

EEA Briefing

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'INSPIRE' directive

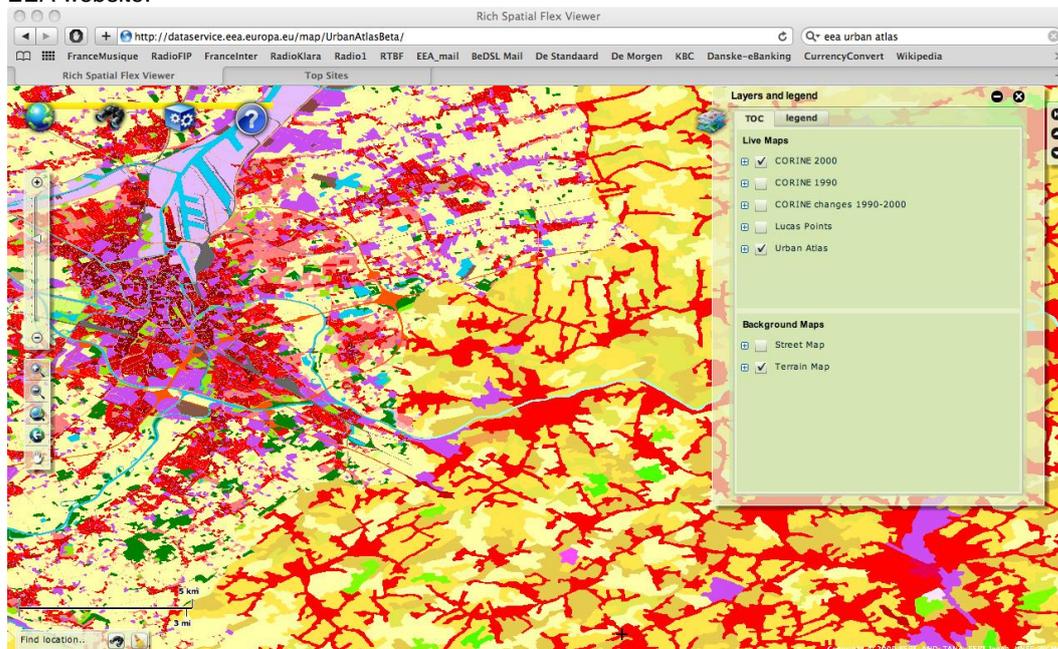
Summary: The EU directive 'INSPIRE' (INfrastructure for SPatial InfoRmation in Europe) aims to benefit European public authorities (and others) by making available relevant, harmonised and quality geographic information that support policies and activities impacting the environment. It requires EU Members States to provide 34 different spatial data themes through a network of 'services'. INSPIRE also requires the adoption of 'Implementing Rules' which set out how the system will operate. EEA has been continuously involved with INSPIRE since its preparatory phase.

Quality spatial information is needed

'Spatial' (or 'geospatial' or 'geographic') information describes a location and properties of phenomena on the earth's surface. It can be 'real world' objects – say, a road on a map, the latitude and longitude of the source of a river, or where different types of soil can be found in a rural area -- or 'virtual', such as property registrations.

Public authorities at all levels in Europe regularly manage and use geospatial information. For many, exchanging and sharing such data with other public authorities is a major part of their public tasks. This is particularly important for those sharing political borders (which ignore environmental threats). For example, countries exchange descriptions of a shared transboundary river and surrounding basin to improve river management; or maps of 'pollution hotspots' which might place other neighbouring countries at risk, to support risk management planning.

Figure 1: INSPIRE will integrate spatial data from different sources to meet multiple user needs. Here, layers from CORINE land cover and Urban Atlas data are combined through an interactive viewer on the EEA website.



On 15 May 2007, the EU directive 'INSPIRE', or INfrastructure for SPatial InfoRmation in Europe, came into force. INSPIRE aims at making available relevant, harmonised and quality geographic information to support the formulation, implementation, monitoring and evaluation of policies and activities which directly or indirectly impact the environment. INSPIRE does not

require the collection of new spatial data but rather builds on infrastructures for spatial information established and operated by EU Member States. It is also considered a core pillar to achieve '[SEIS](#)', the Shared Environmental Information System envisioned for Europe.

Public authorities dealing with the environment have been its initial primary beneficiary. For the EEA, about 80 % of all the environmental data and information that it uses has a spatial dimension. But just about any public authority that uses spatial data can benefit, such as an agriculture department using a transportation map to determine routes for shipping local produce.

Eventually, academics, researchers, non-governmental organizations, businesses and citizens are also expected to benefit. Business will most likely be encouraged to develop new electronic applications for niche markets interested in quality geospatial information -- for example, providing shoppers with the locations of bank machines, or cyclists with cycling shop locations, delivered through personal mobile phones.

Getting INSPIRE started

The EC required its Member States to transpose the directive into national law by 15 May 2009. To date, about one-third of the countries have complied. The next step was for public authorities (environmental and other) to create descriptions of their available data ('metadata') that are included in the directive. Here, INSPIRE categorises 34 different spatial data themes into three groups:

- (1) Annex 1 (e.g. geographical names, standard grid across Europe, hydrography)
- (2) Annex 2 (e.g. elevation, land cover)
- (3) Annex 3 (e.g. buildings, soil, government services, population, habitats)

Annex 1 data, to be supplied by countries first, constitutes the basic geospatial reference framework. It is good practice to refer Annex II and III data to Annex I so that locational consistency can be ensured no matter what data themes are combined. For example, a map of soils (from Annex 3) becomes more relevant when viewed with basic location information such roads and names of towns (e.g. from Annex 1).

Countries then need to establish and operate a network of five 'services' which will use metadata and geospatial data:

- (1) Discovery: Tells the user if the information exists, as well as related issues such as: main content; level of detail; who to contact; pricing; and copyright.
- (2) View: Full viewing and basic querying of the above information.
- (3) Download: Mainly for experts, this will enable users to access a dataset on a server and download all or part of it.
- (4) Transformation: Computer applications will 'transform' or recalculate information that is similar but which has been presented differently from different sources (e.g. one country's road categories based on number of lanes and road width is different from that of another's -- to make one common cross-boundary map, the two need to be 'transformed' into one).
- (5) Invoke: Allows spatial data to be generated by one online service automatically communicating with another (i.e. machines talking with machines).

The directive also requires the adoption of five sets of 'Implementing Rules' which set out how the various elements of the infrastructure will operate. For each set, the EC proposes a draft, prepared by expert Drafting Teams. The five sets are:

- (1) Metadata: Descriptions of available information (spatial data sets, series and services).
- (2) Data specifications: Agreements on how data should be defined and presented, or modelled into 'virtual reality' -- for example, defining the width of a highway lane for standardized mapping (completed for Annex I; under development for Annexes II-III).
- (3) Network services: Discovery, view, download, transformation and invoke services.
- (4) Sharing: Obliges authorities to share information -- the directive's main goal.

- (5) Monitoring and reporting of the status of implementation of the directive in each country.

Ultimately, information from one public source will be seamlessly combined and stored with information from others.

INSPIRE obliges Member States to provide access to their infrastructures through the EC's '[INSPIRE Geoportal](#)'. The current experimental version allows only for discovery and viewing of a limited number of spatial data sets and services – to increase as more become available from Member States (they may also decide to set up additional access points that they themselves consider useful to operate).

EEA Support: EEA believes that INSPIRE offers vast potential to help achieve its core objective to inform and empower policymakers and citizens. EEA has been involved with INSPIRE since its preparatory phase (2004-2006) when it helped define needs for spatial data for addressing environmental issues (e.g. floods). It then participated in Drafting Teams for (1) metadata; and Thematic Working Groups for (2) data specifications of the 34 different spatial data themes for all Annexes.

Until 2013, EEA will (among other activities): continue to participate in the Drafting Team and seven Thematic Working Groups for the development of data specifications for Annex II and III; use INSPIRE metadata profiles as a basis for its EEA 'metadata catalogue; and update its network National Focal Points (NFPs) on INSPIRE news and activities while encouraging more involvement from them. After 2013, EEA aims to: share pan-European spatial datasets; improve bi-directional data flows with countries in its network; and enhance its 'web services' (e.g. its machines communicating automatically with other machines).

More about INSPIRE: [European Commission/INSPIRE](#)