

INSPIRE Directive is likely to be Enforced from Summer 2007 Inspiring Harmonisation of Spatial In

On 22nd of November 2006 the European Parliament and Council reached agreement on the contents of the proposed INSPIRE Directive.

The establishment of a spatial data infrastructure for Europe facilitating seamless access to spatial data for all public authorities on all levels is its central point. In this context an expected impact on the European geoinformation economy as well as the controversial matter of charges for spatial information are in the spotlight.

By Florian Fischer

in Europe is one of fragmentation of datasets and sources, gaps in availability, lack of harmonisation between datasets at different geographical scales and duplication of information collection. These problems make it difficult to identify, access and use data that is available.

As for the availability of spatial data, action on European level are required. Only few Member States have a legal framework to establish a national SDI to control its technical, organisational and legal aspects. In Member States that establish a national SDI only a few problems are considered or single initiatives are not interoperable. Without a harmonised technical framework on the level of the European Union enormous obstacles regarding to the cross-border usage of spatial data are expected in the future.

The INSPIRE initiative intends to trigger the creation of a European spatial information infrastructure that delivers to the users integrated spatial information services. These services should allow the users to identify and access spatial or geographical information from a wide range of sources, from the local level to the global level, in an interoperable way for a variety of uses. The concept of the European spatial data infrastructure is a composition of all SDIs on national, regional and local levels and itself a part of the Global Spatial Data Infrastructure (GSDI).

INSPIRE focuses on environmental policy because environmental issues are inherently cross-border processes. Furthermore spatial

The word infrastructure is used to promote the concept of a reliable, supporting environment, analogous to a road or telecommunications network. Spatial data infrastructures facilitate access to geographically-related information using a minimum set of standard practices, protocols, and specifications. Spatial data infrastructures are commonly delivered electronically via the internet.

What is INSPIRE?

The INSPIRE Directive addresses both technical and non-technical issues of a spatial data infrastructure, ranging from technical standards and protocols (ISO, CEN, OGC, W3C), organisational issues, data policy issues including data access policy and the creation and maintenance of geographical information for a wide range of themes, starting with the environmental sector.

The general situation on spatial information



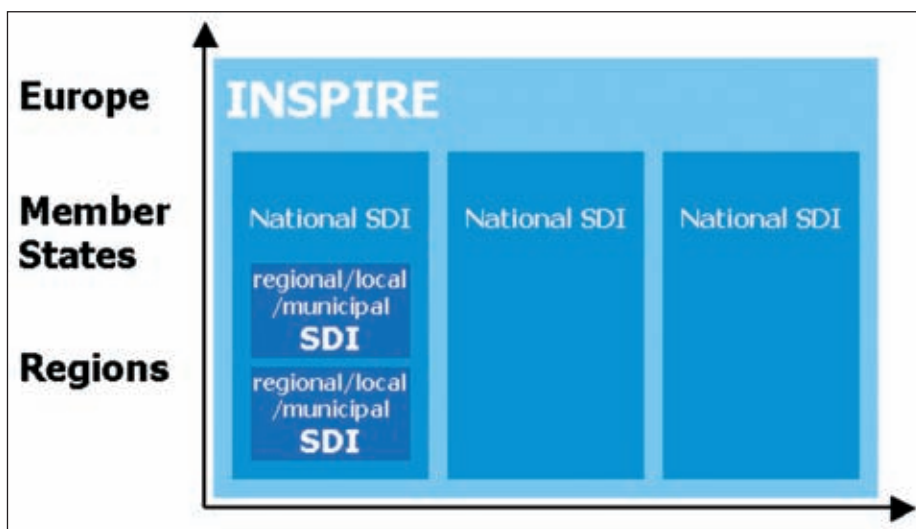
Logo of the INSPIRE Initiative.

INSPIRE (Infrastructure for Spatial Information in Europe) creates a legal framework for the establishment and operation of an infrastructure for spatial information in Europe for the purpose of formulating, implementing, monitoring and evaluating Community policies in Member States at all levels and providing public information.

“Good policy depends on good information, and this directive will help improve both the availability and the consistency of the information we need”, said EU Environment Commissioner Stavros Dimas.

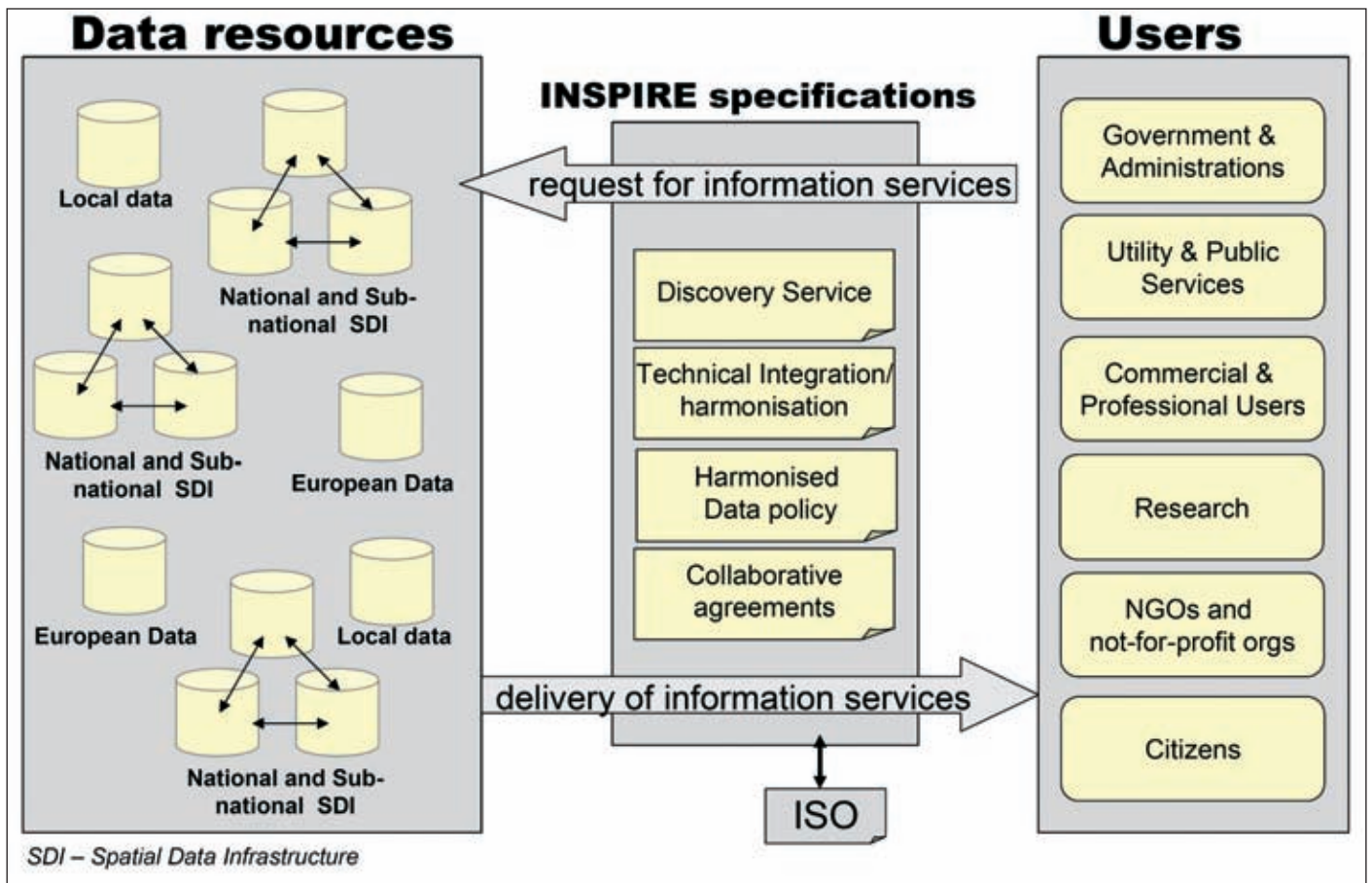
What is a Spatial Information Infrastructure?

The term “spatial data infrastructure” (SDI) is often used to denote the relevant base collection of technologies, policies and institutional arrangements that facilitate the availability of and access to spatial data. A crucial fact is that spatial datasets remain at the institution where they are gathered and updated. A spatial data infrastructure then provides a basis for spatial data discovery, evaluation, download and application for users and providers within all levels of government, the commercial sector, the non-profit sector, academia and the general public.



Composition of INSPIRE by national, regional and local SDIs.

formation across Europe



INSPIRE Information Flow.

datasets offer a perfect opportunity for localising datasets across various thematic subjects. Therefore INSPIRE is as well open for use by and future extension to other sectors such as agriculture, transport and energy. It will also have an impact on the development of national spatial data infrastructures within the Member States as the Finnish Environment Minister Jan-Erik Enestam comments: "I believe that the new directive will create a solid basis for the future development of spatial data infrastructures at national and European level, and also enable high quality data bases and information services to be run in the member states." Possible services are the visualisation of information layers, overlay of information from different sources, spatial and temporal analysis. The target users of INSPIRE include policy-makers, planners and managers at European, national and local level and the citizens and their organisations.

Full Implementation till 2013

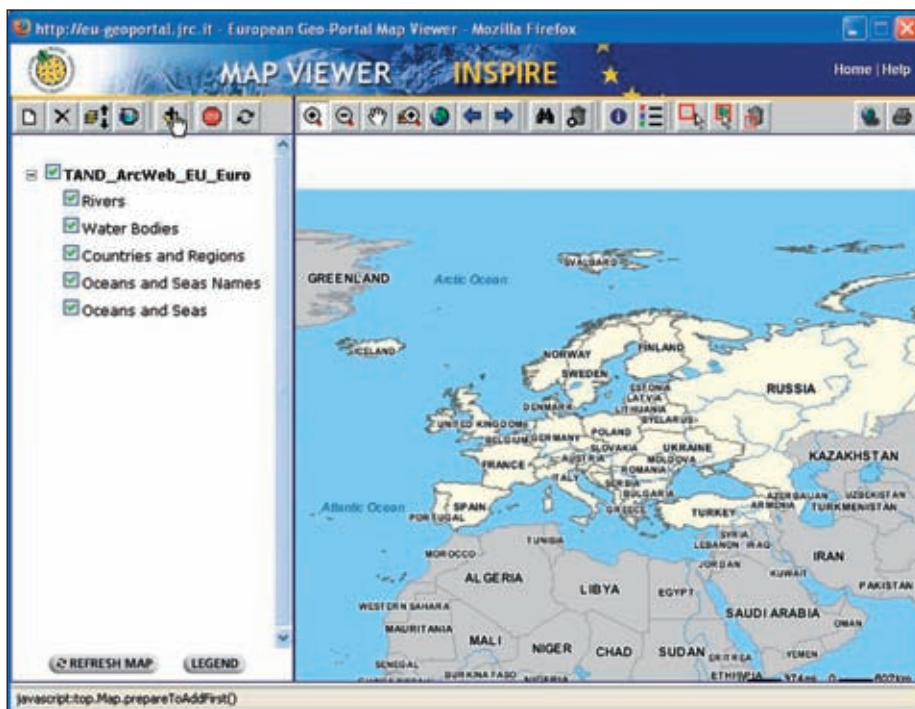
The implementation of INSPIRE contains several stages and shall be finished in the year 2013. In the first phase national catalogues for metadata will be established. In many Member States the catalogues are already in an advanced stage at present. A second part of the implementation is a range of interoperable services for upload, discovery, viewing, download and transformation of spatial data.

Furthermore the INSPIRE Directive aims at the creation of services to invoke spatial data services as a completion of this stage. The directive defines fixed rules for gathering and maintenance of metadata for spatial data and spatial services. The final stage is harmonisation of spatial data. INSPIRE is exclusively concerned with aspects of compatibility of spatial datasets and its retrieval for Community policies. The Member States are not required to change their data format but to provide interfaces to transform heteroge-

neous datasets by a standardised data model. Examples for these services are the Web Mapping Service Specification and Web Feature Service Specification defined by the Open Geospatial Consortium (OGC) and the Geographic Markup Language (GML) for encoding spatial data. The harmonisation issue as well includes the development of a common schema for the semantics of spatial data to achieve nearly universal usability of spatial data. However the level of universal usability to be reached by harmonizing only the schemes and not the data might be limited.

A European Geo-Portal

The Internet access point for spatial data and services under INSPIRE is the European Geo-Portal. The Geo-Portal is established under lead management of the Joint Research Center of the European Commission. It links and will link to national portals and to sector specific data and services. The Geo-Portal does not



The European Geo-Portal Map Viewer.

store or maintain the data. These are distributed in many National and Thematic servers across Europe. Each server is maintained by the organisation responsible for the data.

The Geo-Portal serves as demonstrator for the potentials the European spatial data infrastructure will offer. But awareness raising and training could be more prominent and cross-references to other activities could be made more evident. A link with the information society is important, this is a success factor in the United States.

Boost for the European Geoinformation Economy

The European Commission estimates that the measures needed to implement the new directive will cost member states about 3-5 million euros per year over a period of about ten years. INSPIRE will affect not only the public administration but also the private sector e.g. in the development of new services. This might result in a push of the European geoinformation economy one could think to oneself. Asking Dr.-Ing. Gerd Buziek, vice-president and head of the section for geoinformation economy of Deutscher Dachverband für Geoinformation e. V. (the umbrella organisation for geoinformation in Germany), he says: "First of all we have to await what the Directive will look like because so far only various press releases are on hand."

Furthermore he states that there will be no single investment to establish a spatial data infrastructure. Investments are located in the

budget of each individual public authority that is all governmental levels from national to local. Buziek believes that there is a holdup of investments now till it is clear what the directive will look like exactly. "Obviously public authorities have to adjust to Service Oriented Architecture and certain standards in future tender offers, specified by the INSPIRE Directive", says Buziek and he continues: "The Technology must be implemented and especially the reliable operation of all decentralised data servers is crucial for running a competitive European SDI. Who will do the job depends on the capacity of the public authorities." Generally outsourcing to private sector companies and hence a stimulation of the geoinformation economy is expected.

Experts say that it would be easier to assess the impacts and determine the costs and benefits if the work programme is more explicit in highlighting the needs of environmental policies in order to set priorities.

Open Access to all Public Geodata?

In 2004 the European Commission wanted to open access to all public geodata and spatial services in Europe but the European Council did not agree. Thus the INSPIRE Directive will allow public authorities to take fees for access to data which has to be updated frequently, like weather reports. Critics like the Public Geo Data Initiative still argue for open access to public spatial information because the data gathering and processing is done by public authorities and tax-funded therefore. They argue that taking fees for the data hampers the development of the geoinformation econ-

omy and restricts the citizens right to get insight in public information.

However there are some issues to consider. The INSPIRE Directive is a so called IPR Directive which means that it can not outcast national legislation which might describe a different fee regulation. Dr. Gerd Buziek states thereto, "Primarily Public Geo Data is aligned to the requirements for public duties and as a citizens one has the right to have insight in this information." By the use of a SDI the effort to provide information can be reduced for public authorities and citizens even get a higher quality of information. Therefore a SDI fits perfect together with eGovernment initiatives.

Dr. Buziek holds that the availability of these public map viewing services allows to integrate them in business solutions, too. If companies have different requirements for spatial data they either gather it by themselves, cooperate with public authorities to gather it or pay a fee to get them it public authorities.

Finally the fees for geodata do not have that big influence on the geoinformation economy as Buziek says, "it will remain almost unchanged" and furthermore states that, "a law about freedom of geoinformation such as the freedom of information in the United States will not be established in the future. And if one has a close look in the U.S. it is not that different. You can get free data but in a very low level of detail. If one has a special request there is a fee, too."



Dr.-Ing. Gerd Buziek - vice-president and head of the section for geoinformation economy of Deutscher Dachverband für Geoinformation e. V.

Florian Fischer (ffischer@geoinformatics.com) is a Contributing Editor of *GeoInformatics*.

More information on the topic discussed in this article can be found at <http://inspire.jrc.it>, <http://eu-geoportal.jrc.it>, www.gsdi.org, www.opengeospatial.org, www.ddgi.de and <http://register.consilium.europa.eu/pdf/en/06/st03/st03685.en06.pdf>.