INSPIRE

Infrastructure for Spatial Information in Europe

MIWP 2019.2: Improving accessibility of data sets through network services

Type	Document for information
Creator	EC and EEA INSPIRE Team
Date/status/version	06/06/2019 / FINAL
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Identifier	**MIG/10/2019/DOC7**
Description	Status report from the following MIWP action: • MIWP 2019.2: Improving accessibility of data sets through network services
actions:	MIG to: • Take note and provide feedback on the document • Endorse the proposed follow ups

1   Contents

1   Contents

2   Introduction

The overall objective of this MIWP Action, endorsed during the last MIG meeting (27-28.11.2018) is to improve accessibility and use of the INSPIRE data sets via EU Geoportal[1]. The new Geoportal as well as the endorsed revision of the M&R IRs are following a data-centric approach, which focuses on data sets and how they can be accessed through network services rather than considering data and network services as stand-alone components of the infrastructure.

2.1   Agreed Tasks of the Action

The Action 2019.2 was endorsed with two described phases covering the following tasks:

Phase 1 (January – June 2019)

- Further investigate and document the issues causing the low level of data accessibility (through the Geoportal workshop in January 2019 and follow-up analyses)
- Jointly work on improving data accessibility in the INSPIRE geoportal (through changes in national discovery services and/or the EU Geoportal) following the current approach
- Test the proposed simplified approach for data-service linking (MS metadata & services and INSPIRE geoportal)
- Report status and propose follow-up actions to MIG meeting in June 2019

Phase 2 (July – December 2019) – pending endorsement by the MIG

- Draft change proposals to TGs for metadata, view and download services (and/or a stand-alone TG document on data-service linking)
- Analyse whether the proposed simplifications would require changes in the IRs
- Propose an implementation roadmap (or Common Implementation Strategy)
- Implement support for the simplified approach in the INSPIRE geoportal
  Final status report at MIG meeting in December 2019

3   Action Status Report

This chapter summarizes the joint activity and results related to the improvement of accessibility and use of INSPIRE data sets since the endorsement of the Action on 27-28.11.2018.

3.1   INSPIRE Geoportal Workshop 23-24.1.2019

The Workshop took place in Ispra (JRC), Italy from 23.1-24.1.2019. 45 Experts (e.g. National MD catalogue administrators) from 28 EU Countries + EC & EEA INSPIRE Coordination Team participated in the Workshop.

The main objectives were:

- Improving MS data sets accessibility via INSPIRE Geoportal by:
  - Presenting & clarifying Geoportal back-end system
  - Sharing the results of JRC assessment of the MS feedback (31x) related to the description of the MS data infrastructures in use
  - Presenting a new system for harvesting MS resources

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[1] EU Geoportal: http://inspire-geoportal.ec.europa.eu/

- Discussing proposed changes and improvements of the functionality of Geoportal & harvesting system
- Discussing future steps (operational aspects) and the way of collaborating with MS technical experts (Helpdesk, Forum, Virtual meetings..)

Prior to the WS an On-line Survey was prepared and launched to better understand the technical/organizational situation in each of the Member State. The survey was also to receive a national feedback on the new Geoportal functionality (e.g. Harvesting system or UI).
We have received 31 National Responses. The responses were analysed by the JRC Geoportal team and the assessment was presented during the WS.

Main conclusions of the Workshop[2]:
1) Geoportal back-end & data-service linking
- The back-end system especially harvesting checks are better understood by MS experts
- Relaxation of the data-service linking checks especially for WFS has been appreciated and is recommended to be tested as an alternative option for MS.
- The JRC proposal for a new standalone SW Tool – INSPIRE Resource linkage checker was much appreciated.

2) Improving data/service usability
The introduction of the fact that data accessibility is not enough if the data cannot be effectively used e.g. the files are too big to download, too many layers to view, when trying to download a request for login and password appears in different language, etc. It was agreed to focus on 3 categories:
- Organization of data for download/view
- Harmonizing authentication from user perspective
- Conditions & limitations on access and use

3) Harvesting - new system + new SW Tool
The new proposed harvesting system including a new SW tool (i.e. Harvesting Console) that gives authorized MS administrators more flexibility and control over the process of publishing MS data on EU Geoportal was appreciated.
- More MS feedback after the release of the SW tool and testing
EC (JRC) harvesting of MS resource will still be possible however, not the final publishing of the harvested data in the EU Geoportal = it is and will be a full responsibility of the MS

4) Future meetings / group organisation etc.
- It was agreed that a face to face meeting to be organised once a year is very useful
  - Ad-hoc virtual meetings for dedicated issues, e.g. harvesting, development of new features, data-service linking, success stories from MS etc.

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[2] Sli.do results:
https://webgate.ec.europa.eu/fpfis/wikis/display/InspireMIG/INSPIRE+Geoportal+Workshop?preview=/324049586/324049876/Sli.do%20results.pdf

The full documentation of the Workshop including the presentations, results of the sli.do questions, on-line survey provided by MS, conclusions is available here[3].

3.2   New Geoportal functionality – Version 1.1(2)

Since the launch of the new Geoportal on 17.9.2018 two versions were implemented with the following new functionalities:

v1.2.0 (2019-06-03)

- Geoportal harvest console:
    - end of beta testing
    - minor improvements to the UI
- Geoportal backend:
    - back-end implementation of the Resource Linkages Checker tool
    - back-end support of provided and automated translations of metadata
    - implementation of the EC Translation Service proxy
    - bug fixes to processing logic
- Geoportal viewer:
    - new resource linkages checker tool
    - european level filtering added
    - improved support to the metadata translation

v1.1.0 (2019-03-29)

- Geoportal harvest console:
    - first release of this component
- Geoportal backend:
    - in case a WFS Download Service does not make available a suitable Stored Query for predefined datasets and exactly one coupled resource is identified, the whole content of the WFS is considered as an as-is dataset. In this case, the dataset download link is built as a standard GetFeature request. The INSPIRE Geoportal front-end will therefore display the dataset as downloadable
- Geoportal viewer:
    - new search functionality in the results list page
    - new view service URL copy functionality
    - added the Priority dataset keywords in the metadata detail page
    - support to the metadata translation

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[3] Geoportal Workshop:
https://webgate.ec.europa.eu/fpfis/wikis/display/InspireMIG/INSPIRE+Geoportal+Workshop

3.3   Geoportal Helpdesk

The Geoportal Helpdesk[4] is an on-line support provided by JRC Geoportal administrators to MS data providers. This technical support, widely used by MS, has been in operation since August 2016. It now represents a very valuable knowledge base of technical issues related to not only harvesting of MS resources, but also setting up network services, correctly filling the metadata of data sets or services etc.

Since the Helpdesk support is very time consuming the MS administrators are instructed to first search through the issue tracker to see whether their issue has been already answered (very often the case). Along with the maturity of the Reference Validator users should first use this agreed tool to check their services, MD etc.

Here are the statistics of the issues published in the Geoportal Helpdesk in 2019:
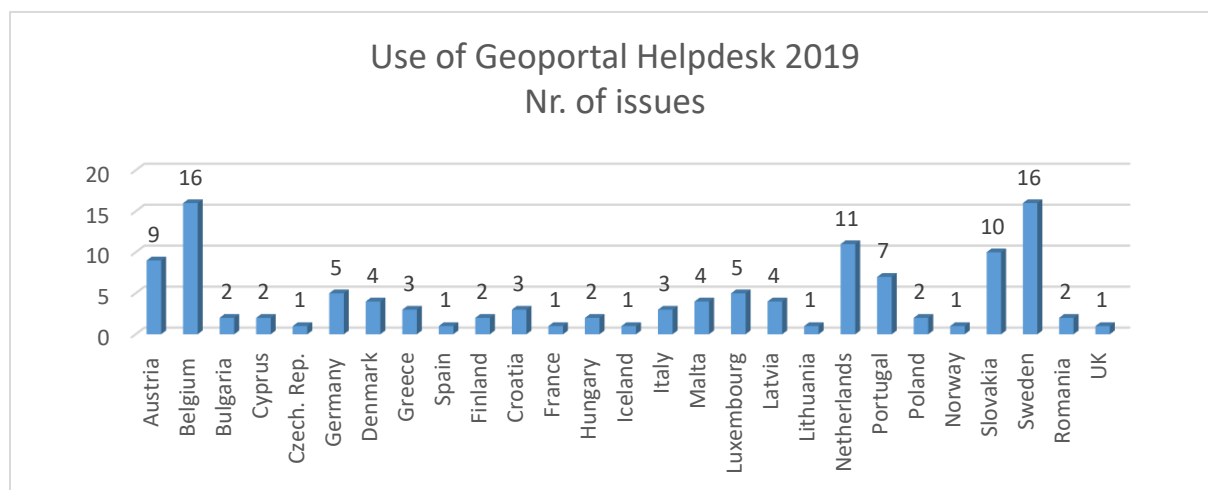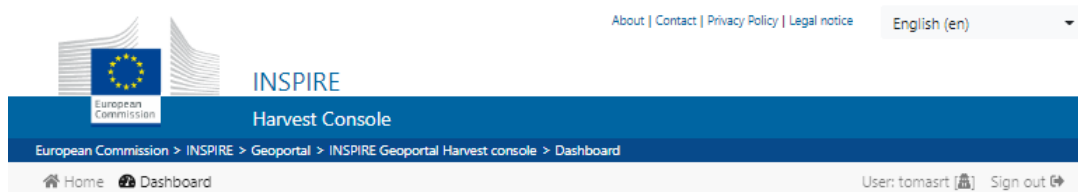
Total number of issues published: 120 (from 1.1.2019 – 2.6.2019)

3.4   New system for harvesting of MS National Discovery Services

On 29.3. a new way of harvesting MS National Discovery Services (currently 36) was officially launched. The new harvesting process is fully supported by a new application – Geoportal Harvest Console.

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[4] Geoportal Helpdesk: https://ies-svn.jrc.ec.europa.eu/projects/geoportal/issues

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English (en) ▼

INSPIRE

European Commission

Harvest Console

European Commission > INSPIRE > Geoportal > INSPIRE Geoportal Harvest console > Dashboard

⌂ Home   🕮 Dashboard

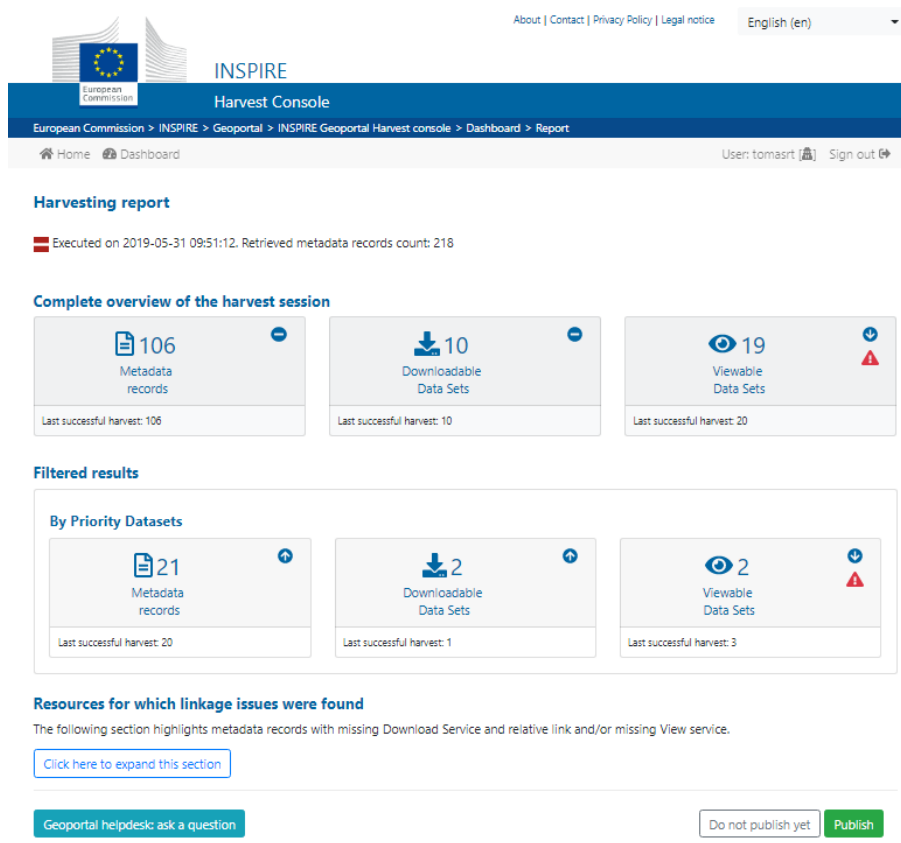User: tomasrt [🏠] Sign out ⏻

Dashboard

Welcome **Robert TOMAS**, here you can manage the Discovery endpoints registered for your country/organization.

Discovery services

Country ⇅	Discovery Service endpoint	Responsible organizations	Last successful execution	Actions	Status
🇧🇪 BE	Federal CSW Service	National Geographic Institute	Mon May 20 2019 13:47:28 GMT+0200 (Central European Summer Time) Check last report	Check and publish Schedule a new harvest	👁 Pending publish
🇱🇻 LV	LV_VISS - Latvijas metadatu katalogs. ĢDS (Ģeotelpisko datu savietotājs)	Valsts reģionālās attīstības aģentūra	Fri May 31 2019 09:51:12 GMT+0200 (Central European Summer Time) Check last report	Check and publish Schedule a new harvest	👁 Pending publish

Picture1: Harvest Console - Dashboard

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English (en) ▼

INSPIRE

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Harvest Console

European Commission > INSPIRE > Geoportal > INSPIRE Geoportal Harvest console > Dashboard > Report

⌂ Home   🕮 Dashboard

User: tomasrt [🏠] Sign out ⏻

Harvesting report

🇱🇻 Executed on 2019-05-31 09:51:12. Retrieved metadata records count: 218

Complete overview of the harvest session

📄 106 ⊖ Metadata records Last successful harvest: 106	⬇ 10 ⊖ Downloadable Data Sets Last successful harvest: 10	👁 19 ⬇ ⚠ Viewable Data Sets Last successful harvest: 20

Filtered results

By Priority Datasets

📄 21 ⬆ Metadata records Last successful harvest: 20	⬇ 2 ⬆ Downloadable Data Sets Last successful harvest: 1	👁 2 ⬇ ⚠ Viewable Data Sets Last successful harvest: 3

Resources for which linkage issues were found

The following section highlights metadata records with missing Download Service and relative link and/or missing View service.

Click here to expand this section

Geoportal helpdesk: ask a question

Do not publish yet   Publish

Picture2: Harvest Console – Harvesting Report

Picture3: Harvest Console - Sandbox

The application is accessible for authorized MS catalogue administrators (Picture 1) that are able to initiate a process harvesting as well as give the final consent to publish respective national metadata in EU Geoportal. The main objectives for this system change are:

- to give **a full MS control** of the harvesting process including its initiation, monitoring/reviewing as well as the **final publishing** of harvested metadata in EU Geoportal;
- to **better support** MS with indications of concrete MD records with possible errors found e.g. missing resource linkages;
- to **reduce the number of requests** (via Geoportal Helpdesk) from MS for the ad-hoc harvesting.

Since the introduction of the Harvest Console (29.3.) administrators of 31 National Discovery Services have already successfully used the Harvest Console and also published (some already several times) their data in the EU Geoportal. The on-line Harvesting status of each national discovery service is available here[5].

The new application has also introduced a concept of a "Sandbox" (Picture 3) where Administrators see not only the actual result of the harvesting including the indications of possible errors, but also the statistics of previous successful harvests (Picture 2). Therefore they can correct the indicated records before publishing the data in the EU Geoportal.

Geoportal Harvesting Status: http://inspire-geoportal.ec.europa.eu/harvesting_status.html

3.5   INSPIRE Resource Linkages Checker

Based on the feedback received before and during the Geoportal Workshop it was confirmed that the biggest problem for MS data providers is to correctly establish the necessary linkages between the INPSIRE resources (Metadata of data sets, services – especially for WFS).

In order to improve the understanding of how the linkages are checked by Geoportal during the process of harvesting and transformation **a new technical documentation** has been produced[6] and presented to MS (e.g. Geoportal WS, MIG-T meeting in Ispra).

Despite the welcome technical documentation it was proposed to develop an automated procedure to check only the linkages between the resources.

The Beta version of the SW tool for checking the resource linkages (MD of datasets x services) has been developed and published on 3.6.2019.

The Resource linkage checker currently covers two major use cases:

1) Checking the linkages in new metadata that has not yet been harvested by Geoportal

2) Checking the linkages of already harvested metadata

All MSs are encouraged to test the tool and provide us with the feedback.

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[6] Geoportal workflow for establishing links between data sets and network services - http://inspire-geoportal.ec.europa.eu/files/INSPIRE_Geoportal_process_for_data-service_linking_v1.0.pdf

3.6   Simplification of data/service linking

Context:

The main objective of this activity is to look for a possible simplification of the way the INSPIRE resources are currently linked (MD of data sets x MD of services) due to the facts that:

- The level of data-service linking is insufficient; many organizations in the MS are not able to provide implementations in line with the current TGs
- The current approach for data-service linking in the TGs (metadata and network services) is widely acknowledged as complicated and there are different interpretations of the requirements, even by implementation/standards experts
- This has negative impacts on the accessibility of INSPIRE data sets and future monitoring and reporting (based on metadata) and hence as the overall impression of the usability of the INSPIRE infrastructure
- The fact that the current approach for service metadata requires extensions to base standards is posing an obstacle to the implementation of INSPIRE requirements (because they are not widely implemented in off-the-shelf software)
- There is a clear overlap / duplication of data set and service metadata, which in some cases leads to inconsistencies.

The activity builds on the document discussed during the MIG-T meetings and also presented to MIG meeting in November 2018[7].

Status of the task so far:

1) 10 volunteering countries experts were contacted to provide us with the real examples of the Metadata of data sets and services filled according to the proposal described in the Discussion document. Additionally some future planning questions related to the intention of application of the simplified option were also asked.

2) So far 6 Countries responded and provided us with the feedback requested.

3) The **first Teleconference** is planned to take place on 14.6.2019 to discuss MS experience with applying the simplified method + JRC will present the assessment of the MS examples received.

The follow up steps will also be discussed and if agreement reached – will be presented during the upcoming MIG meeting 20.6.2019 for endorsement.

3.7   Improving usability of INSPIRE data sets

Context:

Already during the INSPIRE Geoportal Workshop the issue of the usability of INSPIRE data sets and services – meant as the true ability of end users to access (view and download) data sets through the INSPIRE Geoportal and effectively use them in INSPIRE and GIS clients – was presented and

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[7] Discussion Paper on possible simplification of data-service linking in INSPIRE - https://webgate.ec.europa.eu/fpfis/wikis/pages/viewpage.action?pageId=298660106&preview=/298660106/308119079/%5BDOC7%5D_Discussion%20Paper%20on%20data-service%20linking%20v0.5.docx

discussed. The discussion on data usability continued during the MIG-T face to face meeting in Ispra (3-4.4.2019).

Three major topics for improvements have been clearly identified, which go beyond the INSPIRE legal obligations on how data sets shall be made available but are greatly affecting the usability of such data sets. In particular, it is considered of high priority to address the following three issues:

1) Organization of data for distribution in the INSPIRE infrastructure (View and Download services)
Since the INSPIRE legal framework is not specifying how data sets shall be organized, Member States have adopted a number of different strategies for the implementation of network services. Examples include the number of data sets grouped together within one (or few) view and download services as well as the criteria used to group such data sets (by INSPIRE data theme, scale, use case, national provider/organization, etc.); and the file size of data sets served through view and download services, which can result into extremely long waiting times to access data sets served from WFS services or gigantic dimensions of files served through atom feeds.

2) **Protection to data access**

As stated in Articles 13 and 14 of the INSPIRE Directive, MS are allowed to limit public access to data sets and services where this access would adversely affect a number of conditions such as public security, national defense and intellectual property rights. Nevertheless, MS are implementing a variety of measures to prevent or limit access to data sets through the INSPIRE Geoportal, which – although allowed by the INSPIRE Directive – is often highly impacting the usability of such data sets. An example is the protection of download services through an authentication mechanism for the sole purpose of tracking access or charging for access (i.e. purposes different from the conditions set in the Directive), but without informing users on why authentication is put in place and how to get access credentials.

3) **Conditions on access and limitation on use**

The INSPIRE Directive does not provide obligations about the conditions and limitations on access and use of the data sets published by MS. As a consequence, the infrastructure has developed in a very heterogeneous way in terms of data set licenses. Data sets are in fact published under a number of different licenses: these are sometimes standard licenses (e.g. those belonging to the CC BY family), while other times these are custom licenses, only written in a national language, specifying very detailed conditions and limitations on access and use. From the end user's perspective, this results into a complex and often confusing picture on which data sets can be used under which licenses, as well as on the legal conditions applying to the use of data sets obtained from the combination of two or more data sets published on the Geoportal.

Task planning:
To minimize the impact of these issues in the common interest of improving the actual usability of INSPIRE data sets discovered in the Geoportal, the following actions are planned.

1. **Issues 1 and 2:** it is advised that a set of shared **recommendations and best practices** for MS are created through **two specific expert contracts**. In addition to the recommendations already made during the Geoportal Workshop and the face-to-face MIG-T meeting in early 2019, these recommendations will be shared with MS to aid their future choices on how to publish, organize and distribute INSPIRE data sets on the Geoportal.

2. **Issue 3: Identification those MS data sets published on the Geoportal under an open access license**. In this context, an open access license is meant as a license allowing to freely re-use, modify and distribute the data set (or modified versions of it) for any purpose, under the conditions of - at most - providing the attribution of the data set source. Examples of open access licenses (as meant in this context) are [ODbL](), [CC0]() and [CC BY](). Member States were involved in this initiative and they were asked to provide instructions on how to identify open data (meant as defined above) in their national discovery services, by specifying:

   - the metadata element used (using INSPIRE name or ISO x Path if possible): 3. Keyword | 8.2 Limitations on public access;
   - controlled vocabularies, conventions or keywords used, providing the values (in the used language) that can be used to extract the data sets from the discovery service/MD of datasets/services;
   - comments: any additional important comments, e.g. in case MS are not distinguishing open data in their national context because all the resources are open data.

MS are currently providing the requested instructions. Once all of these have been received, they will be used to setup automatic filters on the data sets published on the Geoportal in order to clearly flag as 'open data' those available under an open access license (as defined above). The instructions provided by Member States, together with the description of this initiative, are collected in a web page under the 2019.2 collaborative space (login is required to access them)[8].

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[8] https://webgate.ec.europa.eu/fpfis/wikis/display/InspireMIG/Improving+usability+of+INSPIRE+Data+sets

4   ACTION 2019.2 proposed follow-ups

1) **Simplification of data service linking:**

- Continue with the volunteering experts from MS to assess, fine-tune and conclude on the feasibility of the proposed simplification option. (July 2019)
- Start the 2nd phase i.e.:
  - Draft change proposals to TGs for metadata, view and download services (and/or a stand-alone TG document on data-service linking)
  - Analyse whether the proposed simplifications would require changes in the IRs
  - Propose an implementation roadmap (or Common Implementation Strategy)
  - Implement support for the simplified approach in the INSPIRE geoportal
    Final status report at MIG meeting in December 2019

2) **Improving accessibility of MS data sets via EU Geoportal:**

Geoportal System (back-end/front-end):

- Continue with the monitoring, supporting MS with harvesting of their resources to the Geoportal
- Continue with the development of the Geoportal front-end by introducing a new "thematic viewer" – INSPIRE Analytics providing users with more filtering options of MS resources in the Geoportal
- Develop, adapt the Geoportal system on the calculation, publishing of new INSPIRE Monitoring and Reporting Indicators

3) **Improving usability of MS data sets accessible from the Geoportal**
   Continue working together with MS representatives/experts (MIG, MIG-T, National geoportal catalogue admins.) on:
- Collecting and compiling recommendations and good practices to organize data for distribution in the INSPIRE infrastructure (View and Download services)
- Collecting and compiling recommendations and good practices in protecting data access (e.g. authentication layer) in a transparent and user friendly way.
- Developing/compiling a "semantic" filter to extract MS data in Geoportal available under open data licenses.

5 Annex 1: Statistics - MS data sets availability in EU Geoportal (6.6.2019)

6   Annex 2: Statistics - Use of Geoportal (17.9.2018 - 6.6.2019)

Visits Overview

65,819 visits

4 min 58s average visit duration

39% visits have bounced (left the website after one page)

6.8 actions (page views, downloads, outlinks and internal site searches) per visit

0.14s average generation time

431,997 pageviews, **289,992** unique pageviews

7 total searches on your website, **2** unique keywords

7,722 downloads, **6,621** unique downloads

10,625 outlinks, **9,401** unique outlinks

549 max actions in one visit

Visitor Map

65,819 visits
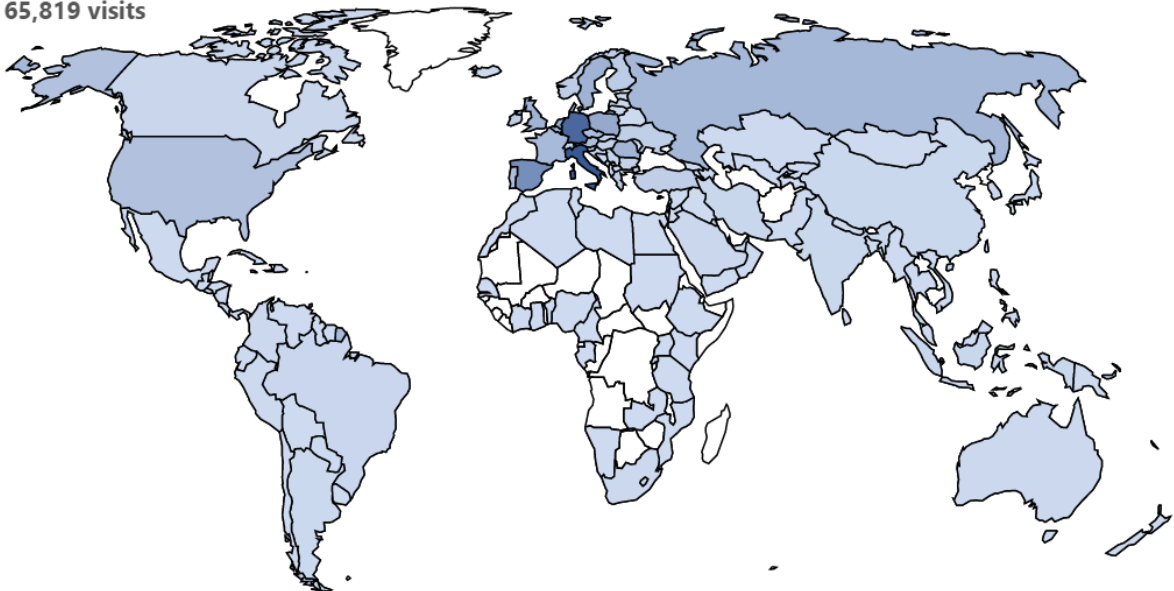
Countries   World-Wide ▼   Visits ▼

— Visits

560

280

0

Mon, Sep 17   Fri, Nov 9   Tue, Jan 1   Sat, Feb 23   Wed, Apr 17
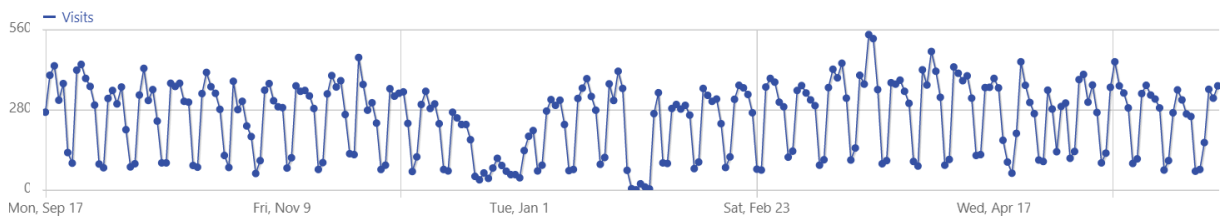
Continent

CONTINENT	▼ VISITS
Europe	59,327
Asia	2,044
North America	1,998
Unknown	1,225
South America	619
Africa	366
Oceania	178
Central America	62

Country

COUNTRY		▼ VISITS
Italy		9,115
Germany		8,028
Spain	📇 〽️	5,237
Poland		3,305
Netherlands		3,096
United Kingdom		2,661
Sweden		2,612
Romania		2,529
Russia		2,269
France		2,189