



Status of implementation of the INSPIRE Directive – 2016 Country Fiches

COUNTRY FICHE Luxembourg

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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 DECISION regarding INSPIRE monitoring and reporting](#) on the 5th of June 2009.

This country fiche highlights the progress of Luxembourg in the various areas of INSPIRE implementation and presents an outlook of planned actions for further improvement of the INSPIRE implementation. The country fiche includes information **until May 2016** as a summary of the information acquired through:

- the 2016 [tri-annual INSPIRE implementation report](#),
- [monitoring report](#) in May 2016,

- a [bilateral meeting](#) on the implementation of the INSPIRE Directive between the Commission and Luxembourg representatives.

1. State of Play

A high-level view on the governance, use and impact of the INSPIRE Directive in Luxembourg. More detailed information is available on the [INSPIRE knowledge base](#).

The content of the chapter is tagged according to 5 criteria of better regulation:

- **[Effectiveness]** How successful has the INSPIRE implementation been in achieving, progressing towards its objectives; progress made, gaps, what factors have influenced or why it has not yet been achieved regarding availability of services, data interoperability, sharing, data policy obstacles
- **[Efficiency]** Costs (numbers or difficulties to evaluate them); benefits (qualitative or quantitative) already visible.
- **[Relevance]** Is it still relevant to make data interoperable, remove obstacles of data sharing, drive collaboration between public services, necessary for National SDI, use cross-sector, requested by eGovernment, modernisation of public admin, etc.; support given by National Institutions for implementation
- **[Coherence]** Internal coherence of INSPIRE provisions proved by implementation; cross-border applications; coherence with other National and EU policies
- **[EU-added value]** Improvement of EU cross-border data management and use; use for environmental monitoring and reporting, use for and with Copernicus data; use cross-sector.

1.1 Coordination

- National Contact point

Name of the public authority	Administration du Cadastre et de la Topographie
Contact information:	
Mailing address	54, av Gaston Diderich
Telephone number	+352 44 901 1
Telefax number	+352 44 901 333
Email address	ecadastre@act.etat.lu
Organisation's website URL	http://www.act.etat.lu
Contact person	Francis Kaell
Telephone number	+356 21234710
Email address	Francis.Kaell@act.etat.lu
Contact person - substitute	Jeff Konnen
Telephone number	+352 44 901 261
Email address	Jeff.Konnen@act.etat.lu

- Coordination Structure
 - Comité de Coordination de l'Infrastructure Luxembourgeoise de Géodonnées CC-ILDG, created in 2009, is an organisation that acts as a steering committee of all the activities concerning the creation, updating, management and distribution of geographic data, either in analogue or in digital form. This group is led by the Administration du Cadastre et de la Topographie (ACT), who is responsible for an important part of the geographic data currently available in the Grand-Duchy. The members are representatives of their respective public organizations, appointed by their ministers or directors in charge.
 - Thematic Working Groups: if special interest topics arise during general meetings, working groups are constituted and agree a meeting schedule. The actual WGs are: WG for legislation

purposes, WG for points of interest, WG for water data, WG for geodata policies, WG for the management of metadata.

- Progress
 - So far there have been no efforts to establish a set of precise rules for working procedures, given that the CC-ILDG has been working very efficiently.
 - The transfer of a first set of geodata to the public domain under the conditions of Creative Commons Zero is certainly a progress with respect to the previous reporting period. It has to be seen as the beginning of the opening of most of the countries geodata, as required by the Public Sector Information Directive. **[Effectiveness]**

1.2 Functioning and coordination of the infrastructure

- In order to be able to deliver a more complete portfolio of Luxembourg's INSPIRE-related datasets, ACT has proceeded to a detailed assessment of Luxembourg's situation in the INSPIRE dossier with the help of external experts.
- Ministry of Interior has been identified as "new" actor in the INSPIRE dossier. Its geodata department works on an integrated seamless dataset of the municipalities' land organisation plans. **[Relevance]**
- The very recent launch of the national open data portal at <http://data.public.lu> with ACT's geoportal team as a main actor, was a turning point in ACT's position in regard of use regulations of webservices. Indeed, most of the central datasets, produced and sold by ACT, like cadastral map, topography, addresses have been released and announced as "open and free webservice". **[Effectiveness]**

1.3 Usage of the infrastructure for spatial information

- The backbone of the Luxembourg's SDI is the Luxembourgish geoportal which opens up an access to the different users. The LSDI offers a lot of OGC compliant webservices (WMS,WFS, CSW).
- Independently of the special geoportal dedicated to INSPIRE, the national geoportal of Luxembourg has great success and is widely used by the general public. **[Effectiveness]**
- All the LSDI's web services can be used in EPSG:2169 (local Luxembourgish SRS) or in EPSG:4326 (WGS84 Lat/Lon) for interoperability.

1.4 Data Sharing Arrangements

- The recent adoption of the PSI directive and the subsequent national transposition, as well as the actual governments commitment to transparency and openness, has started to change many things: **[Relevance]**
 - open data portal has been launched on <https://data.public.lu>
 - LSDI is heading towards the adoption of CC0 as general "licence" for its geodata for all datasets that are not explicitly put under other rules.
 - other systems have also helped to exchange data between public authorities, or to make data more interoperable and re-usable e.g. POI manager.

1.5 Costs and Benefits

- For the years 2013-2015, the costs of geoportal, INSPIRE and related activities, can be approximatively summarised as follows:
 - 2013 - 1.125.000 EUR
 - 2014 - 1.105.000 EUR
 - 2015 - 1.115.000 EUR
- From 2016 to 2020 a supplementary 150.000 EUR per annum has been planned.
- The existence of the national geoportal, seen independently from the INSPIRE initiative, has brought great benefits to Luxembourg's public sector bodies, private firms and the citizen in general. **[Efficiency]**
- INSPIRE and the geoportal have been integrated on the list of important factors in the national administrative simplification program. **[Relevance]**

2 Key Facts and Figures

In addition to the above mentioned issues, the implementation of INSPIRE Directive requires Member States to take four main steps in relation to management of spatial datasets which fall under the Directive:

- Step 1: Identify spatial datasets
- Step 2: Document these datasets (metadata)
- Step 3: Provide services for identified spatial datasets (discovery, view, download)
- Step 4: Make spatial datasets interoperable by aligning them with the common data models.

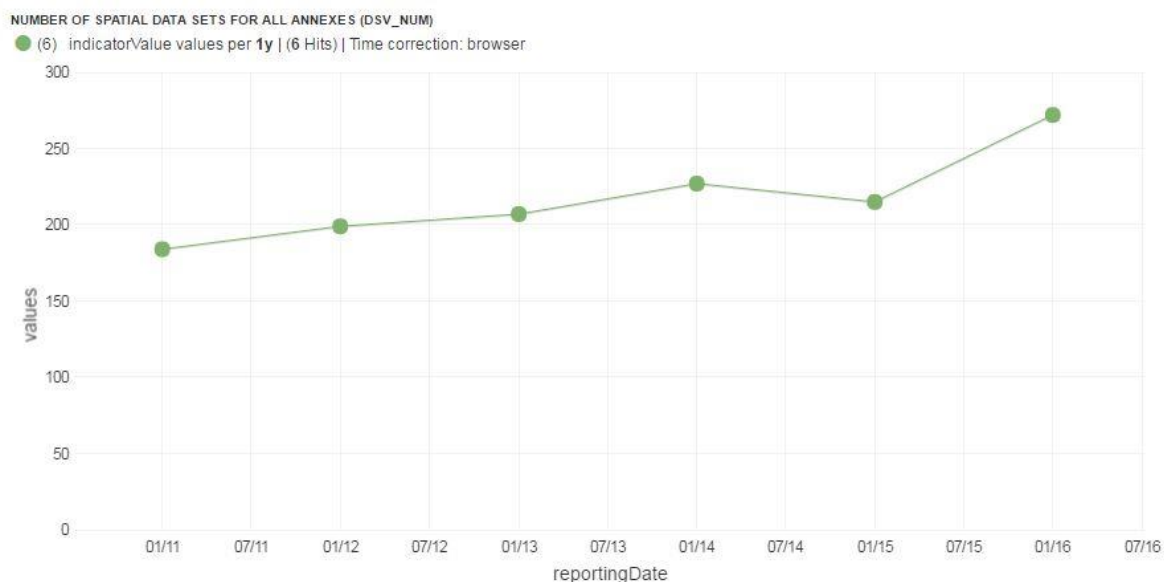
The key facts and figures presented in this country fiche are based on the information provided by Luxembourg on the [INSPIRE dashboard](#). **The provided statistics is not reflecting the data available on [INSPIRE geoportal](#).** The INSPIRE geoportal is updated on a regular and ongoing basis, whilst the INSPIRE dashboard is typically updated after every reporting round, on a yearly basis.

The conformity of the implementation is assessed against the full set of legal specifications set out by the Directive and the Implementing Rules and the commonly agreed good practices set out by the technical guidelines.

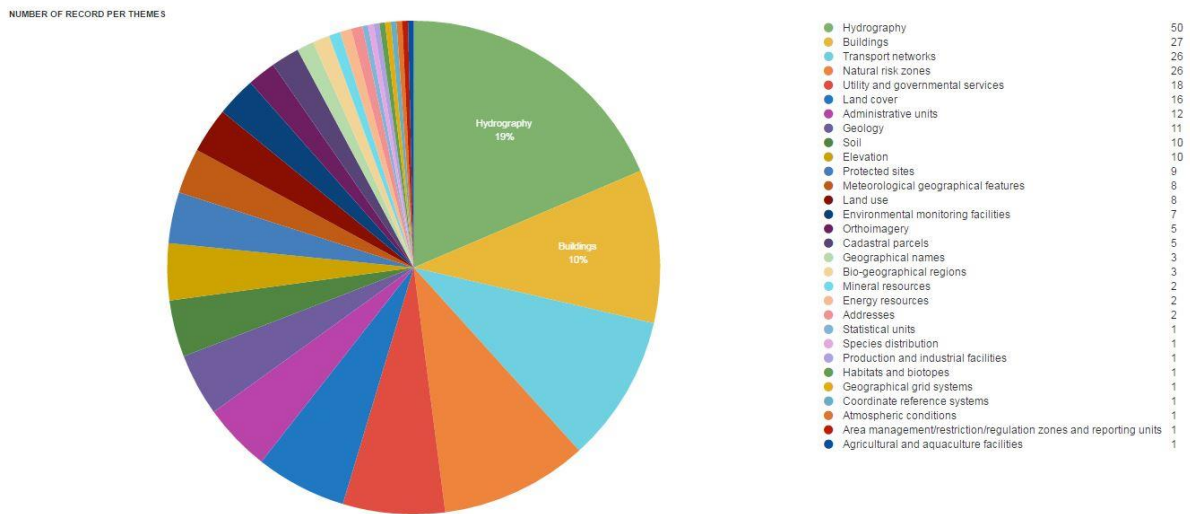
2.1. Identification of spatial data with relevance to the environment (step 1)

a. Evolution of the data offering

DSv_Num: number of spatial data sets for all Annexes

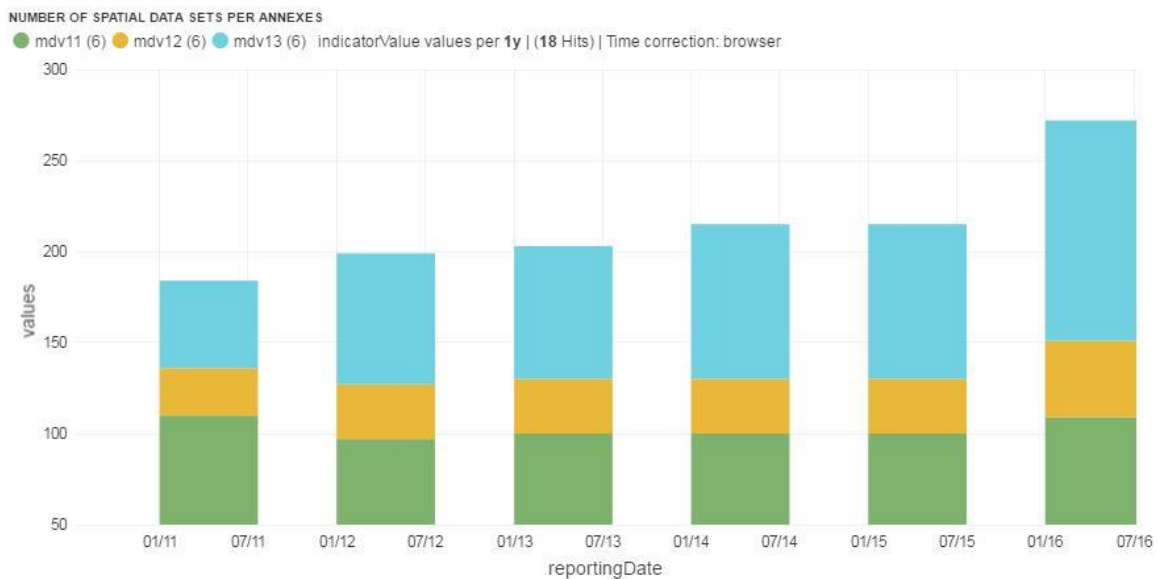


b. Data sets made available per INSPIRE theme in 2015



c. Data sets per annex (Annex 1 & 2: spatial reference data; Annex 3: environmental spatial data)

MDv1.1 (green): number of spatial data sets for Annex I that have metadata
 MDv1.2 (yellow): number of spatial data sets for Annex II that have metadata
 MDv1.3 (blue): number of spatial data sets for Annex III that have metadata



Evaluation of progress for step 1:

Luxembourg has identified a total of 272 spatial data sets with relation to the themes listed in the INSPIRE annexes.

Additional spatial data sets have been identified in 2015. A lot of relevant spatial data sets have already been identified for the different data themes. Luxembourg could further improve by identifying and documenting spatial data sets required under the existing reporting and monitoring regulations of EU environmental law.

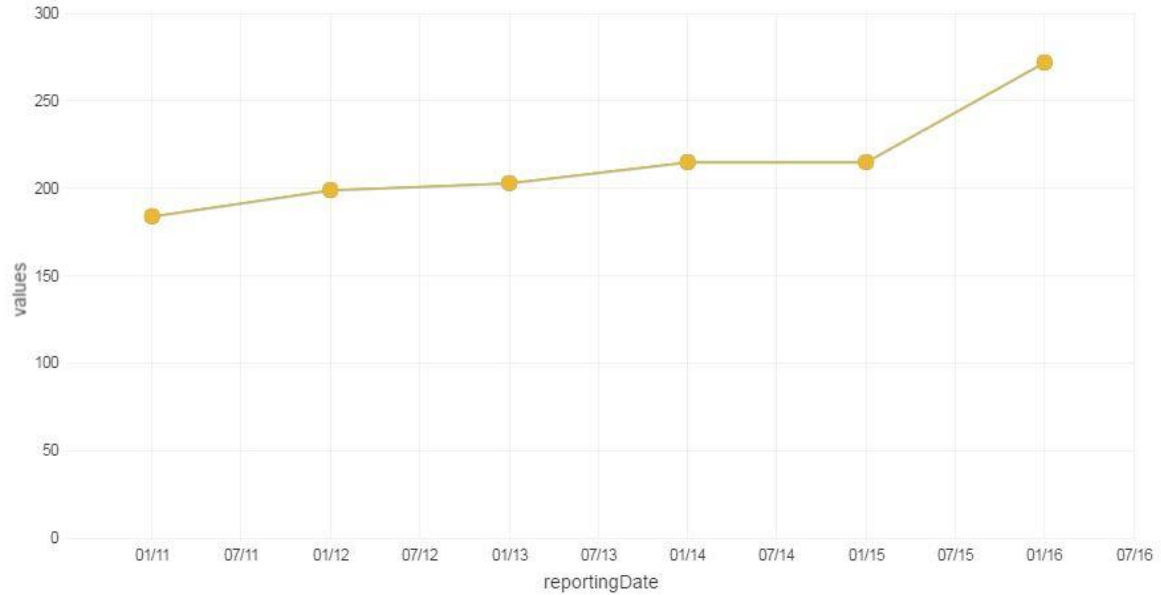
2.2 Documentation of the data (metadata) (step 2)

a. Evolution of documented data and conformity of the documentation

MDv1_DS (green): number of spatial data sets for all Annexes that have metadata

MDv2_DS (yellow): number of spatial data sets for all Annexes that have conformant metadata

NUMBER OF SPATIAL DATA SET THAT HAVE METADATA (MDV1_DS) AND HAVE CONFORMANT METADATA (MDV2_DS)
 ● mdv1_ds (6) ● mdv2_ds (6) indicatorValue values per 1y | (12 Hits) | Time correction: browser



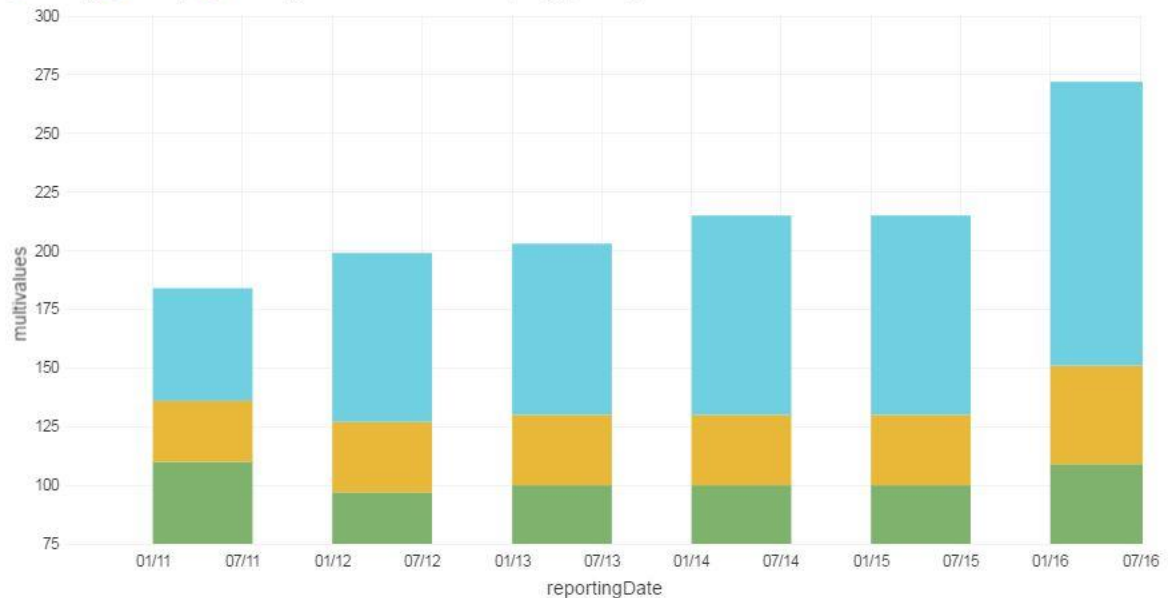
b. Documented data per annex in 2015

MDv2.1 (green): number of spatial data sets for Annex I that have conformant metadata

MDv2.2 (yellow): number of spatial data sets for Annex II that have conformant metadata

MDv2.3 (blue): number of spatial data sets for Annex III that have conformant metadata

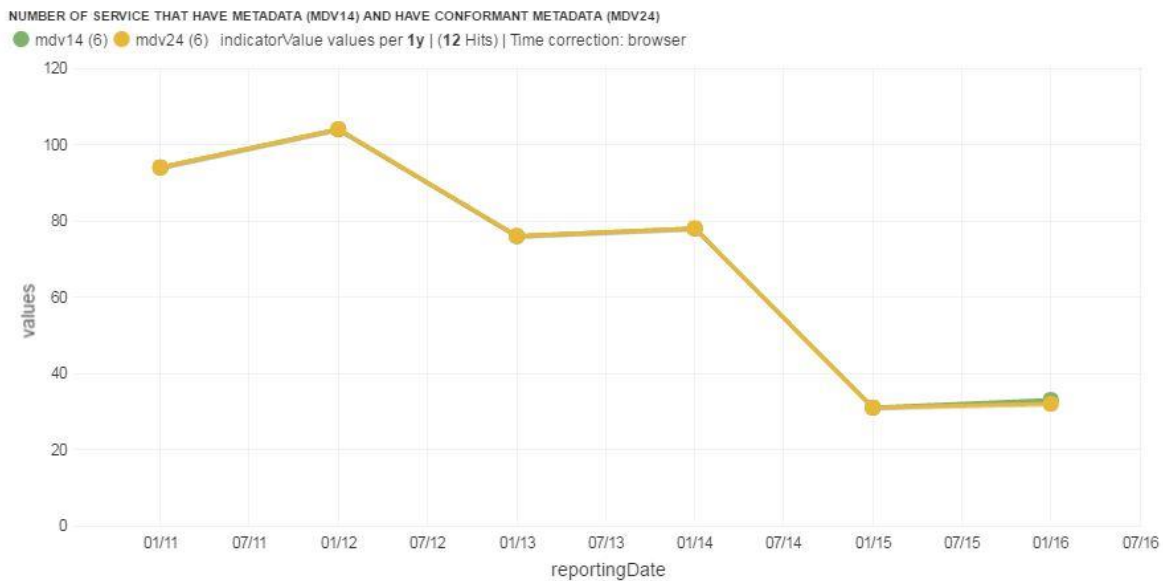
NUMBER OF SPATIAL DATA SETS THAT HAVE CONFORMANT METADATA PER ANNEXES
 ● mdv21 (6) ● mdv22 (6) ● mdv23 (6) indicatorValue multivalues per 1y | (18 Hits) | Time correction: browser



c. Evolution of documented services and conformity of the documentation

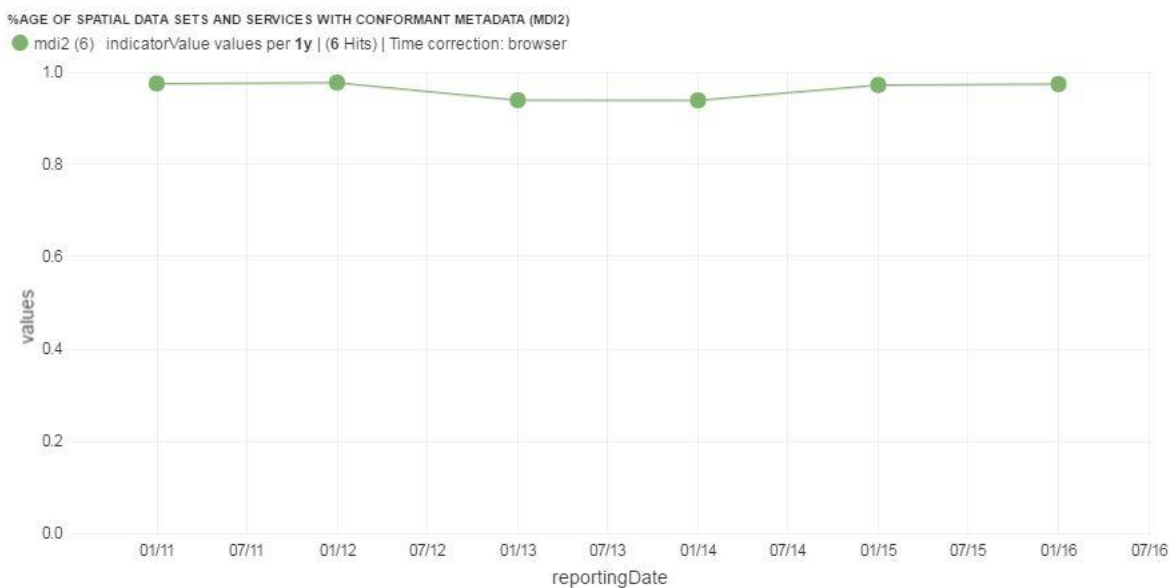
MDv1.4 (green): number of spatial data services that have metadata

MDv2.4 (yellow): number of spatial data services that have conformant metadata



d. Evolution of the overall conformity of the documented metadata

$MDi2 = (\text{number of spatial data sets for all Annexes that have conformant metadata} + \text{number of spatial data services that have conformant metadata}) / (\text{number of spatial data sets for all Annexes} + \text{number of spatial data services})$



Evaluation of progress for step 2:

Luxembourg has documented and published metadata through a digital discovery service for 100% (272) of the identified spatial data sets and 82,5% (33 out of 40) of the digital services. Overall, 97,43% of the Luxembourg metadata conforms to the INSPIRE metadata specifications.

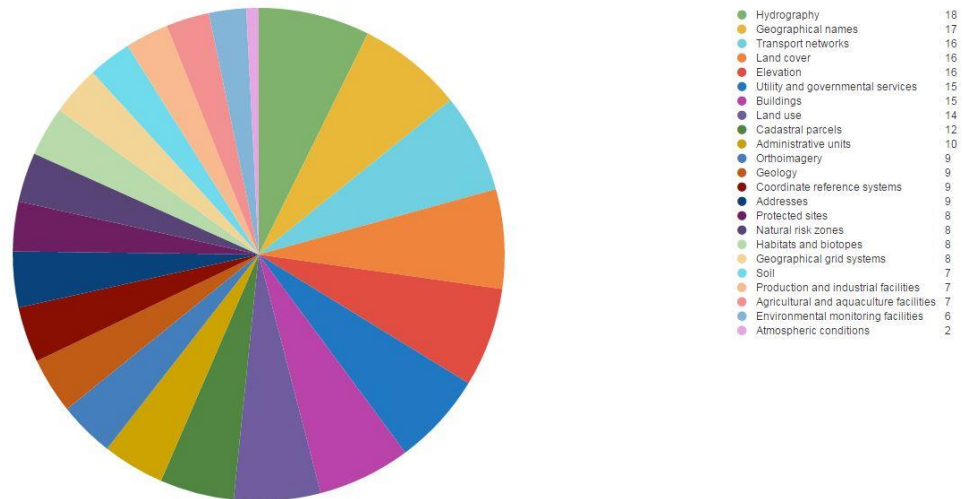
It shows a high level of maturity.

2.3. Accessibility of the data through digital services (step 3)

a. Digitally accessible spatial data per INSPIRE theme in 2015

Note: This figure reflects the amount of spatial data sets made available through a digital service, not the amount of available digital services. A digital service can make several spatial data sets available.

NUMBER OF RECORD PER THEMES



b. Evolution of spatial data made accessible through digital services

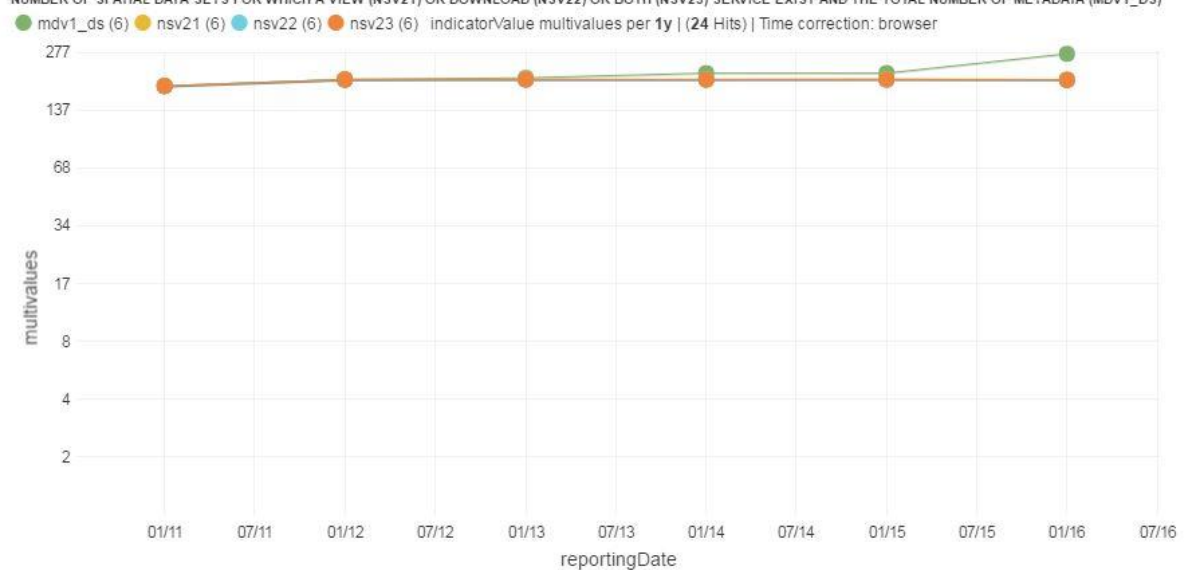
MDv1_DS (green): number of spatial data sets for all Annexes that have metadata

NSv2.1 yellow): number of spatial data sets for which a view service exists

NSv2.2 (blue): number of spatial data sets for which a download service exists

NSv2.3 (orange): number of spatial data sets for which both a view and a download service exists

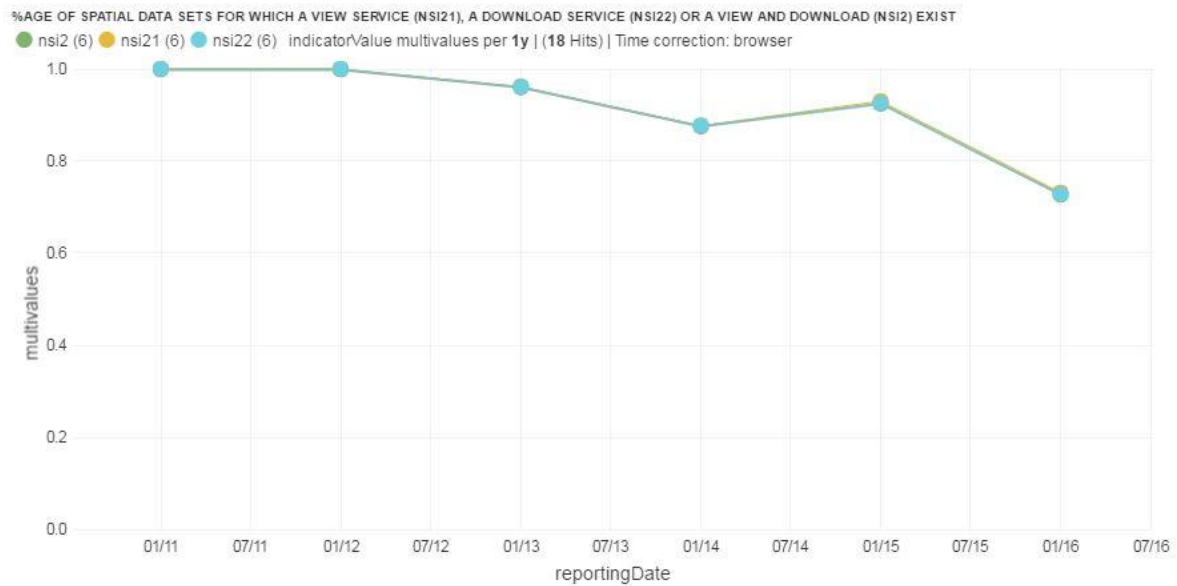
NUMBER OF SPATIAL DATA SETS FOR WHICH A VIEW (NSV21) OR DOWNLOAD (NSV22) OR BOTH (NSV23) SERVICE EXIST AND THE TOTAL NUMBER OF METADATA (MDV1_DS)



NSi2 (green) = number of spatial data sets for which both a view and a download service exists / number of spatial data sets for all Annexes

NSi2.1 (yellow) = number of spatial data sets for which a view service exists / number of spatial data sets for all Annexes

NSi2.2 (blue) = number of spatial data sets for which a download service exists / number of spatial data sets for all Annexes



c. Evolution of the conformity of the digital services

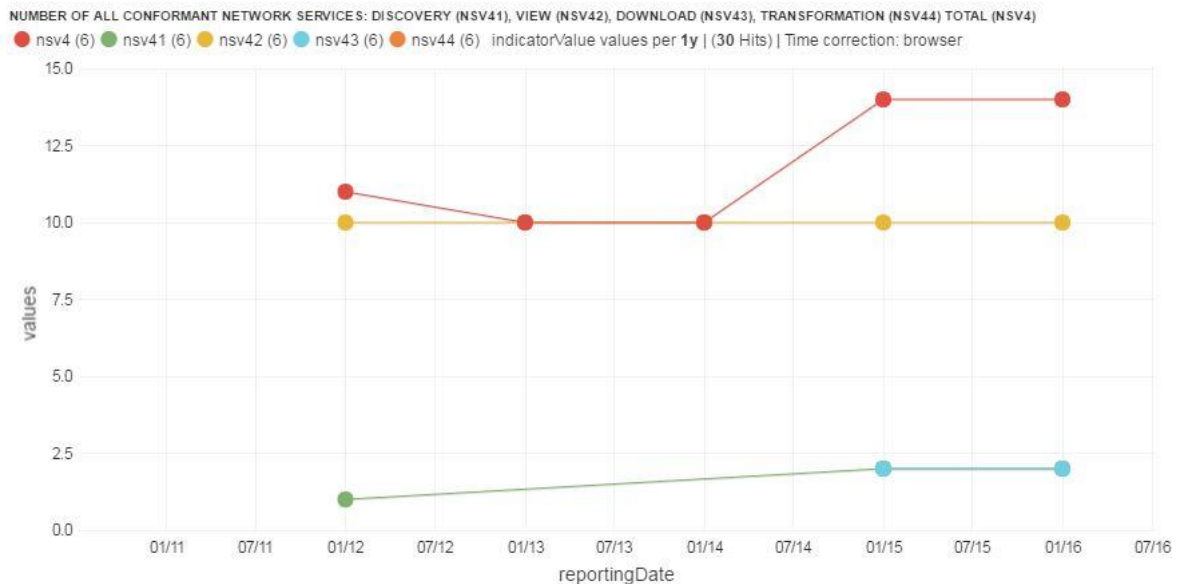
NSv4 (red): number of all conformant network services

NSv4.1 (green): number of conformant discovery network services

NSv4.2 (yellow): number of conformant view network services

NSv4.3 (blue): number of conformant download network services

NSv4.4 (orange): number of conformant transformation network services



Evaluation of progress for step 3:

Luxembourg has:

- 73,16% of its data sets accessible for viewing through a view service;
- 72,79% of its data sets accessible for download through a download service.

35% of the available digital services are conform to the INSPIRE network service specifications.

Luxembourg shows that it has built the necessary capacity and competences to make data accessible through digital INSPIRE network services. The technical conformity of the available services with the INSPIRE network service specifications should be improved.

2.4. Interoperability of spatial data sets (step 4)

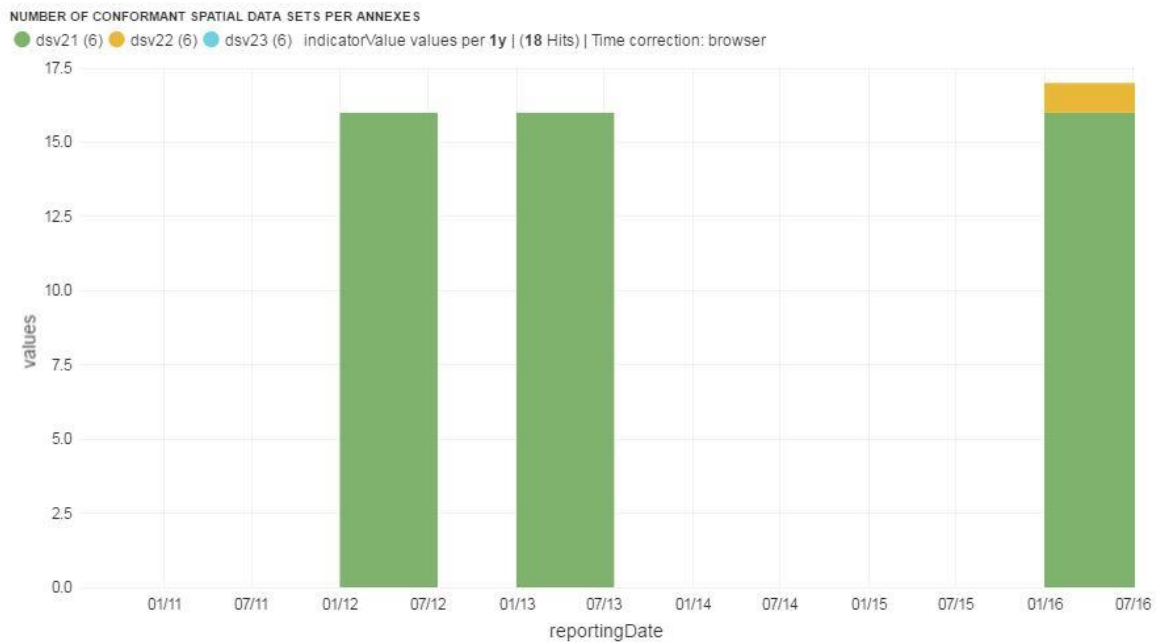
The interoperability of spatial data sets is an outlook on the readiness of Member States to make their spatial data interoperable according to the interoperability specifications laid down in the INSPIRE interoperability implementing regulation ([Commission Regulation \(EU\) No 1089/2010](#)). The deadlines for implementation of the spatial data interoperability are in the future: 23/11/2017 for Annex I data and 21/10/2020 for Annex II and III data.

a. Evolution of the conformity with INSPIRE interoperability specifications for spatial data

DSv2.1 (green): number of conformant spatial data sets with conformant metadata for Annex I

DSv2.2 (yellow): number of conformant spatial data sets with conformant metadata for Annex II

DSv2.3 (blue): number of conformant spatial data sets with conformant metadata for Annex III



Evaluation of progress for step 4:

Luxembourg has reported 17 data sets to be conform to the INSPIRE interoperability specifications.

We can conclude that Luxembourg has started its preparations for the 2017/2020 data interoperability deadlines.

3. Outlook

Luxembourg has critically reviewed their INSPIRE implementation and provided an [action plan](#) in 2016 to remediate existing implementation issues and further improve the overall conformity of the implementation. The following actions are set up to directly address previously identified issues:

a. Coordination (1.1; 1.2)

- **No action foreseen.**

b. Data sharing and exchange (1.4)

- **No action foreseen.**

c. Metadata (2.2)

- **Missing INSPIRE metadata sets will be added in 2016** to complete and correspond to the monitoring information.

d. Network services (2.3)

- **Implementation of a new infrastructure for INSPIRE in 2016**, based on GeoNetwork and GeoServer.

e. Data Interoperability (2.4)

- **An action plan ranging from 2016 to 2021 was developed.**
- In 2017 the new infrastructure will be refined and the Annex I data, until now hosted in ArcGIS for INSPIRE, will be transferred to the GeoNetwork-based infrastructure.
- Following on from the migration of existing Annex I data, the agenda plans to deal with Luxembourg's Annex II datasets, i.e. 'elevation', 'land cover', 'ortho-imagery' and 'geology' as well as the theme 'statistical units' from Annex III.
- The rest of the Annex III datasets are planned to be transformed and made available in compliance to the INSPIRE rules and agenda, during the years 2018, 2019 and 2020.
- In case other datasets are discovered, made available or proposed by the European commission to be integrated into the INSPIRE scope, a budgetary margin has been included to be able to cope with the related supplementary workload.

4. Summary - How is Country doing?

INSPIRE key obligation	Overall implementation status and trend	Outlook	<p align="center"><u>Dashboard Legend</u></p> <p>Implementation Status:</p> <p>😊: implementation of this provision is well advanced or (nearly) completed. Outstanding issues are minor and can be addressed easily.</p> <p>😐: implementation of this provision has started and made some progress but is still far from being complete. Outstanding issues are significant and need to be addressed to ensure that the objectives of the legislation can still be reached by 2020.</p> <p>😞: implementation of this provision is falling significantly behind or has not even started. Serious efforts are necessary to close implementation gap.</p> <p>Trend:</p> <p>↗️: the trend of the implementation is positive.</p> <p>➡️: the trend of the implementation is neutral.</p> <p>↘️: the trend of the implementation is negative.</p> <p>Outlook:</p> <p>🟢: clear and targeted actions have been identified which allow reaching the objectives of the legislation in an effective way.</p> <p>🟡: No real progress has been made in the recent past or actions which have been identified are not clear and targeted enough to predict a more positive outlook.</p> <p>🔴: no actions have been identified to overcome identified implementation gaps.</p>
Ensure effective coordination	😊 ↗️	🟢	
Data sharing without obstacles	😊 ↗️	🟢	
Step 1: Identify spatial datasets	😐 ↗️	🟡	
Step 2: Document datasets (metadata)	😊 ↗️	🟢	
Step 3: Provide services for identified spatial datasets (discovery, view, download)	😐 ➡️	🟡	
Step 4: Make spatial datasets interoperable by aligning them with the common data models.	😐 ↗️	🟢	

Specific recommendations:

For each Member State, the accessibility of environmental data (based on what the INSPIRE Directive envisages) as well as data-sharing policies have been systematically reviewed.

Luxembourg has indicated in the 3-yearly INSPIRE implementation report that the necessary data-sharing policies allowing access and use of spatial data by national administrations, other Member States' administrations and EU institutions without procedural obstacles are available and implemented. Most of Luxembourg's spatial data is available at no cost, and generally there exists no special legislation detailing any limitations or general conditions for their delivery and use. An exception is made for cadastral, topographic and aerial image data for which costs are charged. Although, Luxembourg does not yet have an official license model for the use and re-use of the data, the very recent open data initiative, linked to the Public Sector Information directive, has contributed to a general opening of many datasets and promotion of Creative Commons licences for data and geo-data created by public authorities.

Assessments of monitoring reports issued by Luxembourg and the spatial information that Luxembourg has published on the INSPIRE geoportal indicate that not all spatial information needed for the evaluation and implementation of EU environmental law has been made available or is accessible. The larger part of this missing spatial information consists of the environmental data required to be made available under the existing reporting and monitoring regulations of EU environmental law.

Suggested action

- Identify and document all spatial data sets required for the implementation of environmental law, and make the data and documentation at least accessible 'as is' to other public authorities and the public through the digital services foreseen in the INSPIRE Directive.