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Introduction

The INSPIRE Directive sets the minimum conditions for interoperable sharing and exchange of spatial data across Europe as part of a larger European Interoperability Framework and the e-Government Action Plan that contributes to the Digital Single Market Agenda. Article 21 of INSPIRE Directive defines the basic principles for monitoring and reporting. More detailed implementing rules regarding INSPIRE monitoring and reporting have been adopted as Commission Implementing Decision (EU) 2019/1372 on the 19th August 2019.

This country fiche highlights the progress in the various areas of INSPIRE implementation. It includes information on monitoring 2022 acquired in December 2022 and Member States update.

State Of Play

A high-level view on the governance, use and impact of the INSPIRE Directive in Finland. More detailed information is available on the INSPIRE knowledge base.

Coordination

National Contact Point

Name of Public Authority: Ministry of Agriculture and Forestry
Contact Email: Click to email
National INSPIRE Website: https://www.paikkatietoikkuna.fi/?lang=en
MIG Contacts: **Contact Person:** Antti Vertanen
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MIG T Contacts: **Contact Person:** Jari Reini
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Contact Person: Lena Hallin-Pihlatie
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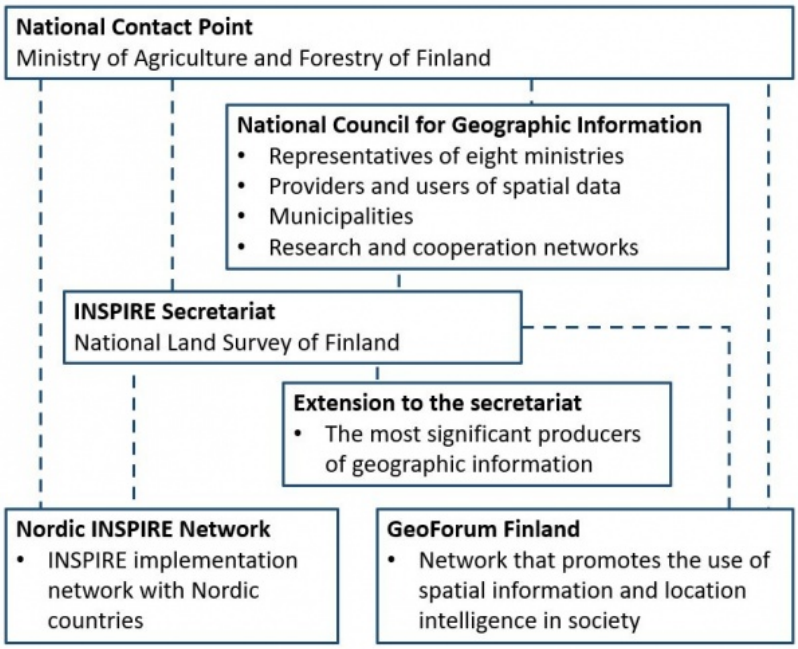

Coordination Structure & Progress:

National Contact point

Name of public authority	Ministry of agriculture and forestry
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Telephone number	+ 35829516001
Fax number	
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Contact person	Antti Vertanen
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Contact person substitute	
Telephone number	
E-mail	

Coordination Structure

- The **Ministry of Agriculture and Forestry** is the national contact point of INSPIRE toward the province of Åland and the rest of Finland. The ministry of Agriculture and Forestry is represented in the MIG as well as in the INSPIRE committee.
- The **INSPIRE secretariat** at the National Land Survey of Finland provides support and guidance for national INSPIRE implementers and maintains national SDI services, such as the Finnish Geoportal. The INSPIRE secretariat is represented in the MIG and the permanent technical subgroup of the MIG and acts as the official secretariat of the national Council of Geographic Information and its extended secretariat.
- The **National Council for Geographic Information** consists of representatives of ministries, major data providers, Universities and co-operation networks. The following ministries are represented in the council: Ministry of the Interior, Ministry of Defence, Ministry of Finance, Ministry of Social Affairs and Health, Ministry of Agriculture and Forestry, Ministry of Transport and Communications, Ministry of Environment and Ministry of Employment and Economy. The council has 5-6 meetings per year.
- The **Extended Secretariat of the National Council for Geographic Information** provides policy and implementation support. The following organisations are represented in the extended secreatriat: National Land Survey, Finnish Environmental Institute, Meteorological Institute, Geological Research Centre, Finnish Transport Agency, Natural Resources Institute Finland, Statistics Finland, Digital and Population Data Services Agency, Finnish Transport and Communications Agency and City of Helsinki as the representative of the municipalities. The extended secretariat has 5-6 meetings per year.
- **GeoForum Finland** is a network established in 2020 that promotes the use of spatial information and location intelligence in society. The network develops cooperation between the geospatial industry and organisations using spatial data; companies, public administration, educational and research institutions.
- The **Nordic INSPIRE Network** is an informal INSPIRE implementation network with Finland, Iceland, Denmark, Norway and Sweden with focus on cross-border activities and knowledge exchange on INSPIRE implementation issues. The network has meetings twice a year.

Functioning and coordination of the infrastructure

- The INSPIRE Directive (2007/2/EC) was transposed in Finland in 2009 by the Spatial Information Infrastructure Decree (725/2009) and the Act on the Infrastructure for Spatial Information (421/2009). The Province of Åland islands has, on the basis of its autonomy, adopted an Act on the Infrastructure for Spatial Information (2017:54).
- Finland has connected their **national discovery service** (**Paikkatietohakemisto**) to the EU geoportal allowing for the publication of metadata for the available spatial data sets and services on the EU geoportal.
- The National Land Survey of Finland maintains the **Finnish geoportal** **(Paikkatietoikkuna)**. The geoportal site also provides information about the national SDI and guidance for INSPIRE implementers.
- The implementation is guided by a national Geodata strategy. A first version was developed in 2004, a second version in 2010, a third version in 2014, a fourth version in 2016 and a fifth version in 2018. Currently, the sixth version of the strategy, 2022-2025, is in use.
- Further information on implementation of INSPIRE in Finland can be obtained at https://www.maanmittauslaitos.fi/kartat-ja-paikkatieto/paikkatietojen-yhteentoimivuus/inspire

Progress:

- In 2022 the INSPIRE Secretariat continued supporting the national data providers in the transition to use version 2.0. of the Metadata Technical Guidelines. By the end of the year metadata of 85 communities and 20 regional authorities that have INSPIRE datasets and services were updated and validated in co-operation with INSPIRE secretariat and data producers. This meant a lot of work but was successful.
- There has been improvement in the monitoring results of 2022, especially regarding the conformity of metadata. There was also an increase in the number of INSPIRE dataset metadata and in the accessibility of spatial data sets through view and download services.

CONFORMITY OF METADATA	2019	2020	2021	2022
Data set metadata conformancy (MDi1.1)	27,50 %	43 %	55 %	75 %
Service metadata conformancy (MDi1.2)	1,10 %	18 %	44 %	86 %

Figure 2. Progress in conformity of metadata between 2019 and 2022.

- Please note, that Finland has decided to include all as is datasets in the harvesting to the INSPIRE Geoportal, which affects the monitoring results.
- In Finland all the 309 municipalities are individually responsible to implement the INSPIRE Directive. Especially many small municipalities lack resources which affects the monitoring results.
- Finland has been active in developing and promoting the use of INSPIRE Good Practices, especially GeoPackage and OGC API Features, to streamline the delivery and use of INSPIRE data and services.
- Finland has evidence in producing INSPIRE Download services by using the OGC API Features standard. These services provide INSPIRE datasets in GeoJSON format: Statistics Finland's INSPIRE services and INSPIRE Simple Addresses by National Land Survey of Finland.

- Finland acts as a coordinator in the GeoE3 project (2020-2023) that provides a vital connection between existing and emerging National, Regional and Cross-Border digital services. It provides dynamic integration of high-value data sets and services (e.g. meteorological or statistical data) with geospatial features from existing national geospatial data platforms (e.g. building data or road network data).
- There are ongoing processes to build new national systems for the built environment (spatial plans, building permits information) and address information.
- A new National Geographic Information Strategy was prepared in 2021 and published in January 2022. GeoForum Finland coordinated the work. Key actions:
  - Solving environmental challenges with spatial information.
  - Spatial data as the engine of business.
  - Spatial information in the structural change of data resources.

Usage of the infrastructure for spatial information

- The use of geographic information has grown in recent years, mainly due to the increased public availability of information and the implementation of the INSPIRE Directive. The spatial infrastructure for searching, viewing and downloading has improved the accessibility of spatial data and has raised public awareness. The growth in use of view and download services has been significant the last couple of years.
- The national geoportal Paikkatietoikkuna provides a map interface, where the user can access and use over 2500 layers in a comprehensive way offered by about 60 national data provides. The geoportal is developed as open-source code on the basis of the established geographic reference architecture and is available for reuse supporting a wide range of user interfaces and map publication. The geoportal is used daily by 3 000-6000 different users.
- Broad access to spatial information is provided to the users by many different web applications serving specific use cases including municipal maps, routing and planning services, nationwide routing services, geography education, public points of interest, cultural heritage, agricultural applications and environmental applications.
- Access to spatial data has improved and the reported use of data has increased. The increasing use of geographic information has also encouraged data providers to improve the quality of the data and develop data products and services that are better suited to user needs. Spatial information industry companies also played a significant role in promoting the use of spatial information e.g. Finnish Location Information Cluster, a consortium of geospatial information sector companies offering spatial information services.
- In the beginning of 2023, 85 (out of 309) municipalities, 18 (out of 18) regional councils, Åland islands and 16 governmental authorities and agencies were actively involved in the National SDI as producers of metadata, data and services (). There are 1500 published metadata in the National Discovery Service (Paikkatietohakemisto) by 300 different updaters. The interface receives 320 000–446 000 searches per month.

Data sharing arrangements

- The opening up of public information has continued and most of the nationwide INSPIRE datasets are open. For the conditions of use a broad international CC BY 4.0 License applies (Creative Commons license), significantly simplifying the use of the data in different member states and by EU institutions.
- Environmental data have been open to the public since 2008. The National Land Survey opened the terrain data in 2012. After that, many other authorities including the largest municipalities have opened or are planning to open data for free re-use.
- For fee-charged data, the tariff developed by each authority apply.
- Recent changes in security environment have risen questions on limitations to the openness of data.

Costs and benefits

- The costs regarding the implementation of the INSPIRE Directive vary between actors and are difficult to estimate. Overall, no significant changes have occurred since 2016. According to surveys conducted in 2016 and 2019, the key causes of costs can be summed up as:
- establishment and maintenance of network services, procurement of software, preparation of metadata, information harmonisation (estimated costs between 2013-2015: EUR 4.4 million)
- coordination, support, training, monitoring and development of centralized systems (estimated costs between 2013-2015: EUR 3.4 million).

The identified benefits of the implementation of the INSPIRE Directive vary between actors from large to little or no benefits. The monetary value of the total benefits is difficult to assess and such information is currently not available. According to survey conducted in 2020, the key benefits can be summed up as:

INSPIRE has acted as a tool and has made spatial data producers implement APIs for data sharing as well as created understanding to:

- What does interoperability of spatial data mean and what are the benefits of it. Finnish geoportal Paikkatietoikkuna visualises this concretely.
- Open APIs from as-is spatial datasets
- INSPIRE showed the purpose and benefits of standard APIs.
- Oskari software which is an open-source platform originally developed for Paikkatietoikkuna. Oskari is used in several organisations in Finland and worldwide.
- Impact on the pricing of spatial data. Implementation of INSPIRE has advanced the opening of spatial data and created technical means to use open data.
- Development of networks.
- Spatial datasets have been described and can be easily found.

Key facts and figures

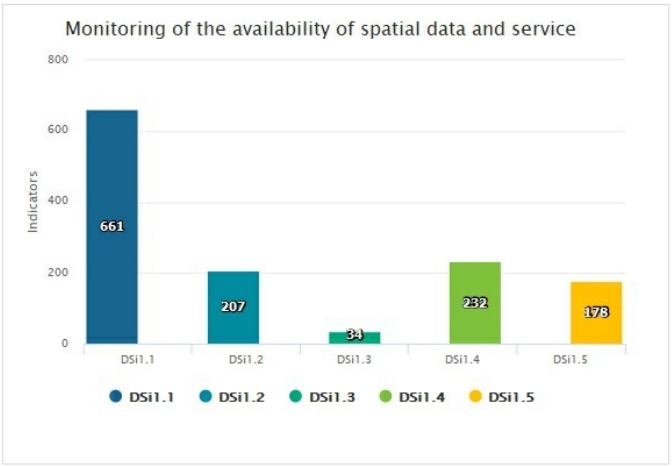
Finland

Indicators in support of Commission Decision (EU) 2019/1372 implementing Directive 2007/2/EC (INSPIRE) as regards to monitoring and reporting

Graphs generated with data taken from: https://inspire-geoportal.ec.europa.eu/mr2022_details.html?country=fi

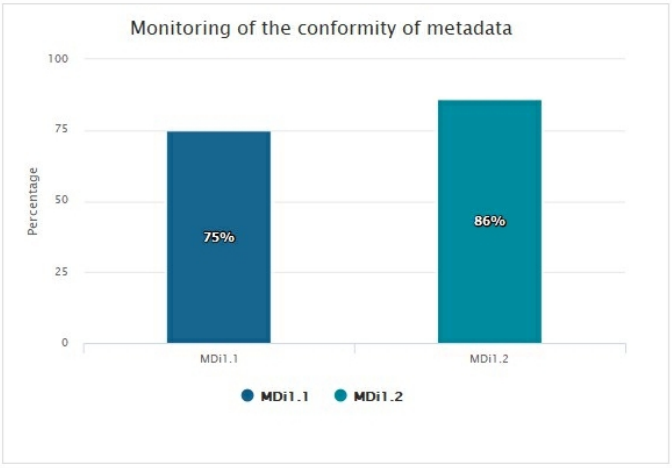
The date of harvest metadata: *2022-12-16, 19:25:25*

Endpoint: *b0259e81-cd1c-4354-bfa2-5cad4c3c7308*



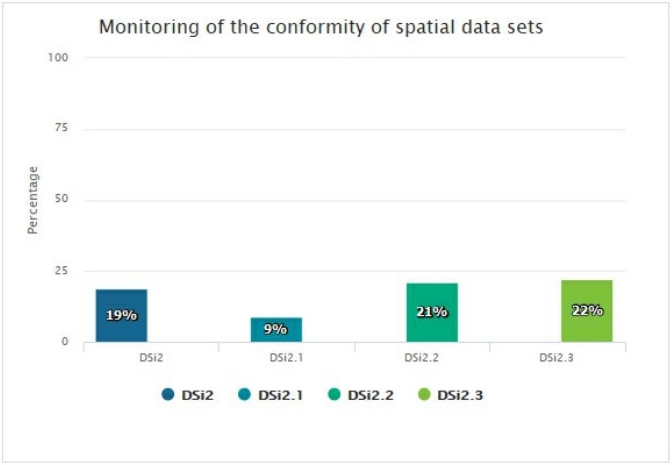
Legend

Indicator	Definition
DSi1.1	The number of spatial data sets for which metadata exist
DSi1.2	The number of spatial data services for which metadata exist
DSi1.3	The number of spatial data sets for which the metadata contains one ormore keywords from a register provided by the Commission indicating that the spatial data set is used for reporting under the environmental legislation
DSi1.4	The number of spatial data sets for which the metadata contains a keyword from a register provided by the Commission indicating that the spatial data set covers regional territory
DSi1.5	The number of spatial data sets for which the metadata contains a keyword from a register provided by the Commission indicating that the spatial data set covers national territory



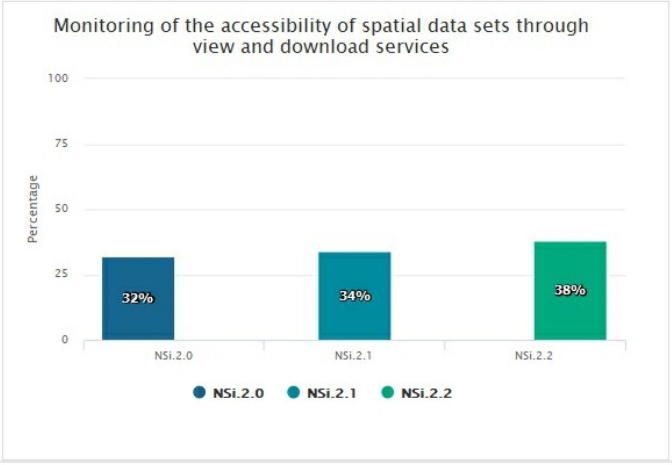
Legend

Indicator	Definition
MDi1.1	Percentage of metadata for spatial data sets conformant with Commission Regulation (EC) No 1205/2008 as regards metadata
MDi1.2	Percentage of metadata for spatial data services conformant with Commission Regulation (EC) No 1205/2008 as regards metadata



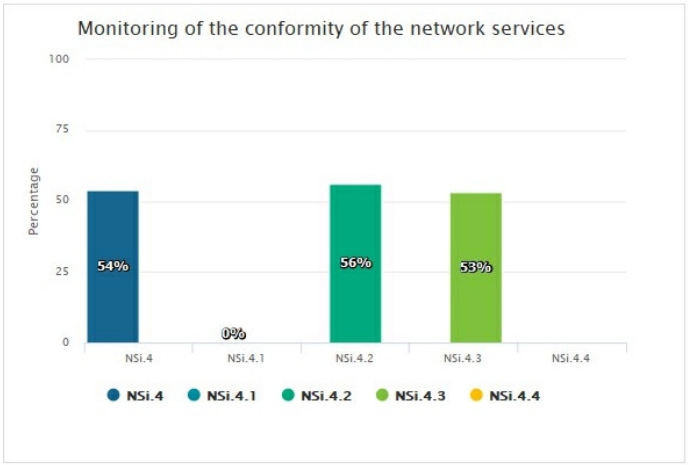
Legend

Indicator	Definition
DSi2	Percentage of spatial data sets that are in conformity with Commission Regulation (EU) No 1089/2010 as regards interoperability of spatial data sets
DSi2.1	Percentage of spatial data sets, corresponding to the themes listed in Annex I,that are in conformity with Commission Regulation (EU) No 1089/2010 as regards interoperability of spatial data sets
DSi2.2	Percentage of spatial data sets, corresponding to the themes listed in Annex II, that are in conformity with Commission Regulation (EU) No 1089/2010as regards interoperability of spatial data sets
DSi2.3	Percentage of spatial data sets, corresponding to the themes listed in Annex III,that are in conformity with Commission Regulation (EU) No 1089/2010 as regards interoperability of spatial data sets



Legend

Indicator	Definition
NSi.2.0	The Percentage of spatial data sets that are accessible through view and the download services
NSi.2.1	The Percentage of spatial data sets that are accessible through view services
NSi.2.2	The Percentage of spatial data sets that are accessible through download services



Legend

Indicator	Definition
NSi.4	Percentage of the network services that are in conformity with Commission Regulation (EC) No 976/2009 as regards the Network Services
NSi.4.1	Percentage of the discovery services that are in conformity with Commission Regulation (EC) No 976/2009 as regards the Network Services
NSi.4.2	Percentage of the view services that are in conformity with Commission Regulation (EC) No 976/2009 as regards the Network Services
NSi.4.3	Percentage of the download services that are in conformity with Commission Regulation (EC) No 976/2009 as regards the Network Services
NSi.4.4	Percentage of the transformation services that are in conformity with Commission Regulation (EC) No 976/2009 as regards the Network Services