

Towards the Green Deal data space

What is new in INSPIRE?



*Jordi Escriu
(EC-JRC INSPIRE Team)*

*EuroGeographics Joint INSPIRE & POLicy KEN webinar
- "INSPIRE beyond 2020", 18th November 2021*

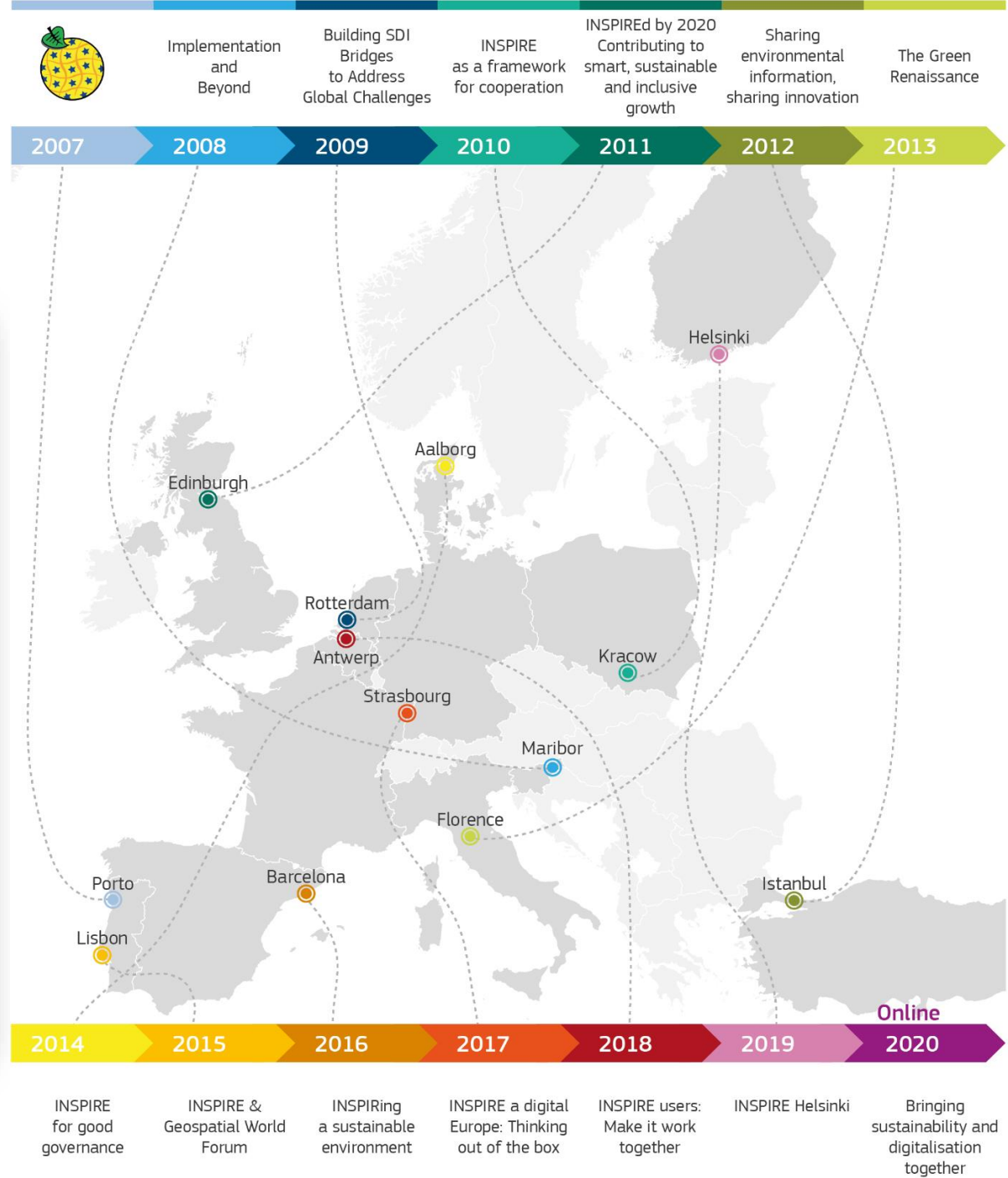
INSPIRE

The geospatial pineapple

- One of the biggest geospatial data sharing initiatives in the world (**7000+ providers**).
- **Multi-faceted Spatial Data Infrastructure** framework
 - **Legal:** Directive, Implementing provisions, transposition in MS.
 - **Organisational:**
 - Governance structure with National contact points / structures, Multiple Commission Services.
 - Maintenance and Implementation Work programme;
 - **Technical:** Reusing building blocks from standardisation bodies (OGC, ISO, etc.)
 - Full stack of guidelines for discoverability, metadata, data encoding and data sharing.
- **Status of implementation**
 - Directive entered into force in 2007 / Roadmap finished by December 2021.
 - **Lights and shadows.** Objectives partially achieved. Heterogeneity of implementations across EU. Pan European coverage yet to be achieved.



Lights - What works well Community



Lights - What works well

Data availability & E-reporting

- Discoverability and accessibility are improving.
- Use of INSPIRE in e-reporting.

The screenshot shows the INSPIRE Geoportal homepage. At the top, there's a header with the European Commission logo and the text "INSPIRE GEOPORTAL Enhancing access to European spatial data". Below this is a navigation bar with links like Home, Priority Data Sets Viewer, Thematic Viewer, Harvesting status, and Find out more about. The main content area features a map of Europe titled "INSPIRE Data Sets - EU & EFTA Country overview". To the right of the map is a box titled "INSPIRE Geoportal Data Set Statistics" with the following data:

Category	Count
Metadata records	91433
Downloadable Data Sets	44789
Viewable Data Sets	46451

Below the statistics box is a "Select a COUNTRY" section with a grid of country flags and their respective data set counts. At the bottom, there's a "Select the whole EUROPE" button and a "Download stats" button.



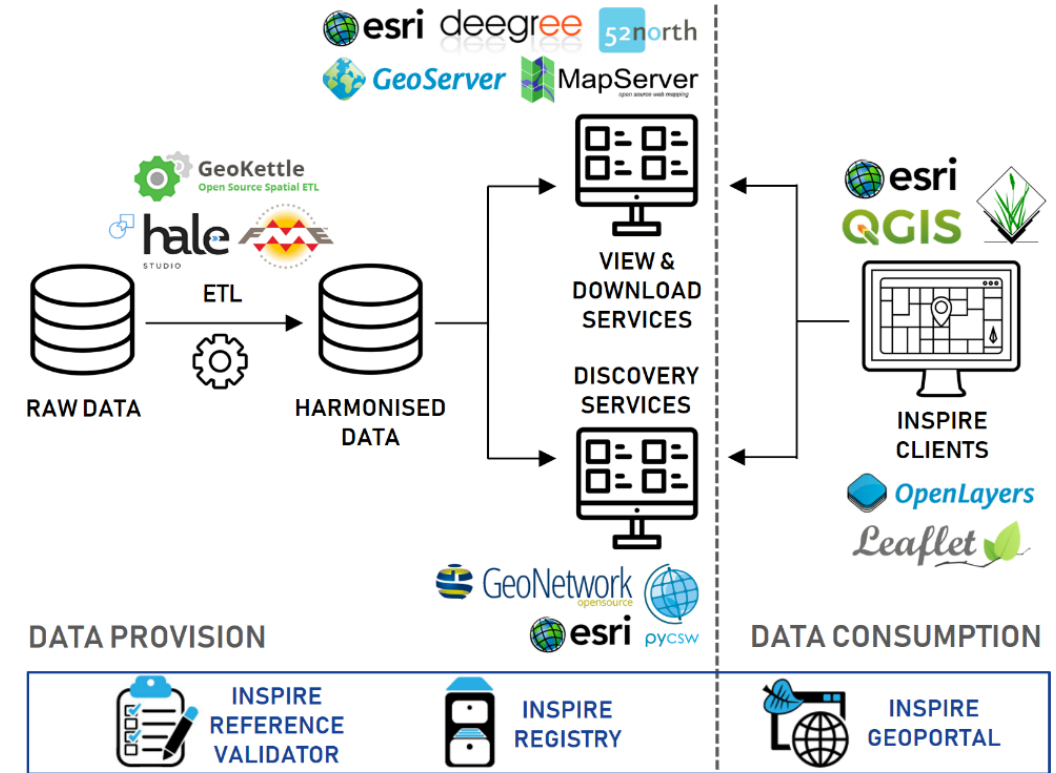
The screenshot shows the European Data Portal search results for "inspire". The header includes the European Data Portal logo and navigation links like Data, Impact & Studies, Training, News & Events, and About. Below the header is a search bar with "inspire" entered. The results show "86668 datasets found". The main content area displays a list of datasets with details such as the title, description, and metadata. The datasets listed include:

- INSPIRE view service WMS on the issue of Nadia Grid (EL GRID)
- INSPIRE WMS View Service for the theme Geographical Names (GN)
- WMS DB-Netz rail network
- INSPIRE WMS Rail Network (INSPIRE TN-RA)

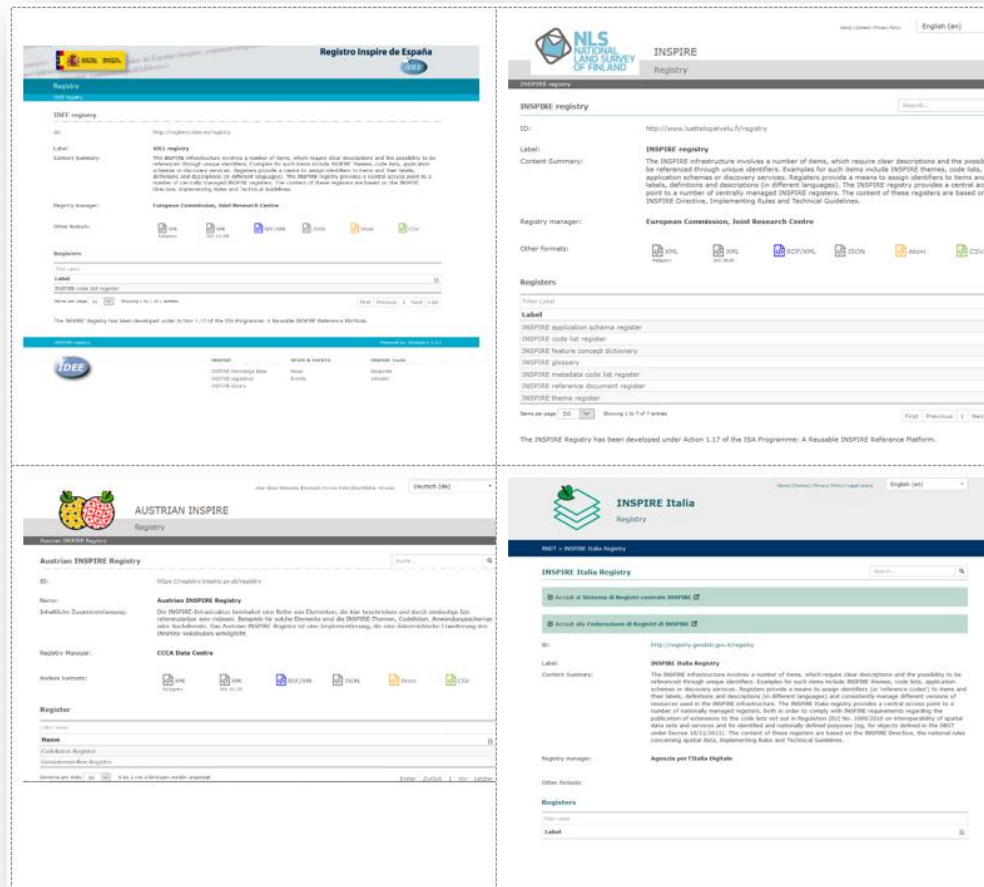
Lights - What works well

Rich ecosystem of tools

- Central INSPIRE components.
- Many client and server implementations.



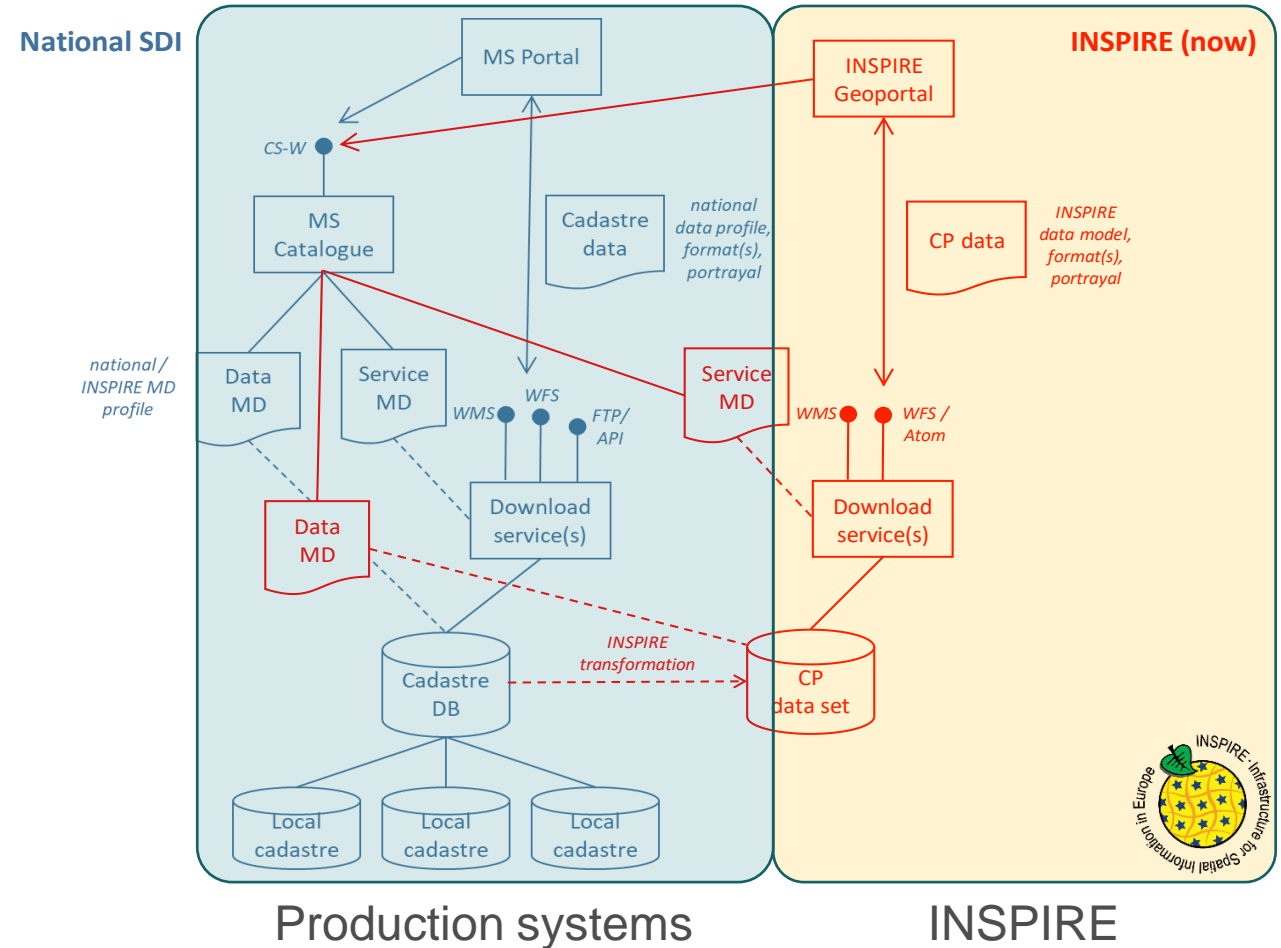
INSPIRE CENTRAL COMPONENTS



Shadows - What does not work so well

Inappropriate organisational approaches

- Parallel implementations.
- Duplication of efforts.
- INSPIRE sometimes implemented to only check a box.



Shadows - What does not work so well

Inflexibility in standardisation

- Adherence to specific technologies / encodings.
- Strictly following standards vs. Narrow use of standards.
- Custom extensions: Extending standards is problematic.
 - Extended capabilities.
 - GML attributes.
 - Nested structures.



Shadows - What does not work so well

Complexity

```
<gn:NamedPlace gml:id="MIG20172_example_NamedPlace">
  <gn:beginLifespanVersion xsi:nil="true"/>
  <gn:geometry>
    <gml:Point gml:id="_d7180a8f-a590-44da-8b45-41d96d5cba5e" srsName="http://www.opengis.net/def
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    </gml:Point>
  </gn:geometry>
  <gn:inspireId>
    <base:Identifier>
      <base:localId>NamedPlace_Example</base:localId>
      <base:namespace>https://www.examples.eu/</base:namespace>
    </base:Identifier>
  </gn:inspireId>
  <gn:localType xsi:nil="true"/>
  <gn:name>
    <gn:GeographicalName>
      <gn:language>deu</gn:language>
      <gn:nativeness xsi:nil="true"/>
      <gn:nameStatus xsi:nil="true"/>
      <gn:sourceOfName xsi:nil="true"/>
      <gn:pronunciation xsi:nil="true"/>
      <gn:spelling>
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          <gn:script xsi:nil="true"/>
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  <gn:name>
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      <gn:sourceOfName xsi:nil="true"/>
      <gn:pronunciation xsi:nil="true"/>
      <gn:spelling>
        <gn:SpellingOfName>
          <gn:text>Munich</gn:text>
          <gn:script xsi:nil="true"/>
        </gn:SpellingOfName>
      </gn:spelling>
    </gn:GeographicalName>
  </gn:name>
  <gn:type xsi:nil="true"/>
</gn:NamedPlace>
```

OpenStreetMap Modifica Cronologia Esporta

Traccati GPS Diari degli utenti Copyright Aiuto Informazioni mingo23

Etichette

alt_name:la	Monachium,Monac hum
capital	4
ele	519
int_name	Munich
is_in_country_code	DE
is_in_iso_3166_2	DE-BY
name	München
name:als	Münche
name:ar	ميونخ
name:az	Münhen
name:bar	Minga
name:be	Мюнхен
name:be-larask	Мюнхэн
name:bg	Мюнхен
name:ca	Munic
name:cs	Mnichov
name:da	München
name:de	München

<https://www.openstreetmap.org/node/1700534808#map=12/48.1332/11.6462>

What is ahead

New Policy context

- **“Europe fit for the Digital Age”** priority of the new European Commission:
 - Data-driven innovation.
 - Adding value to Europe’s economy and society.
- **European Strategy for Data:**
 - Establishment of a single market for data through sector-specific data spaces.
 - Different actors interplaying in the data economy (public sector, businesses, citizens, and academia)
- **Open Data Directive** (and forthcoming Implementing Act):
 - Provision and sharing of public sector High-Value Datasets (many of them geospatial).
- **INSPIRE:** Public-sector contribution to the **Green Deal data space**.

What is ahead

Technological trends

- New data sources:
 - Internet of Things (IoT).
 - Citizen-generated geospatial data.
 - Open research data.
 - Private data.
- Application Programming Interfaces (APIs) – From data collection to data connection.
- Novel architectures.
- Agile standards.
- Mature tools.

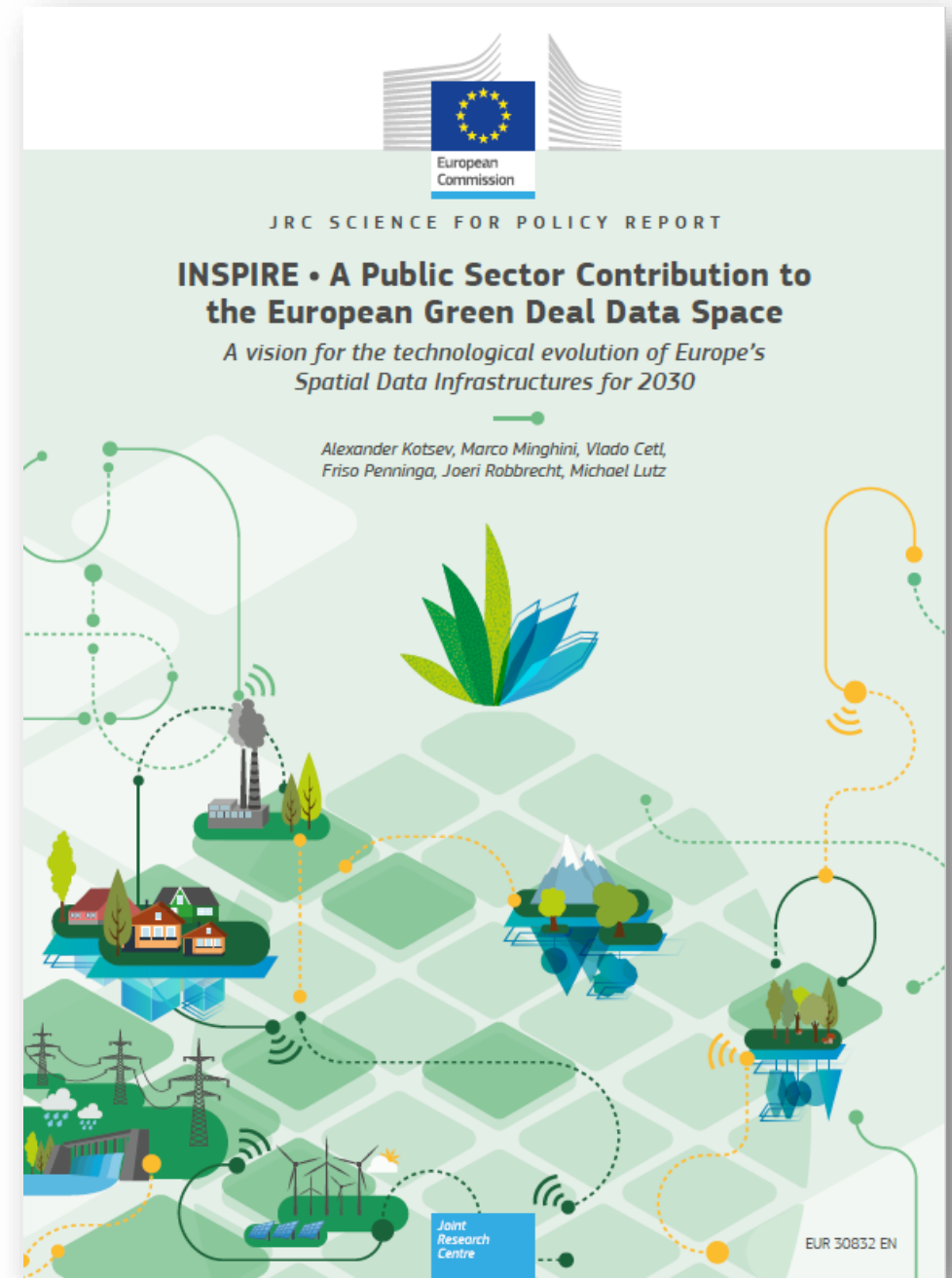


INSPIRE Evaluation & Future JRC Science for Policy Report

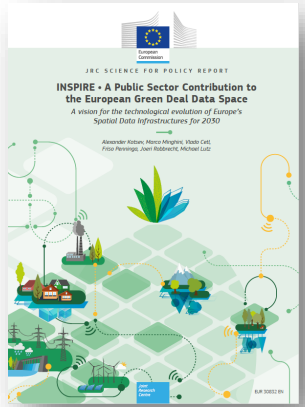
- **INSPIRE - A Public Sector Contribution to the European Green Deal Data Space**

<https://publications.jrc.ec.europa.eu/repository/handle/JRC126319>

- Prepared with Geonovum and DG ENV.
- Sneak peek:
 - Overview of the status
 - Policy and technological context
 - Lessons learned
 - Vision for the technological evolution
 - Actions and roadmap
 - Prototype reference framework

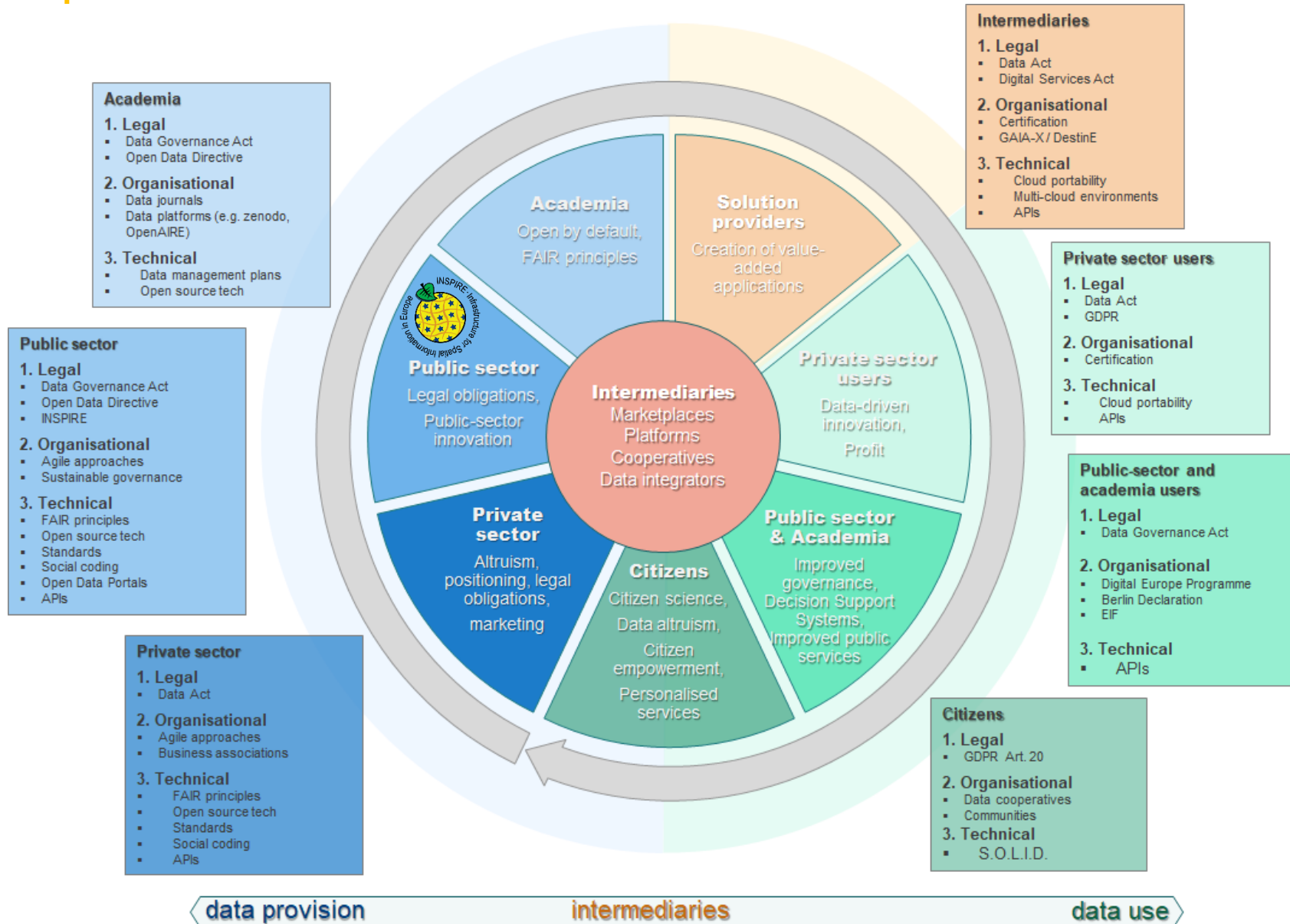


INSPIRE Future Vision



- INSPIRE should **‘blend in’** with the **broader ecosystem** of spatial and non-spatial data, infrastructures, technologies and policies.
- This will mean **opening up to a broader community** of implementers and users, and to a wider range of applications and use cases.
- Making the INSPIRE framework more **flexible and agile** will significantly lower the entry level to the sharing and utilisation of data.
- Technical **approaches need to be simplified** by reusing well-adopted standards and technologies.

INSPIRE In a broader data ecosystem



- From a linear approach to a data ecosystem:
 - Cross-sectoral.
 - Creation of value.
 - Sustainable governance model.



Addressing the challenge

Maintenance and Implementation Work programme

(MIWP 2021-2024)

Context for modernising the technological framework of INSPIRE.

6 core actions

- 1.1 Towards a digital ecosystem for the environment and sustainability
- 2.1 Need-driven data prioritisation
- 2.2 Roadmap for priority-driven implementation
- 2.3 Simplification of INSPIRE implementation
- 2.4 Central infrastructure components
- 3.1 GreenData4all initiative



INSPIRE Central Components

An update



*Jordi Escriu
(EC-JRC INSPIRE Team)*

*EuroGeographics Joint INSPIRE & POLicy KEN webinar
- "INSPIRE beyond 2020", 18th November 2021*

INSPIRE Central Components

Core for delivering INSPIRE

INSPIRE Toolbox

- INSPIRE Geoportal.
- INSPIRE Reference Validator.
- INSPIRE Registry.

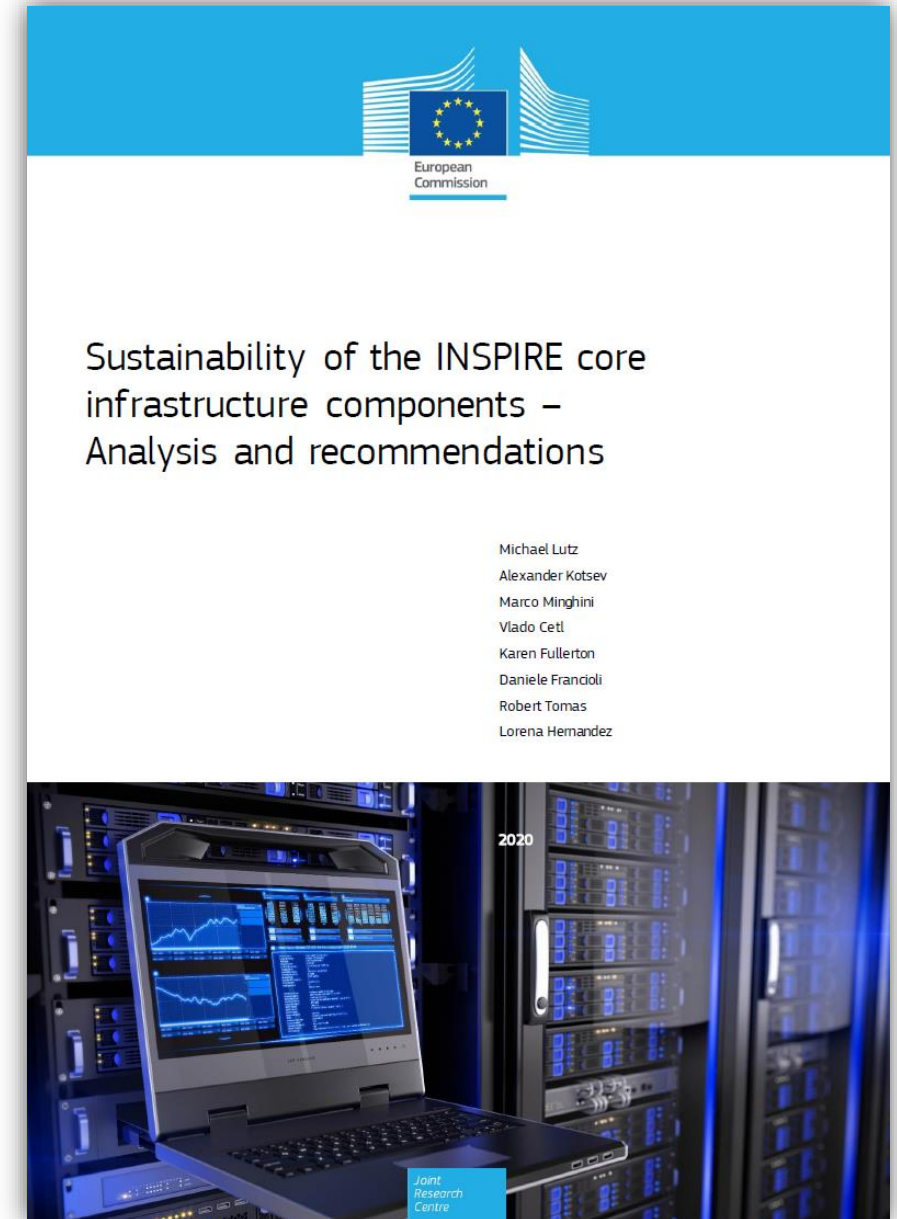
INSPIRE Framework

- Technical guidelines.
- Application schemas.

INSPIRE Central Components

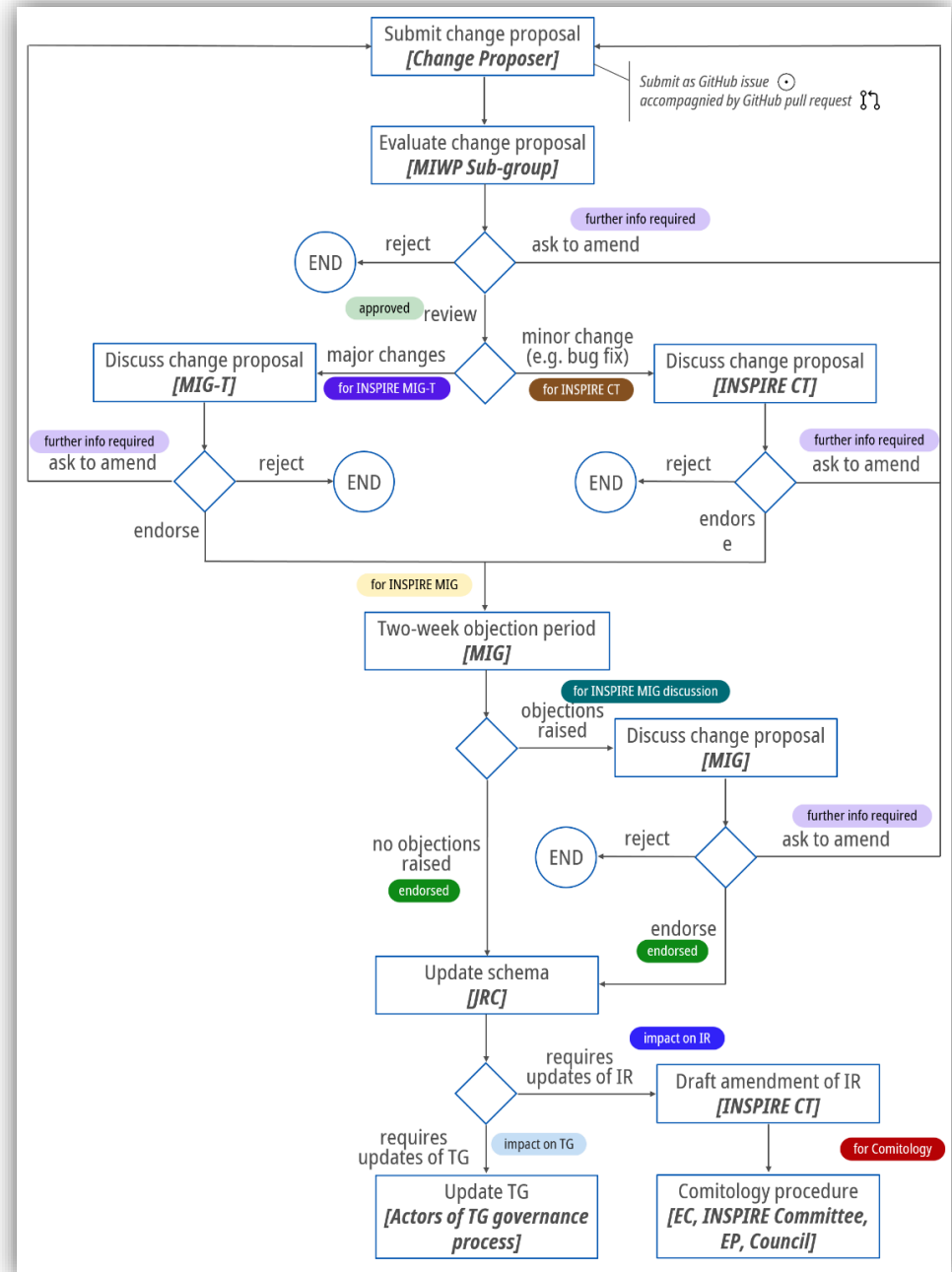
Sustainability approach

- Support by tools is the default.
- Build strategic partnerships with communities: OSGeo, GeoNetwork
- Focus on the INSPIRE-specificity and not on mainstream tool development.
- Harmonise the approaches for helpdesk.
- Decouple tools from infrastructure.
- Extensive use of the cloud.



INSPIRE Central Components Governance

- Open the floor to proposals from the community:
 - INSPIRE Helpdesks (GitHub)
 - INSPIRE Good Practices
- Transparent approach for governance:
 - MIG-T Meetings Actions and Sub-groups.
 - Decision tree and release plan:
 - Know how to approach each issue.
 - Releases planned during the year, aligned with MIG-T Meetings.



The Toolbox

INSPIRE Geoportal

Main access point to
INSPIRE Infrastructure tools
and resources.

Based on own development.
(GeoNetwork, in near future)

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



INSPIRE GEOPORTAL

Enhancing access to European spatial data

European Commission > INSPIRE > Geoportal

[Home](#) [Priority Data Sets Viewer](#) [Thematic Viewer](#) [Harvesting status](#) [Find out more about](#)

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



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



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 Reference Validator

The validator application is to help data providers, solution providers and national coordinators to check whether their data sets, network services and metadata meet the requirements defined in the INSPIRE Technical Guidelines.

The validation tests are based on the Abstract Test Suites agreed between Member States and the Commission in the INSPIRE Maintenance and Implementation Group.

[Go to INSPIRE validator](#)

The Toolbox

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

Highlights

- Renewal of functionality (Backend): **Ongoing**
 - Migration to a **GeoNetwork**-based architecture
 - Maintaining functionality of the current Geoportal.
 - Improved harvesting processes and performance.
 - Migration to a cloud environment: assure system availability / scalability.
- Renewal of user interface (Frontend): **Ready!**
 - Allows filtering INSPIRE datasets according to **High-Value Datasets** (HVDs).
 - Launch waiting for the publication of the HVDs Implementing Act.

The Toolbox

INSPIRE Geoportal (Backend prototype) - Ongoing

The screenshot displays the 'INSPIRE Geoportal (Backend prototype)' interface. The top navigation bar includes 'My GeoNetwork catalogue', 'Search', 'Map', 'Contribute', and 'Admin console'. The user is logged in as 'admin admin ADMINISTRATOR' and the language is set to 'English'.

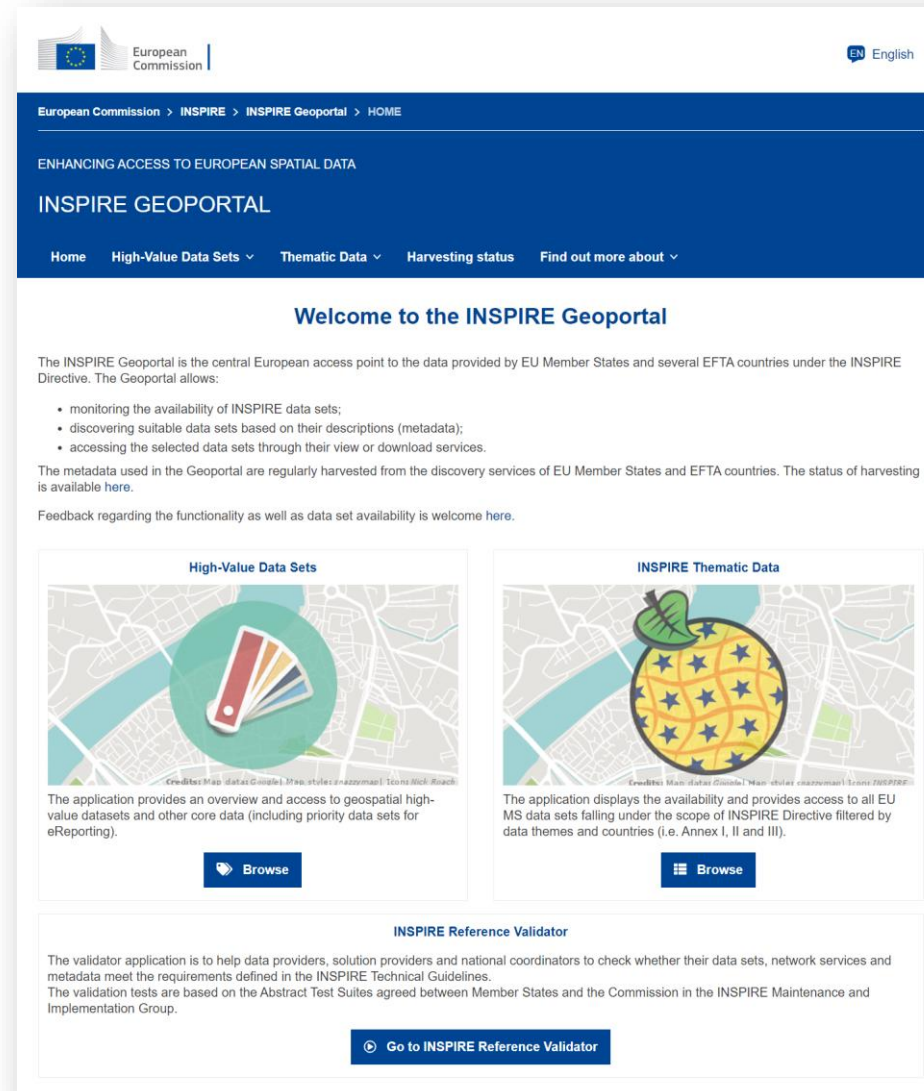
The left sidebar shows a menu with 'Catalog harvesters' selected. The main content area is divided into two panels:

- Harvester List:** A table listing various harvesters, all with 'Last run : Invalid date'. The selected harvester is 'BE-GEOBRU (OGC CSW 2.0.2 (remote harvester))'.
- Harvester Configuration Panel:** This panel shows the configuration for the selected 'BE-GEOBRU' harvester. It includes tabs for 'Settings', 'Harvester history', and '106 Metadata records'. The 'Settings' tab is active, showing fields for 'Node name and logo' (BE-GEOBRU), 'Group' (Belgium), and 'User' (admin admin (admin)). The 'Schedule' tab is also visible, with 'Enable' and 'Disable' buttons. The 'Configuration for protocol OGC CSW 2.0.2 (remote harvester)' section includes a 'Service URL' field (https://geobru-geonetwork.irisnet.be/geonetwork/inspire/fre/csw) and a checkbox for 'Process CSW endpoints in the service metadata' (unchecked). The 'Number of records to retrieve per request' is set to 20.

The Toolbox

INSPIRE Geoportal (Frontend prototype)

- Ready!
- It will be launched when the High Value Datasets (HVDs) Implementing Act is published and enters in force.



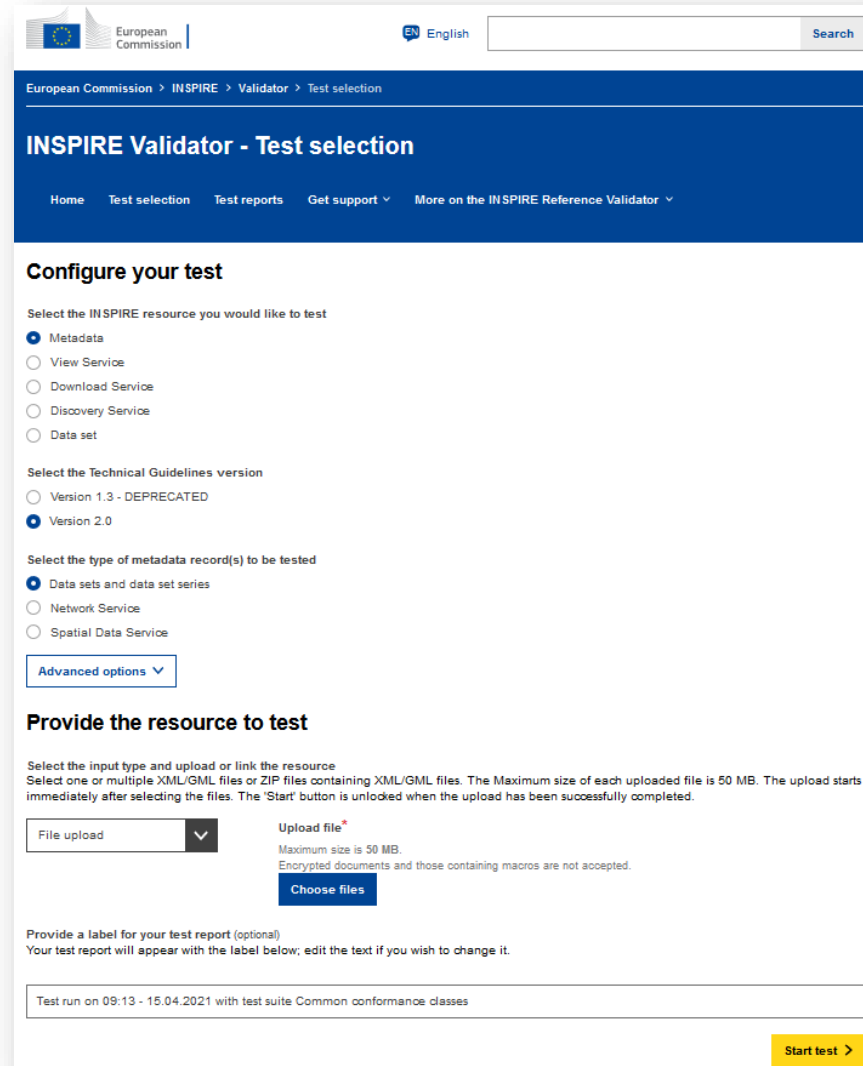
The Toolbox

INSPIRE Reference Validator

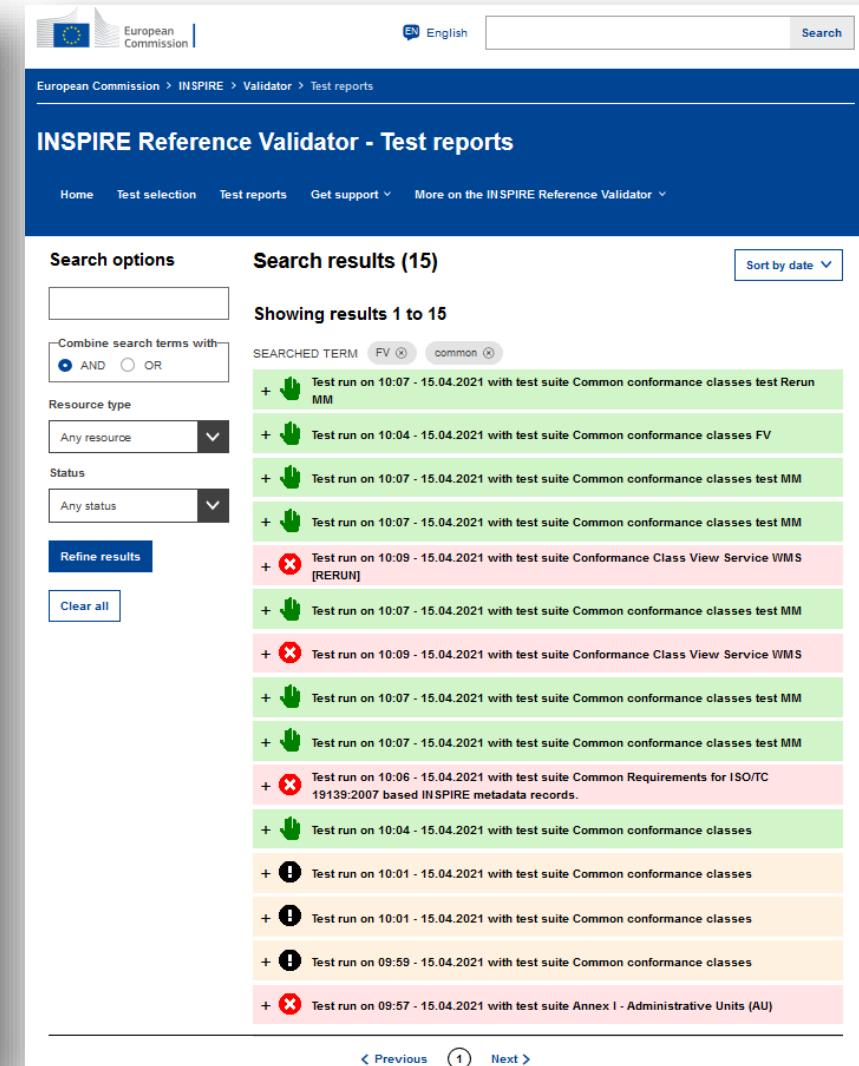
Tool used in assessing conformance of INSPIRE resources.

Based on the ETF (open source) software.

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



The screenshot shows the 'INSPIRE Validator - Test selection' page. It features a blue header with the European Commission logo and a search bar. Below the header, there's a navigation bar with links: Home, Test selection, Test reports, Get support, and More on the INSPIRE Reference Validator. The main content area is titled 'Configure your test' and includes sections for selecting the INSPIRE resource (Metadata, View Service, Download Service, Discovery Service, Data set), the Technical Guidelines version (Version 1.3 - DEPRECATED, Version 2.0), and the type of metadata record(s) to be tested (Data sets and data set series, Network Service, Spatial Data Service). There's an 'Advanced options' dropdown. Below this is the 'Provide the resource to test' section, which allows users to select the input type and upload or link the resource. It includes a 'File upload' button and an 'Upload file' button with a 'Choose files' link. At the bottom, there's a text input for a label and a 'Start test' button.



The screenshot shows the 'INSPIRE Reference Validator - Test reports' page. It features a blue header with the European Commission logo and a search bar. Below the header, there's a navigation bar with links: Home, Test selection, Test reports, Get support, and More on the INSPIRE Reference Validator. The main content area is titled 'Search options' and includes a search bar, a 'Combine search terms with' dropdown (AND, OR), a 'Resource type' dropdown (Any resource), and a 'Status' dropdown (Any status). There are 'Refine results' and 'Clear all' buttons. To the right, there's a 'Search results (15)' section with a 'Sort by date' dropdown. Below this, there's a table showing 15 test results. Each row includes a status icon (green hand for success, red X for failure, yellow exclamation mark for warning), a date range, and a description of the test suite and resource.

SEARCHED TERM	FV	common
+ [green hand]	Test run on 10:07 - 15.04.2021 with test suite Common conformance classes test Rerun MM	
+ [green hand]	Test run on 10:04 - 15.04.2021 with test suite Common conformance classes FV	
+ [green hand]	Test run on 10:07 - 15.04.2021 with test suite Common conformance classes test MM	
+ [green hand]	Test run on 10:07 - 15.04.2021 with test suite Common conformance classes test MM	
+ [red X]	Test run on 10:09 - 15.04.2021 with test suite Conformance Class View Service WMS [RERUN]	
+ [green hand]	Test run on 10:07 - 15.04.2021 with test suite Common conformance classes test MM	
+ [red X]	Test run on 10:09 - 15.04.2021 with test suite Conformance Class View Service WMS	
+ [green hand]	Test run on 10:07 - 15.04.2021 with test suite Common conformance classes test MM	
+ [green hand]	Test run on 10:07 - 15.04.2021 with test suite Common conformance classes test MM	
+ [red X]	Test run on 10:06 - 15.04.2021 with test suite Common Requirements for ISO/TC 19139:2007 based INSPIRE metadata records.	
+ [green hand]	Test run on 10:04 - 15.04.2021 with test suite Common conformance classes	
+ [yellow exclamation mark]	Test run on 10:01 - 15.04.2021 with test suite Common conformance classes	
+ [yellow exclamation mark]	Test run on 10:01 - 15.04.2021 with test suite Common conformance classes	
+ [yellow exclamation mark]	Test run on 09:59 - 15.04.2021 with test suite Common conformance classes	
+ [red X]	Test run on 09:57 - 15.04.2021 with test suite Annex I - Administrative Units (AU)	

The Toolbox

INSPIRE Reference Validator

Highlights (I)

- Governance and annual releases:
<https://github.com/INSPIRE-MIF/helpdesk-validator/tree/master/release%20strategy>
- New user interface available (2nd release 2021).
- New version of the 'Bulk validation' tool (October 2021):
<https://github.com/inspire-eu-validation/monitoring-bulk-validation-tool/releases/tag/v2021.1.0>
- Limitation of massive use of the Validator in production:
New API gateway:
max. 100 requests/week (200 for next Monitoring) and max. 1 request/second
<https://github.com/INSPIRE-MIF/helpdesk-validator/issues/594>

The Toolbox

INSPIRE Reference Validator

Highlights (II)

- New tests already available for testing:
 - Abstract and executable tests suites for INSPIRE Annex II/III Data Specifications:
<https://github.com/INSPIRE-MIF/helpdesk-validator/issues/336>
- New tests planned for future releases:
 - OGC API – Features standard.
 - Datasets in the scope of the Common Agricultural Policy (IACS Data).
 - Simplified approach for linking metadata and services (data-service linking).

The Toolbox

INSPIRE Registry

Tool used for
referencing common
codes and concepts.
Based on the Re³gistry
(open source) software.

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



The screenshot shows the INSPIRE Registry homepage. At the top, there's a header with the European Commission logo, the INSPIRE logo, and a language selector set to English (en). Below the header, a navigation bar shows the path: European Commission > INSPIRE > INSPIRE registry. The main content area is titled 'INSPIRE registry' and includes a search bar. A blue banner encourages users to help improve the Re3gistry software by filling out a survey. The page provides key information: the ID is http://inspire.ec.europa.eu/registry, the label is INSPIRE registry, and the content summary describes the infrastructure and its purpose. It also identifies the registry manager as the European Commission, Joint Research Centre. Under 'Other formats', icons for XML (Re3gistry and ISO 19135), JSON, Atom, and CSV are shown. A 'Registers' section contains a table listing various registers, such as 'INSPIRE application schema register' and 'INSPIRE theme register'. At the bottom, there's a footer with 'INSPIRE registry' and 'Powered by: Re3gistry 1.3'.

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  XML  JSON  Atom  CSV

Registers

Filter Label
Label
INSPIRE application schema register
INSPIRE code list register
INSPIRE enumeration register
INSPIRE feature concept dictionary
INSPIRE glossary
INSPIRE layer register
INSPIRE media-types register
INSPIRE metadata code list register
INSPIRE reference document register
INSPIRE theme register

Items per page: 50 Showing 1 to 10 of 10 entries [First](#) [Previous](#) [1](#) [Next](#) [Last](#)

The INSPIRE Registry has been developed under Action 1.17 of the ISA Programme: A Reusable INSPIRE Reference Platform.

INSPIRE registry Powered by: Re3gistry 1.3

The Toolbox

INSPIRE Registry

Highlights

- **Re³gistry v2**
 - Latest release (2.2.4) – 27th July 2021
<https://github.com/ec-jrc/re3gistry/releases/tag/v2.2.4>
 - Current status:
 - **Completed**: Development, testing and security assessment.
 - **On-going**: Correction of bugs and new features (Target: beginning 2022).
- **INSPIRE Registry**
 - Currently based on Re3gistry v1.3
 - Update to Re3gistry v2 foreseen by January 2022.

The Toolbox

INSPIRE Registry

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>



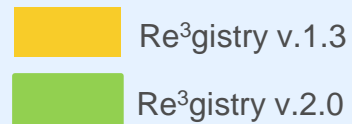
<https://joinup.ec.europa.eu/collection/re3na/solution/re3gistry/about>

The Toolbox

INSPIRE Registry

Who is using it?

- **Public sector**
 - European Commission, national agencies Member States, ecc.
- **Private sector**
- **Other**
- In Europe, but not just!



0 250 500 1,000 Km

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Flexibility in implementation

INSPIRE GitHub repositories and Good practices



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*EuroGeographics Joint INSPIRE & POLicy KEN webinar
- "INSPIRE beyond 2020", 18th November 2021*

Opening and Mainstreaming INSPIRE

GitHub Helpdesks

- **GitHub works well!**

<https://github.com/INSPIRE-MIF>

2 Levels of support:

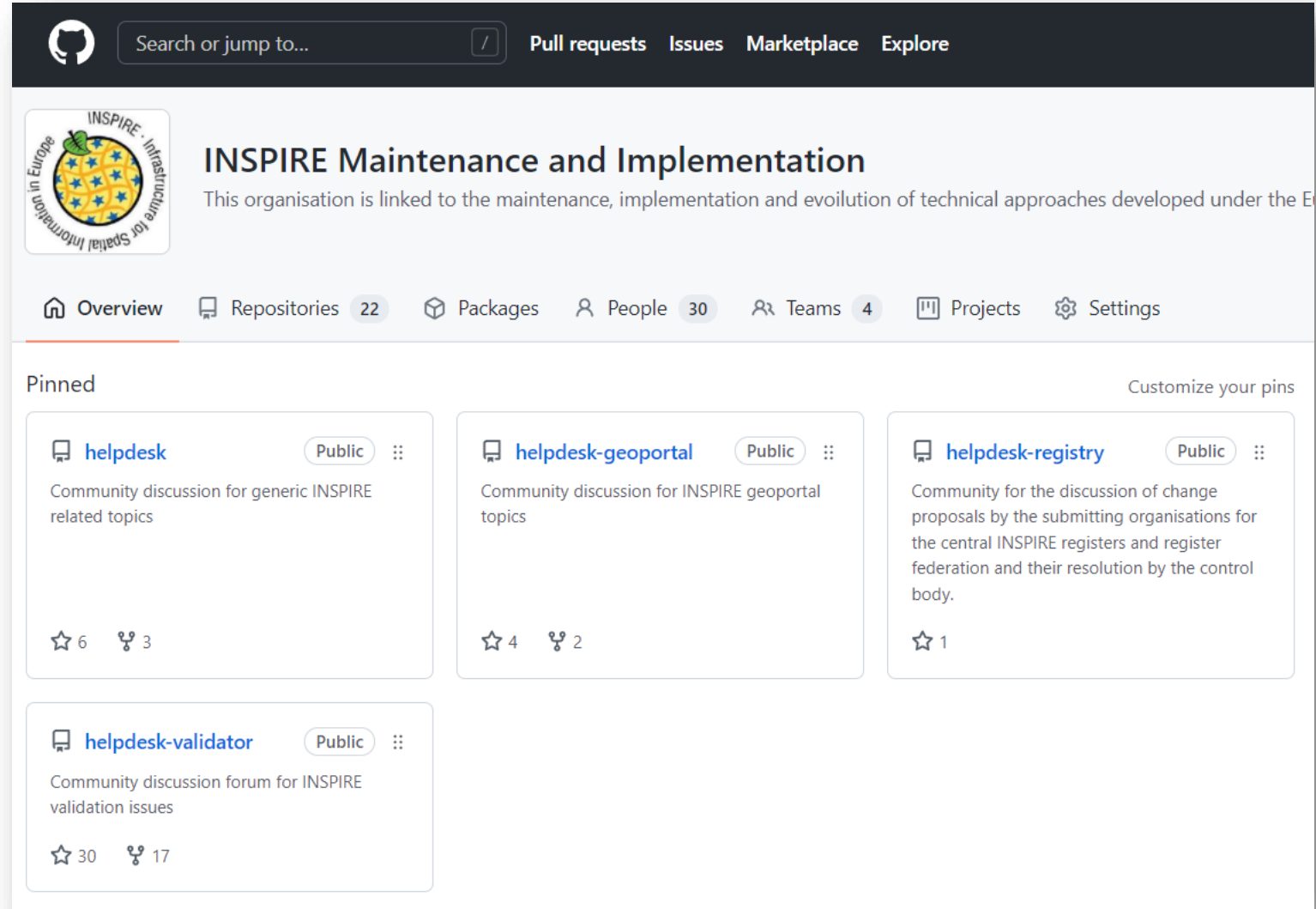
Level 1 –

General support – Includes:

- Checking requests.
- Immediate answering.
- Moving questions to the right Level 2, if needed.

Level 2 –

Provision of concrete solution.



The screenshot shows the GitHub organization page for "INSPIRE Maintenance and Implementation". The header includes the GitHub logo, a search bar, and navigation links for Pull requests, Issues, Marketplace, and Explore. The organization's profile picture is a circular logo with a globe and the text "INSPIRE - Infrastructure for Spatial Information in Europe". The organization's description states: "This organisation is linked to the maintenance, implementation and evolution of technical approaches developed under the E...". Below the header, there are tabs for Overview, Repositories (22), Packages, People (30), Teams (4), Projects, and Settings. The "Pinned" section displays four repositories:

- helpdesk** (Public): Community discussion for generic INSPIRE related topics. 6 stars, 3 forks.
- helpdesk-geoportal** (Public): Community discussion for INSPIRE geoportal topics. 4 stars, 2 forks.
- helpdesk-registry** (Public): Community for the discussion of change proposals by the submitting organisations for the central INSPIRE registers and register federation and their resolution by the control body. 1 star.
- helpdesk-validator** (Public): Community discussion forum for INSPIRE validation issues. 30 stars, 17 forks.

Opening and Mainstreaming INSPIRE

INSPIRE Good Practices

- Good Practice library available.
- Procedure for proposing Good Practices and subsequent potential endorsement:
 - *Step 1. Initiation.*
 - *Step 2. Submission as candidate (MIG-T).*
 - *Step 3. Outreach.*
 - *Step 4. Submission (MIG).*
 - *Step 5. Legal scrutiny.*
 - *Step 6. Feedback.*

<https://inspire.ec.europa.eu/portfolio/good-practice-library>

The screenshot shows the 'INSPIRE KNOWLEDGE BASE' website. The header includes the European Commission logo, navigation links (About, Contact Us, Terms of use, Privacy Policy, Legal Notice, Cookies), and a language selector set to 'English (en)'. A search bar is located in the top right. The main navigation bar features links for Home, Learn, Implement, Participate, Use, and Toolkit. The 'Implement' link is active. Below the navigation bar, a 'Quick search' sidebar lists various topics like Data and Service Sharing, Data Specifications, Implement, INSPIRE, INSPIRE in your Country, Learn, Maintenance and Implementation, Metadata, MIG Work Programme, Monitoring and Reporting, Network Services, Participate, and Spatial Data Services. The main content area is titled 'Good Practice Library' and contains a table of 'Good Practice documents'. The table has two columns: 'Candidate' and 'Endorsed'. Under 'Candidate', there are links for 'Building one access point to dispersed data sources', 'Making spatial data downloadable via WMS services', and 'OGC compliant INSPIRE Coverage data and service implementation'. Under 'Endorsed', there are links for 'GeoDCAT-AP', 'SDMX for Human Health and Population Distribution', 'OGC API - Features as an INSPIRE download service', and 'OGC SensorThings API as an INSPIRE download service'. Below the table, there is a 'Good Practice Template' section with a 'Download Template' button. The 'Context' section explains the development of INSPIRE and the creation of legally-binding Implementing Rules (IRs) and Technical Guidelines (TGs). It also mentions the Thematic Clusters discussion forums and the need for new TGs. The 'Context' section concludes with a statement that at least three types of good practice can already be observed: 1. Good practice related to INSPIRE implementation, where practitioners are extending and evolving the key elements of INSPIRE to support their communities' needs, such as extended data models.

INSPIRE KNOWLEDGE BASE

Infrastructure for spatial information in Europe

European Commission > INSPIRE > Toolkit > Good Practice Library

Home Learn Implement Participate Use Toolkit

Quick search

- Data and Service Sharing
- Data Specifications
- Implement
- INSPIRE
- INSPIRE in your Country
- Learn
- Maintenance and Implementation
- Metadata
- MIG Work Programme
- Monitoring and Reporting
- Network Services
- Participate
- Spatial Data Services
- Use

Good Practice Library

Good Practice documents

Candidate	Endorsed
Building one access point to dispersed data sources	GeoDCAT-AP
Making spatial data downloadable via WMS services	SDMX for Human Health and Population Distribution
	OGC API - Features as an INSPIRE download service
	OGC SensorThings API as an INSPIRE download service
	OGC compliant INSPIRE Coverage data and service implementation

Good Practice Template

[Download Template](#)

Context

The development of INSPIRE foresaw the creation of an initial set of legally-binding Implementing Rules (IRs) and Technical Guidelines (TGs). As technology evolved since INSPIRE's creation and as experience is being gained through the implementation process, the need for new TGs emerged (e.g. for download services for observations and coverages), alongside a range of related tools that can maximise the benefits of the implementation process. These were developed in 2015 and 2016 under dedicated actions under the Maintenance and Implementation Work Programme.

At the same time, in the Thematic Clusters discussion forums, good practices for specific implementation issues (e.g. how to create persistent identifiers), opportunities offered by emerging technologies and standards (e.g. Vector Tiles, OGC SensorThings API) or extensions/profiles for specific application domains are being shared and discussed. Also, work in Member States, by solution providers or in research projects often yield interesting results that implementers in other Member States could benefit from.

At least three types of good practice can already be observed:

1. Good practice related to INSPIRE implementation, where practitioners are extending and evolving the key elements of INSPIRE to support their communities' needs, such as extended data models.

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[EU Spotify](https://open.spotify.com/playlist/37i9dQZF1DX0XUx1Q8WjZ9)

Thank you!



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