementation of the INSPIRE Directive in Cyprus is provided below:



Principle Description and Rationale

The process of identifying, preparing, collecting and publishing data with quality, by the different stakeholders, is a significant challenge that requires effort and control at different levels.

This process must be streamlined, significant decisions regarding how data is managed, prepared / transformed and assessed for quality must be taken and relevant procedures and responsibilities established.

Design Analysis

The following are the Strategic Actions required to fulfil the Future State Design principle:

Item: 11	Action Title: Develop a Monitoring Process to ensure execution of the Steps to Compliance and the remaining INSPIRE implementation roadmap deadlines
Description:	<p>In addition to the set of standardized processes for Data identification, Preparation and Gathering a Monitoring Process to ensure execution of the Steps to Compliance must be developed. This should be documented, communicated to the stakeholders (data providers) and the specific monitoring milestones and activities must be understood.</p> <p>The processes should define responsibilities, cycles of execution, the data required to be gathered by the INSPIRE Operational Team, specific KPIs to monitor (e.g. % of completed metadata, % of transformed as per INSPIRE data sets, % of published as per INSPIRE data sets, % of up to date / refreshed data sets) and the reporting to the Management Team and the Management Council. Monitoring should include internal cycles to capture progress to compliance and the cycles required to generate the reports submitted to the European Union.</p> <p><i>Note: The first task to be implemented as part of this monitoring process, shall be the commitment for a time plan (INSPIRE Monitoring Plan) for each stakeholder from the day of commencement of the Strategy implementation to the targeted day of compliance, broken down into the eight (8) steps of compliance for all relevant datasets for each stakeholder. All required initial data to establish this monitoring plan has been gathered as part of the development of the Strategic Plan.</i></p>
Resources:	<p>The procedure and the communication process should be developed and delivered by the INSPIRE Operational Team and should be approved and monitored by the Management Team and the Management Council.</p>
Stakeholders:	<p>INSPIRE Operational Team, Management Team, Management Council, stakeholders (data providers).</p>

The Future State

Future State Design

The design analysis of the defined Strategic Principles and related Strategic Actions for the implementation of the INSPIRE Directive in Cyprus is provided below:



Principle Description and Rationale

The process of identifying, preparing, collecting and publishing data with quality, by the different stakeholders, is a significant challenge that requires effort and control at different levels.

This process must be streamlined, significant decisions regarding how data is managed, prepared / transformed and assessed for quality must be taken and relevant procedures and responsibilities established.

Design Analysis

The following are the Strategic Actions required to fulfil the Future State Design principle:

Item: 12	Action Title: Ensure that Meta Data is Developed for all INSPIRE Relevant Data
Description:	<p>The current state analysis has revealed that metadata is practically non-existent for most relevant data sets. As such, and as part of the overall monitoring Process to be implemented. A key milestone should be set for all stakeholders to gather and define the appropriate metadata.</p> <p>The Management Council must ensure that this responsibility is clear in the cross-sector, shared agreement to be established.</p> <p>The INSPIRE Operational Team shall provide the required support and shall monitor the progress and report to the Management Team.</p>
Resources:	<p>The policy shall be established by the Management Council. The implementation of the processes (also detailed in the previous pages) shall be performed by the INSPIRE Operational team.</p>
Stakeholders:	<p>Management Council, Management Team, INSPIRE Operational Team, stakeholders (data providers)</p>

The Future State

Future State Design

The design analysis of the defined Strategic Principles and related Strategic Actions for the implementation of the INSPIRE Directive in Cyprus is provided below:



Principle Description and Rationale

The process of identifying, preparing, collecting and publishing data with quality, by the different stakeholders, is a significant challenge that requires effort and control at different levels.

This process must be streamlined, significant decisions regarding how data is managed, prepared / transformed and assessed for quality must be taken and relevant procedures and responsibilities established.

Design Analysis

The following are the Strategic Actions required to fulfil the Future State Design principle:

Item: 13	Action Title: Ensure that Data is Transformed and Harmonized at the Source and Provide Tools to Stakeholders to Standardize the Process
Description:	<p>The long term viability of any processes established and the minimization of resource time and cost to achieve and maintain compliance is highly affected by the completeness and quality of data. The participation in the process of many stakeholders renders the need to transform, harmonize and standardize data at the source. This entails the stakeholders assuming responsibility to follow the INSPIRE standards and transform data in the source systems.</p> <p>The Management Council must ensure that this responsibility is clear in the cross-sector, shared agreement to be established.</p> <p>A selected set of tools (refer to the list of tools as part of action “Develop Standardized Process for Data Identification, Preparation and Gathering”) must be made available to stakeholders.</p> <p>Stakeholders should make existing digital orthophotos, data from existing maps and the relevant geographic data, cadastral parcels and identifiers, geographic names and administrative units, etc available through the Geoportal.</p>
Resources:	The policy shall be established by the Management Council. The implementation of the processes detailed in the previous pages shall be performed by the INSPIRE Operational team.
Stakeholders:	Management Council, INSPIRE Operational Team, stakeholders (data providers)

The Future State

Future State Design

The design analysis of the defined Strategic Principles and related Strategic Actions for the implementation of the INSPIRE Directive in Cyprus is provided below:



Principle Description and Rationale

Another significant obstacle to the implementation of INSPIRE, is the lack of resources, skills and capacity at the various stakeholders but also at the level of establishing the technical and working teams defined by the legislation. No dedicated resources exist and the activities to achieve compliance are performed in an ad hoc and not effective way.

To achieve progress, resources must be allocated / assigned and capacity must be created.

Design Analysis

To close the gap between the required capacity and resources, decisions must be taken to allocate / assign resources, people must be trained to develop skills and the network of specialists must be established with a central point of reference.

The main aim of skills training must be to promote the effective and appropriate handling and use of geospatial data but also to address the use by specific 'communities of interest'. A variety of skills and knowledge transfer mechanisms need to be considered, varying from short courses to the provision of some form of centralized networked service training.

In addition a Helpdesk or Second Level of expertise can be established for data providers to obtain assistance and support.

Capacity can also be achieved by establishing the Technical Working Teams defined by the relevant legislation. However, these usually work with non dedicated individuals hence their effectiveness and efficiency is not to the level required. As such, the training and support (e.g. help desk) can be undertaken by the dedicated INSPIRE Operational Team and supporting tasks (e.g. standardization research, dissemination and utilization approach) can be assigned to Technical working Teams.

External services can be utilized to facilitate tasks, but these should relate mostly to assisting in overcoming specific obstacles or performing once-off time consuming tasks. This includes the establishment of the online services until the shared infrastructure is available and the services are transitioned there.

The Future State

Future State Design

The design analysis of the defined Strategic Principles and related Strategic Actions for the implementation of the INSPIRE Directive in Cyprus is provided below:



Principle Description and Rationale

Another significant obstacle to the implementation of INSPIRE, is the lack of resources, skills and capacity at the various stakeholders but also at the level of establishing the technical and working teams defined by the legislation. No dedicated resources exist and the activities to achieve compliance are performed in an ad hoc and not effective way.

To achieve progress, resources must be allocated / assigned and capacity must be created.

Design Analysis

The following are the Strategic Actions required to fulfil the Future State Design principle:

Item: 14	Action Title: Formally Establish the Liaison Role and Assign Individuals
Description:	<p>The role of each stakeholder as a data provider is essential within the whole INSPIRE compliance governance framework.</p> <p><i>The structure, roles and responsibilities of the necessary Governance Model are detailed in section: Implementation Strategy - Governance, Roles And Responsibilities, of this document.</i></p> <p>A Liaison must be assigned for each stakeholder. This position must be formally established as a role and not just as a contact individual. The role should be documented in the cross-sector, shared agreement to be established. The Liaison shall act as the point of contact, reporting and action for each stakeholder regarding the INSPIRE Directive and NSDI implementation and shall have the following responsibilities:</p> <ul style="list-style-type: none"> ▪ To implement the policies and processes defined by the Management Council for data identification, preparation and gathering; ▪ To interact and liaise with the INSPIRE Operational Team; ▪ To raise issues and participate in conflict / issue resolution; ▪ To provide feedback and reporting to the ISNPIRE Operational Team.
Resources:	<p>Each stakeholder must assign a primary Liaison. A backup individual should also be assigned.</p>
Stakeholders:	<p>All data providers (stakeholders) within the public sector.</p>

The Future State

Future State Design

The design analysis of the defined Strategic Principles and related Strategic Actions for the implementation of the INSPIRE Directive in Cyprus is provided below:



Principle Description and Rationale

Another significant obstacle to the implementation of INSPIRE, is the lack of resources, skills and capacity at the various stakeholders but also at the level of establishing the technical and working teams defined by the legislation. No dedicated resources exist and the activities to achieve compliance are performed in an ad hoc and not effective way.

To achieve progress, resources must be allocated / assigned and capacity must be created.

Design Analysis

The following are the Strategic Actions required to fulfil the Future State Design principle:

Item: 15	Action Title: Staff the INSPIRE Operational Team With Dedicated Skilled Individuals
Description:	<p>As detailed in a previous action, a dedicated INSPIRE Operational Team is required to be established to provide the day to day and continuous support and guidance at the operational level. This can be provided by operational individuals that are close to the subject.</p> <p>It is imperative that this team is establish prior to initiating the implementation of the strategy.</p>
Resources:	<p>The Team should comprise at a minimum 2-3 individuals that must be assigned to this role for the period of applicability of the specific action. It is suggested that the individuals ae assigned to this role for a period of at a minimum one year, during which their primary responsibilities would be to execute the activities listed above. The resources must possess the knowledge and skills to provide support to the stakeholders regarding the INSPIRE Directive.</p> <p><i>The positioning of the Team in the structure, roles and responsibilities are detailed in section: Implementation Strategy - Governance, Roles And Responsibilities, of this document</i></p>
Stakeholders:	<p>The key stakeholder(s) involved in implementing this action is the Management Team, the INSPIRE Council and the Council of Ministers.</p>

The Future State

Future State Design

The design analysis of the defined Strategic Principles and related Strategic Actions for the implementation of the INSPIRE Directive in Cyprus is provided below:

Principle Description and Rationale

Another significant obstacle to the implementation of INSPIRE, is the lack of resources, skills and capacity at the various stakeholders but also at the level of establishing the technical and working teams defined by the legislation. No dedicated resources exist and the activities to achieve compliance are performed in an ad hoc and not effective way.

To achieve progress, resources must be allocated / assigned and capacity must be created.



Design Analysis

The following are the Strategic Actions required to fulfil the Future State Design principle:

Item: 16	Action Title: Develop and Deliver Training Sessions
Description:	<p>The current state analysis has revealed significant gaps in the level of awareness and understanding of the key stakeholders involved. The Management Council should ensure that specific training sessions are delivered to stakeholder representatives, both at the initiation of the implementation of the strategy but also at periodic intervals. The training program should include both structured presentations but also on site support. Suggested areas to cover are the following:</p> <ul style="list-style-type: none"> ▪ INSPIRE Awareness training: A training focusing on providing an overview to INSPIRE, the latest development and the key compliance milestones. ▪ INSPIRE Compliance Approach and Benefits training: A training focusing on the steps to achieve compliance, the responsibilities of stakeholders, the challenges and the benefits that can be realized. ▪ INSPIRE Resources and Collaboration Requirements training: A training that details the resources in human capital, processes and tools required for stakeholders to achieve compliance and also the collaboration requirements between stakeholders and the relevant governance and operational bodies defined by the Implementation Strategy. ▪ INSPIRE Implementation Strategy Overview presentation: A presentation that summarizes the Implementation Strategy approach, actions, requirements and roadmap. ▪ INSPIRE Data Transformation Process training: A more technical training regarding the process and tools to be utilized to transform data at the source. This should include the detailed explanation of the relevant INSPIRE themes and technical requirements for each stakeholder.
Resources:	The training session and on site support shall be delivered by the INSPIRE Operational Team.
Stakeholders:	The key stakeholder(s) involved in implementing this action is INSPIRE Operational Team.

The Future State

Future State Design

The design analysis of the defined Strategic Principles and related Strategic Actions for the implementation of the INSPIRE Directive in Cyprus is provided below:



Principle Description and Rationale

Another significant obstacle to the implementation of INSPIRE, is the lack of resources, skills and capacity at the various stakeholders but also at the level of establishing the technical and working teams defined by the legislation. No dedicated resources exist and the activities to achieve compliance are performed in an ad hoc and not effective way.

To achieve progress, resources must be allocated / assigned and capacity must be created.

Design Analysis

The following are the Strategic Actions required to fulfil the Future State Design principle:

Item: 17	Action Title: Establish a Help and Support Line
Description:	In addition to trainings and on site support when required, the Management Council must establish a Help and Support Line. Stakeholders and other interested entities and individuals shall be able to contact the INSPIRE Operational Team at a specific Help and Support Line. Through this line the INSPIRE Operational Team shall be able to provide guidance regarding the different activities part of the steps to compliance but also to provide information to interested entities and individuals regarding the benefits that can be realized by leveraging the published data.
Resources:	The Help and Support Line shall be staffed by the INSPIRE Operational Team. If the volume of the help and support calls is high then the Team can be expanded with a dedicated resource and the responsibility for providing help and support over the phone can rotate between the Team members.
Stakeholders:	The key stakeholder(s) involved in implementing this action is the Management Council and the INSPIRE Operational Team.

The Future State

Future State Design

The design analysis of the defined Strategic Principles and related Strategic Actions for the implementation of the INSPIRE Directive in Cyprus is provided below:



Principle Description and Rationale

Another significant obstacle to the implementation of INSPIRE, is the lack of resources, skills and capacity at the various stakeholders but also at the level of establishing the technical and working teams defined by the legislation. No dedicated resources exist and the activities to achieve compliance are performed in an ad hoc and not effective way.

To achieve progress, resources must be allocated / assigned and capacity must be created.

Design Analysis

The following are the Strategic Actions required to fulfil the Future State Design principle:

Item: 18	Action Title: Establish Technical Working Teams
Description:	<p>Some progress has been achieved in the recent year with regards to implementing the steps to compliance, mostly at the technical infrastructure level. However, there are a number of technical matters that need to be agreed and established. This must be done through deliberation with involved stakeholders. As such technical working teams can be established to process specific matters. The teams shall be established by the Management Council, the relevant stakeholders must commit resources and each Technical Working Team must have a scope of operation and a deadline for a deliverable. Example matters to be addressed by the Technical Working Teams include:</p> <ul style="list-style-type: none"> ▪ Standards to be used ▪ Thematic areas commonality analysis ▪ Open data and data sharing approach ▪ Etc
Resources:	<p>The Technical working Teams shall comprise representatives from stakeholders. These can be the Liaisons or other specific individuals when specialized technical knowledge is required.</p>
Stakeholders:	<p>The key stakeholder(s) involved in implementing this action is the Management Council, the Management Team and the stakeholders leadership.</p>

The Future State

Future State Design

The design analysis of the defined Strategic Principles and related Strategic Actions for the implementation of the INSPIRE Directive in Cyprus is provided below:



Principle Description and Rationale

Another significant obstacle to the implementation of INSPIRE, is the lack of resources, skills and capacity at the various stakeholders but also at the level of establishing the technical and working teams defined by the legislation. No dedicated resources exist and the activities to achieve compliance are performed in an ad hoc and not effective way.

To achieve progress, resources must be allocated / assigned and capacity must be created.

Design Analysis

The following are the Strategic Actions required to fulfil the Future State Design principle:

Item: 19	Action Title: Obtain Services for Selective Assistance
Description:	As in the past, resources availability and specialization have been an issue, as expressed by the Management Council. As such the Council must consider sourcing external services for the implementation of any of the listed actions of the Strategic Plan.
Resources:	Externally sourced resources, required budget for each action, internal project management.
Stakeholders:	The key stakeholder(s) involved in implementing this action is the Management Council.

The Future State

Future State Design

The design analysis of the defined Strategic Principles and related Strategic Actions for the implementation of the INSPIRE Directive in Cyprus is provided below:

Principle Description and Rationale

To make the publication and exchange of information run smoothly, data has to be made available in a clear, accessible and simple way. The standardization and harmonization of data and of infrastructures are important steps that have to be taken if this is to be realized.

A series of standards, guidelines and specifications are available to be adopted and implemented. A structured approach to adopting this must be implemented and central guidance must be given. Agreed standards should form part of the cross-sector, shared agreement and commitment model for the INSPIRE Directive.



Design Analysis

Despite all the efforts internationally between government institutions, academic institutions and the private sector, geo-information is still quite fragmented and not easily accessible. As stated before, in addition to the DLS LIS system, other peripheral systems were created and a large volume of digital information was collected. Most of the data generated were based on the infrastructure for geographical data of the DLS and the same projection system and coordinates were mostly adopted but some other systems have followed their own specifications, in order to meet quickly specific internal needs, with the result that there is no compatibility.

INSPIRE provides standards for a number of the datasets and gives specifications for data and services. These standards and specifications must be included in the implementation of the INSPIRE Geo-portal. By using the INSPIRE standards and specifications and by linking up with its European infrastructure, the Cyprus Geo-portal will be well placed in a wider European context, and users both within and outside of Cyprus benefit more from access to more data. The INSPIRE implementing rules and the technical guidelines documents have dependencies with European and international standards (both formal standards-developing organizations such as ISO and CEN, as well as de-facto organizations such as OGC). The implementing rules are complemented with technical guidelines (TGs) containing detailed instructions and recommendations for implementers. While implementing rules specify what needs to be implemented at an abstract and generic level, the non-binding technical guidelines specify how legal obligations could be implemented, making reference to existing standards where appropriate — e.g. those of the Open Geospatial Consortium (OGC) and ISO/TC211. Implementing these technical guidelines will maximize the interoperability of INSPIRE spatial data sets and services.

The definition and standardization of Open Data is not mature yet, leading to heterogeneity of Open Data licensing models. Although any institution or organization may produce open data, an emphasis is placed on publishing information from public authorities, usually presented as Open Government Data. One of the well-known and used open licensing models is Creative Commons, which provides free, easy-to-use copyright licenses and a simple, standardized way to give the public permission to share and use the creative work — on condition of the author's choice.

The Future State

Future State Design

The design analysis of the defined Strategic Principles and related Strategic Actions for the implementation of the INSPIRE Directive in Cyprus is provided below:

Principle Description and Rationale

To make the publication and exchange of information run smoothly, data has to be made available in a clear, accessible and simple way. The standardization and harmonization of data and of infrastructures are important steps that have to be taken if this is to be realized.

A series of standards, guidelines and specifications are available to be adopted and implemented. A structured approach to adopting this must be implemented and central guidance must be given. Agreed standards should form part of the cross-sector, shared agreement and commitment model for the INSPIRE Directive.



Design Analysis (Cont.)

With regards to metadata INSPIRE requires that it includes:

- The conformity of spatial data sets with the implementing rules;
- Rights of use of spatial data sets and services;
- The quality and validity of spatial data;
- The public authorities responsible for the establishment, management, maintenance and distribution of spatial data sets and spatial data services;
- The spatial data sets to which public access is limited and the reasons for such limitation.

The INSPIRE Metadata Regulation was published on Dec. 4, 2008. Member States had two years to create metadata for Annex I and II, and 5 years for Annex III. The metadata editor is available in the INSPIRE geo-portal. Some examples of standards currently utilized are:

- ISO19109:2005 Geographic information - Rules for application schema;
- ISO19110:2005 Geographic information - Methodology for feature cataloguing;
- ISO 19107:2003 Geographic information - Spatial schema;
- ISO 19115:2003 Geographic information – Metadata;
- For the description of non-spatial datasets a core set of metadata elements are provided in the Dublin Core Metadata Standard (ISO 15836).

In addition the filling in of INSPIRE is based on a Service Oriented Architecture (SOA). Web services make searching, consulting and downloading data possible, based on standards, worked out specifications and by organizing clear data and processes. Data providers and / or publishers for INSPIRE will have to have Service Oriented Architecture or open architecture in which web services can run. In this sense, “open” means that the architecture has to focus on exchanging data, in both a technical and organizational way. Web services play an important role here.

The Future State

Future State Design

The design analysis of the defined Strategic Principles and related Strategic Actions for the implementation of the INSPIRE Directive in Cyprus is provided below:



Principle Description and Rationale

To make the publication and exchange of information run smoothly, data has to be made available in a clear, accessible and simple way. The standardization and harmonization of data and of infrastructures are important steps that have to be taken if this is to be realized.

A series of standards, guidelines and specifications are available to be adopted and implemented. A structured approach to adopting this must be implemented and central guidance must be given. Agreed standards should form part of the cross-sector, shared agreement and commitment model for the INSPIRE Directive.

Design Analysis

The following are the Strategic Actions required to fulfil the Future State Design principle:

Item: 20	Action Title: Establish a Technical Working Team to Identify and Prescribe the Standards to be Utilized by all Stakeholders
Description:	As detailed in a previous action, technical working teams can be established to process specific matters. A matter that must be specifically addressed by a Technical Working Team is that of Standardization. The team must be formed immediately, as soon as the Strategy Implementation commences. The participants must represent the key stakeholders that maintain the large and more comprehensive data sets and represent the key critical infrastructures and physical resources management authorities in Cyprus. A list and reference of standards to be considered are listed on the previous page.
Resources:	The participants must represent the key stakeholders that maintain the large and more comprehensive data sets and represent the key critical infrastructures and physical resources management authorities in Cyprus. In addition a representative of the INSPIRE Operational Team must participate.
Stakeholders:	The key stakeholder(s) involved in implementing this action is the Management Council, the INSPIRE Operational Team and the participating stakeholders.

The Future State

Future State Design

The design analysis of the defined Strategic Principles and related Strategic Actions for the implementation of the INSPIRE Directive in Cyprus is provided below:



Principle Description and Rationale

To make the publication and exchange of information run smoothly, data has to be made available in a clear, accessible and simple way. The standardization and harmonization of data and of infrastructures are important steps that have to be taken if this is to be realized.

A series of standards, guidelines and specifications are available to be adopted and implemented. A structured approach to adopting this must be implemented and central guidance must be given. Agreed standards should form part of the cross-sector, shared agreement and commitment model for the INSPIRE Directive.

Design Analysis

The following are the Strategic Actions required to fulfil the Future State Design principle:

Item: 21	Action Title: Embed the Use of Standards in the Cross-sector, Shared Agreement and Commitment Model for the INSPIRE Directive
Description:	Following the analysis of the standards to adopt, by the Technical Working Team and the approval of the results by the Management Council, the agreed standards and the responsibility of the stakeholders to comply with these must be embedded in a revised version of the Cross-sector, Shared Agreement I for the INSPIRE Directive.
Resources:	This activity requires the resources of the Management Council and the Management Team.
Stakeholders:	The key stakeholder(s) involved in implementing this action is the Management Council and the Management Team.



Ministry of Interior

**THE PROVISION OF SERVICES FOR THE
IMPLEMENTATION OF DIRECTIVE 2007/2/EC
(INSPIRE) IN THE REPUBLIC OF CYPRUS, IN
ACCORDANCE WITH LAW N.43(I)/2010**

Implementation Strategy

Implementation Strategy

Overview

The implementation approach for executing the Strategic Plan shall be based on the following:

- Establishing the necessary governance model;
- Defining a pragmatic implementation roadmap;
- Assigning resources.

The current document defines the required governance model and the implementation roadmap. However, resources must be allocated and assigned by the Government, the Ministry of Interior and the stakeholders in general.

Governance, Roles And Responsibilities

The Strategic Plan implementation approach requires a solid governance model with clear roles and responsibilities. Clearly the Management Council as defined by the law, must undertake the responsibility to implement the Strategic Plan. The same governance model that will be used to monitor and execute day to day activities for the implementation of the INSPIRE Directive can be used to implement the Strategic Plan.

The components of the suggested model is presented below. These have been defined based on current best practices in other member countries, including countries where specific entities have been established to lead the INSPIRE implementation and similar initiatives (e.g. Geonovum in the Netherlands):



Figure 6: Strategic Plan Implementation Governance Model Components

Implementation Strategy

Governance, Roles And Responsibilities

The structure of the suggested model is presented below:

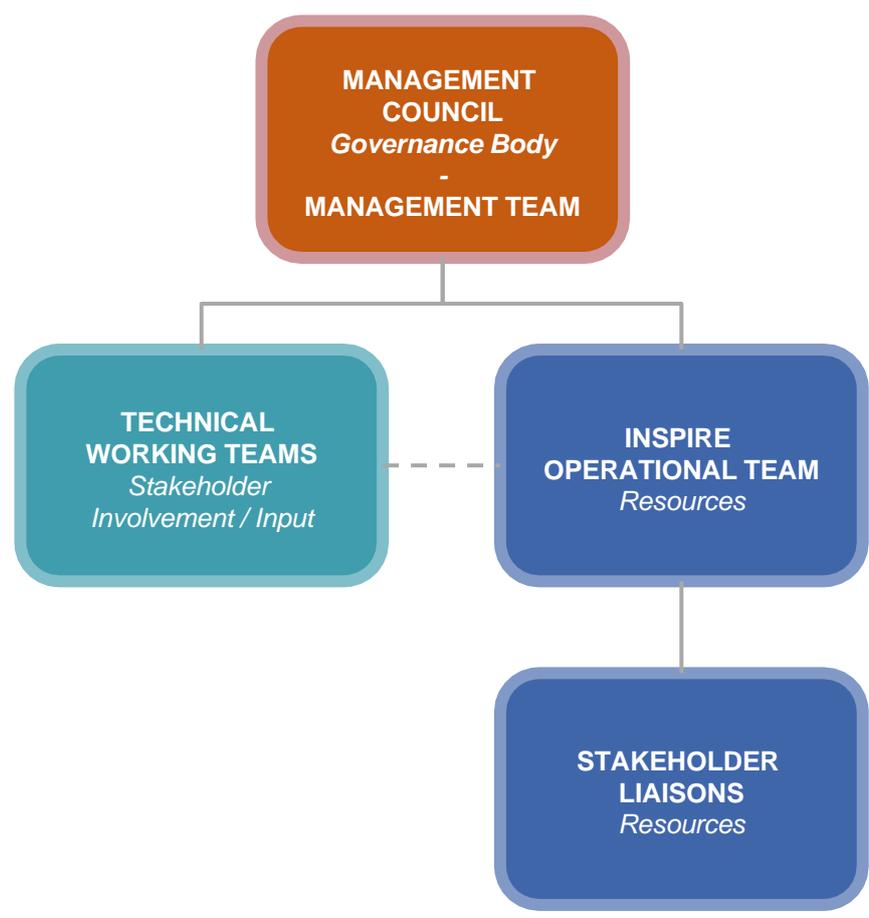


Figure 7: Strategic Plan Implementation Governance Model Structure

Note the following:

- The responsible authority remains the Ministry of Interior as defined by the legislation;
- The Management Council defined above can be implemented via the Management Board defined by the legislation;
- The Team of Directors defined by the legislation can continue to exist as the minimum entities quorum requirement for the Management Council to operate;
- The Technical Committees and the Working Groups defined by the legislation can be merged to a more lean structure of having Technical Working Teams reporting to the Management Council and cooperating with the dedicated INSPIRE Operational Team.

Implementation Strategy

Governance, Roles And Responsibilities

The role and responsibilities of each component of the structure are defined below:

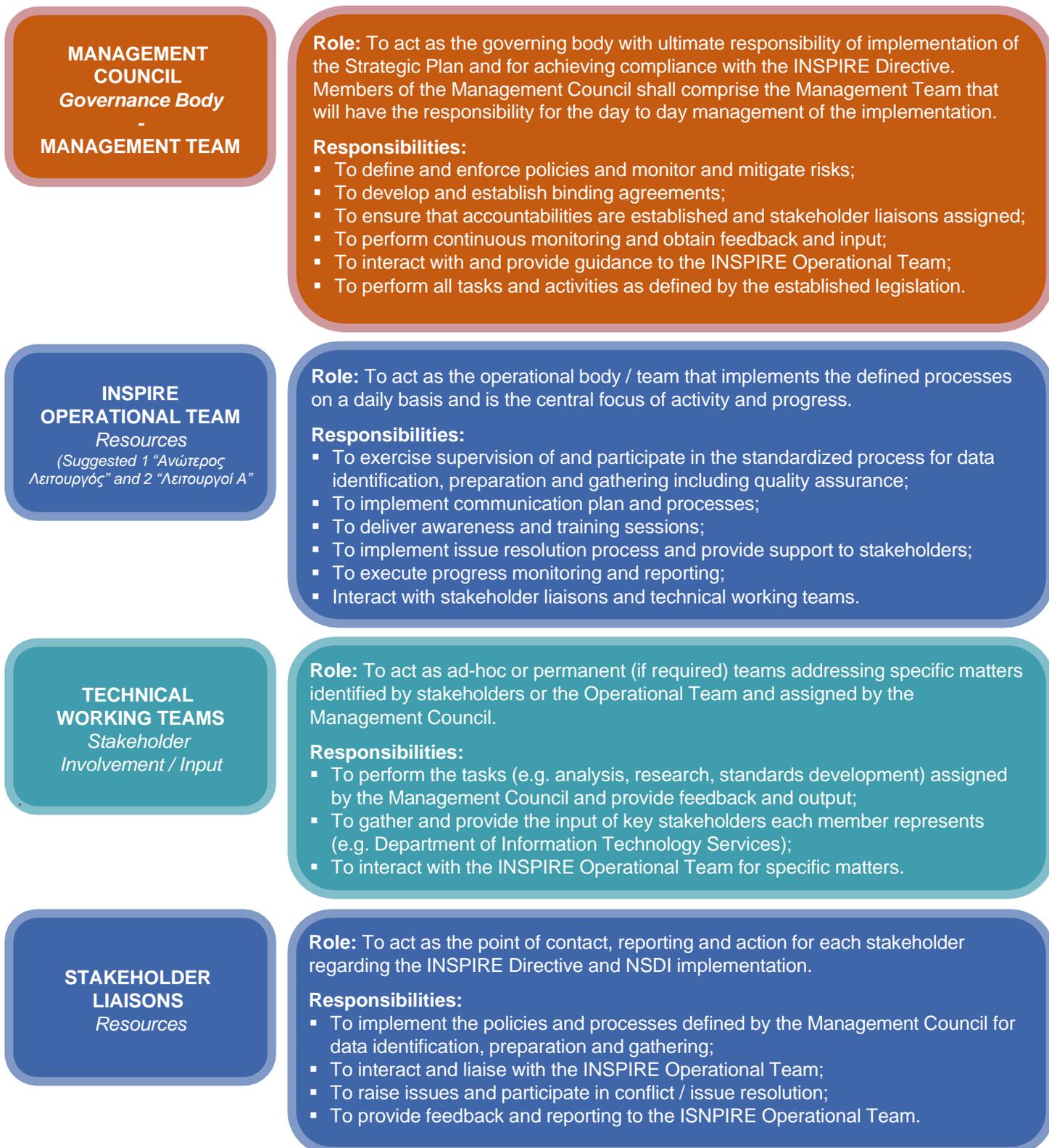


Figure 8: Governance Model Components Role and Responsibilities

Implementation Strategy

Resources And Funding

The following is an analysis of the resources and effort needed to implement the listed actions. **The analysis assumes the establishment of a dedicated INSPIRE Operational Team.** If this will not be established then external services will be required. The estimated cost is for setting up the activities and subsequent continuation and maintenance:

Strategic Principle	Action	Resources for Internal Execution	Effort for Internal Execution	Resources for Services / Tools
Leadership & Governance	1-Establish and Empower the Focused Management Body	Management Council and Council of Ministers time	N/A	N/A
	2-Establish a Dedicated INSPIRE Operational Team	Dedication of 2-3 resources time	3000-5000 man hours per year	N/A
	3-Establish a Quality Assurance Process	Part of the INSPIRE Operational Team time	N/A	N/A
	4-Establish a Program for Raising / Enhancing Awareness	Part of the INSPIRE Operational Team time	N/A	N/A
Collaboration & Communication	5-Establish cross-sector, shared agreement and commitment model for the INSPIRE Directive for the entire public sector stakeholders	Part of the INSPIRE Operational Team time	N/A	N/A
	6-Implement a Communication and Issue Resolution Process	Part of the INSPIRE Operational Team time	N/A	N/A
Data Preparation & Collection	10-Develop Standardized Process for Data Identification, Preparation and Gathering	Part of the INSPIRE Operational Team time	N/A	N/A
	11-Develop a Monitoring Process to ensure execution of the Steps to Compliance and the remaining INSPIRE implementation deadlines	Part of the INSPIRE Operational Team time	N/A	N/A
	12-Ensure that Data is Transformed at the Source and Provide Tools to Stakeholders to Standardize the Process	Part of the INSPIRE Operational Team time Stakeholders resources time	6000-8000 man hours initially 240 man hours subsequently per stakeholder per year	Utilization of suggested tools
	13-Ensure that Metadata is Developed for all INSPIRE Relevant Data	Part of the INSPIRE Operational Team time Stakeholders resources time	3500-4500 man hours initially 60 man hours subsequently per stakeholder per year	Utilization of suggested tools
Technical Infrastructure	7-Identify and Leverage Existing Compliant Technical Infrastructure	Utilize the DLS portal or existing cloud based eGIS Geoportal	N/A	Existing services
	8-Issue a National Level Policy for the Utilization of a Shared Infrastructure	Management Council and Council of Ministers time	N/A	N/A
	9-Develop a Supporting Mobile Application that will Demonstrate the Benefits of Data Sharing and Publication	Part of the INSPIRE Operational Team time	N/A	Mobile application development
Resources & Capacity Building	14-Formally Establish the Liaison Role and Assign Individuals	Management Council and Council of Ministers time	N/A	N/A
	15-Staff the INSPIRE Operational Team With Dedicated Skilled Individuals	Dedication of 2-3 resources time	Man hours listed above	N/A
	16-Develop and Deliver Training Sessions	Part of the INSPIRE Operational Team time	N/A	Utilize provided material
	17-Establish a Help and Support Line	Part of the INSPIRE Operational Team time	N/A	N/A
	18-Establish Technical Working Teams	Management Council / Part of the INSPIRE Operational Team time	N/A	N/A
	19-Obtain Services for Selective Assistance (for sourcing any of the above actions – an estimation)	Management Council / Part of the INSPIRE Operational Team time	N/A	Supporting Services
Standardization	20-Establish a Technical Working Team to Identify and Prescribe the Standards to be Utilized by all Stakeholders	Part of the INSPIRE Operational Team time Stakeholders resources time	500-600 man hours	N/A
	21-Embed the Use of Standards in the Cross-sector, Shared Agreement and Commitment Model for the INSPIRE Directive	Management Council and Council of Ministers time	N/A	N/A

Implementation Strategy

Resources And Funding

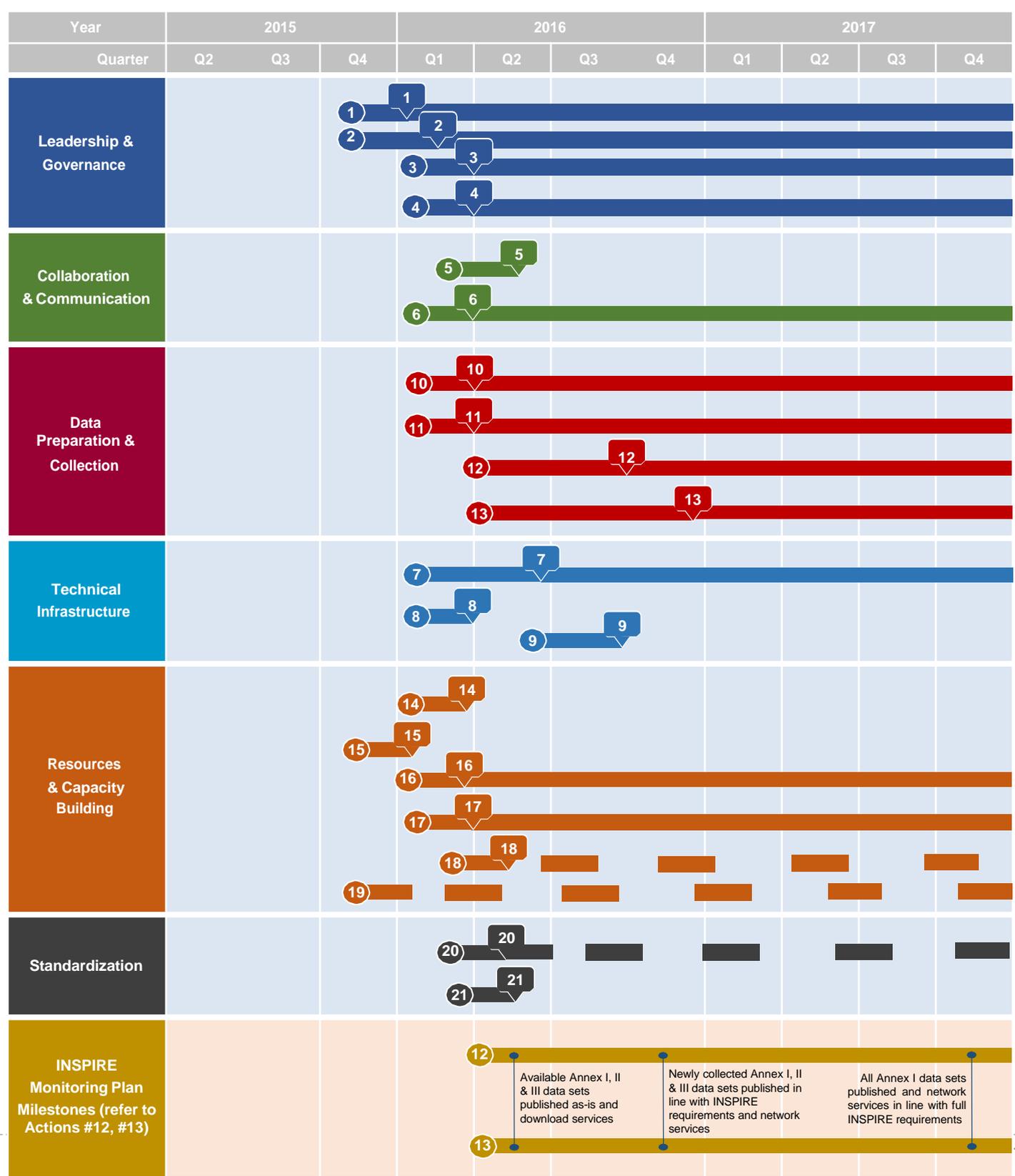
The following is an analysis of the funds needed to implement the listed actions. **The analysis assumes the establishment of a dedicated INSPIRE Operational Team.** If this will not be established then external services will be required. The estimated cost is for setting up the activities and subsequent continuation and maintenance:

Strategic Principle	Action	Resources for Internal Execution	Effort for Internal Execution	Resources for Services / Tools	Budget for Internal Execution	Budget for Services / Tools
Leadership & Governance	1-Establish and Empower the Focused Management Body	Management Council and Council of Ministers time	N/A	N/A	N/A	N/A
	2-Establish a Dedicated INSPIRE Operational Team	Dedication of 2-3 resources time	3000-5000 man hours per year	N/A	€100,000 per year	N/A
	3-Establish a Quality Assurance Process	Part of the INSPIRE Operational Team time	N/A	N/A	N/A	N/A
	4-Establish a Program for Raising / Enhancing Awareness	Part of the INSPIRE Operational Team time	N/A	N/A	N/A	N/A
Collaboration & Communication	5-Establish cross-sector, shared agreement and commitment model for the INSPIRE Directive for the entire public sector stakeholders	Part of the INSPIRE Operational Team time	N/A	N/A	N/A	N/A
	6-Implement a Communication and Issue Resolution Process	Part of the INSPIRE Operational Team time	N/A	N/A	N/A	N/A
Data Preparation & Collection	10-Develop Standardized Process for Data Identification, Preparation and Gathering	Part of the INSPIRE Operational Team time	N/A	N/A	N/A	N/A
	11-Develop a Monitoring Process to ensure execution of the Steps to Compliance and the remaining INSPIRE implementation deadlines	Part of the INSPIRE Operational Team time	N/A	N/A	N/A	N/A
	12-Ensure that Data is Transformed at the Source and Provide Tools to Stakeholders to Standardize the Process	Part of the INSPIRE Operational Team time Stakeholders resources time	6000-8000 man hours initially 240 man hours subsequently per stakeholder per year	Utilization of suggested tools	€160,000 initially €6,000 subsequently per stakeholder per year	€20,000 - €40,000 per stakeholder
	13-Ensure that Metadata is Developed for all INSPIRE Relevant Data	Part of the INSPIRE Operational Team time Stakeholders resources time	3500-4500 man hours initially 60 man hours subsequently per stakeholder per year	Utilization of suggested tools	€120,000 initially €2,000 subsequently per stakeholder per year	Utilization of suggested tools above
Technical Infrastructure	7-Identify and Leverage Existing Compliant Technical Infrastructure	Utilize the DLS portal or existing cloud based eGIS Geoportal	N/A	Existing services	N/A	Existing DLS budget for maintenance and support
	8-Issue a National Level Policy for the Utilization of a Shared Infrastructure	Management Council and Council of Ministers time	N/A	N/A	N/A	N/A
	9-Develop a Supporting Mobile Application that will Demonstrate the Benefits of Data Sharing and Publication	Part of the INSPIRE Operational Team time	N/A	Mobile application development	N/A	€10,000 initially and €2,000 per year
Resources & Capacity Building	14-Formally Establish the Liaison Role and Assign Individuals	Management Council and Council of Ministers time	N/A	N/A	N/A	N/A
	15-Staff the INSPIRE Operational Team With Dedicated Skilled Individuals	Dedication of 2-3 resources time	Man hours listed above	N/A	As listed above	N/A
	16-Develop and Deliver Training Sessions	Part of the INSPIRE Operational Team time	N/A	Utilize provided material	N/A	N/A
	17-Establish a Help and Support Line	Part of the INSPIRE Operational Team time	N/A	N/A	N/A	N/A
	18-Establish Technical Working Teams	Management Council / Part of the INSPIRE Operational Team time	N/A	N/A	N/A	N/A
Standardization	19-Obtain Services for Selective Assistance (for sourcing any of the above actions – an estimation)	Management Council / Part of the INSPIRE Operational Team time	N/A	Supporting Services	N/A	€200,000 - €350,000
	20-Establish a Technical Working Team to Identify and Prescribe the Standards to be Utilized by all Stakeholders	Part of the INSPIRE Operational Team time Stakeholders resources time	500-600 man hours	N/A	€15,000	N/A
	21-Embed the Use of Standards in the Cross-sector, Shared Agreement and Commitment Model for the INSPIRE Directive	Management Council and Council of Ministers time	N/A	N/A	N/A	N/A

Implementation Strategy

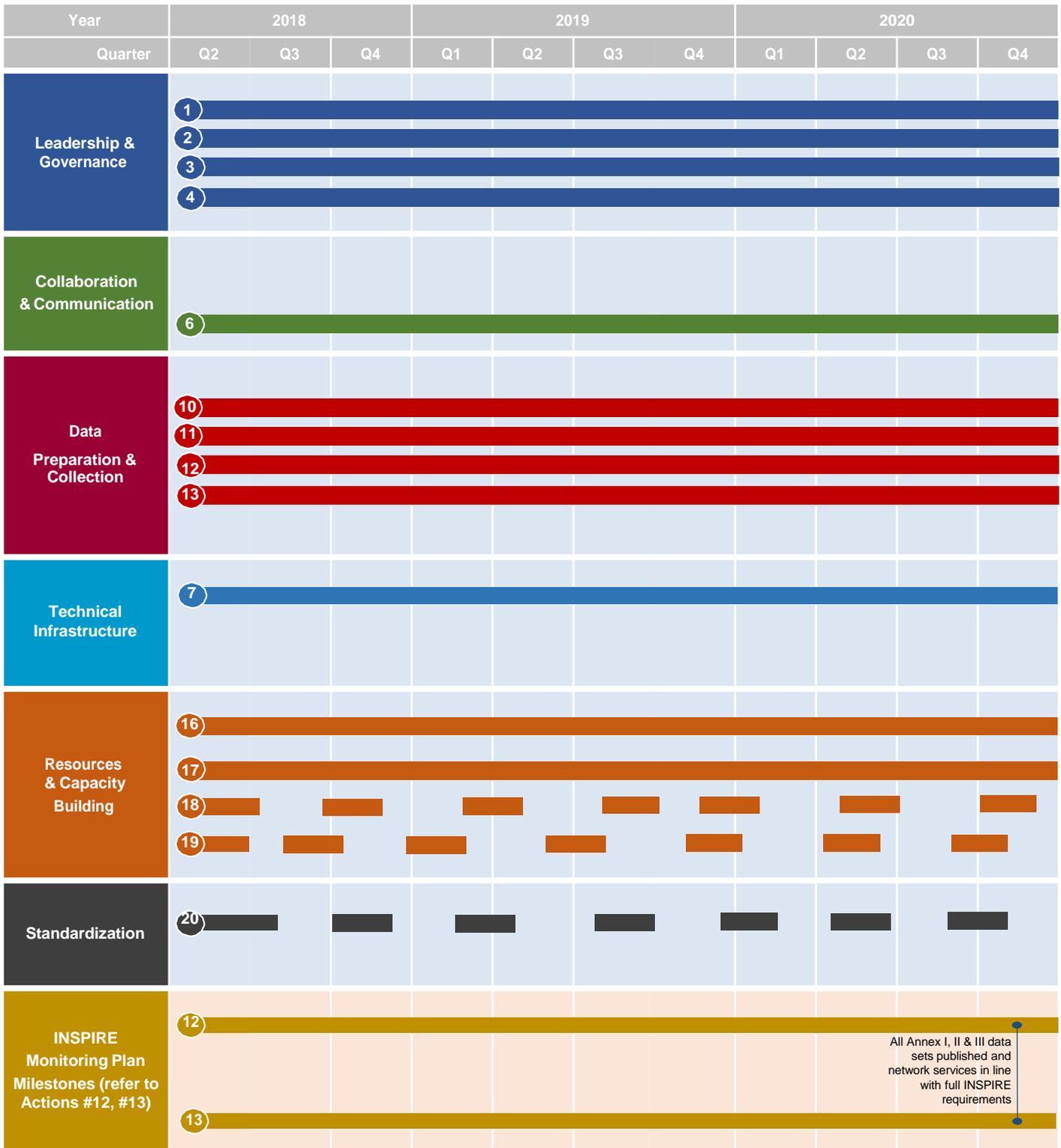
Roadmap

The following is a suggested timeline and, where applicable, dependencies for the implementation of the Strategic Actions, in the form of a roadmap. The time bars show when an Action must be started and when it must be completed. Where continuous operational activities resulting from the completion of the Action these, are shown where, possible using a transparent color:



Implementation Strategy

The following is a suggested timeline and, where applicable, dependencies for the implementation of the Strategic Actions, in the form of a roadmap. The time bars show when an Action must be started and when it must be completed. Where continuous operational activities resulting from the completion of the Action these, are shown where, possible using a transparent color:



Implementation Strategy

Challenges and Risks

The same challenges faced in implementing the INSPIRE Directive may be faced during implementation of the Strategic Plan also. This includes the lack of governance, lack of resources and lack of a process to implement the required actions. This should be taken very seriously by the Ministry of Interior and the Management Council. The resolution of these challenges will be a prerequisite for the successful implementation of the Strategic Plan. The following is a listing of the key challenges, constraints and resolution prerequisites:

Challenge: Management Commitment and Support.

Shifting priorities at the management and political level may affect the implementation of the Strategic Plan. Management commitment and support may not be continuous.

Prerequisites: The Strategic Plan must be approved, adopted and the commitment communicated by the highest level of management possible. The organizational structure to deliver the implementation of the Strategy must be established immediately after approval of the Strategic Plan document and the decision making authority for all matters regarding the implementation of the Strategic Plan must be given to the Management Council.

Challenge: Buy-in by stakeholders and deadlines.

A number of stakeholders are involved and tasks / projects are expected to have tight deadlines.

Prerequisites: Specific actions for educating, training and engaging stakeholders have been defined. These must be executed and their progress must be monitored closely.

Challenge: Resource availability.

The current environment and the need for a number of projects to be handled by many of the stakeholders may lead to lack of resources.

Prerequisites: A specific composition of the organizational structure to deliver the implementation of the Strategic Plan and for the staffing of the INSPIRE Operational Team has been defined. These resources must be committed by the Ministry of Interior and the other involved stakeholders on time. If resources are not available to establish the Operational Team then services can be procured as transition stage. For this to be successful at least a number of dedicated resources must be assigned to work with the service provider. Once the implementation is under execution, resource requirements shall be reviewed periodically.

Challenge: Technical challenges regarding lack or appropriate tools.

As per the identified action, stakeholders may face the lack of appropriate tools to facilitate the gathering, preparation / transformation steps.

Prerequisites: The suggested action in this document to make available the required tools should be implemented. This can be in the form of central procurement for the Operational Team or the utilization of tools integrated in existing architectures (e.g. DLS Portal).

Implementation Strategy

Challenge: Changes in processes, systems, and technology may require that roles and responsibilities be structured and performed differently.

Changes that will be effected on specific processes of capturing and handling data and way of executing may be significant.

Prerequisites: It is imperative that the processes to be implemented are clearly explained and agreed with stakeholders.

Challenge: There is a need to ensure that data utilized is accurate up to date and complete. In addition no national data models exist.

Disparate data sources should be harmonized and centralized as much as possible as part of the overall INSPIRE Directive and NSDI implementation. The lack of a national data model might cause delays and may require an agreement between stakeholders regarding the data model to use.

Prerequisites: The Management Council must assign a working Team to develop and agree a national model in line with INSPIRE requirements. Data should be transformed at the source to achieve efficiency.

Challenge: Stakeholder coordination, quality assurance and experienced resources.

Lack of experience resources with stakeholder coordination and communication and quality assurance.

Prerequisites: Identify a core of knowledgeable (i.e. 2-3) that will form the main team. If possible procure services to assist.

Challenge: Lack of funds and development cost

The cost relevant to the development of infrastructure and web services and applications as well as to the preparation of specifications and rules on common use and sharing of the system and the data.

Prerequisites: Leverage any existing initiatives to minimize new / additional costs.

Challenge: Additional operational costs

Additional operational costs including cost of production of basic geospatial reference data (cost relevant to the homogenization of existing geospatial data in order to produce the background to be used for the presentation and dissemination of geospatial data through the information system), compliance costs for data producers (cost relevant to the transformation of geospatial data and the development and maintenance of appropriate services), etc.

Prerequisites: Leverage any existing initiatives to minimize new / additional costs. Utilize central support and operations to lower the stakeholder costs as much as possible.

Challenge: Current requirement for payment to receive data

Current legislations or practices sometimes render the need for a user to pay to received data from a public authority.

Prerequisites: the Management Council must make a suggestion, in line also with the current government open data initiative (www.data.gov.cy), to render data received from online services free for the public and other authorities. Access control can be implemented on sensitive data or where license / usage agreements apply.



Ministry of Interior

**THE PROVISION OF SERVICES FOR THE
IMPLEMENTATION OF DIRECTIVE 2007/2/EC
(INSPIRE) IN THE REPUBLIC OF CYPRUS, IN
ACCORDANCE WITH LAW N.43(I)/2010**

Appendices

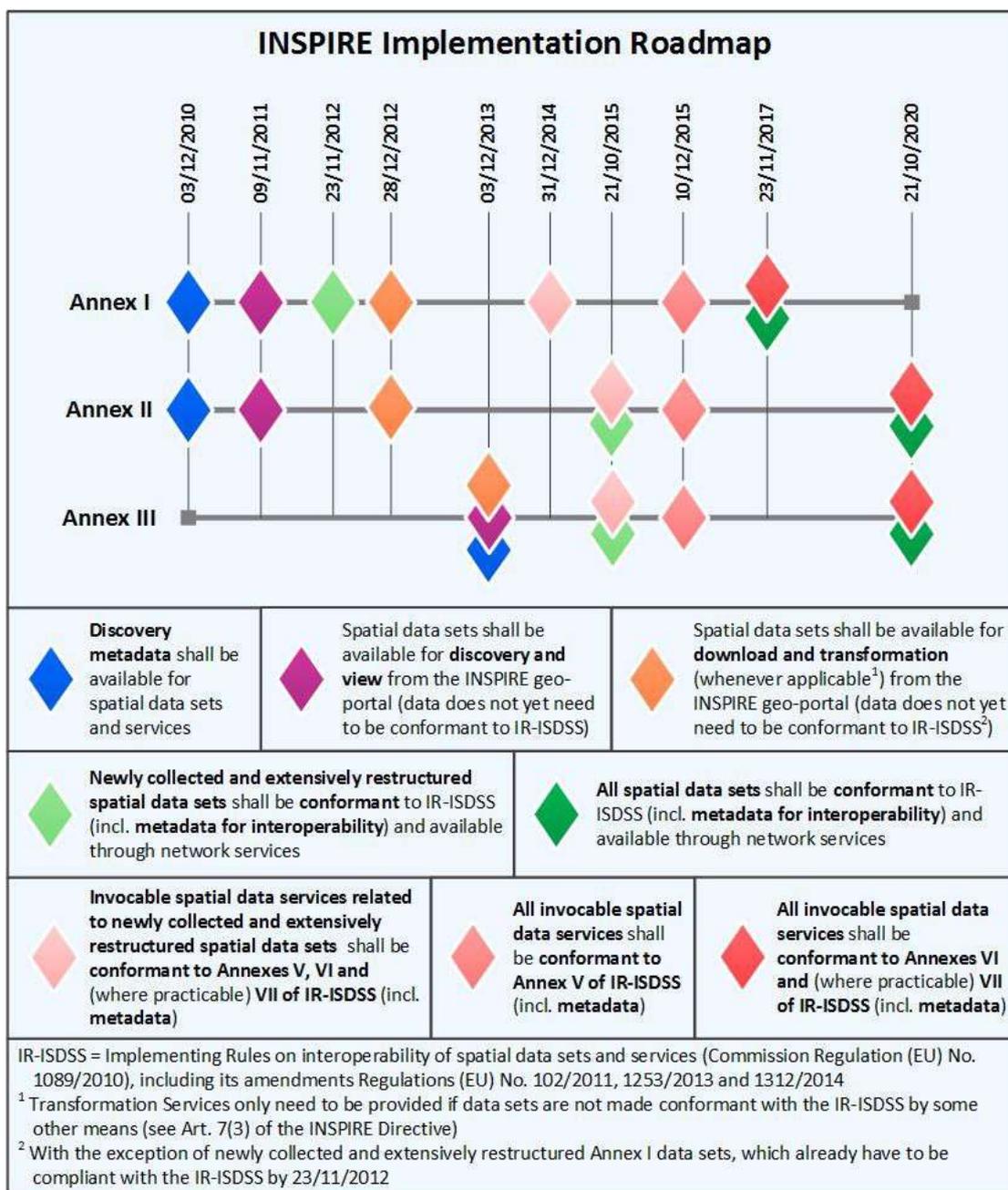
Appendices

Appendix 1 – INSPIRE Data Themes

Annex I Themes	Annex II Themes
Co-ordinate reference systems	Elevation
Geographical grid systems	Land cover
Geographical names	Orthoimagery
Administrative units	Geology
Addresses	
Cadastral parcels	
Transport networks	
Hydrography	
Protected sites	
Annex III Themes	
Statistical units	Natural risk zones
Buildings	Atmospheric conditions
Soils	Meteorological geographical features
Land use	Oceanographic geographical features
Human health & safety	Sea regions
Utility & government services	Bio-geographical regions
Environmental monitoring facilities	Habitats & biotopes
Production & industrial facilities	Species distribution
Agriculture & aquaculture facilities	Energy resources
Population distribution - demography	Mineral resources
Area management restriction/regulation zones & reporting units	

Appendices

Appendix 2 – INSPIRE Roadmap



Appendices

Appendix 3 – Current State Analysis Questionnaire

IMPLEMENTATION OF DIRECTIVE 2007/2/EC (INSPIRE) IN THE REPUBLIC OF CYPRUS, IN ACCORDANCE WITH LAW N.43(I)/2010

Completion Instructions

Sheet	Instructions
1 - INSPIRE COMPLIANCE Qs	Please answer each question as per the current status regarding the INSPIRE relevant data for your organization. Please complete all columns and rows and use N/A where the matter is not applicable. Greyed out cells should not be completed as these are already not applicable.
2 - DATA LIST	Please complete the information for each data set / data element identified as INSPIRE relevant data for your organization.

IMPLEMENTATION OF DIRECTIVE 2007/2/EC (INSPIRE) IN THE REPUBLIC OF CYPRUS, IN ACCORDANCE WITH LAW N.43(I)/2010

Stakeholder Questionnaire

Stakeholder: PLEASE ENTER STAKEHOLDER NAME (e.g. Department of Lands and Surveys)

Item	Required Activity	Activity Status (enter Yes, No, In Progress)	Description of Planned Activities / Comments (to be completed by the stakeholder)	Duration of Activity to be Performed	Target Completion Date (to be completed by the stakeholder)
Phase 1					
Step 1: Identify, Evaluate and select data sets					
1	Have you evaluated your data catalogue / inventory to identify data within scope of INSPIRE (i.e. as defined by the 34 INSPIRE data themes)?				
2	Have you identified and selected relevant data topics and data sets to be shared within the scope of INSPIRE?				
2	Have you identified and selected additional data topics and data sets to be shared? Please list these data sets / elements in sheet "2 - DATA LIST".				
3	Have you identified the existing electronic data and decided which datasets to publish? Please list these data sets / elements in sheet "2 - DATA LIST".				
4	Is the format and the content of the data in GIS format (e.g. shapefile, geodatabase)? If not, please state the current format of the data.				
5	If conversion to GIS acceptable format is needed has this been defined and the transformation mapping created?				
6	Have you decided the frequency of updating of these data sets (and the metadata below)?				
7	Have you established a process to handle new data generation in line with INSPIRE requirements?				
Step 2: Create INSPIRE compliant metadata for Data Sets and Services					
1	For the identified datasets above, have you created the required Metadata for the datasets to be published, including the list below? -Title; -Data Ownership Details; -Data Type and Format; -Data Spatial / Geometric Compatibility; -Data Resolution – equivalent scale ; -Projection; -Date of Creation; -Restrictions; -Size; -Update Frequency; -Responsible for Communication				
2	Have you created the required Metadata for the network services being used to publish the data?	N/A	N/A	N/A	N/A
Step 3: Define and Check compliance with licensing / usage terms (i.e. open, closed)					
1	Have you identified relevant licensing / usage arrangements or restrictions for the datasets to be published? Including the requirement to pay to receive the data?				
2	Have you identified open data and created statements for how the data can be used and shared when published?				
3	Have you identified data that can be made available to restricted users (e.g. with access control)?				
Step 4: Register data and services (Metadata Catalogue and Discovery)					
1	Have you published discovery metadata records for data and services to a harvest location (e.g. on a website), from which the resources can be machine-accessed from the Internet?	N/A	N/A	N/A	N/A
2	Have you registered the harvest location with a relevant portal?	N/A	N/A	N/A	N/A
3	Has the collection / 'harvesting' been ensured thus a relevant portal collects the metadata records from the registered location and makes them available within the portal environment?	N/A	N/A	N/A	N/A
4	Have you validated, once collected, the individual data and service discovery metadata records?	N/A	N/A	N/A	N/A
5	If the validation is successful, is the metadata record visible within the relevant portal?	N/A	N/A	N/A	N/A
Phase 2					
Step 5: Publish data					
1	Are datasets allowed to be searchable via Discovery Service?	N/A	N/A	N/A	N/A
2	Are datasets allowed to be visualized via View Service?	N/A	N/A	N/A	N/A
3	Is access to data content provided via Download Service?	N/A	N/A	N/A	N/A
Step 6: Transform data to INSPIRE standards (Transform, Download and Invoke)					
1	Have you selected and implemented an approach to transform data to INSPIRE standards so that it is comparable with data from other public sector organizations (i.e. changing the database at source or by transforming it before publication)?				
2	Have you created a map (matching table) between the original data and the transformed ones to: - Decide to which Inspire Data Theme (target) the Data Set corresponds; - Analyze the data model of the original Spatial Data Set (source); - Decide how the model (details in fields) of the target Data Set will be implemented; - Define the mapping by implementing the matching table (i.e. populating the table)?				
3	Have you set up Transformation Services for transforming Data formats?	N/A	N/A	N/A	N/A
4	Have you set up Transformation Services for transforming Coordinate reference systems?	N/A	N/A	N/A	N/A
5	Have you set up Transformation Services for transforming Data from a source logical schema to the INSPIRE logical schema?	N/A	N/A	N/A	N/A
6	Have you transformed the Source Spatial Data Set to the Target Spatial Data Set by employment of the matching table and services above? With the transformation was geodatabase data set is created and checked?	N/A	N/A	N/A	N/A
7	Once the data has been transformed: - Have you created GML file(s) for downloading, the services (if implemented) and the metadata for interoperability; - Have you validated the GML file(s) and services (if available) and update the Inspire metadata to current data edition and status; - Have you published the GML file(s) (as Download Services) and services (if available - as Invocable Interoperability Services); - Have you updated and publish the metadata entries?	N/A	N/A	N/A	N/A
Step 7: Monitoring and Reporting					
1	Have you established monitoring tools that cover metadata, spatial data sets, services including network services, and data sharing?	N/A	N/A	N/A	N/A
2	Have you established reporting processes?	N/A	N/A	N/A	N/A
Step 8: Data and Service Sharing					
1	Have you defined appropriate rights management and licensing agreements that do not restrict the use of data.	N/A	N/A	N/A	N/A

/ Thank you