



INSPIRE Monitoring and Reporting 2021

JRC INSPIRE Team



14th MIG meeting – November 25, 2021

INSPIRE Monitoring and Reporting 2021

- Based on [Commission Decision 2019/1372](#):
 - **19 indicators** calculated from the metadata of spatial data sets & spatial data services published by Member States through discovery services

DECISIONS

COMMISSION IMPLEMENTING DECISION (EU) 2019/1372

of 19 August 2019

implementing Directive 2007/2/EC of the European Parliament and of the Council as regards monitoring and reporting

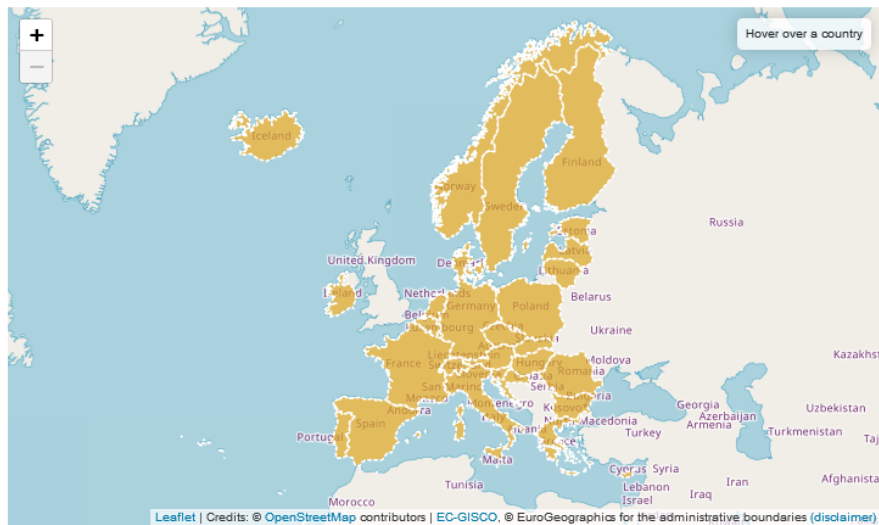
(notified under document C(2019) 6026)

(Text with EEA relevance)

INSPIRE Monitoring and Reporting 2021

- INSPIRE Geoportal

INSPIRE Data Sets - EU & EFTA Country overview



INSPIRE Geoportal Data Set Statistics

91433

Metadata records

44828

Downloadable Data Sets

46442

Viewable Data Sets

Spatial scope coverage: National Regional

Select a COUNTRY

Austria	630 449 492	Finland	597 88 238	Latvia	166 100 99	Portugal	622 350 496
Belgium	577 377 488	France	218 75 17	Liechtenstein	69 10 12	Romania	103 35 38
Bulgaria	263 97 99	Germany	65393 41149 42184	Lithuania	132 126 59	Slovakia	345 83 96
Croatia	146 10 22	Greece	59 59 59	Luxembourg	304 283 243	Slovenia	91 12 32
Cyprus	42 32 34	Hungary	121 23 20	Malta	150 149 150	Spain	246 75 164
Czech Republic	165 60 87	Iceland	147 7 0	Netherlands	220 126 146	Sweden	245 189 217
Denmark	207 113 99	Ireland	76 0 0	Norway	161 71 28	Switzerland	218 2 4
Estonia	87 41 54	Italy	19470 528 668	Poland	163 109 97		

<https://inspire-geoportal.ec.europa.eu>

- INSPIRE Reference Validator

European Commission | English | Search

European Commission > INSPIRE > Validator > Test selection

INSPIRE Reference Validator - Test selection

Home | Test selection | Test reports | Get support | More on the INSPIRE Reference Validator

Configure your test

Select the INSPIRE resource you would like to test

Metadata
 View Service
 Download Service
 Discovery Service
 Data set

Select the Technical Guidelines version

Version 1.3 - DEPRECATED
 Version 2.0

Select the type of metadata record(s) to be tested

Data sets and data set series
 Network Service
 Spatial Data Service

Advanced options

Provide the resource to test

Select the input type and upload or link the resource

Select one or multiple XML/GML files or ZIP files containing XML/GML files. The Maximum size of each uploaded file is 50 MB. The upload starts immediately after selecting the files. The 'Start' button is unlocked when the upload has been successfully completed.

File upload | Upload file*
Maximum size is 50 MB.
Encrypted documents and those containing macros are not accepted.

Choose files

Provide a label for your test report (optional)
Your test report will appear with the label below; edit the text if you wish to change it.

Test run on 18:07 - 28.09.2021 with test suite Conformance Class 2b: INSPIRE data sets and data set series metadata for Monitoring

Start test >

<https://inspire.ec.europa.eu/validator>

Monitoring and Reporting 2021 – Indicators

- Indicators grouped into 5 categories:

- availability of spatial data and services
 - DSi1.1, DSi1.2, DSi1.3, DSi1.4, DSi1.5

absolute values

- conformity of metadata
 - MDi1.1, MDi1.2
- conformity of spatial data sets
 - DSi2, DSi2.1, DSi2.2, DSi2.3
- accessibility of spatial data sets
 - NSi2, NSi2.1, NSi2.2
- conformity of network services
 - NSi4, NSi4.1, NSi4.2, NSi4.3, NSi4.4

relative values
(percentages)

Monitoring and Reporting 2021 – Indicators

- Indicators grouped into 5 categories:

- availability of spatial data and services

- DSi1.1, DSi1.2, DSi1.3, DSi1.4, DSi1.5

- conformity of metadata

- MDi1.1, MDi1.2

- conformity of spatial data sets

- DSi2, DSi2.1, DSi2.2, DSi2.3

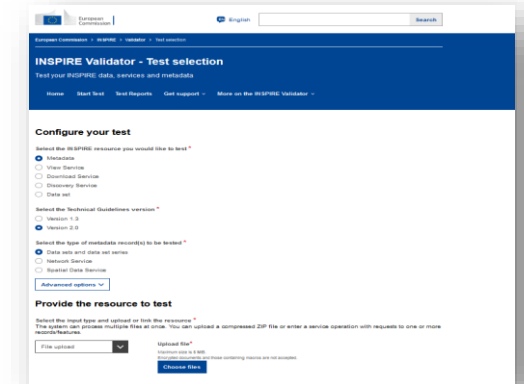
- accessibility of spatial data sets

- NSi2, NSi2.1, NSi2.2

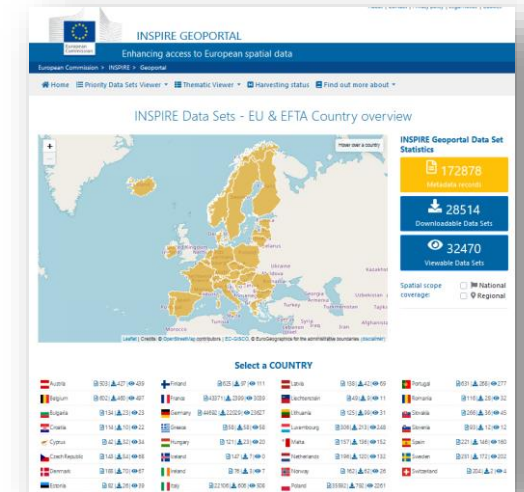
- conformity of network services

- NSi4, NSi4.1, NSi4.2, NSi4.3, NSi4.4

**INSPIRE
Reference
Validator**
(metadata
validation)

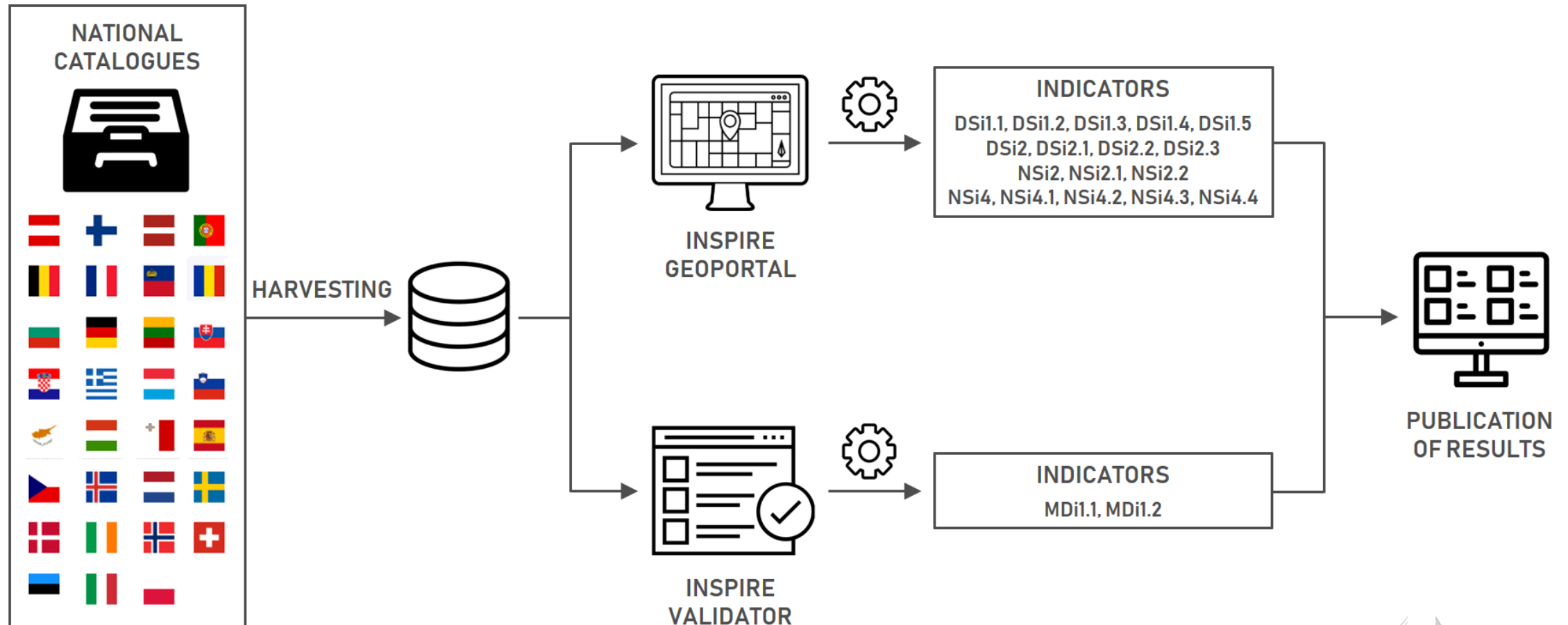


**INSPIRE
Geoportal**
(linkages check)



Monitoring and Reporting 2021 – Process

- Overall process:



INSPIRE Geoportal – Preparation for Monitoring and Reporting 2021

- Preview of values of the 17 indicators calculated by the Geoportal through the harvest console:



RO

RO_ANCPI - Serviciul de căutare al geoportalului INSPIRE al României

ANCPI

Fri Sep 10 2021
12:48:03 GMT+0200
(Central European Summer Time)
[Check last report](#)

Check and publish

Schedule a new harvest

Pending publish

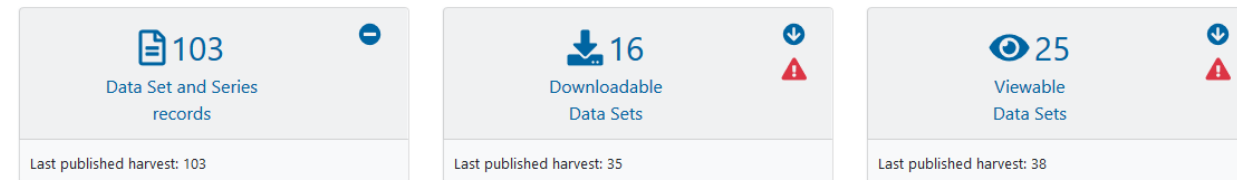
INSPIRE Geoportal – Preparation for Monitoring and Reporting 2021

- Preview of values of the 17 indicators calculated by the Geoportal through the harvest console:

Harvesting report

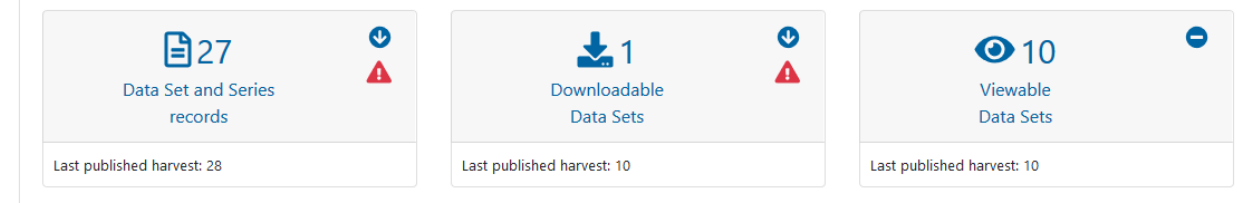
Executed on 2021-09-10 12:48:02. Retrieved metadata records count: 179

Complete overview of the harvest session



Filtered results

By Priority Datasets



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

Calculate indicators

Do not publish yet

Publish

INSPIRE Geoportal – Preparation for Monitoring and Reporting 2021

- In view of the transition to the new backend, focus is placed on solving the most relevant issues having an impact on Monitoring and Reporting:
 - bugs on the calculation of specific indicators (e.g. DSi2.2 and NSi4.1, reported by BE)
 - issues with harvests (recently reported by DE, EE, PT, AT, SK)
 - prioritisation of issues open in the helpdesk

INSPIRE Reference Validator – Releases

Annual releases

As mentioned above, several releases of the INSPIRE Reference Validator are scheduled each year with the main goal of concentrating breaking changes in the first half of the year in order to produce the major release used for the end-of-year Monitoring process already in June. The scheduled annual releases are described in detail in the next sub-sections. In addition to the different infrastructure and deployment environments, the different releases are managed using different branches of the *ets-repository* repository.

For simplicity, the descriptions make explicit reference to releases in the years 2021/2022, but the same release schedule will be applied consistently over the following years:

- v2021.1 - 15/03/2021: it includes both breaking and non-breaking changes.
- v2021.2 - 15/06/2021: it includes both breaking and non-breaking changes.
- v2022.b - 15/06/2021: it includes both breaking and non-breaking changes which are planned to become effective (for Monitoring purposes) in the following year. **used for Monitoring and Reporting 2021**
- v2021.3 - 15/09/2021: it only includes non-breaking changes, so that any INSPIRE resource passing the test in the previous release automatically passes the same test in this release. This release is the one used for the end-of-year Monitoring process.
- v2022.0 - 15/01/2022: it includes both breaking and non-breaking changes, including those available in the beta instance of the previous year.

INSPIRE Reference Validator – Preparation for Monitoring and Reporting 2021

- Conformance Class 2 *INSPIRE data sets and data set series interoperability metadata* will be added (compared to last year):
 - included by default when validating data set metadata in the new UI

Select the type of metadata record(s) to be tested

- Data sets and data set series
- Network Service
- Spatial Data Service

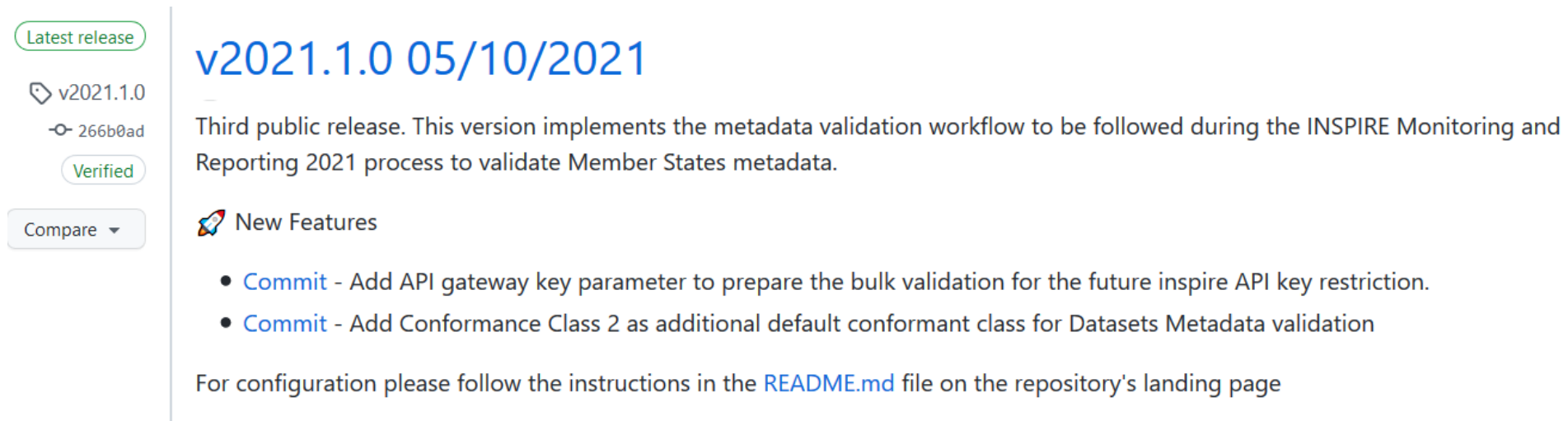
Advanced options ^

Select the conformance classes to be assessed

- Common Requirements for ISO/TC 19139:2007 based INSPIRE metadata records ([source](#))
- Conformance Class 1: 'Baseline metadata for data sets and data set series' ([source](#))
- Conformance Class 2: 'INSPIRE data sets and data set series interoperability metadata' ([source](#))
- Conformance Class 2b: 'INSPIRE data sets and data set series metadata for Monitoring' ([source](#))

Bulk validation tool – v.2021.1.0

- Allows to validate large numbers of metadata:
 - using the Validator [API](#)
 - based on [Pentaho Data Integration \(PDI\)](#)
- New version including the additional Conformance Class 2:
 - to be used with [your own instance](#) of the INSPIRE Reference Validator!



The screenshot shows the GitHub release page for the Bulk validation tool. On the left sidebar, there is a 'Latest release' badge, the version 'v2021.1.0', a commit hash '266b0ad', a 'Verified' badge, and a 'Compare' dropdown menu. The main content area displays the release title 'v2021.1.0 05/10/2021' in blue. Below the title, it states 'Third public release. This version implements the metadata validation workflow to be followed during the INSPIRE Monitoring and Reporting 2021 process to validate Member States metadata.' A 'New Features' section with a rocket icon lists two bullet points: 'Commit - Add API gateway key parameter to prepare the bulk validation for the future inspire API key restriction.' and 'Commit - Add Conformance Class 2 as additional default conformant class for Datasets Metadata validation'. At the bottom, it says 'For configuration please follow the instructions in the [README.md](#) file on the repository's landing page'.

<https://github.com/inspire-eu-validation/monitoring-bulk-validation-tool/releases/tag/v2021.1.0>

Monitoring and Reporting 2020 – Dashboard

- Landing page:
 - number of data sets, data set series & services for all countries
 - documentation to help understand the results

The screenshot displays the INSPIRE GEOPORTAL dashboard for Monitoring and Reporting 2020. The page header includes the European Commission logo and navigation links. The main content area is a grid of 32 country-specific cards, each showing counts for Metadata, Dataset, Services, and Series. Below the grid, there is a 'Documentation' section with links to various guides.

Country	Metadata	Dataset	Services	Series
Austria	509	510	0	
Belgium	594	241	44	
Bulgaria	135	8	0	
Croatia	93	139	23	
Cyprus	30	44	0	
Czech Republic	116	182	26	
Denmark	182	203	0	
Estonia	84	109	2	
Finland	571	207	59	
France	45749	49327	1121	
Germany	57974	88068	531	
Greece	59	21	0	
Hungary	104	46	0	
Iceland	148	11	0	
Ireland	76	22	0	
Italy	18864	2646	380	
Latvia	157	234	1	
Liechtenstein	60	3	0	
Lithuania	116	97	0	
Luxembourg	304	59	0	
Malta	150	151	0	
Netherlands	217	324	1	
Norway	161	254	0	
Poland	292	287	4	
Portugal	621	605	4	
Romania	104	67	1	
Slovakia	309	285	5	
Slovenia	94	74	0	
Spain	244	281	2	
Sweden	247	207	0	
Switzerland	211	30	1	

Documentation:

- [Commission Implementing Decision \(EU\) 2019/1372 of 19 August 2019 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards monitoring and reporting](#)
- [Guidance document for the calculation of indicators](#)
- [Indicators calculation](#)
- [Guidance on indicator visualisation in the dashboard](#)
- [Information on the software used to calculate the indicators](#)

<https://inspire-geoportal.ec.europa.eu/mr2020.html>

Monitoring and Reporting 2020 – Dashboard

- Country-specific page:
 - overview statistics: number of data sets, data set series & services, number of conformant & non conformant metadata
 - values of Monitoring and Reporting 2020 indicators

<https://inspire-geoportal.ec.europa.eu/mr2020.html>

Finland +

INSPIRE-f670705f-f4e9-11e6-81e4-52540023a883

MD Catalogue URL: <https://www.paikkatietohakemisto.fi/geonetwork/srv/fin/csw>

Endpoint ID: INSPIRE-f670705f-f4e9-11e6-81e4-52540023a883

The date of harvest metadata: Sun, 17 Jan 2021 23:03:02 GMT

Overview statistics of the harvested metadata

Dataset: 571	Series: 59	Services: 207
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Results of evaluation using [INSPIRE Reference Validator](#)

Metadata Dataset		Metadata Services	
Conformant: 253	NOT Conformant: 377	Conformant: 36	NOT Conformant: 171
Click to download the test reports of failed records		Click to download the test reports of failed records	

Summary of metadata failing validation in [this endpoint](#) (batch file identifier, metadata identifier, metadata type, total number and ids of failed test assertions)
 Summary of metadata failing validation in [all endpoints](#) (see "readme" sheet for details)

Monitoring Indicators 2020

Availability		Conformity	
Monitoring of the availability of spatial data and service			
586 DSi1.1 =	204 DSi1.2 ↑	Monitoring of the conformity of metadata	
19 DSi1.3 =		★☆☆☆☆ MDi1.1 ↑	★☆☆☆☆ MDi1.2 ↑
49 DSi1.4 ↑	231 DSi1.5 ↑	Monitoring of the conformity of spatial data sets	
★☆☆☆☆ DSi2 ↑			
Monitoring of the accessibility of spatial data sets through view and download services		★☆☆☆☆ DSi2.1 ↑	★☆☆☆☆ DSi2.2 ↑
★☆☆☆☆ NSi2 ↓		★☆☆☆☆ DSi2.3 ↑	★☆☆☆☆ NSi4 =
★☆☆☆☆ NSi2.1 =	★☆☆☆☆ NSi2.2 ↓	Monitoring of the conformity of the network services	
★☆☆☆☆ NSi4.1 =		★☆☆☆☆ NSi4.2 =	★☆☆☆☆ NSi4.3 =
Not available NSi4.4			

Monitoring and Reporting 2020 – Dashboard

- New visualization of indicators

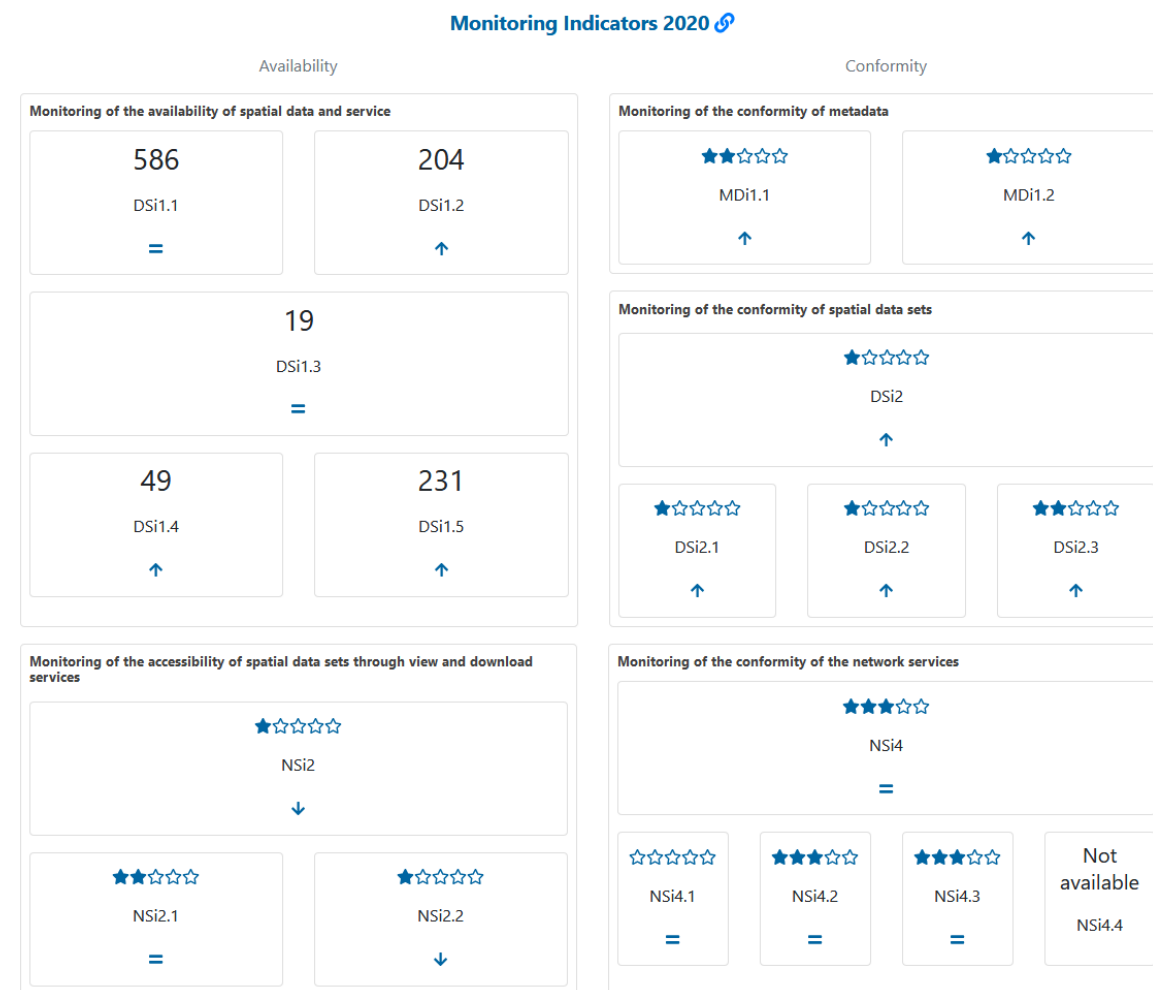
- star-based scoring system (for percentage indicators):

- ☆☆☆☆☆ $0 \leq X < 10\%$
- ★☆☆☆☆ $10\% \leq X < 30\%$
- ★★☆☆☆ $30\% \leq X < 50\%$
- ★★★☆☆ $50\% \leq X < 70\%$
- ★★★★☆ $70\% \leq X < 90\%$
- ★★★★★ $90\% \leq X \leq 100\%$

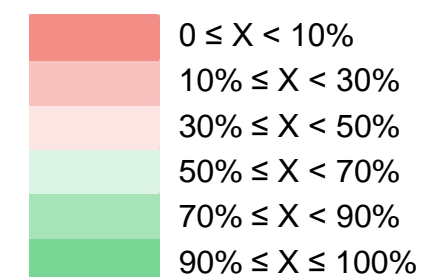
- comparison against 2019 results:

- for relative number indicators:
 - ↑ increase of at least 10%
 - ↓ decrease of at least 10%
 - = increase or decrease of less than 10%
 - for absolute number indicators:

same rule but considering 10% of the 2019 values

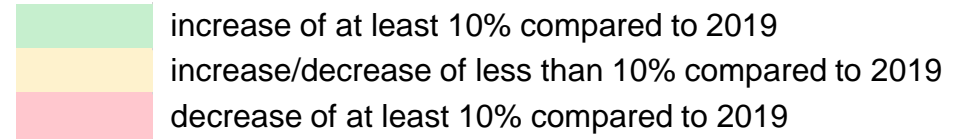


Where do we start from – 2020 performance



	DSi1.1	DSi1.2	DSi1.3	DSi1.4	DSi1.5	MDi1.1	MDi1.2	DSi2	DSi2.1	DSi2.2	DSi2.3	NSi2	NSi2.1	NSi2.2	NSi4	NSi4.1	NSi4.2	NSi4.3	NSi4.4
AT	509	510	137	265	244	95%	92%	66%	75%	69%	61%	83%	93%	85%	93%	100%	89%	97%	#N/A
BE	636	241	355	531	94	86%	49%	62%	95%	22%	65%	86%	89%	90%	88%	67%	89%	88%	#N/A
BG	132	8	115	42	79	0%	0%	85%	82%	11%	97%	58%	60%	58%	50%	50%	100%	0%	#N/A
CH	212	30	0	0	1	0%	0%	2%	7%	2%	0%	1%	2%	1%	0%	0%	0%	0%	#N/A
CY	30	44	9	0	0	0%	0%	3%	0%	50%	0%	40%	53%	80%	0%	#N/A	0%	0%	#N/A
CZ	142	182	33	55	84	58%	79%	39%	87%	73%	24%	37%	62%	40%	80%	100%	75%	84%	100%
DE	58504	88068	144	2098	135	19%	80%	55%	58%	50%	55%	61%	64%	63%	98%	100%	98%	99%	#N/A
DK	180	203	48	0	178	63%	99%	52%	95%	38%	48%	32%	44%	40%	91%	#N/A	89%	92%	#N/A
EE	86	109	24	0	86	100%	100%	100%	100%	100%	100%	42%	56%	42%	96%	0%	94%	100%	#N/A
EL	59	21	54	0	35	98%	100%	3%	40%	#N/A	0%	100%	100%	100%	5%	100%	0%	0%	#N/A
ES	246	281	91	47	181	96%	98%	68%	93%	89%	61%	65%	76%	68%	71%	100%	67%	85%	#N/A
FI	586	204	19	49	231	43%	18%	25%	16%	15%	33%	15%	40%	20%	54%	0%	53%	58%	#N/A
FR	45587	49326	136	0	89	0%	0%	9%	10%	12%	9%	0%	5%	1%	1%	6%	2%	0%	0%
HR	116	139	16	0	56	51%	100%	13%	6%	7%	13%	2%	16%	6%	37%	33%	28%	53%	#N/A
HU	110	48	19	0	1	0%	0%	31%	36%	28%	35%	4%	5%	8%	17%	60%	10%	15%	#N/A
IE	76	22	42	0	76	96%	5%	100%	100%	100%	100%	0%	0%	0%	100%	100%	100%	100%	#N/A
IS	148	11	0	2	42	27%	36%	34%	94%	100%	93%	0%	0%	21%	83%	#N/A	67%	100%	#N/A
IT	19122	2645	128	9572	813	51%	5%	8%	6%	11%	12%	1%	3%	1%	1%	0%	2%	0%	0%
LI	60	3	0	0	47	0%	0%	15%	11%	17%	9%	15%	20%	17%	0%	#N/A	0%	0%	#N/A
LT	116	97	93	0	116	96%	100%	98%	97%	100%	99%	31%	31%	89%	94%	100%	90%	98%	#N/A
LU	304	59	92	0	304	99%	98%	70%	100%	92%	59%	84%	88%	94%	100%	100%	100%	100%	#N/A
LV	158	234	61	0	0	0%	0%	73%	76%	63%	79%	53%	59%	55%	4%	#N/A	6%	2%	#N/A
MT	150	151	51	0	150	70%	89%	95%	93%	100%	94%	81%	98%	83%	0%	0%	0%	0%	#N/A
NL	218	324	36	0	207	22%	67%	47%	67%	64%	38%	57%	63%	61%	92%	#N/A	93%	92%	#N/A
NO	161	254	14	2	158	1%	0%	43%	68%	43%	37%	14%	17%	42%	0%	0%	0%	0%	#N/A
PL	296	287	60	1	122	36%	6%	40%	91%	13%	29%	16%	17%	34%	83%	100%	72%	88%	#N/A
PT	625	605	145	233	292	55%	41%	41%	65%	41%	38%	56%	80%	64%	55%	#N/A	56%	53%	#N/A
RO	105	67	28	15	88	93%	97%	38%	70%	31%	29%	30%	33%	30%	89%	100%	93%	83%	#N/A
SE	247	206	58	0	247	91%	75%	100%	99%	100%	100%	72%	81%	81%	100%	100%	99%	100%	#N/A
SI	94	74	9	0	80	70%	89%	61%	75%	57%	62%	12%	40%	16%	92%	#N/A	86%	100%	#N/A
SK	286	285	61	5	198	60%	75%	3%	5%	3%	1%	21%	27%	24%	31%	14%	29%	34%	0%

Where do we start from – Comparison against 2019



	DSi1.1	DSi1.2	DSi1.3	DSi1.4	DSi1.5	MDi1.1	MDi1.2	DSi2	DSi2.1	DSi2.2	DSi2.3	NSi2	NSi2.1	NSi2.2	NSi4	NSi4.1	NSi4.2	NSi4.3	NSi4.4
AT	509	510	137	265	244	95%	92%	66%	75%	69%	61%	83%	93%	85%	93%	100%	89%	97%	#N/A
BE	636	241	355	531	94	86%	49%	62%	95%	22%	65%	86%	89%	90%	88%	67%	89%	88%	#N/A
BG	132	8	115	42	79	0%	0%	85%	82%	11%	97%	58%	60%	58%	50%	50%	100%	0%	#N/A
CH	212	30	0	0	1	0%	0%	2%	7%	2%	0%	1%	2%	1%	0%	0%	0%	0%	#N/A
CY	30	44	9	0	0	0%	0%	3%	0%	50%	0%	40%	53%	80%	0%	#N/A	0%	0%	#N/A
CZ	142	182	33	55	84	58%	79%	39%	87%	73%	24%	37%	62%	40%	80%	100%	75%	84%	100%
DE	58504	88068	144	2098	135	19%	80%	55%	58%	50%	55%	61%	64%	63%	98%	100%	98%	99%	#N/A
DK	180	203	48	0	178	63%	99%	52%	95%	38%	48%	32%	44%	40%	91%	#N/A	89%	92%	#N/A
EE	86	109	24	0	86	100%	100%	100%	100%	100%	100%	42%	56%	42%	96%	0%	94%	100%	#N/A
EL	59	21	54	0	35	98%	100%	3%	40%	#N/A	0%	100%	100%	100%	5%	100%	0%	0%	#N/A
ES	246	281	91	47	181	96%	98%	68%	93%	89%	61%	65%	76%	68%	71%	100%	67%	85%	#N/A
FI	586	204	19	49	231	43%	18%	25%	16%	15%	33%	15%	40%	20%	54%	0%	53%	58%	#N/A
FR	45587	49326	136	0	89	0%	0%	9%	10%	12%	9%	0%	5%	1%	1%	6%	2%	0%	0%
HR	116	139	16	0	56	51%	100%	13%	6%	7%	13%	2%	16%	6%	37%	33%	28%	53%	#N/A
HU	110	48	19	0	1	0%	0%	31%	36%	28%	35%	4%	5%	8%	17%	60%	10%	15%	#N/A
IE	76	22	42	0	76	96%	5%	100%	100%	100%	100%	0%	0%	0%	100%	100%	100%	100%	#N/A
IS	148	11	0	2	42	27%	36%	34%	94%	100%	93%	0%	0%	21%	83%	#N/A	67%	100%	#N/A
IT	19122	2645	128	9572	813	51%	5%	8%	6%	11%	12%	1%	3%	1%	1%	0%	2%	0%	0%
LI	60	3	0	0	47	0%	0%	15%	11%	17%	9%	15%	20%	17%	0%	#N/A	0%	0%	#N/A
LT	116	97	93	0	116	96%	100%	98%	97%	100%	99%	31%	31%	89%	94%	100%	90%	98%	#N/A
LU	304	59	92	0	304	99%	98%	70%	100%	92%	59%	84%	88%	94%	100%	100%	100%	100%	#N/A
LV	158	234	61	0	0	0%	0%	73%	76%	63%	79%	53%	59%	55%	4%	#N/A	6%	2%	#N/A
MT	150	151	51	0	150	70%	89%	95%	93%	100%	94%	81%	98%	83%	0%	0%	0%	0%	#N/A
NL	218	324	36	0	207	22%	67%	47%	67%	64%	38%	57%	63%	61%	92%	#N/A	93%	92%	#N/A
NO	161	254	14	2	158	1%	0%	43%	68%	43%	37%	14%	17%	42%	0%	0%	0%	0%	#N/A
PL	296	287	60	1	122	36%	6%	40%	91%	13%	29%	16%	17%	34%	83%	100%	72%	88%	#N/A
PT	625	605	145	233	292	55%	41%	41%	65%	41%	38%	56%	80%	64%	55%	#N/A	56%	53%	#N/A
RO	105	67	28	15	88	93%	97%	38%	70%	31%	29%	30%	33%	30%	89%	100%	93%	83%	#N/A
SE	247	206	58	0	247	91%	75%	100%	99%	100%	100%	72%	81%	81%	100%	100%	99%	100%	#N/A
SI	94	74	9	0	80	70%	89%	61%	75%	57%	62%	12%	40%	16%	92%	#N/A	86%	100%	#N/A
SK	286	285	61	5	198	60%	75%	3%	5%	3%	1%	21%	27%	24%	31%	14%	29%	34%	0%

Thank you!



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