



# INSPIRE Geoportal

Towards a new EU data ecosystem



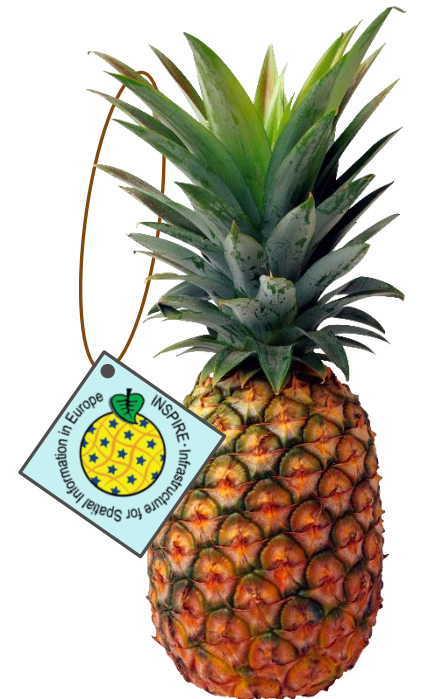
*Jordi Escriu  
EC-JRC INSPIRE Team  
Project Manager INSPIRE Geoportal*

*EuroSDR & EuroGeographics INSPIRE KEN Workshop  
on Spatial Data Discoverability, 28<sup>th</sup> April 2022*

# INSPIRE

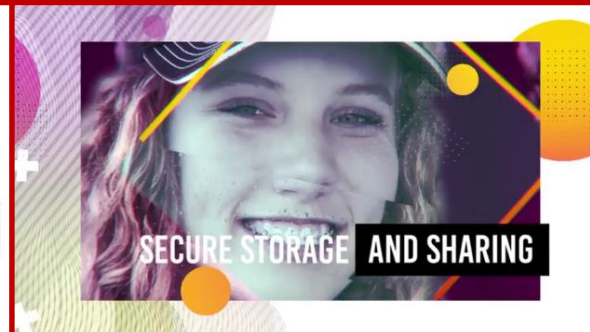
## The geospatial pineapple

- 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 do be achieved.



# A new context is ahead

## New European digital society





# Adaptation

## New European legal framework

- **“Europe fit for the Digital Age”**
  - Priority of the European Commission.
- **European Strategy for Data**
  - Data Governance.
  - Digital Market.
  - Open Data Directive implementation.
  - Data Act.
- **Open Data Directive (EU) 2019/1024**
- **INSPIRE Directive** - **Directive 2007/2/EC**
  - Evolution: Green Deal data space.



# Implementation

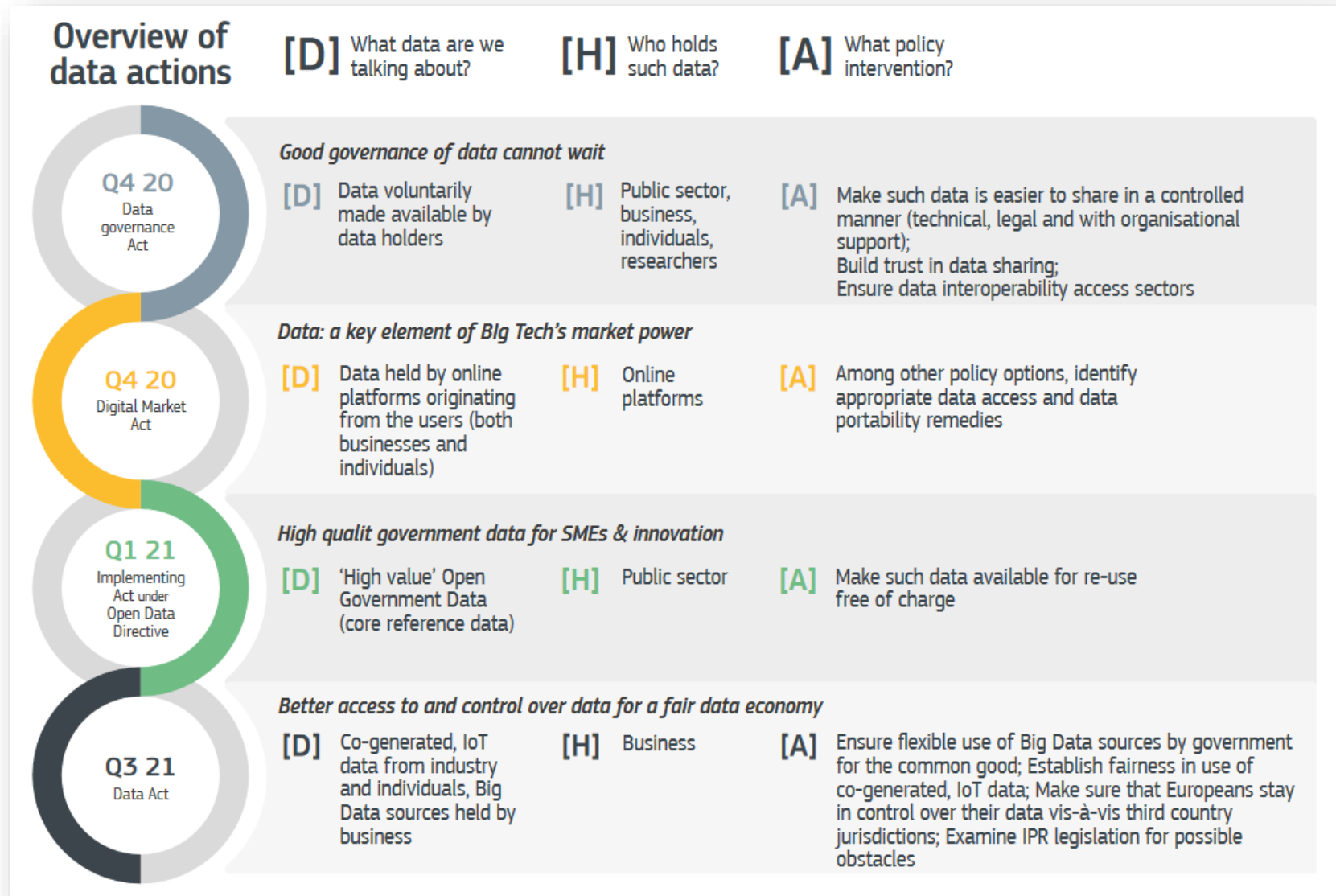
## European Strategy for Data

### 1. Data Governance

### 2. Digital Market

### 3. Open Data

### 4. Data Act



# Defining now the future!

## Sectoral European data spaces

Rich pool of data  
(varying degree of  
accessibility)

Free flow of data  
across sectors and  
countries

Full respect of GDPR

Horizontal  
framework for data  
governance and data  
access

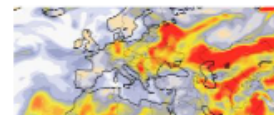


- Technical tools for data pooling and sharing
- Standards & interoperability (technical, semantic)
- Sectoral Data Governance (contracts, licenses, access rights, usage rights)
- IT capacity, including cloud storage, processing and services

Personal Data Spaces



High Value Data sets



Public Sector

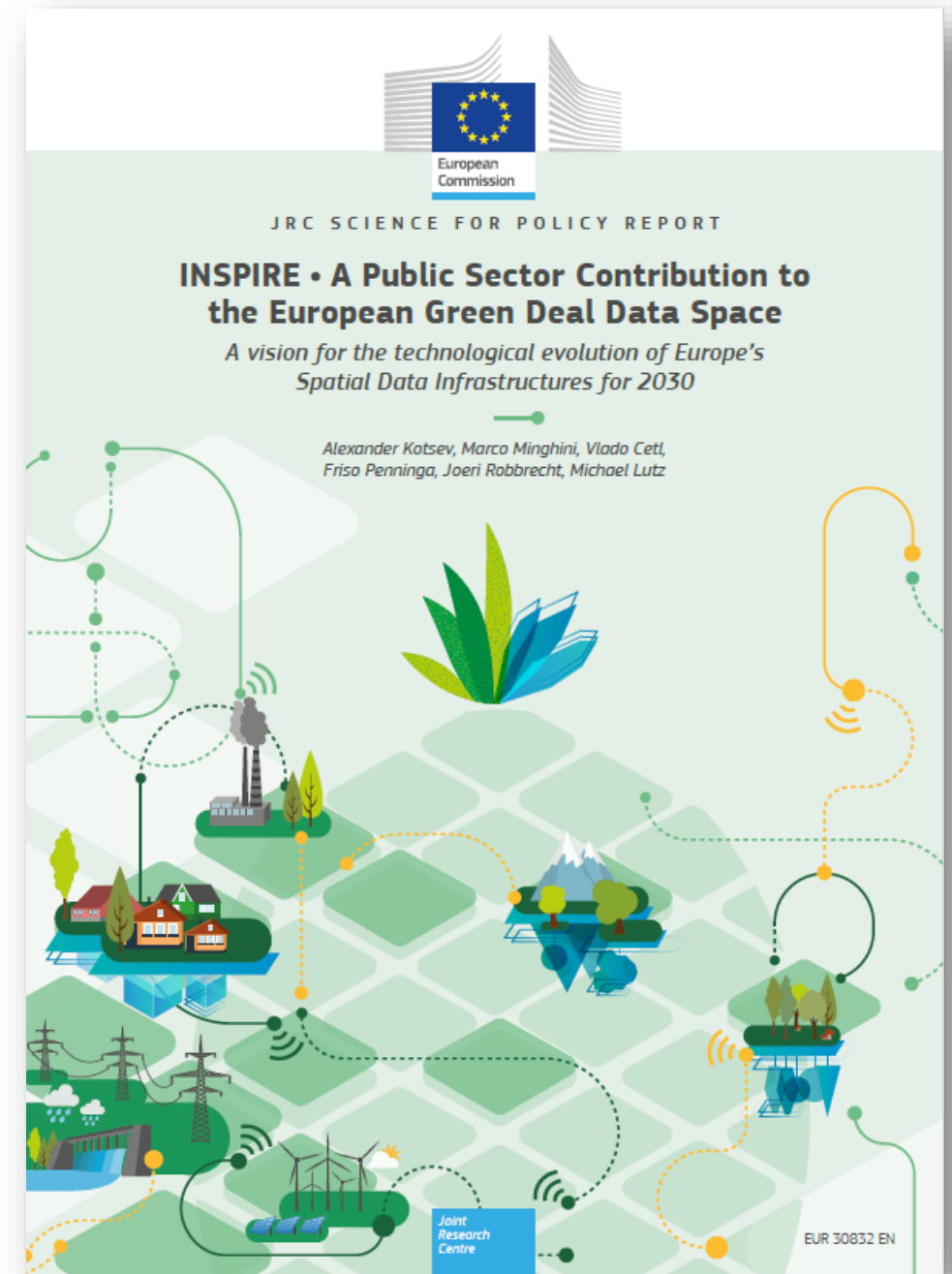


# INSPIRE Evaluation & Future JRC Science for Policy Report

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

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

- Prepared by JRC, 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 Evaluation & Future Vision



- Evolution to a data ecosystem.
- Broadening the scope:
  - New sectors: public, private/businesses, academia.
  - New communities: developers, users.
- Widening the range of applications and use cases.
- Making the INSPIRE framework more simple, flexible and agile.
- Lowering the knowledge entry-level for implementing and/or using data.
- Reusing well-adopted and working standards and technologies.



# 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

# Central INSPIRE Components

## Sustainability approach


- Sustainability of the INSPIRE core infrastructure components
  - 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.



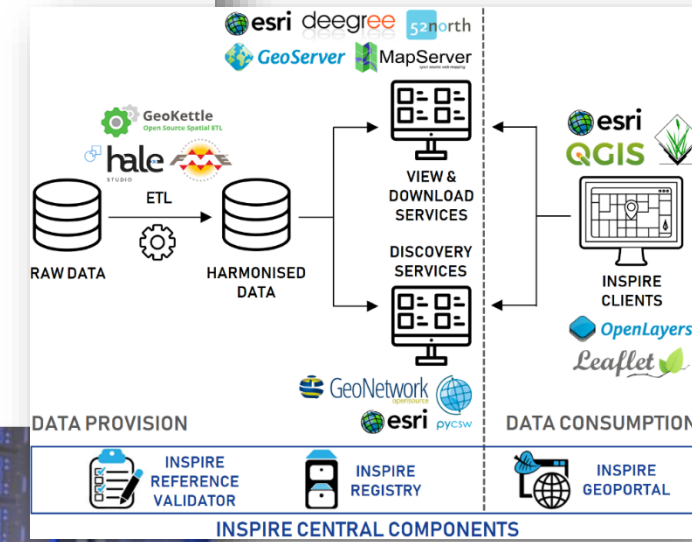
European Commission

Sustainability of the INSPIRE core infrastructure components – Analysis and recommendations

Michael Lutz  
Alexander Kotsev  
Marco Minghini  
Vlado Cetl  
Karen Fullerton  
Daniele Francioli  
Robert Tomas  
Lorena Hernandez



Joint Research Centre



# INSPIRE Geoportal

## What we have

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

Main access point to INSPIRE Infrastructure tools and resources.

- Own development (GeoNetwork, in near future).



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](#)

# INSPIRE Geoportal

## What we have

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

Main access point to INSPIRE Infrastructure tools and resources.

- Own development (GeoNetwork, in near future).
- Focus: INSPIRE M&R.

The screenshot shows the INSPIRE Geoportal website. At the top, there is a navigation bar with the European Commission logo and the text "INSPIRE GEOPORTAL Enhancing access to European spatial data". Below this is a breadcrumb trail: "European Commission > INSPIRE > Geoportal". The main content area is titled "INSPIRE Data Sets - EU & EFTA Country overview". It features a map of Europe with a "Hover over a country" tooltip. To the right of the map is a "INSPIRE Geoportal Data Set Statistics" panel with three metrics: 91433 Metadata records, 44789 Downloadable Data Sets, and 46451 Viewable Data Sets. Below the map is a "Select a COUNTRY" section with a grid of country entries, each showing a flag, the country name, and three statistics (document, download, and view icons). At the bottom, there is a "Select the whole EUROPE" button and a "Download stats" button. The footer contains "INSPIRE Geoportal" and "Version: 1.5.0".

Country	Document	Download	View
Austria	630	410	493
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	80	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	172
Sweden	245	189	217
Switzerland	218	2	4



# INSPIRE Geoportal Revamp

## Objectives

- **Geoportal Backend: Ongoing**
  - Migration to a GeoNetwork-based architecture.
    - Functionality of the current Geoportal is maintained.
    - Improved Harvesting processes and performance (use of micro-services).
  - Migration to a cloud environment: assure system availability / scalability.
- **Geoportal Frontend: Ready + Backend integration ongoing**
  - New UI filtering INSPIRE datasets according to High-Value Datasets.
  - Launch still waiting for the publication of the HVDs Implementing Act.

# INSPIRE Geoportal Revamp: Frontend

- **Ready** – Filtering by High Value Datasets (HVDs). To be launched when the Implementing Act on HVDs is published and enters into force.
- **Ongoing** – Additional developments are currently on-going for integrating the UI to the new GeoNetwork backend.

The screenshot displays the INSPIRE Geoportal homepage. At the top, there is the European Commission logo and a language selector set to 'English'. Below the logo is a breadcrumb trail: 'European Commission > INSPIRE > INSPIRE Geoportal > HOME'. A dark blue header contains the text 'ENHANCING ACCESS TO EUROPEAN SPATIAL DATA' and 'INSPIRE GEOPORTAL'. A navigation menu below the header includes 'Home', 'High-Value Data Sets', 'Thematic Data', 'Harvesting status', and 'Find out more about'. The main content area features a 'Welcome to the INSPIRE Geoportal' section with a paragraph explaining its role as the central European access point. It lists three key functions: monitoring data set availability, discovering data sets based on metadata, and accessing selected data sets. Below this, it mentions that metadata is harvested from discovery services and provides a link for harvesting status. A feedback link is also present. Two service cards are displayed: 'High-Value Data Sets' with a color palette icon and a 'Browse' button, and 'INSPIRE Thematic Data' with an apple icon and a 'Browse' button. At the bottom, there is a section for the 'INSPIRE Reference Validator' with a 'Go to INSPIRE Reference Validator' button.

European Commission | EN English

European Commission > INSPIRE > INSPIRE Geoportal > HOME

ENHANCING ACCESS TO EUROPEAN SPATIAL DATA

INSPIRE GEOPORTAL

Home High-Value Data Sets Thematic Data 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](#).

#### High-Value Data Sets

The application provides an overview and access to geospatial high-value datasets and other core data (including priority data sets for eReporting).

[Browse](#)

#### INSPIRE Thematic Data

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 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 Reference Validator](#)

# INSPIRE Geoportal Revamp: Backend

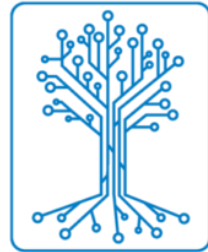


- Prototype delivered and tested.
- Production-ready system near to be delivered.

The screenshot displays the 'My GeoNetwork catalogue' interface. On the left, a sidebar shows 'Catalog harvesters' and 'Catalog harvester report'. The main area is titled 'Harvester' and lists several harvesters, with 'BE-GEOBRU' selected. The configuration page for 'BE-GEOBRU' is shown on the right, featuring tabs for 'Settings', 'Harvester history', and '106 Metadata records'. The configuration includes fields for 'Node name and logo' (BE-GEOBRU), 'Group' (Belgium), 'User' (admin admin), 'Service URL' (https://geobru-geonetwork.irisnet.be/geonetwork/inspire/fre/csw), and 'Number of records to retrieve per request' (20). There are also 'Delete' and 'Save' buttons at the top right of the configuration section.

# INSPIRE Geoportal future: Data spaces

## Analysis of relevant data sharing initiatives



GAIA-X



MyData



iSHARE



ocean



FIWARE



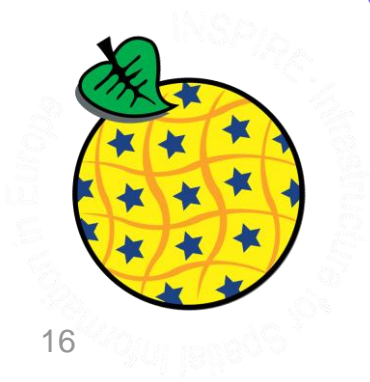
BDV BIG DATA VALUE ASSOCIATION



Catena-X  
Automotive Network



open data institute





# INSPIRE Geoportal future: Data spaces

## Analysis of technical and non-technical requirements

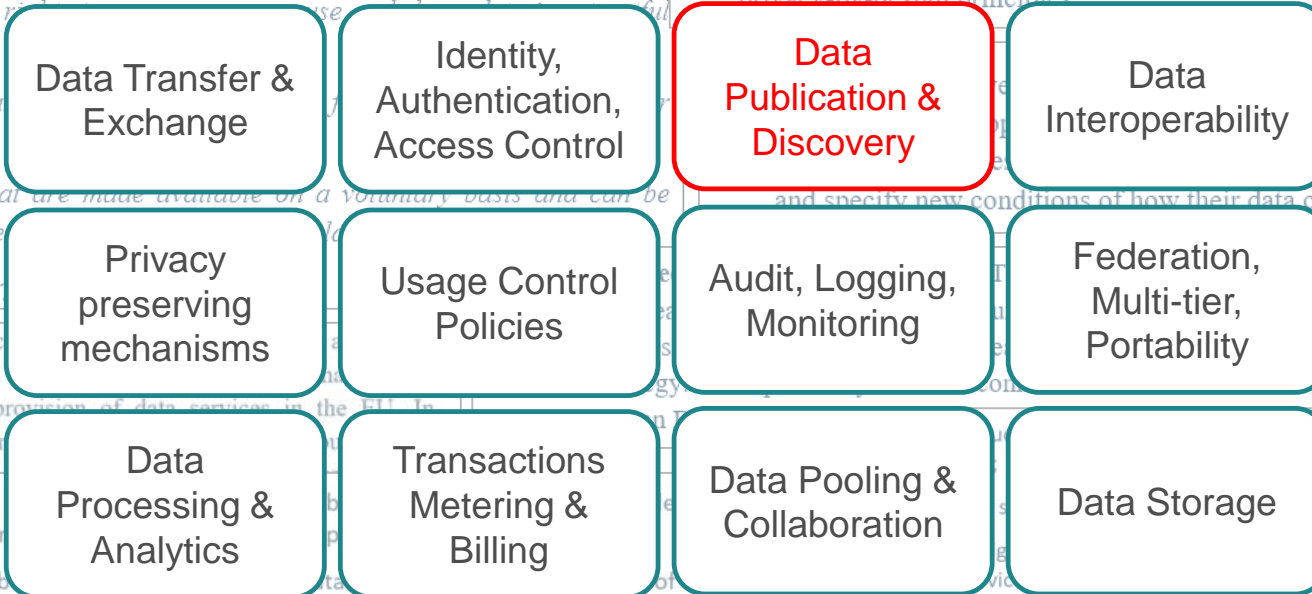
### Key features of a data space

- A secure and privacy-preserving IT infrastructure to pool, access, process, use and share data.
- A data governance mechanism, comprising a set of rules of legislative, administrative and contractual nature that determine the rights and obligations of participants in a clear and transparent manner.
- Data holders are in control of who can access their data and under which conditions it can be used.
- Presence of vast amounts of data that are made available on a voluntary basis and can be reused against remuneration or for free.
- Participation by an open number of organisations.

### Respect of EU rules and values: data spaces in the EU legal framework on data protection and portability and other rules relevant for provision of data services in the EU. In particular, reasonable technical, legal and other measures should be taken to ensure that data spaces are compatible with the EU legal framework on data protection and portability and other rules relevant for provision of data services in the EU.

- Provide a full cloud stack with built-in identification and security, including data masking services; and on crosscutting, low power, and
- Provide a technical baseline to build on crosscutting, low power, and
- Allow state-of-the art data management between cloud and edge, enabling seamless ultra-fast data workload balancing between them, and intelligent data porting between centralised and decentralised data infrastructures;
- Ensure performance and quality of service in the execution of applications across multiple cloud and edge providers;

- **Technical data infrastructure:** participants in the creation of common European data spaces will be encouraged to use the common technical infrastructure and building blocks which will allow to efficiently build data spaces in a coordinated manner. The common technical infrastructure should integrate the cybersecurity-by-design and privacy-by-design principles.



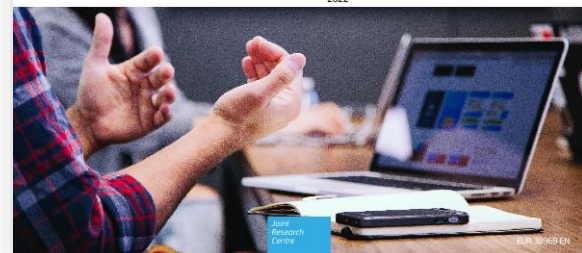
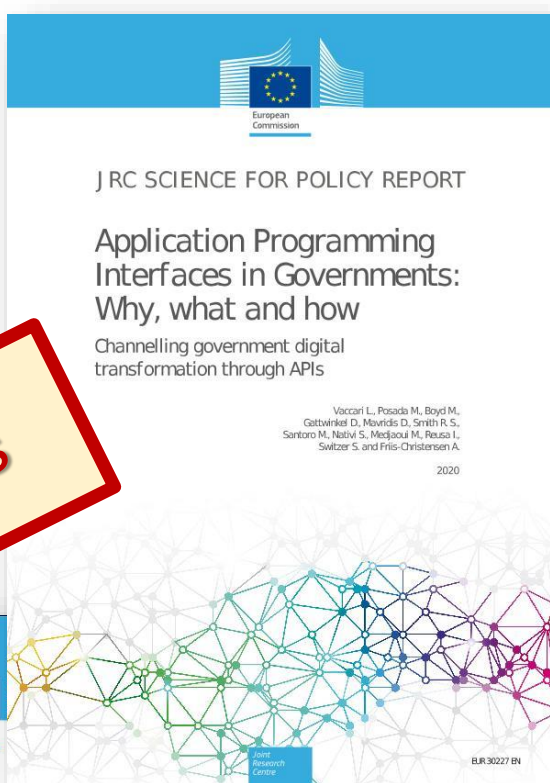
common European data spaces should allow participants to pool, access, use and share all types of data. Data holders should be able to give their consent and to change access rights and specify new conditions of how their data can be accessed and reused.

Integration costs are high for interconnected data spaces in the European Union. The adoption of common European data spaces should be encouraged to use the common technical infrastructure and building blocks which will allow to efficiently build data spaces in a coordinated manner.

built-in identification and security, including data masking services; and on crosscutting, low power, and

- Integrate an environmental tracking performance system to ensure services operate in a low power mode;
- Provide secure resource efficient data storage services;
- Be tested in use cases in areas of public interest including the areas of trust services and electronic identity, modernisation of public administration, mobility, as well as industrial data spaces.

Findings



# INSPIRE Geoportal future: Data spaces

## Data spaces Cookbook (ongoing)

- JRC knowledge base to provide an easy entry point for data spaces stakeholders to JRC findings.
  - Ingredients: JRC research findings from articles, reports.
  - Mapped to the technical and non-technical requirements for data spaces as defined in:
    - The European Strategy for Data and SWD(2022) 45 final.
- Co-created and validated by different services (ENV, SANTE, GROW, DIGIT, JRC, AGRI, CNECT).
- Two products derived from the same knowledge base:
  - Living document (online).
  - Interactive component (chatbot, Q&A system).
- Complements the Data Spaces Support Centre and European Innovation Board.
- **Some reflections for the future in the presentation after lunchbreak!**

# Keep in touch



[ec.europa.eu/](https://ec.europa.eu/)



[europa.eu/](https://europa.eu/)



[@EU\\_Commission](https://twitter.com/EU_Commission)



[@EuropeanCommission](https://www.facebook.com/EuropeanCommission)



[European Commission](https://www.linkedin.com/company/european-commission)



[europeancommission](https://www.instagram.com/europeancommission)



[@EuropeanCommission](https://www.youtube.com/@EuropeanCommission)



[EUTube](https://www.youtube.com/EUTube)



[EU Spotify](https://open.spotify.com/playlist/37i9ZqRwXb1Rmzw0R0108)



# Thank you!



Jordi.ESCRIU@ec.europa.eu



© European Union 2020

Unless otherwise noted the reuse of this presentation is authorised under the [CC BY 4.0](https://creativecommons.org/licenses/by/4.0/) license. For any use or reproduction of elements that are not owned by the EU, permission may need to be sought directly from the respective right holders.

