

# INSPIRE – Why is This Such a Good Idea?



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We all know the images from the great floods in Central Europe. Enormous areas are left under water, the life of people and animals are threatened, and subsequent reconstruction incurs enormous costs. In Denmark, we have also experienced flooding – on a smaller scale, but extensive enough to give us the impression that water runs where water wants to run. Water does not respect borders, neither administrative nor national. The same applies to a number of other environmental phenomena such as air pollution, spreading of infectious diseases and invasive species. In emergency situations, it is crucial to have access to relevant and reliable information. It must be possible quickly and easily to answer questions such as where the water will run to over the next couple of hours, which settlements are at risk, and where can we evacuate to? Furthermore, when talking of phenomena that strike across borders, it is important to be able to access data from several different countries, and that these can be used as one coherent information basis. It is exactly for this reason that the INSPIRE Directive was approved seven years ago. This article provides an overview of the content and the significance of INSPIRE.

Keywords: INSPIRE, public data, governance, environmental management, spatial information

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## The basic purpose of INSPIRE

It is not only in emergency situations that there is a need to be able to share data. In the management of our environment, nature, health, defence and transport sectors a.o., there is a need to be able to exchange data across administrative borders – nationally, regionally and locally.

Good governance is contingent on access to good and reliable information. Considering the growing complexity and the mutual dependencies in the issues handled by the administration, it is necessary to be able to compose data across professional environments and sectors in order to create the necessary basis for decisions.

One example of a complex governance task is EIA (*Environmental Impact Assessment*). An EIA account must describe how a building or construction project will influence the surrounding environment. This may, for instance, include information and analyses about direct and indirect impacts on:

- People, wildlife and vegetation
- Soil conditions, water, air, climate and landscape
- Material goods and cultural heritage <sup>1</sup>



A prerequisite for this is to have access to data from a number of different professional environments and administrative levels, and a significant part of these data will have a spatial dimension.

Access to spatial information is a prerequisite for being able to govern society and handle crises, and by basing governance on a unified spatial basis, greater task handling cohesion can be created.

And this is precisely INSPIRE's key purpose. The INSPIRE Directive is to provide the necessary technical, data and agreement structures that will ensure access to the large amount of valuable public spatial information that is available in the member countries.

The idea is to create cohesion between the existing national digital infrastructures across administrative borders and across professional and sector borders.

This requires uniformity and standardisation, and this is why the INSPIRE Directive establishes a common framework for all EU member states by setting out rules and guidelines for the components in the infrastructure for spatial information.

The rules, also called implementing rules, apply to the following components:

- Metadata – information about data sets and network services
- Data sets – harmonisation so that data can be combined
- Network services – search, display, transformation and download
- Monitoring and reporting on the implementation of the Directive
- Agreements – common provisions for the EU's access to the member states' data and services

The INSPIRE Directive is implemented via national legislation in the individual member states. In Denmark, this happens via *Lov om infrastruktur for geografisk information* (Act on Infrastructure for Spatial Information), also called the SI Act.

Read more at [www.INSPIRE-danmark.dk](http://www.INSPIRE-danmark.dk), where you will also find guidelines, videos and best practice examples.

## Responsibilities and tasks – who does what?

The Minister for the Environment has authorised the Danish Geodata Agency (DGA) to implement the INSPIRE Directive in Denmark.

As national INSPIRE contact, DGA is responsible for communication to and from the European Commission, and it represents Denmark on the INSPIRE Committee<sup>2</sup>.

DGA is also responsible for implementing the SI Act, which includes, among other things, facilitating the national INSPIRE parties' implementation tasks. This happens in a number of different ways, e.g. via a website, newsletters, hands-on workshops, information meetings and bilateral working meetings.

For the information systems managers who are covered by the SI Act<sup>3</sup>, this means familiarising themselves with the data specifications in their respective areas of expertise, preparing metadata and keeping these updated, harmonising data models and ensuring that their INSPIRE data and metadata are displayed via network services as stated in the Directive. The information systems managers also contribute to the annual monitoring of the infrastructure and assist the DGA during hearings and similar.

If you would like to know more about the organisation of the INSPIRE work at EU level, you can find information at <http://inspire.ec.europa.eu/>.

## Information

The INSPIRE Directive includes a list of the spatial information that is covered by the INSPIRE set of rules (the implementing rules). The list is divided into a number of themes, which take their starting point in the use of data in different administrative areas (see figure 2).

The theme *Hydrography*, for instance, includes, in addi-

<sup>2</sup> The European Commission is assisted in the process of approving implementing rules by the INSPIRE Committee (Regulatory Committee), which consists of representatives from the member states and is headed by the Commission. This is known as a comitology procedure.

<sup>3</sup> A public authority is covered by the SI Act if it possesses data sets that are covered by INSPIRE Annexes I, II and III.



Figure 1. Examples of elements included in the INSPIRE theme Hydrography (INSPIRE\_DataSpecification\_HY\_v3.0.1).

Annex I	
1. Coordinate reference systems	4. Land use
2. Geographical grid systems	5. Human health and safety
3. Geographical names	6. Utility and governmental services
4. Administrative units	7. Environmental monitoring facilities
5. Transport networks	8. Production and industrial facilities
6. Hydrography	9. Agricultural and aquaculture facilities
7. Protected sites	10. Population distribution – demography
8. Addresses	11. Area management/restriction/regulation zones and reporting units
9. Cadastral parcels	12. Natural risk zones
Annex II	
1. Elevation	13. Atmospheric conditions
2. Land cover	14. Meteorological geographical features
3. Orthoimagery	15. Oceanographic geographical features
4. Geology	16. Sea regions
Annex III	
1. Statistical units	17. Bio-geographical regions
2. Buildings	18. Habitats and biotopes
3. Soil	19. Species distribution
	20. Energy resources
	21. Mineral resources

Figure 2. Themes for spatial information covered by INSPIRE's Annex I, II and III.



tion to watercourses and lakes with related sub-basins, a number of different elements related to surface water, as shown in figure 1.

For a number of large and interdisciplinary administrative areas, this means that relevant information is 'pre-packed', so that it can immediately be used as a whole – it is not necessary first to search for the individual data sets and then fiddle around to combine these.

## EU standards – any use in the Danish administration?

Data specifications for the individual themes, specifications of requirements on network services and other technology as well as guidelines for implementation have been prepared in pan-European working groups. This has made it possible to gather top level expertise within the different, often comprehensive and complex, administrative and standardisation areas. It has been a lengthy process, which has been concluded in 2014 with the last implementing rules for *Spatial Data Services*. This means that we now have a standardised basis that can be used with great advantage in connection with the development of digital governance. We have benefited from this in Denmark.

Right from the beginning, the Danish implementation strategy has been about making the most of the INSPIRE Directive. Our starting point has been that INSPIRE is to support the ongoing work with the development of the national infrastructure for spatial information and be integrated in the work related to digital governance.

As INSPIRE is based on a standardised distribution model for data and on internationally recognised technology standards, data can be combined across the themes as needed, and thus they are not reserved for one specific application. This is useful when information is to be exchanged between administrative levels and between sectors. If we use the same models and standards, we can reuse data and technology efficiently. This is relevant, for

instance, in relation to climate adaptation where various types of spatial information is to form the basis for analyses and planning. Information about watercourses and lakes, sub-basins and the coastline are to work together with elevation and depth data and information about land use, e.g. built-up areas.

These data are covered by the INSPIRE Directive and are thus standardised so that they can be used together. Not in an isolated INSPIRE silo, but as a part of the unified public administration basis.

## INSPIRE used for building digital governance

INSPIRE rests on a number of principles that form the basis for the professional and focused use of spatial information. The principles are not unique to INSPIRE, but useful as common sense in many digitisation initiatives.

The INSPIRE principles:

- Data should be collected once only.
- Data should be maintained where this can be done most efficiently.
- It should be easy to gain an overview of available data and network services.
- Data should be usable together, regardless of where they come from.
- Good conditions should be in place to ensure that data can be used by many people in different contexts.

INSPIRE for 'good governance' is the theme for this year's INSPIRE Conference, and INSPIRE is already contributing principles, models, standards and technical components in a number of governance areas, as the following examples will show.

## INSPIRE and core data

The effort to secure 'Good core data for all'<sup>4</sup> is a part of the Danish eGovernance Strategy 2011-15, which was agreed between the Danish government, Local Government Denmark and the Danish Regions. The vision is

<sup>4</sup> Core data denote fundamental data in public registers about citizens, companies, buildings, addresses and immovable property.

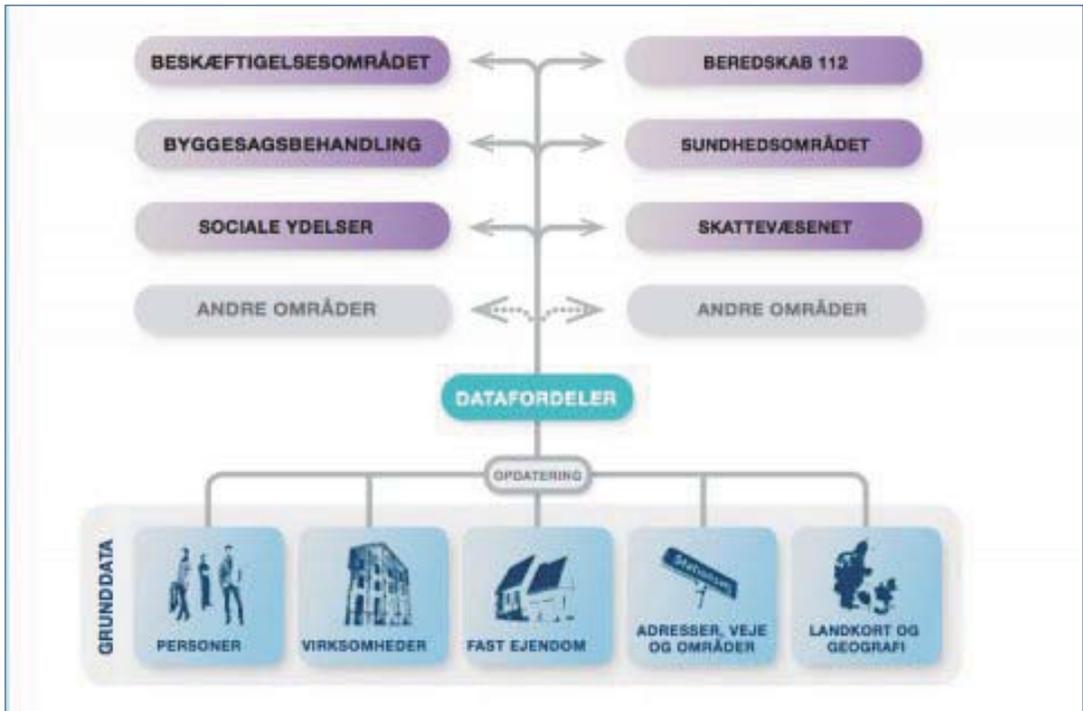


Figure 3. Unified core data and data distributor in Denmark (<http://www.digst.dk/Loesninger-og-infrastruktur/Grunddata>).

The geographical core data include:

- Geographical names
- Digital elevation models
- Localised administrative divisions
- Grid units
- Cadastral parcels
- Localised addresses
- Easements
- Localised buildings on leased land
- Localised freehold flats
- Coastline
- Nature areas (woodland etc.)
- Roads
- Railways and ferry routes
- Localised buildings
- Localised technical facilities
- Watercourses
- Lakes
- Wetlands
- Sea regions

that core data should be the public sector's top quality common governance basis, and that it should be updated efficiently in one place and be used by everybody – including private companies. Free core data will be of benefit both to the public sector's efficiency and to innovation and value creation throughout society. With core data as a new digital raw material, commercial products can be developed, and better public information and service can be created.

Read more about the Core Data Programme here: <http://www.digst.dk/Loesninger-og-infrastruktur/Grunddata>

The Core Data Programme has found its inspiration in INSPIRE – both in terms of principles for the work with digital infrastructure and in the concrete standardisation directions contained in the Directive.

The selection of core data has been based on the data



that are already covered by the INSPIRE Directive and thus by the SI Act. The starting point is the data themes in Annex I of the INSPIRE Directive, which are referred to as reference data. This will ensure that the standardisation and the investments that are made in connection with the implementation of the Directive will be made useful in a wide context.

## More models for common use

The Core Data Programme spans several different business domains, which are more or less related to each other. In order to make sure that core data can easily and flexibly be exchanged and reused in many contexts, it is necessary to work on a common data model.

This is why the Danish Agency for Digitisation, the Danish Ministry of Housing, Urban and Rural Affairs and the Danish Geodata Agency have prepared a common set of model rules. These will ensure that the modelling of data objects will be based on a common set of guidelines and on common basic qualities.

As several sets of core data are already covered by the INSPIRE Directive, it made good sense to take a look at how INSPIRE's standards and guidelines could be used in the work. INSPIRE has a solid model foundation based on, among other things, ISO standards, as well as a well-proven methodological foundation, which has been developed in collaboration among the EU member states (cf. the specification work mentioned above). Importance has therefore been attached to reusing INSPIRE's standards and guidelines in the common model rules for core data.

Read more about the common model rules here:

[http://www.kl.dk/ImageVaultFiles/id\\_64743/cf\\_202/Modelregler\\_for\\_grunddata.PDF](http://www.kl.dk/ImageVaultFiles/id_64743/cf_202/Modelregler_for_grunddata.PDF)

## Technology is a must

INSPIRE also contributes technical components to the national infrastructure. One example is the Danish geo-

data portal, [geodata-info.dk](http://geodata-info.dk), which includes the Danish INSPIRE search service. The portal supports the principle that it should be easy to gain an overview of available data and network services. [Geodata-info.dk](http://geodata-info.dk) is freely available to everybody, and as a common component in the national infrastructure, information is also available about a series of data sets and services that are not covered by the INSPIRE Directive. The Danish Geodata Agency is responsible for operation and continued development of [geodata-info.dk](http://geodata-info.dk).

[Geodata-info.dk](http://geodata-info.dk) has been developed as an Open Source component and in collaboration with the other Nordic countries. The thinking has been that as all countries are now to develop the same INSPIRE components, why not develop together and thereby share both expenses and experience.

As a common component in the infrastructure, [geodata-info.dk](http://geodata-info.dk) is used widely. For instance, the Danish Natural Environment Portal <sup>5</sup>, which is also an INSPIRE service provider, has decided that metadata related to the portal are to be displayed via [geodata-info.dk](http://geodata-info.dk). The Danish Natural Environment Portal thus reuses the functionality for editing, search, display etc. that has already been funded and developed in connection with INSPIRE.

Visit [geodata-info.dk](http://geodata-info.dk) here: [www.geodata-info.dk](http://www.geodata-info.dk)

## Monitoring INSPIRE

In connection with the annual monitoring of the INSPIRE Directive, a lot of information is collected about the implementation status. The information comes from the data systems managers, and it can largely already be found as metadata on [geodata-info.dk](http://geodata-info.dk).

In order to ease the work of the data systems managers and avoid duplicated work, the Danish Geodata Agency has developed a tool that will extract relevant information from [geodata-info.dk](http://geodata-info.dk) prior to the monitoring and place it in the monitoring chart. As the monitoring demands certain information that cannot be retrieved

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<sup>5</sup> The Danish Natural Environment Portal is a partnership between the municipalities, Danish Regions and the Ministry of the Environment. The portal is to support the environmental authorities in their task solution and provide a uniform and updated data basis for the environmental area, promote digital governance procedures within the environmental area and improve communication to the public.



Figure 4. Frøslev Bog ([www.inspire-danmark.dk](http://www.inspire-danmark.dk))

from the metadata descriptions, a certain amount of manual handling is still needed. The data systems managers are therefore asked to enter the missing information before the Danish Geodata Agency forwards the information to the European Commission.

## Environmental policy and INSPIRE

The EU's environmental policy aims to preserve, protect and improve the natural environment and people's health. This is done via, among other things, a series of directives about e.g. air quality, bathing water and flooding, which set out common rules and guidelines for the member states' environmental governance.

In connection with the implementation of these directives, the member states are to submit reports continually to the European Commission about status and progress. A great deal of data is used for this, a large part of which has a spatial dimension. It is therefore an obvious choice to use INSPIRE in this connection, after all – why collect and process data that are already available in a standardised and accessible form?

## Protected nature reserves are monitored by the EU

Geodata constitute an important basis for the Danish Ministry of the Environment's work with Denmark's protected nature reserves. It is important to know exactly

where protected nature reserves are located, what they look like topographically, and how they develop over time. Not least when these reserves are covered by the EU Directive Natura 2000 and thus subject to an obligation to report monitoring results to the EU. The large majority of the data used for this is covered by INSPIRE, and this coincidence has led to the preparation of an expansion of INSPIRE's data models applicable to Natura 2000 reporting data.

With the expanded model, the Ministry of the Environment can now kill two birds with one geodata set while at the same time complying with the requirements of both directives.

The photo above shows Frøslev Bog, which is protected under Natura 2000. Frøslev Bog is located in the southernmost corner of Denmark, stretching across both sides of the Danish-German border. The natural condition of Frøslev Bog must therefore be described with both Danish and German geodata. When these geodata are INSPIRE-harmonised, they can be used not only across the border, but also in connection with other INSPIRE data, e.g. related to the roads or agricultural areas.

Another example of the connection between directives is the work to develop an expanded model for reporting in relation to the Air Quality Directive.

Again, it was a case of reaping synergy effects by letting INSPIRE data form the basis for reporting about air

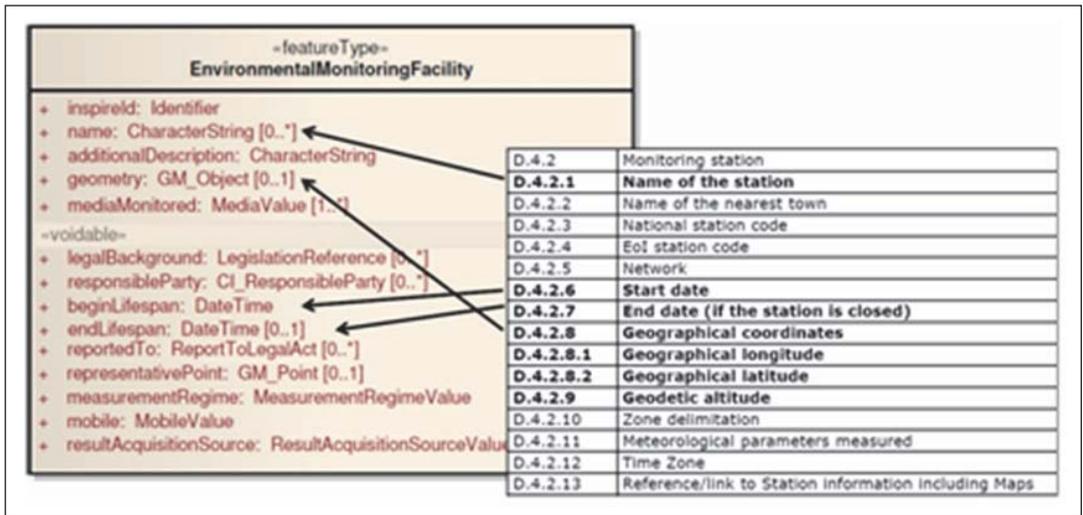


Figure 5. INSPIRE and the Air Quality Directive ([www.inspire-danmark.dk](http://www.inspire-danmark.dk)).

quality. 'On top of' the INSPIRE foundation, an expanded data model has been developed, which complies with INSPIRE's data specifications, but in addition includes the data elements required by the Air Quality Directive. This means that INSPIRE data constitute the basis for reporting in relation to the Air Quality Directive.

The figure below shows an example of a comparison between part of a theme in INSPIRE (left) and part of a report in relation to the Air Quality Directive (right).

The effect of this work is not only that it is now possible to report more efficiently by reusing INSPIRE data. With the expansion of the Air Quality Directive's theme descriptions, which means that they now comply with the specifications in INSPIRE, another advantage has been gained. In Article 26 of the Air Quality Directive, it says: "The information shall be made available free of charge by means of any easily accessible media including the Internet." This requirement is 'automatically' accommodated by the requirement that all INSPIRE data must be made accessible via standardised network services.

The area concerning environmental governance and environmental directives is complex and comprehensive, but there are no signs that regulations will be fewer

in the coming years. It therefore makes sense to take a look at synergy effects and streamlining in this area. The examples from Natura 2000 and the Air Quality Directive show that there are possibilities of reaping benefits if work is targeted at integrating the common foundation for reuse of data and services that INSPIRE makes available.

### Who decides which way to go?

In an ever more globalised world, we have an increasing need to be able to work, exchange and combine information across all kinds of administrative and sector-related borders. Spatial information is a pivotal point for this, and a great potential exists in spreading the use of the spatial aspect to even more contexts. If our common foundation is in place, we can reap benefits in earnest. INSPIRE contributes to this with a significant part, but the continued development of the national infrastructure for spatial information requires collaboration and coordination – both within the public sector and between the public and the private sector.

Without structures for coordination and control, however, it is difficult to reach the targets in a cost-effective

<sup>6</sup> The Harmonisation Committee for Infrastructure for Spatial Information' was appointed by the Minister for the Environment in 2010 as a part of the implementation of the INSPIRE Directive. The Committee was established based on Section 10 of the 'Act on Infrastructure for Spatial Information' (the SI Act).

tive way. The Harmonisation Committee <sup>6</sup> constitutes a cornerstone in the national control structure, and one of the Committee's most significant tasks is to ensure that the infrastructure for spatial information is made useful within digital governance.

The Committee is to submit recommendations about initiatives for the promotion of the infrastructure for spatial information in Denmark. It is also to support the Danish Minister for the Environment as regards contact with the European Commission in connection with the implementation of the INSPIRE Directive.

The Harmonisation Committee is made up of 10 members who represent public authorities, educational and research institutions and the private sector. The

chairman of the Committee is the director of the Danish Geodata Agency.

Since it was set up, the Committee has contributed to solving a number of tasks, e.g. in the process of identifying the Danish authorities that are covered by the INSPIRE Directive. The Committee is also involved ahead of meetings in the INSPIRE Committee.

The Harmonisation Committee has also launched a project that is to clarify what should be core data in the roads area. In Denmark, it is a well-known challenge that there is a lack of cohesion between the roads geometry in the geographical databases and the way in which address-based and roads administrative systems register roads data. Such cohesion is a prerequisite for establishing core data in the roads area.

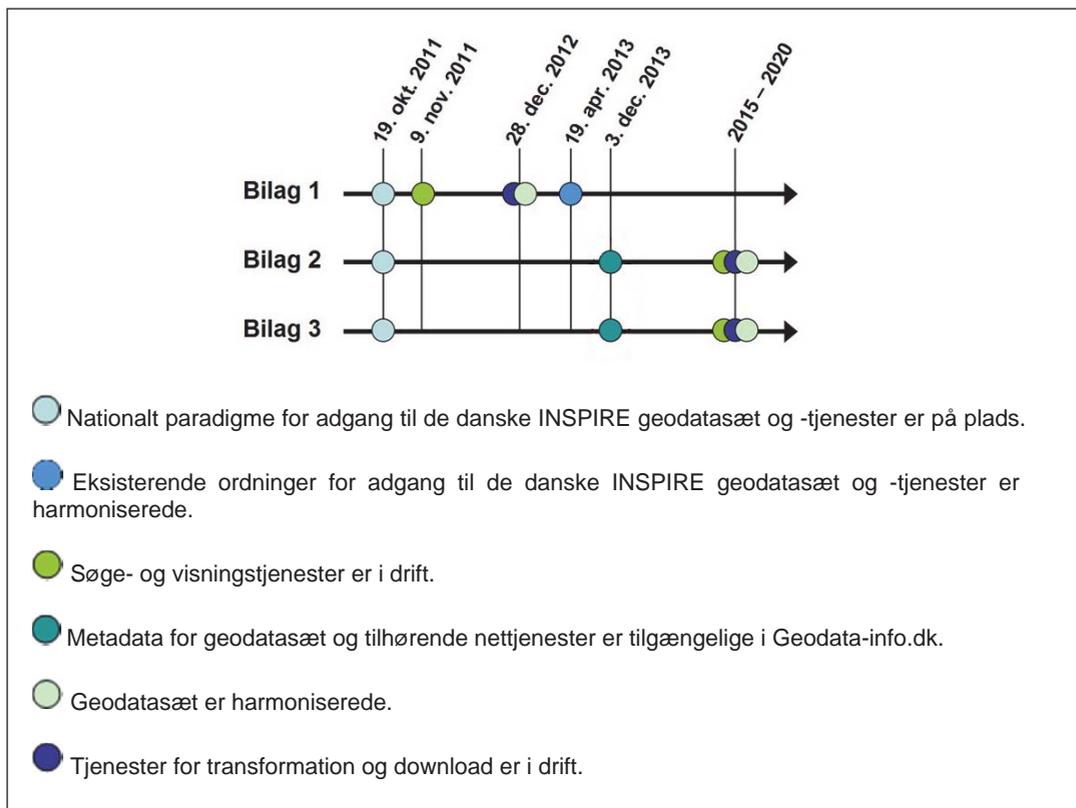


Figure 6. Step-by-step implementation of INSPIRE (www.INSPIRE-Danmark.dk)



The project has been completed, and it resulted in a common reference model for roads data, which is inspired by and compatible with INSPIRE's transport network model.

The pivotal point for the Harmonisation Committee's work is to make spatial information useful, in both the public and the private sector, so that growth and streamlining can be created.

## Where are we now? – Status and timeline

The INSPIRE Directive entered into force in 2007 and is being implemented in different stages and at different paces. The Directive will be fully implemented in all EU member states by 2020.

The Directive consists of a number of common implementing rules (IR), which apply to the areas that make up the infrastructure for spatial information (metadata, data harmonisation, network services, agreements about access to data as well as monitoring and reporting). The implementing rules are supplemented by a number of technical guidelines, which provide detailed instructions about the implementation, e.g. by mentioning applicable standards in the area.

The implementing rules are approved as Commission decisions or regulations, and they are binding for the individual member states. Figure 6 shows how the implementation is scheduled step-by-step based on INSPIRE's three data theme Annexes.

As the figure shows, most of the milestones in the implementation plan have been passed. In 2014 and 2015, the work on harmonising data sets as outlined in Annex III will be given particular attention, and in Denmark, work is already in progress to identify authorities with data sets that are relevant to INSPIRE.

## INSPIRE in a greater context

INSPIRE is, however, not the be all and end all; it will not solve all our problems, and it cannot meet all our needs.

Continual development of the common structures and elements that constitute infrastructure for spatial information is necessary. In Denmark, collaboration continues on the development of structures and components that can be used widely and across the digital administration. Many initiatives are in progress, and more will be added – the need for spatial information continues to rise.

'Where are you, where am I, what can be found nearby, how do I get from A to B?' are questions that we have always, in some way or another, asked ourselves and each other, but now we can and will find answers to these questions instantly and through the very digital media that we use in our relation to each other and the surrounding world. This poses demands on the quality of information, on functionality and on a dynamic and flexible connection between technology and data. It must be easy, fast and digital.

We expect increasingly that the public administration makes efficient services available to companies and citizens. The purpose of the Digital Agenda for Europe is to create growth and help EU citizens and companies make the most of digital technologies. The ISA <sup>7</sup> Programme is a part of the Digital Agenda and deals with interoperability, reuse and sharing of information between the EU's public administrations.

As we have already seen, spatial information plays an important role in the establishment of a cohesion in the administration, and the infrastructure contributes components for the creation of the necessary interoperability between data and services.

Under the ISA Programme, an activity, the EULF (European Union Location Framework), has therefore been launched to promote the exchange and sharing of spatial information in the digital administration. The purpose of the EULF is to identify and promote best practice methods aimed at concrete applications and based on user needs.

<sup>7</sup> The ISA (Interoperability Solutions for European Public Administrations) is an EU programme that supports and promotes efficient digital collaboration between European public authorities across national borders. The programme is to provide accessibility, interoperability, reuse and sharing of common solutions. A budget of 164.1 million euros has been allocated for the period 2010-2015.

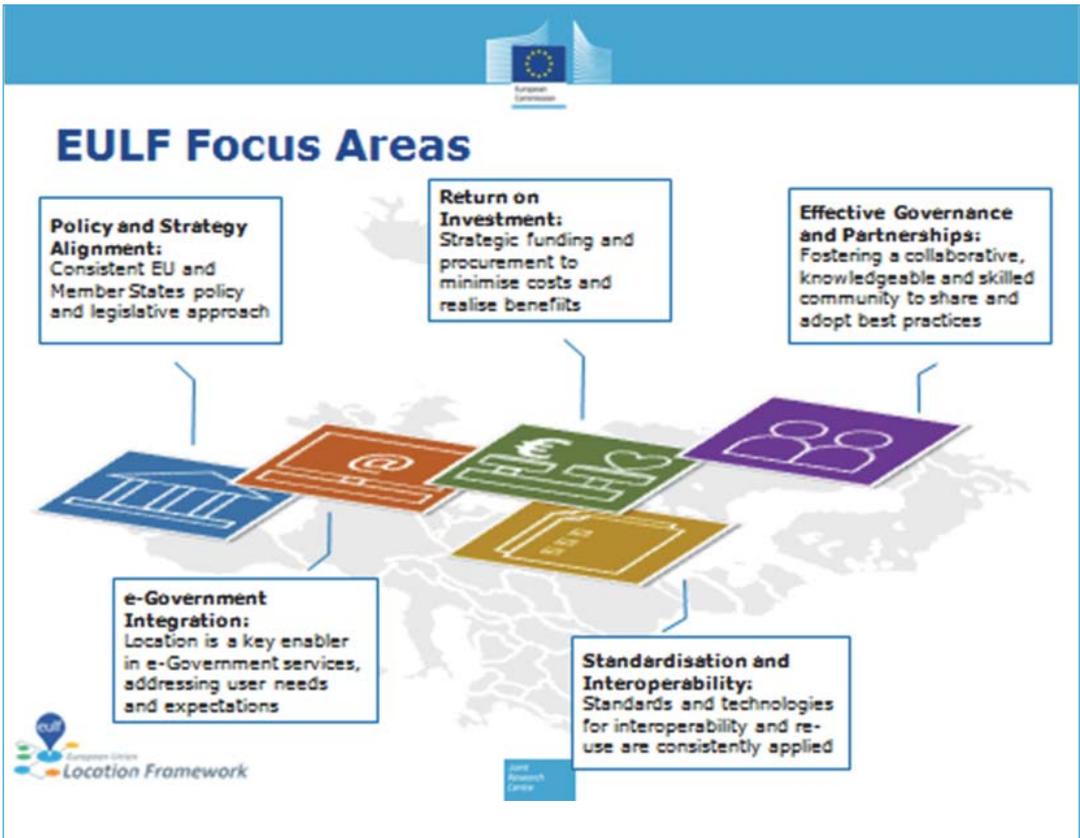


Figure 7. EULF focus areas ([http://ec.europa.eu/isa/actions/02-interoperability-architecture/2-13action\\_en.htm](http://ec.europa.eu/isa/actions/02-interoperability-architecture/2-13action_en.htm)).

The EULF concept will consist of a collection of case studies, specifications, guidelines, teaching materials, recommendations and initiatives that public authorities and other stakeholders require in order to ease the implementation, use and expansion of INSPIRE in digital governance. The EULF will establish an open and interoperable framework that public authorities can use, e.g. in connection with tenders. The framework will supplement already existing technical INSPIRE guidelines with a view to easing the use of the infrastructure in new thematic sectors.

The EULF thus sets out a useful strategic/operational framework for the further utilisation of INSPIRE in the member states, and it supports the integration and use of the spatial component in digital governance.

Under the focus area 'Return on Investment', a methodological framework is being prepared during the

spring of 2014 for measuring the effect and utility value of implementing an infrastructure for spatial information and for measuring effect and integrating the spatial component in digital governance. At a later stage, the work will be made available along with other recommendations, guidelines, best practices and methods that cover the EULF's focus areas.

Read more about the EULF here: [http://ec.europa.eu/isa/actions/02-interoperability-architecture/2-13action\\_en.htm](http://ec.europa.eu/isa/actions/02-interoperability-architecture/2-13action_en.htm)

The ISA Programme also includes activities for work targeted at the reuse of INSPIRE, 'Reusable INSPIRE Reference Platform (ARE3NA)'. The purpose is to identify reusable components that can support the implementation of INSPIRE and at the same time contribute

<sup>8</sup> <http://ea.oio.dk/>

<sup>9</sup> [http://ec.europa.eu/isa/documents/isa\\_annex\\_i\\_i\\_eif\\_en.pdf](http://ec.europa.eu/isa/documents/isa_annex_i_i_eif_en.pdf)



to greater cohesion between the EU initiatives ISA, EU Open Data and the Digital Agenda for Europe.

This happens through the establishment of a collection of tools, policies, guidelines and technical components, which we know in Denmark from the OIO EA (*Offentlig Information Online* – Public Information Online - Enterprise Architecture) work with the architecture bookcase <sup>8</sup>.

ARE3NA is thus a collection of practical tools that can be used in connection with concrete implementation and development.

By sharing best practice examples, guidelines, technologies and a general framework, the two initiatives combined have addressed the four levels of interoperability that are defined in the EIF <sup>9</sup> (European Interoperability Framework). The EULF thus deals with the more legal and organisational elements, while ARE3NA handles the semantic and technological elements, which means that a more targeted (re-)use of spatial information in many different contexts has been made somewhat easier.

Due to these two ISA initiatives, a joint INSPIRE-ISA working group (Spatial Information and Services Working Group) was set up in the autumn of 2013. The group is to provide political and technical advice about the role that spatial information and INSPIRE can have in the work related to the Digital Agenda for Europe. Particular importance is given to the political adaptation and integration of e-governance services across sectors and borders, and to the development and approval of common reusable technical components.

The group is headed by the European Commission and consists of representatives from a number of member states and DIGIT <sup>10</sup>, the Joint Research Centre <sup>11</sup>, DG Environment <sup>12</sup>, and Eurostat<sup>13</sup>. Denmark is represented by the national INSPIRE contact, who coordinates the effort with the Danish Agency for Digitisation.

One of the working group's focus areas is to implement pilot projects with a view to describing concrete use cases where INSPIRE/ISA can contribute valuable components. So far, it has been agreed to establish pilot

projects within two administrative areas, i.e. the marine and transport areas.

## INSPIRE is made useful and supports the private business sector

Work is also in progress to involve the private sector in the implementation and utilisation of INSPIRE. The EU's 7th Framework Programme for Research includes initiatives targeted specifically at small and medium-sized enterprises (SME). In the EU, SMEs are a significant source of growth, employment and innovation. Within the information and communications technology sector in particular, SMEs can contribute to increased use of spatial information and at the same time create new business opportunities and thus increase employment.

The SmeSpire project focuses on these opportunities in INSPIRE by encouraging SMEs, and supporting them, to contribute to the member states' implementation of the INSPIRE Directive. The purpose of the project is to build bridges between INSPIRE and Geo-ICT solutions, and it has 15 partners from 12 member states: 8 SMEs, 3 research institutions, 3 public institutions and 1 NGO (GISIG).

Read more here: <http://www.smespire.eu/project-overview/>.

## INSPIRE and the future

Seven years have now passed since INSPIRE was approved as a common framework for the EU member states' development of infrastructure for spatial information and thus for the work on spreading the use of spatial information.

All implementing rules have been approved, and the member states' are busy implementing in accordance with rules and guidelines. The next couple of years will be characterised by the great task of harmonising the many thematic data sets and bringing them into use within and outside the environmental administration.

With Annex I (and, in parts, Annex II), we have now

<sup>10</sup> The Directorate-General for Informatics (DIGIT) – [http://ec.europa.eu/dgs/informatics/index\\_da.htm](http://ec.europa.eu/dgs/informatics/index_da.htm)

<sup>11</sup> Joint Research Centre (JRC) – <http://ec.europa.eu/dgs/jrc/>

<sup>12</sup> The Directorate-General for the Environment – [http://ec.europa.eu/dgs/environment/index\\_en.htm](http://ec.europa.eu/dgs/environment/index_en.htm)

<sup>13</sup> <http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/>

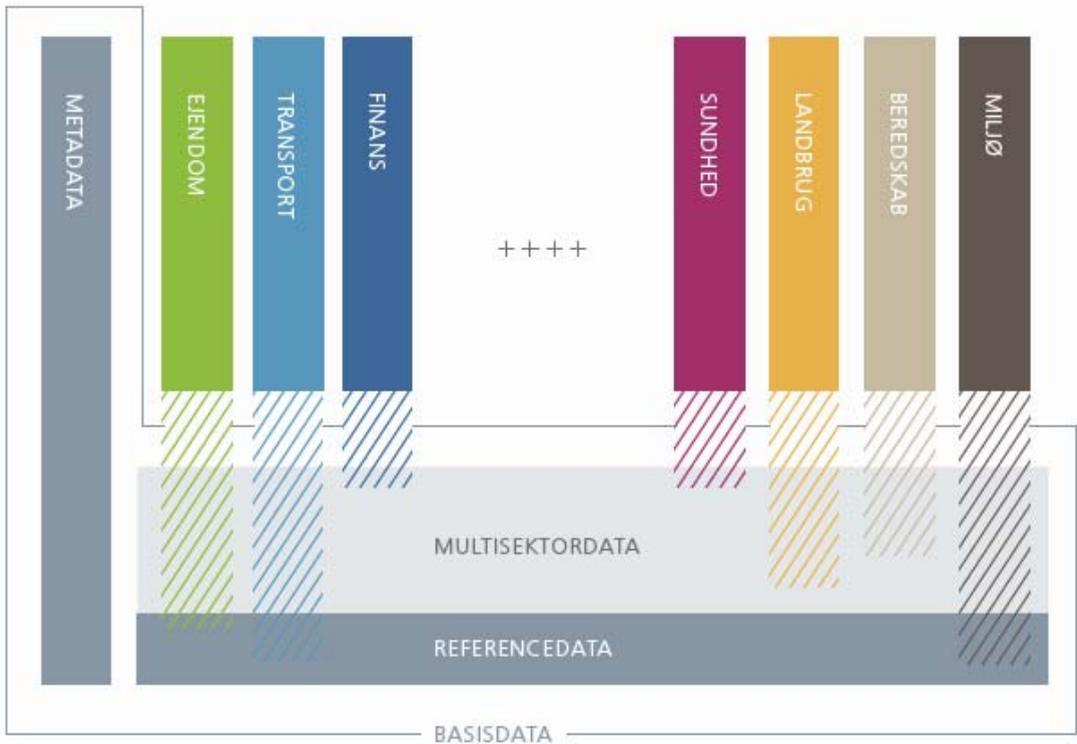


Figure 8. The infrastructure model (Geographical Report 2010)

got a reference basis – or, in a Danish context, a series of core data sets. This set of harmonised, unified core data with appertaining distribution functionality provides a solid foundation for using and utilising the more administration-focused data of Annex III.

INSPIRE is thereby a significant part of the Infrastructure Model, which is shown in figure 8.

In this article, we have seen how INSPIRE has contributed to the development of the national infrastructure for spatial information, both in terms of interdisciplinary work with core data and in terms of the more sector-specific work in relation to the expansion of environmental directives.

What will the future bring? Will we still be talking about INSPIRE in seven years' time? Maybe not, and maybe that will be because we have succeeded in making INSPIRE a part of the common foundation on the basis of which we govern and develop solutions. However, nothing comes from nothing, and we all have a couple of tasks to complete first.

In Denmark, we are focusing particularly on two tracks in the continued effort to make INSPIRE useful.

We will work on creating synergy between the different environmental directives and INSPIRE and thus reap the benefit of reusing INSPIRE components in connection with monitoring and reporting to the EU.

This happens, for instance, through improved collaboration between the IONET and INSPIRE people about identifying places where it can be an advantage to use a common foundation in reporting contexts.

We will also continue to work on facilitating the use and integration of the spatial component in digital governance, and thus to support the possibilities for streamlining and efficiency that this creates.

It is therefore essential that INSPIRE can continue to deliver value and meet changing demands and needs – also in the long term. Denmark will therefore support and seek influence on the work related to the maintenance and development of INSPIRE rules and guidelines.

After consulting with the member states, the European Commission has set up a framework for the maintenance and implementation of INSPIRE (INSPIRE Maintenance and Implementation Framework – MIF). The Framework is



based on the same principles that apply to the establishment of the infrastructure as a whole (the INSPIRE Directive).

The objective of the MIF is to support the ongoing work on the implementation of the implementing rules, collect experience from this work and possibly apply this to changes in the INSPIRE rules and/or guidelines. The interdisciplinary connections between the different parts of the infrastructure are to be secured, as changes in one place, e.g. data specifications, can influence other components, e.g. network services. Finally, the MIF is to give continual consideration to the demands that will emerge from the (environmental) policy work.

Resources and competences are needed in order to keep this work afloat, and the European Commission therefore appointed, in the autumn of 2013, an expert group – the INSPIRE Maintenance and Implementation Group (MIG) to handle the realisation of the MIF.

The group consists of representatives from the member states who have experience with implementation of the INSPIRE Directive at both a technical and a more governance-related level. The members have been appointed by the member states, and they are organised in a technical and a 'political' part, respectively.

The objective is to have a platform for exchange of experience and best practices, and to advise the Commission on necessary measures in connection with the

maintenance and development of INSPIRE rules and guidelines. The MIG prepares an annual action plan, which is approved by the member states.

There is a long tradition for collaboration between the Nordic countries, and INSPIRE is no exception to this. Right from the outset, the Nordic countries have collaborated on the implementation of the Directive and benefited greatly from knowledge and experience exchange and, as the article has shown, the joint development of components. No doubt, the collaboration will continue, and it already stretches into the MIG as well as into the international work on infrastructure for spatial information and digital governance, e.g. under the auspices of EULF and ISA.

Our resources are already scarce, and we sense the need to be even more cost-effective when we develop and digitise – both in the public and in the private sector. It is therefore necessary for us to pool our strengths and base our work on the common components, common agreement bases and common principles – across national and regional borders.

So, let us use each other across those borders. Let us take advantage of the many interdisciplinary collaborations, projects and communities that have emerged due to the INSPIRE implementation, and let us continue to exchange experience, best practice and concrete solutions.

And, let us remember this: INSPIRE will become what we make it!

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