



Calculation of INSPIRE Monitoring and Reporting indicators

M&R Indicators

Monitoring of the availability of spatial data and services (1/2)

- Indicators on data set, series and services metadata

DSi1.1	The number of spatial data sets for which metadata exist	Number of all data set and series metadata records published by the Member States in their registered discovery services.
DSi1.2	The number of spatial data services for which metadata exist	Number of all spatial data services metadata records published by the Member States in their registered discovery services.

- The INSPIRE Geoportal evaluates metadata records, obtained from all the registered services available by **December 15th** of every year.
- For these indicators, the INSPIRE Geoportal ignores any omissions or errors in the **theme keyword** element.
- INSPIRE Geoportal (based on GeoNetwork) is, by design, not able to store metadata **duplicates**.

M&R Indicators

Monitoring of the availability of spatial data and services (2/2)

- Priority Data Set keyword

DSi1.3	The number of spatial data sets for which the metadata contains one or more keywords from a register provided by the Commission indicating that the spatial data set is used for reporting under the environmental legislation	Number of metadata records tagged with one or more Priority data set keywords in the metadata "Keyword" element.
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- Spatial Scope keyword

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	Number of metadata records tagged with the " Regional " value as SpatialScope keyword in the metadata "Keyword" element.
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	Number of metadata records tagged with the " National " value as SpatialScope keyword in the metadata "Keyword" element.

- For the above indicators, INSPIRE Geoportal considers every metadata record with at least one keyword ID (extracted from gmx:anchor/@xlink:href) **matched against the IDs of the proper metadata code lists** (Spatial Scope, Priority Data sets) values.

M&R Indicators

Monitoring of the conformity of metadata

- Conformity of metadata, **validated by the INSPIRE Reference Validator**

MDi1.1	Percentage of metadata for spatial data sets conformant with Commission Regulation (EC) No 1205/2008 as regards metadata	<p>This percentage value is obtained as $P_{MDi1.1} = N \times 100 \div DSi1.1$</p> <p>Where N is the number of conformant metadata records the INSPIRE Geoportal verifies, that successfully pass the following tests:</p> <ul style="list-style-type: none">• “Conformance Class 2: INSPIRE data sets and data set series interoperability metadata” and “Conformance Class 2b: INSPIRE data sets and data set series metadata for Monitoring” for Spatial data sets and series
MDi1.2	Percentage of metadata for spatial data services conformant with Commission Regulation (EC) No 1205/2008 as regards metadata	<p>This percentage value is obtained as $P_{MDi1.2} = N \times 100 \div DSi1.2$</p> <p>Where N is the number of conformant metadata records the INSPIRE Geoportal verifies, that successfully pass the following tests:</p> <ul style="list-style-type: none">• “Conformance Class 4: INSPIRE Network Services metadata”, for Network Services• “Conformance Class 5: INSPIRE Invocable Spatial Data Services metadata”, for Invocable Spatial Data Services

- Starting from the 2020 Monitoring and Reporting exercise, only MD TG v2.x will be accepted.

M&R Indicators

Monitoring of the conformity of spatial data sets

- Declared conformity of metadata and Annex I/II/III

DSi2	Percentage of spatial data sets that are in conformity with Commission Regulation (EU) No 1089/2010 as regards interoperability of spatial data sets	The percentage value is obtained as $P_{DSi2.x} = N \times 100 \div DSi1.1$ For DSi2 indicator , N is the number of metadata dataset records with the declared conformity with Regulation 1089/2010. For instance, in the metadata the conformity could be expressed with:
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	<pre><gmd:title> <gmx:Anchor link:href="http://data.europa.eu/eli/reg/2010/1089"> COMMISSION REGULATION (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services </gmx:Anchor> </gmd:title></pre> <p>See note [1] below for the complete requirement.</p>
DSi2.2	Percentage of spatial data sets, corresponding to the themes listed in Annex II , that are in conformity with Commission Regulation (EU) No 1089/2010 as regards interoperability of spatial data sets	For DSi2.x indicators , it also taken into account the presence of at least one INSPIRE theme keyword listed in the respective Annex. For instance, in the metadata the theme keyword could be expressed with:
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	<pre><gmd:keyword> <gmx:Anchor xlink:href="http://inspire.ec.europa.eu/theme/ac">Atmospheric conditions</gmx:Anchor> </gmd:keyword></pre> <p>See note [2] for the complete requirement.</p>

- 1) For the "Conformity" element, refer to [chapter 2.4.1 of MD TG v2.2.1](#)
- 2) For the Keywords for Spatial Data Theme, refer to [chapter 3.1.2.2 of MD TG v2.2.1](#)

M&R Indicators

Monitoring of the accessibility of spatial data sets through view and download services

- Downloadable and Viewable

NSi2	The percentage of spatial data sets that are accessible through view and the download services	The percentage value is obtained as $P_{NSi2.x} = N \times 100 \div DSi1.1$ Where N is the number the INSPIRE Geoportal considers: <ul style="list-style-type: none">• as viewable, every data set for which at least one view network service could be correctly established/linked• as downloadable, every data set for which at least one download network service could be established/linked
NSi2.1	The percentage of spatial data sets that are accessible through view services	
NSi2.2	The percentage of spatial data sets that are accessible through download services	

M&R Indicators

Monitoring of the conformity of network services

- Declared conformity of Network Services (1/2)

NSi4	Percentage of the network services that are in conformity with Commission Regulation (EC) No 976/2009 as regards the Network Services	<p>The type of network service identification is based on:</p> <ul style="list-style-type: none">• Metadata element "Spatial Data Service Type", expressed for example as: <pre><srv:serviceType> <gco:LocalName codeSpace="http://inspire.ec.europa.eu/metadata-codelist/SpatialDataServiceType">view</gco:LocalName> </srv:serviceType></pre> <p>The formulas are expressed in the next slide.</p>
NSi4.1	Percentage of the discovery services that are in conformity with Commission Regulation (EC) No 976/2009 as regards the Network Services	
NSi4.2	Percentage of the view services that are in conformity with Commission Regulation (EC) No 976/2009 as regards the Network Services	
NSi4.3	Percentage of the download services that are in conformity with Commission Regulation (EC) No 976/2009 as regards the Network Services	
NSi4.4	Percentage of the transformation services that are in conformity with Commission Regulation (EC) No 976/2009 as regards the Network Services	

M&R Indicators

Monitoring of the conformity of network services

- Declared conformity of Network Services (2/2)

NSi4	Percentage of the network services that are in conformity with Commission Regulation (EC) No 976/2009 as regards the Network Services	$P_{NS} = \sum_{ns \in \{DS, VW, DW, TS\}} N_{ns} \times 100 \div \sum_{ns \in \{DS, VW, DW, TS\}} T_{ns}$	<p>N_x represent the number of that specific type of network services, in conformity with the Regulation No 976/2009</p> <p>T_x represent the total number of that specific type of network services</p>
NSi4.1	Percentage of the discovery services that are in conformity with Commission Regulation (EC) No 976/2009 as regards the Network Services	$P_{DS} = N_{DS} \times 100 \div T_{DS}$	
NSi4.2	Percentage of the view services that are in conformity with Commission Regulation (EC) No 976/2009 as regards the Network Services	$P_{VW} = N_{VW} \times 100 \div T_{VW}$	
NSi4.3	Percentage of the download services that are in conformity with Commission Regulation (EC) No 976/2009 as regards the Network Services	$P_{DW} = N_{DW} \times 100 \div T_{DW}$	
NSi4.4	Percentage of the transformation services that are in conformity with Commission Regulation (EC) No 976/2009 as regards the Network Services	$P_{TS} = N_{TS} \times 100 \div T_{TS}$	