

Spatial data infrastructure in Iceland

*Work in the DRF-Iceland pre-project*

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| Delivery description:  |

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| Version:1.0 | Last change:201x-xx-xx | Authors: Guðmundur Valsson | Accepted by:DRF-Iceland team |

# Spatial Data Infrastructure in Iceland

## Leagal framework

In May 2011, the Icelandic parliament passed [Act no. 44/2011](http://www.lmi.is/en/wp-content/uploads/2012/04/Act-1-On-the-Infrastructure-for-Geospatial-Data-2_bg.pdf) on spatial data infrastructure. The legislation aims to build up and maintain access to spatial data owned by the government. The law derives from the EU INSPIRE Directive. According to the act, the spatial data infrastructure consists of: “Technology, policies, standards and human resources necessary to acquire spatial data, process them, preserve, disseminate and facilitate their use.”

Spatial data infrastructure is based on several principles of INSPIRE:

* Data should only be collected once;
* Data shall be maintained where possible to do so in the most efficient manner;
* Simple overview that covers which type of data and services is available (metadata);
* Data should be used from its place of origin;
* Ensure that it is possible to use data from many in different contexts.

The National Land Survey of Iceland is responsible for this Act.

According to the Act the National Land Survey of Iceland shall operate the geoportal in order to provide access to digital spatial data and information about it. The following web services must be accessible to the general public via the geoportal:

1. Metadata services making it possible to search for spatial datasets and related services.
2. View services making it possible, as a minimum, to display, navigate, zoom in/out, pan or overlay viewable spatial data sets and to display legend information and any relevant content of metadata.
3. Downloading services, enabling copies of spatial data sets, or parts of such sets, to be downloaded.
4. Transformation services, enabling spatial data sets to be transformed with a view to achieve interoperability.
5. Services allowing spatial data services to be invoked.

Access to services pursuant to points 1–5 paragraph 1, must be available to the public, with the limitations on the right to information which are stipulated in Article 6 of the Act on right to information regarding environmental issues.

Authorities that have digital spatial data in their care shall ensure that the data and associated web services are made accessible through the geoportal. If the digital spatial data and related web services are consistent with this law's provisions and set regulations on its basis, the authorities must have the technical capacity to disseminate data and link them into the geoportal.

If other parties than the authorities possess digital spatial data in accordance with the provisions of this Act and set regulations on its basis, they may apply to connect their spatial data into the geoportal. Such a request must be sent to the National Land Survey of Iceland which decides about whether the connection is permissible. At the same time, it is in the interest of the National Land Survey of Iceland that parties other than the authorities can connect their data to the geoportal.

## Spatial data in Iceland

A survey was made in the year 2015 on the status of [Icelandic public spatial data](http://www.lmi.is/wp-content/uploads/2015/10/20152110_skyrsla_grunngerdarkonnun.pdf) (in Icelandic). The survey was sent to 40 agencies and all the municipalities. In all, 36 agencies and 57 municipalities have answered

### Main results for governmental agencies

* The governmental agencies have in total 326 spatial datasets, only 50% of the data sets have registered metadata and about 1/3 of the agencies have a person responsible for the registration of metadata.
* Agencies with the most spatial datasets are National Land Survey of Iceland (62), Icelandic Institute of Natural History (34) and the Road Administration (29).
* The theme Transportation has most datasets (34)
* The spatial datasets are in most cases connected to the legal duties of the agencies and they mostly take care of the acquisition and distribution of the data.
* About 50% of the agencies maintain and store the data themselves
* There is a need for a better coastline, elevation model, property boundaries, land surface and land use
* More than 75% of the agencies distribute their data free of charge
* About 40% of the agencies say that lack of knowledge, resources and manpower inhibit the development in the field of geospatial information’s. But 60% say that there is some positive development

### Main results for municipalities

* The municipalities are in general not prepared to build up spatial data infrastructure according to INSPIRE
* 70% of the municipalities rely on assistance from private companies when it comes to maintenance and storage of spatial data
* Just over 50% of the municipalities have clear picture of the ownership of their spatial data
* 95% believe that cooperation concerning spatial data between municipalities in an interesting option but only 39% have already some cooperation
* Spatial information regarding property boundaries, technical infrastructure of urban areas, map database and information about land use is owned by majority of the municipalities.
* Municipalities that are renting spatial data from private companies are mostly renting aerial photographs and map databases
* It’s rare that municipalities are using data from governmental agencies, but if they are it’s from NLSI, National Planning Agency, The Road Administration and from power and heating companies
* Municipalities are mostly lacking property boundaries of farmland. The lack of data and high cost are the main obstacles there
* Most of the spatial data from the municipalities is free of charge

Today there are 158 datasets, 17 services and 9 series in the geoportal. So, there is still much work to get all public data connected to the geoportal.

## Current status and ongoing work at NLSI

Through the year of 2016 much effort was put into changing between software’s and the structure for data harmonization and dissemination at the NLSI. These changes were, among others, made to facilitate the coordination of Icelandic spatial data to the requirements of the INSPIRE Directive of the European Union. With this approximation, the data from Iceland is on par with other European countries and the requirements on data access according to the INSPIRE Directive is complied.

In connection with the structural changes at the NLSI a new software for map windows was introduced to users, built on Oskari. Furthermore, GeoNetwork, a metadata platform, was implemented to register metadata as a part of the Icelandic Spatial data Geoportal. With the new map window, it is easier for users to connect metadata and view the data. The new map window also gives users the opportunity to combine, in one map window, data from different government agencies. With easy access to spatial data from different sources one can assemble information that would not be easily obtained otherwise

<https://gatt.lmi.is/geonetwork/srv/eng/catalog.search>

## Spatial data in Iceland and a dynamic reference frame

When we look at the data in the geoportal as it is today we see that dynamic reference frame is not relevant for most of the data due to its lack of accuracy. But with accurate data from municipalities and hopefully more accurate data from the agencies in near future this will start to be an issue for the geospatial community in Iceland and not just the surveyors.