

# Open source geospatial software powering policy implementation: the INSPIRE central infrastructure components

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FOSS4G 2021 – 1 October 2021



# INSPIRE Directive

DIRECTIVE 2007/2/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL  
of 14 March 2007

establishing an Infrastructure for Spatial Information in the European Community (INSPIRE)

- Aims to create a **European SDI** to support EU environmental policies aligned with the current **green and digital policy context**.
- Provides a comprehensive framework for **interoperability of spatial data**:
  - **data & service sharing**
  - **data & service discovery (metadata)**
  - **network services**
- based on the SDIs established and operated by the EU Member States.

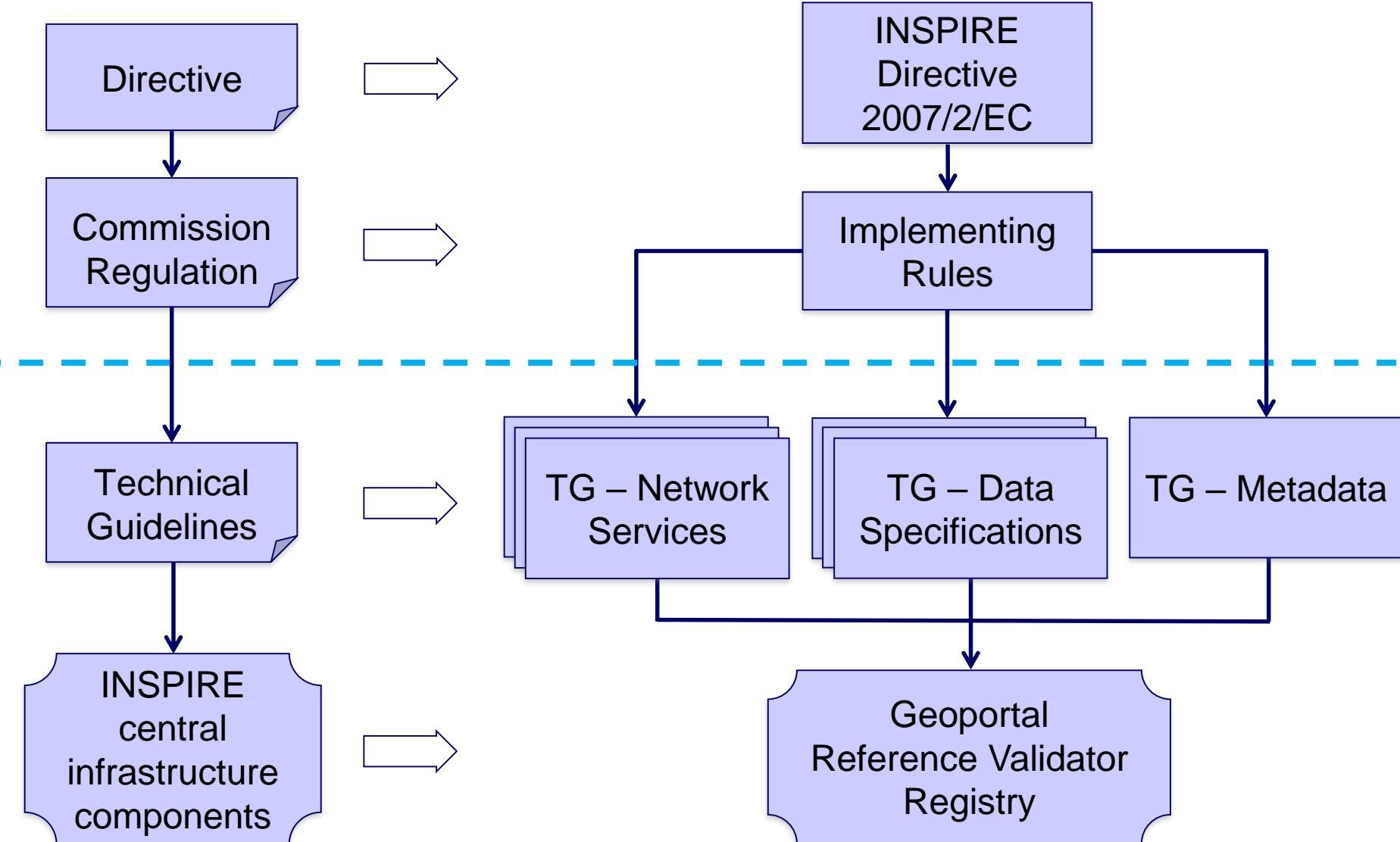
# Implementing Rules, Technical Guidelines and central components

“What Member States must implement”  
(abstract specification)

**legally binding**

**not legally binding**

“How Member States might implement it”  
(implementation specification)



# INSPIRE central infrastructure components

- Sustainable evolution of the INSPIRE central infrastructure components by:
  - focusing on the **INSPIRE specificity** and not on mainstream tool development
  - using of existing, mature **open source** software
  - harmonising the approach for **helpdesks**
  - extensively using the **cloud** to host the tools
  - improving transparency and dialogue with Member States
  - building **strategic partnerships** with stakeholders & communities (incl. OSGeo)



Sustainability of the INSPIRE core infrastructure components – Analysis and recommendations

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# INSPIRE Geoportal

# INSPIRE Geoportal

- Central point of access to all data shared under INSPIRE:
  - harvests national catalogues (does not store any data)
  - allows to search, view and download datasets
  - available filters:
    - priority datasets for environmental reporting
    - INSPIRE data themes

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## Welcome to the INSPIRE Geoportal

The INSPIRE Geoportal is the central European access point to the data provided by EU Member States and several EFTA countries under the INSPIRE Directive. The Geoportal allows:

- monitoring the availability of INSPIRE data sets;
- discovering suitable data sets based on their descriptions (metadata);
- accessing the selected data sets through their view or download services.

The metadata used in the Geoportal are regularly harvested from the discovery services of EU Member States and EFTA countries. The status of harvesting is available [here](#).

Feedback regarding the functionality as well as data set availability is welcome [here](#).

### Priority Data Sets Viewer

Credits: Map data Google| Map style: snazzymap| Icon: Nick Roach

The application displays the availability and provides access to the selected priority data sets used for environmental reporting. It allows filtering by environmental domain, environmental legislation and country, as well as individual priority data sets.

[Browse Priority Data Sets](#)

### INSPIRE Thematic Viewer

Credits: Map data Google| Map style: snazzymap| Icon: INSPIRE

The application displays the availability and provides access to all EU MS data sets falling under the scope of INSPIRE Directive filtered by data themes and countries (i.e. Annex I, II and III).

[Browse INSPIRE Thematic Data Sets](#)

# INSPIRE Geoportal

- Filtering for priority datasets:
  - by environmental domain

**Environmental Domains**  
Explore Member States' priority data sets grouped by the following Environmental Domains or individual data sets.

Domains    Thematic Grouping    List of data sets

 Air  
Covers ambient air quality and cleaner air for Europe ...  
  
   113 | 46 | 38

 Nature  
Covers conservation of natural habitats and wild fauna and flora, wild birds...  
  
   310 | 215 | 198

 Water  
Covers the Water Framework Directives, Urban waste water, bathing water...  
  
   864 | 532 | 457

 Noise  
Covers ambient noise quality and noise for Europe...  
  
   409 | 247 | 228

 Waste  
Covers the landfill of waste, waste from extractive industries, soil...  
  
   28 | 13 | 14

 Industrial emissions  
Covers industrial emissions...  
  
   90 | 38 | 36

 Industrial accidents  
Covers industrial accidents...  
  
   26 | 20 | 20

# INSPIRE Geoportal

- Filtering for priority datasets:
  - by environmental domain
  - by environmental legislation

## Environmental Reporting Legislation

Explore Member States' priority data sets grouped by related e-Reporting legislation.

 Directive 1999/31/EC Landfill of Waste Directive   35    10    11	 Directive 2000/60/EC Water Framework Directive   527    362    285	 Directive 2002/49/EC Noise Directive   504    323    321	 Directive 2006/21/EC Extractive Waste Directive   11    7    8
 Directive 2006/7/EC Bathing Water Directive   28    19    18	 Directive 2007/60/EC Floods Directive   479    175    278	 Directive 2008/50/EC Air Quality Directive   113    46    38	 Directive 2008/56/EC Marine Strategy Framework Directive   78    56    40
 Directive 2009/147/EC Birds Directive   96    63    62	 Directive 2010/75/EU Industrial Emissions Directive   43    18    17	 Directive 2012/18/EU SEVESO III Directive   26    20    20	 Directive 86/278/EEC Sewage Sludge Directive   14    4    4
 Directive 91/271/EEC Urban Waste Water Treatment Directive   94    70    70	 Directive 91/676/EEC Nitrates Directive   61    39    45	 Directive 92/43/EEC Habitats Directive   200    131    115	 Directive 98/83/EC Drinking Water Directive   31    14    12
 Recommendation 2014/70/EU Recommendation on hydraulic fracturing   8    4    4	 Regulation (EC) 166/2006 European Pollutant Release and Transfer Register   51    23    22	 Regulation (EU) 1143/2014 Invasive Alien Species Directive   28    22    22	 Regulation (EU) 2017/852 Mercury Regulation   5    1    1
 EEA Annual Work Programme Nationally designated areas - CDDA   47    34    37	 National legislation National biogeographical regions   20    13    13		

# INSPIRE Geoportal

- Filtering for INSPIRE data themes:

## INSPIRE Data Themes

Explore all Member States' INSPIRE data sets by selecting an INSPIRE data theme.

### Annex I

 Addresses	 Administrative units
— Def.: Location of properties based on address identifiers, usually by road name, house number, postal code.  1 323   39   124	— Def.: Units of administration, dividing areas where Member States...  1 812   89   233

 Cadastral parcels	 Geographical grid systems
— Def.: Areas defined by cadastral registers or equivalent.  1 7956   66   56	— Def.: Harmonised multi resolution grid with a common point of origin...  1 139   19   10

 Geographical names	 Hydrography
— Def.: Names of areas, regions, localities, cities, suburbs...  1 1194   73   88	— Def.: Hydrographic elements, including marine areas and all other water bodies and items related...  1 1273   259   227

 Protected sites	 Coordinate reference systems
— Def.: Area designated or managed within a framework of international, Community and Member States' ...  1 1248   352   376	— Def.: Systems for uniquely referencing spatial information in...  1 156   18   11

 Natural risk zones	 Oceanographic geographical features
— Def.: Vulnerable areas characterised according to natural hazards ...  1 1749   249   464	— Def.: Physical conditions of oceans (currents, salinity, ...  1 206   47   26

 Population distribution - demography	 Production and industrial facilities
— Def.: Geographical distribution...  1 203   71   69	— Def.: Industrial production sites, including installations...  1 366   111   114

 Species distribution	 Sea regions
— Def.: Geographical distribution of occurrence of animal an...  1 246   110   114	— Def.: Physical conditions of seas and saline water bodies ...  1 697   168   238

 Soil	 Statistical units
— Def.: Soils and subsoil characterised according to ...  1 789   31   32	— Def.: Units for dissemination or use of statistical inform...  1 393   130   177

### Annex III

 Atmospheric conditions
— Def.: Physical conditions in the atmosphere. Includes spatial data based on measurements, on models...  1 253   53   115

 Agricultural and aquaculture facilities
— Def.: Farming equipment and production facilities (including irrigation systems, greenhouses...  1 156   35   37

 Area management / restriction / regulation zones and reporting units
— Def.: Areas managed, regulated...  1 1887   701   728

 Bio-geographical regions
— Def.: Areas of relatively homogeneous ecological conditions with common characteristics  1 164   37   37

### Annex II

 Elevation
— Def.: Digital elevation models for land, ice and ocean surface...  1 884   99   231

 Geology
— Def.: Geology characterised according to composition...  1 1197   245   310

 Land cover
— Def.: Physical and biological cover of the earth's surface...  1 937   199   206

 Orthoimagery
— Def.: Geo-referenced image data of the Earth's surface, from either...  1 1138   66   109

 Utility and governmental services
— Def.: Includes utility facilities such as sewage, waste ma...  1 1346   385   462

# INSPIRE Geoportal

## INSPIRE Data Sets - EU & EFTA Country overview



### Select a COUNTRY

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

<https://inspire-geoportal.ec.europa.eu/overview.html?view=thematicEuOverview&theme=none>

# INSPIRE Geoportal

- Access to single datasets:

Data sets by

Country:  Denmark

 Filter results by: ▾

Properties:  
 Downloadable  
 Viewable

Spatial scope coverage:  
 National  
 Regional  
 Other

[Reset](#)

 Countries ▾  
 Themes ▾

Title	Show dataset titles in: original MD language ▾	Properties
 Havbunds sediment 250.000		   
 Jordartskort 1:200.000		   
 INSPIRE_FloodRiskZone_1000aar		   
 INSPIRE_FloodAreas_2016_2021_1000aar		   
 INSPIRE_FloodRiskZone_100aar		   
 INSPIRE_FloodAreas_2016_2021_100aar		   
 DK INSPIRE PS Natura 2000 bird protection areas		   
 DK INSPIRE PS Natura 2000 Habitat Areas		   
 DK INSPIRE AM Surface Water Bodies WFD (2015 - 2021)		   
 DK INSPIRE EF Monitoring Stations WFD (2015 - 2021)		   
Title	Properties	

Show 10 entries Showing 1 to 10 of 207 entries Previous 1 2 3 4 5 ... 21 Next

# INSPIRE Geoportal

- Access to single datasets:
  - metadata
  - view service
  - download service

Data sets by

Country: Denmark

Filter results by:

Properties:  
 Downloadable  
 Viewable

Spatial scope coverage:  
 National  
 Regional  
 Other

[Reset](#)

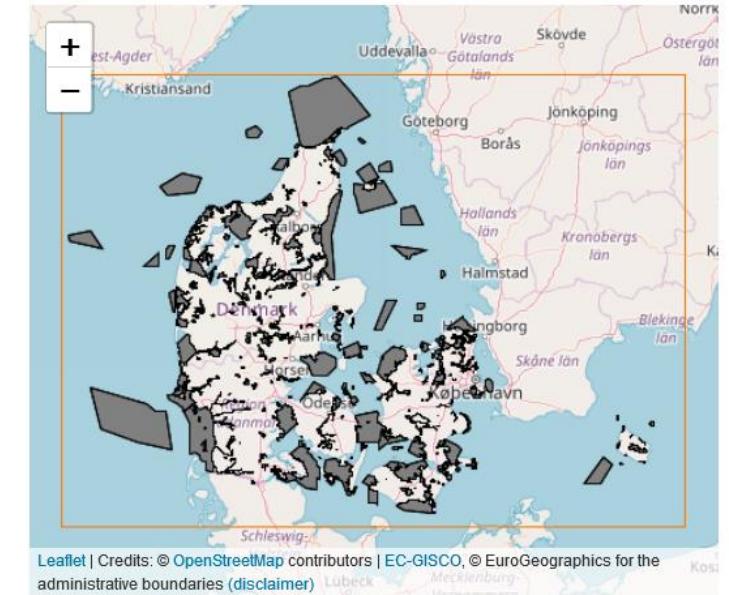
Countries

Themes

Title	Show dataset titles in:	Properties
Havbundssediment 250.000	original MD language	
Jordartskort 1:200.000		
INSPIRE_FloodRiskZone_1000aar		
INSPIRE_FloodAreas_2016_2021_1000aar		
INSPIRE_FloodRiskZone_100aar		
INSPIRE_FloodAreas_2016_2021_100aar		
DK INSPIRE PS Natura 2000 bird protection areas		
<b>DK INSPIRE PS Natura 2000 Habitat Areas</b>		
DK INSPIRE AM Surface Water Bodies WFD (2015 - 2021)		
DK INSPIRE EF Monitoring Stations WFD (2015 - 2021)		

Show 10 entries Showing 1 to 10 of 207 entries Previous 1 2 3 4 5 ... 21 Next

PS.ProtectedSite (PS.ProtectedSite)  
you might need to zoom-in to see the information



Legend

protected sites: polygon

protected sites: line

[Close](#)

# INSPIRE Geoportal – Harvesting status

- **Harvest** of national catalogues:
  - requested by the catalogue responsible (not by us)
  - only when needed, e.g. when there are changes
  - results previewed in a **sandbox** and then accepted

## Harvesting Status

This page informs about statuses of the harvesting of the officially registered Discovery Services of EU and some EFTA countries.

[Geoportal harvest console](#)

Country	Discovery Service Title	Publication date
ES	Official Catalogue of INSPIRE Dataset and Services (CODSI) (CNIG en nombre del Consejo Superior Geográfico)	Tue, 28 Sep 2021 16:47:01 GMT
PL	Geoportal - Polska Usługa Wyszukiwania INSPIRE (Główny Urząd Geodezji i Kartografii (GUGiK))	Mon, 27 Sep 2021 18:08:20 GMT
SE	Nationell svensk metadatakatalog	Mon, 27 Sep 2021 06:13:02 GMT
DK	Geodata-info søgetjeneste (Styrelsen for Dataforsyning og Effektivisering)	Sat, 25 Sep 2021 09:41:58 GMT
AT	INSPIRE Suchdienst Österreich	Fri, 24 Sep 2021 11:55:57 GMT
EE	Estonian INSPIRE Discovery Service	Thu, 23 Sep 2021 05:16:09 GMT
HR	NIPP kataloška usluga	Mon, 13 Sep 2021 13:18:52 GMT
LV	Latvijas metadatu katalogs. GDS (Ģeotelpisko datu savietotājs) (organization name)	Mon, 13 Sep 2021 12:25:04 GMT
BE	Metadata Vlaanderen CSW (Informatie Vlaanderen)	Wed, 08 Sep 2021 11:08:57 GMT
NL	CSW Nationaal Georegister (NGR) (Beheer PDOK)	Tue, 07 Sep 2021 10:28:19 GMT

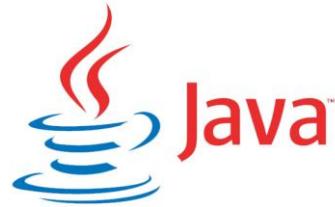
Show 10 entries

Showing 1 to 10 of 35 entries

Previous [1](#) [2](#) [3](#) [4](#) Next

# INSPIRE Geoportal – Architecture

- Backend



- Frontend



# INSPIRE Geoportal – Ongoing developments

- Re-engineered **backend** based on GeoNetwork:
  - aligned with GeoNetwork's plan to move to **micro-services**
  - main focus is on the **harvesting module**
  - direct contribution to the main branch (no forks) to ensure **sustainability**
  - **containerisation & cloud hosting**
- New **frontend** to include an additional filtering option:
  - by **high-value datasets** – as specified in the upcoming Implementing Act following the 2019 Open Data Directive



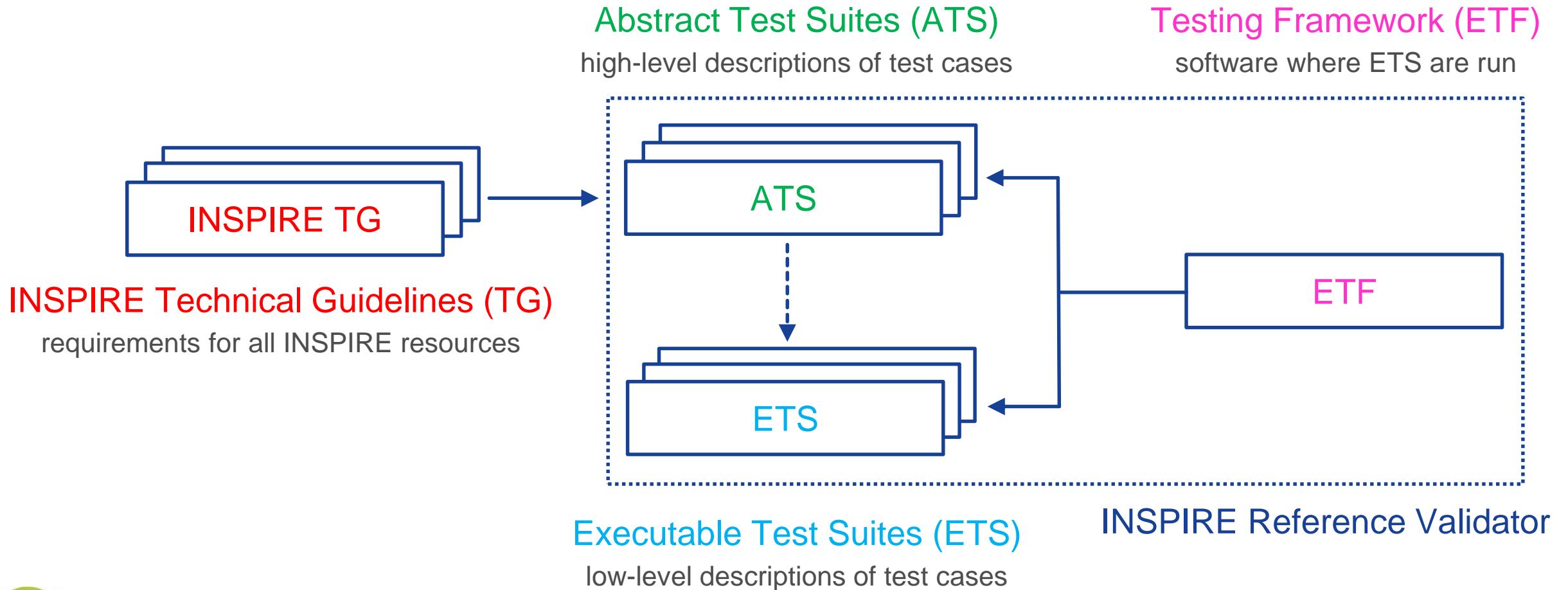
# INSPIRE Reference Validator

# INSPIRE Reference Validator

- Reasons to develop a common validator:
  - help Member States data providers **test resources** (metadata, data sets and network services) against INSPIRE requirements
  - help INSPIRE coordinators (DG ENV, JRC & EEA) and national coordinators **check INSPIRE implementation progress** in Member States & across Europe
    - support INSPIRE Monitoring and Reporting
  - help solution providers **check their software solutions** against INSPIRE requirements



# INSPIRE Reference Validator – Components



# Abstract & Executable Test Suites

- ATS and ETS available for:
  - metadata
  - discovery services **CSW**
  - view services **WMS, WMTS**
  - download services **WFS, Atom, WCS, SOS, OGC API - Features (soon)**
  - data specifications
  - data encodings
  - Annex I/II/III data specifications

The screenshot shows a GitHub workspace for INSPIRE validation and conformity testing. The main navigation bar includes 'Overview', 'Repositories' (54), 'Packages', 'People' (11), 'Teams' (3), 'Projects', and 'Settings'. Below the navigation is a search bar with filters for 'Type', 'Language', and 'Sort'. A green 'New' button is visible. The repository list includes:

- ets-repository**: Repository for Executable Test Suites of the INSPIRE validator (under development). Metrics: XQuery, 13 stars, 24 forks, 72 issues, 4 pull requests, updated yesterday.
- metadata**: Abstract Test Suite for the Technical Guidelines for INSPIRE Metadata based on EN ISO 19115 and EN ISO 19119. Metrics: 8 stars, CC0-1.0 license, 13 forks, 14 issues (1 needs help), 1 pull request, updated on 30 Apr.
- download-service**: Abstract Test Suite for the Technical Guidance for the implementation of INSPIRE Download Services. Metrics: 2 stars, CC0-1.0 license, 4 forks, 12 issues, 0 pull requests, updated on 11 Jun 2019.
- view-service**: Abstract Test Suite for the Technical Guidance for the implementation of INSPIRE View Services. Metrics: 2 stars, CC0-1.0 license, 3 forks, 5 issues, 0 pull requests, updated on 16 Jan 2020.
- data-lu**: Abstract Test Suite for the Data Specification on Land Use. Metrics: 1 star, CC0-1.0 license, 1 fork, 0 issues, 0 pull requests, updated on 15 Jun.

# ETF Testing Framework

- A **testing framework** is a software to run ETS.
- The INSPIRE Reference Validator makes use of the **ETF Testing Framework**:
  - a test framework to validate spatial data, metadata & web services in SDIs
  - developed since 2010
  - consistent with **standards** (ISO/OGC)
  - **open source** under EUPL v.1.2, current version: 2.0.0
- An ETF deployment is composed of a **database**, a **servlet container** and one or more **test drivers** to execute ETS:
  - currently supported test drivers are **SoapUI** for web services, **BaseX** for XML documents and **TEAM Engine** for OGC tests
- The ETF can be used from a **web application** and a **REST API**.

# INSPIRE Reference Validator – Public UI

- New user interface offering:
  - simplified workflow for starting tests

The screenshot shows the 'INSPIRE Reference Validator - Test selection' page. At the top, there's a navigation bar with links for Home, Test selection, Test reports, Get support, and More on the INSPIRE Reference Validator. The main content area is titled 'Configure your test'. It includes sections for selecting the INSPIRE resource (Metadata is selected), Technical Guidelines version (Version 2.0 is selected), and the type of metadata record(s) to be tested (Data sets and data set series is selected). There's also an 'Advanced options' button. Below this, the 'Provide the resource to test' section has a 'File upload' input field with a 'Choose files' button. A note specifies that XML/GML files or ZIP files containing XML/GML files can be uploaded, with a maximum size of 50 MB. A yellow banner at the bottom indicates a test run was completed on 18.07 - 28.09.2021.



<https://inspire.ec.europa.eu/validator/test-selection/index.html>

Start test >

# INSPIRE Reference Validator – Public UI

- New user interface offering:
  - simplified workflow for starting tests
  - new visualization of test reports with improved options for filtering

The screenshot shows the INSPIRE Reference Validator - Test reports page. At the top, there is a navigation bar with the European Commission logo, language selection (English), and a search bar. Below the navigation, the page title is "INSPIRE Reference Validator - Test reports". A sub-navigation bar includes Home, Test selection, Test reports, Get support, and More on the INSPIRE Reference Validator. On the left, there is a sidebar titled "Search options" with fields for search terms, a dropdown for "Combine search terms with" (AND selected), and dropdowns for "Resource type" (Any resource) and "Status" (Any status). There are also "Refine results" and "Clear all" buttons. The main area is titled "Search results (1010)" and shows "Showing results 1 to 30". Each result row contains a status icon (green checkmark for successful, red X for failed), a timestamp, and a brief description of the test run, such as "Test run on 17:09 - 28.09.2021 with test suite Conformance Class 4: INSPIRE Network Services metadata". The results are color-coded by status: green for successful, red for failed, and light pink for others.



<https://inspire.ec.europa.eu/validator/test-reports/index.html>

# INSPIRE Reference Validator – Public UI

- New user interface offering:
  - simplified workflow for starting tests
  - new visualization of test reports with improved options for filtering
- 2 instances available:
  - staging instance: includes bug fixes & new features for testing purposes
  - production instance: includes only consolidated developments
    - 4 releases per year:

<https://github.com/INSPIRE-MIF/helpdesk-validator/releases>

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

The screenshot shows the 'INSPIRE Reference Validator - Test reports' page. At the top, there are links for Home, Test selection, Test reports, Get support, and More on the INSPIRE Reference Validator. Below this is a search bar with a 'Sort by date' dropdown. On the left, there are search options for 'Combine search terms with' (AND/OR), 'Resource type' (Any resource), 'Status' (Any status), and buttons for 'Refine results' and 'Clear all'. The main area displays 'Search results (1010)' with a heading 'Showing results 1 to 30'. Each result row contains a small icon (red X or green checkmark), a timestamp, and a brief description of the test run, such as 'Test run on 17:09 - 28.09.2021 with test suite Conformance Class 4: INSPIRE Network Services metadata'.

# INSPIRE Registry

# Re<sup>3</sup>gistry software

- A reusable **open source** solution for managing and sharing **reference codes** through the use of persistent URIs and a clear **governance** approach.
  - code lists, taxonomies, thesauri, «lists of things»
- Provides a **central access point** allowing labels and descriptions for reference codes to be easily looked up by **humans** or retrieved by **machines**.



<https://joinup.ec.europa.eu/collection/are3na/solution/re3gistry/about>

for **any** data infrastructure  
(not only SDIs)!

# Re<sup>3</sup>gistry: where to find it?



## Re3gistry 2 software

license EUPL 1.2

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### About the Re3gistry 2

The Re3gistry 2 is a reusable open source solution for managing and sharing "reference codes".

It provides a consistent central access point where labels and descriptions for reference codes can be easily browsed by humans and retrieved by machines.

Reference codes are exchanged between applications to uniquely reference some 'thing'. They can be used to define sets of permissible values for a data field or to provide a reference or context for the data being exchanged. Examples are enumerations, controlled vocabularies, taxonomies, thesauri or, simply, 'lists of things'.

The Re3gistry 2 supports organisations in managing and updating reference codes in a consistent way.

The Re3gistry software version numbers comply with the [Semantic Versioning Specification 2.0.0](#).

<https://github.com/ec-jrc/re3gistry>

# Re<sup>3</sup>gistry: where to find it?



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English | Deutsch | Español | Suomen kieli | Français | Italiano | 日本語 | Hungarian

## Re3gistry

### About

The Re3gistry 2 is a reusable open source solution for managing and sharing "reference codes". Initially developed as a central component of the EU's [INSPIRE](#) infrastructure, it provides a consistent central access point where labels and descriptions for reference codes can be easily browsed by humans and retrieved by machines. Reference codes are exchanged between applications to uniquely reference some 'thing'. They can be used to define sets of permissible values for a data field or to provide a reference or context for the data being exchanged. Examples are enumerations, controlled vocabularies, taxonomies, thesauri or, simply, 'lists of things'. The Re3gistry 2 supports organisations in managing and updating reference codes in a consistent way. The Re3gistry software version numbers comply with the Semantic Versioning Specification 2.0.0.

### Core Features

- User-friendly editing interface to easily add, edit and manage the registers and reference codes
- Management of the full lifecycle of the reference codes (based on the ISO 19135 Standard)
- Highly flexible and customisable data models
- Multi-lingual content support
- Support for versioning
- RESTful API with content negotiation (including OpenAPI 3 descriptor)
- Free-text search
- Supported formats: HTML, ISO 19135 XML, JSON
- Service formats can be easily added or customised (default formats: JSON and ISO 19135 XML)
- Multiple authentication options
- Externally governed items referenced through URIs
- INSPIRE register federation format support (option to automatically create the RoR format)
- Web-app to access the reference codes in a human readable way.



[https://live.osgeo.org/it/overview/re3gistry\\_overview.html](https://live.osgeo.org/it/overview/re3gistry_overview.html)

[https://live.osgeo.org/it/quickstart/re3gistry\\_quickstart.html](https://live.osgeo.org/it/quickstart/re3gistry_quickstart.html)

# INSPIRE Registry

## INSPIRE registry

Search... 

Help us improving the Re3gistry software! Please fill our quick survey at <http://europa.eu/!Bn84Ct> 

ID: <http://inspire.ec.europa.eu/registry>

Label: **INSPIRE registry**

Content Summary:

The INSPIRE infrastructure involves a number of items, which require clear descriptions and the possibility to be referenced through unique identifiers. Examples for such items include INSPIRE themes, code lists, application schemas or discovery services. Registers provide a means to assign identifiers to items and their labels, definitions and descriptions (in different languages). The INSPIRE registry provides a central access point to a number of centrally managed INSPIRE registers. The content of these registers are based on the INSPIRE Directive, Implementing Rules and Technical Guidelines.

Registry manager: **European Commission, Joint Research Centre**

Other formats:



XML  
Re3gistry



XML  
ISO 19135



JSON



Atom



CSV

## Registers

Label
<a href="#">INSPIRE application schema register</a>
<a href="#">INSPIRE code list register</a>
<a href="#">INSPIRE enumeration register</a>
<a href="#">INSPIRE feature concept dictionary</a>
<a href="#">INSPIRE glossary</a>
<a href="#">INSPIRE layer register</a>
<a href="#">INSPIRE media-types register</a>
<a href="#">INSPIRE metadata code list register</a>
<a href="#">INSPIRE reference document register</a>
<a href="#">INSPIRE theme register</a>

Items per page 50 Showing 1 to 10 of 10 entries First Previous 1 Next Last

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

- Currently:
  - 10 registers
  - 10000+ items
  - 23 languages
  - 7 formats

# Re<sup>3</sup>gistry: architecture

## BACKEND



## FRONTEND



# Re<sup>3</sup>gistry v.2: functionalities

- Multi-lingual support
- Several formats (JSON, XML, RDF, etc.) – extensible
- Ready-to-use & customisable public user interface
- User, admin & developer manuals
- Simple management of users and groups
- User-friendly editing interface
- Integration of ISO 19135:2005 procedures to register reference codes
- Integrated, OpenAPI-compliant REST API
- Simple data export and indexing (provided by Solr)
- Guided installation procedure, including migration from Re<sup>3</sup>gistry v.1.3
- RSS feed
- RoR format to facilitate federation

The screenshot shows the INSPIRE Registry application page. At the top right, there is a multilingual dropdown menu set to English (en). Below it, a search bar and a search engine button are visible. The main content area is titled 'application' and contains fields for 'ID', 'PersistentURI', 'Versioning', and 'Customisable fields'. A section for 'Item lifecycle management' includes buttons for 'Valid' and 'Other formats' (RDF/XML, JSON, Atom, CSV). A table titled 'Subtypes' lists various media types like atom+xml, geo+json, and vnd.sqlite3, each with a status column. Some rows are highlighted with orange boxes and labeled 'Link to Externally managed values' or 'Internally managed values'. At the bottom, there are links for 'Default formats + JSON API', 'Powered by: Registry 1.3', and social media icons.

# Register Federation

- Created as a testbed to **join together national/sectorial extensions** of INSPIRE data models in a single place to facilitate sharing of codes.
- Fully compatible with the **Re<sup>3</sup>gistry**.
- **RoR (Register of Registers)** format.
- Ready-to-use and customisable public user interface (webapp).
- To be released as **open source** in the coming months.

The screenshot shows the 'Registries' section of the INSPIRE Register Federation web interface. At the top, there is a navigation bar with links for 'About | Contact | Privacy Policy', the European Commission logo, and the 'INSPIRE' logo. Below the navigation bar, the page title is 'Register Federation'. A breadcrumb navigation shows 'European Commission > INSPIRE > Register Federation > Registries'. The main content area has tabs for 'Registries', 'Registers', 'Relations', 'Federated search', and 'Help'. The 'Registries' tab is selected. The table lists ten registries, each with a link to its details:

Label	Publisher
European Geoscience Registry	BRGM ↗
Système de publication de registres de l'IDG française	BRGM ↗
INSPIRE registry	European Commission, Joint Research Centre ↗
EEA Data Dictionary vocabularies	European Environment Agency ↗
Austrian INSPIRE registry	CCCA Data Centre ↗
INSPIRE Italia Registry	Agency for Digital Italy ↗
Lithological Classification Austria - extended values	Geological Survey of Austria ↗
Spanish INSPIRE registry	Centro Nacional de Información Geográfica ↗
BRGM (French geological survey) registry tool	BRGM ↗
IUGS CGI Geoscience Vocabularies for Linked Data	Geoscience Terminology Working Group (GTWG) ↗

# Summary

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<b>INSPIRE central infrastructure component</b>	<b>Source code &amp; community support</b>	<b>Underlying open source software</b>
INSPIRE Geoportal <a href="https://inspire-geoportal.ec.europa.eu">https://inspire-geoportal.ec.europa.eu</a>	<a href="https://github.com/INSPIRE-MIF/helpdesk-geoportal">https://github.com/INSPIRE-MIF/helpdesk-geoportal</a>	GeoNetwork (WIP) <a href="https://github.com/geonetwork">https://github.com/geonetwork</a>
INSPIRE Reference Validator <a href="https://inspire.ec.europa.eu/validator">https://inspire.ec.europa.eu/validator</a>	<a href="https://github.com/inspire-eu-validation">https://github.com/inspire-eu-validation</a> <a href="https://github.com/INSPIRE-MIF/helpdesk-validator">https://github.com/INSPIRE-MIF/helpdesk-validator</a>	ETF Testing Framework <a href="https://github.com/etf-validator">https://github.com/etf-validator</a>
INSPIRE Registry <a href="https://inspire.ec.europa.eu/registry">https://inspire.ec.europa.eu/registry</a>	<a href="https://github.com/INSPIRE-MIF/helpdesk-registry">https://github.com/INSPIRE-MIF/helpdesk-registry</a>	Re3gistry <a href="https://github.com/ec-jrc/re3gistry">https://github.com/ec-jrc/re3gistry</a>

# Thank you!



<https://git.io/JgYBv>



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