INSPIRE Geoportal

Towards a new EU data ecosystem

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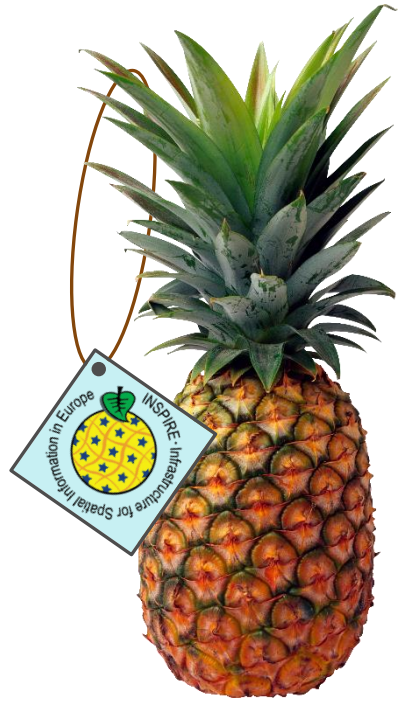
EuroSDR & EuroGeographics INSPIRE KEN Workshop on Spatial Data Discoverability, 28th April 2022

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.



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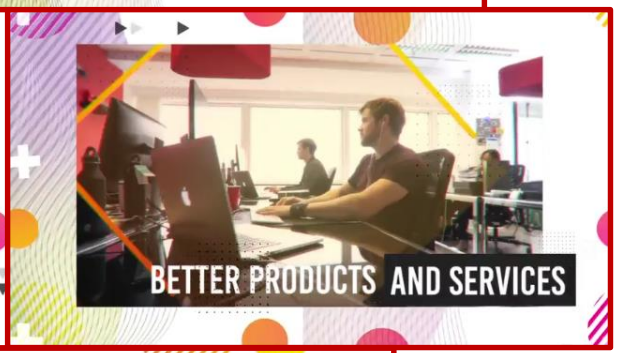
A new context is ahead

New European digital society



European Commission

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.

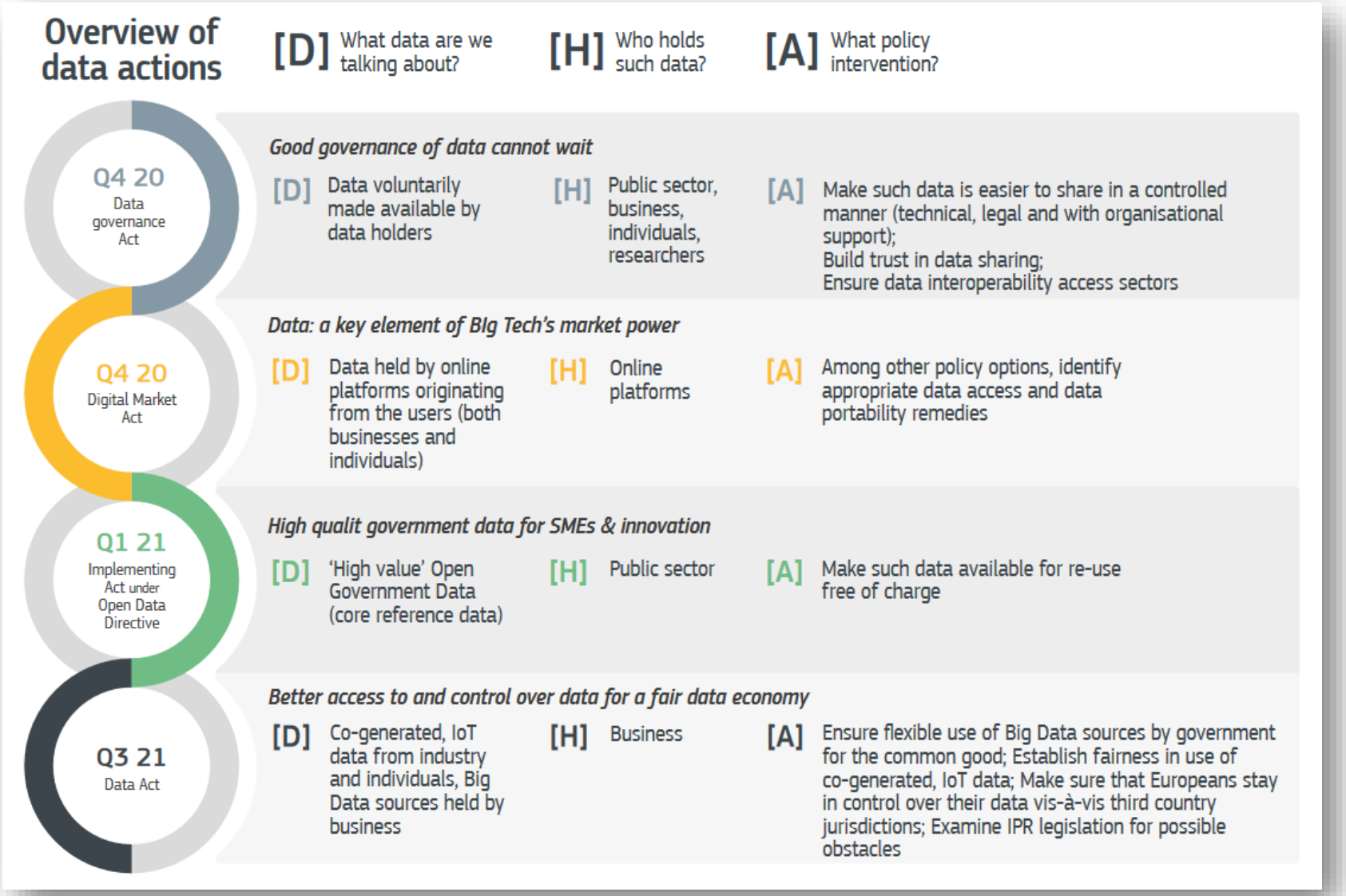
Implementation
European Strategy for Data

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

Health

Industrial & Productive

Agriculture

Finance

Mobility

Environment **Green Deal**

Energy

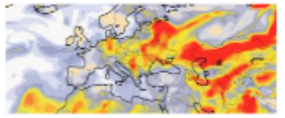
Public Administration

Skills

- 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



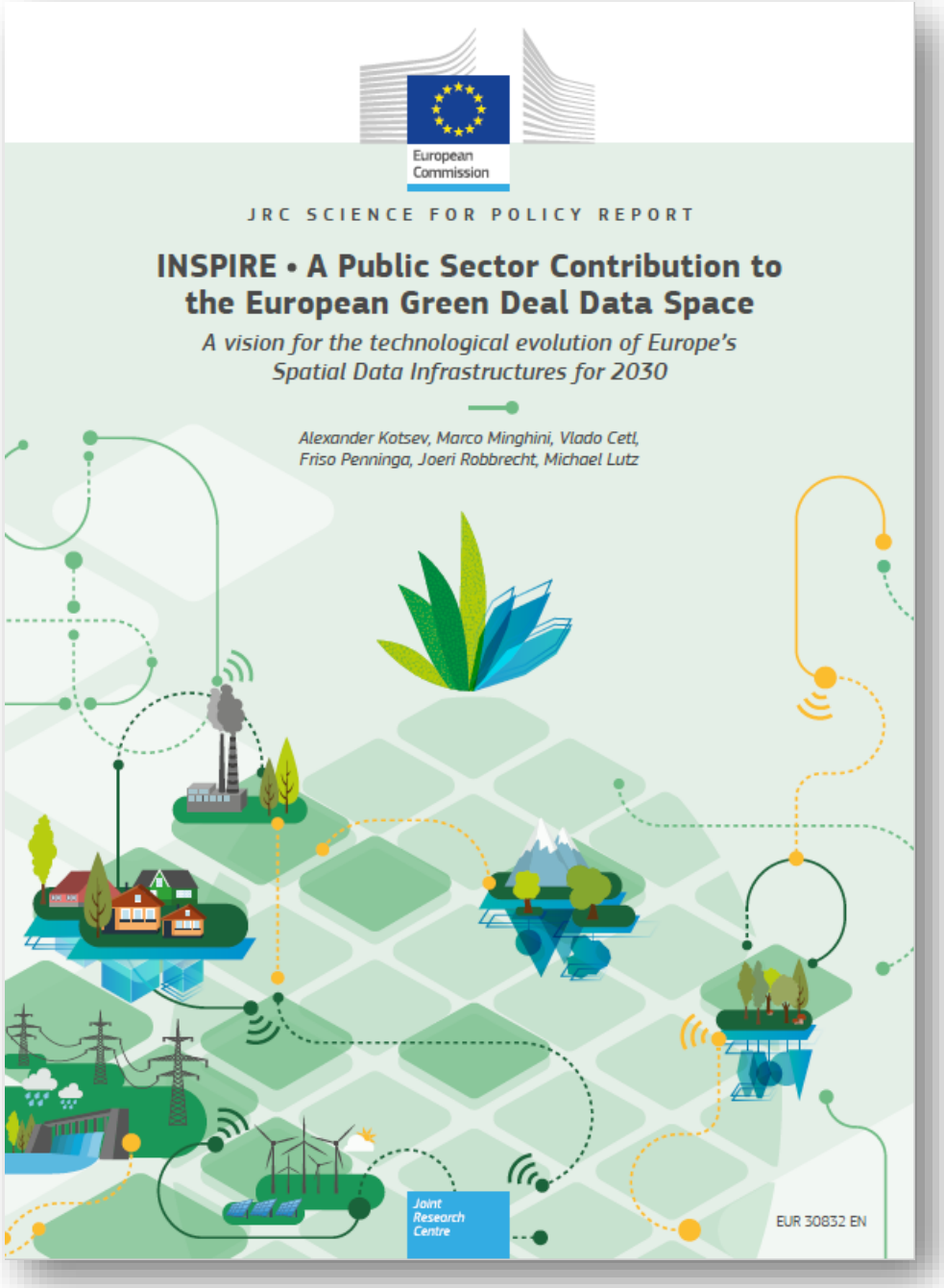
Public Sector

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.

European Commission

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

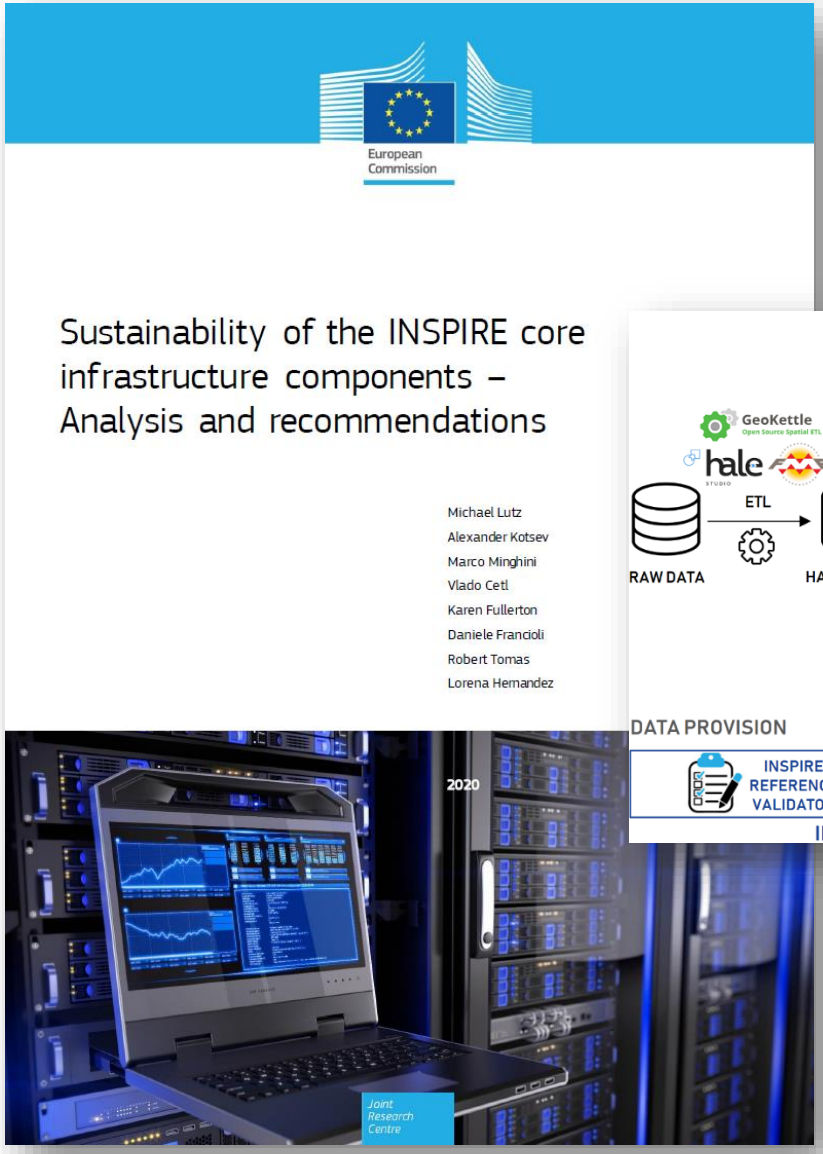
2.4 Central infrastructure components

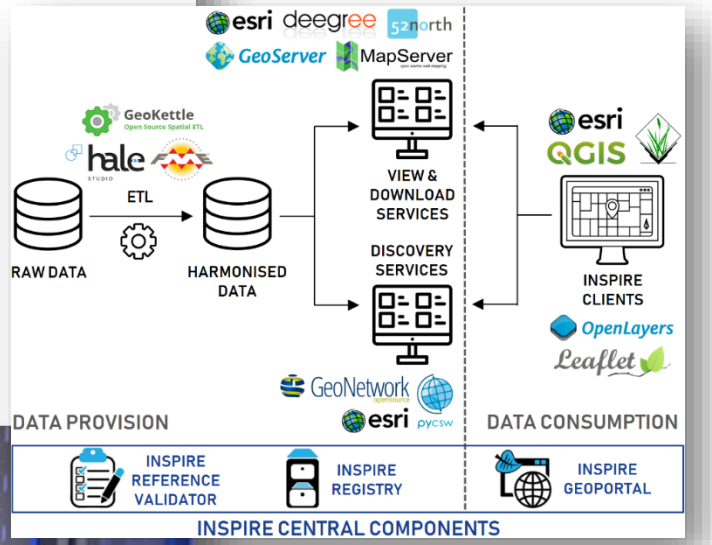
3.1 GreenData4all initiative

European Commission

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.





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INSPIRE Geoportal
What we have

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

Main access point to INSPIRE Infrastructure tools and resources.

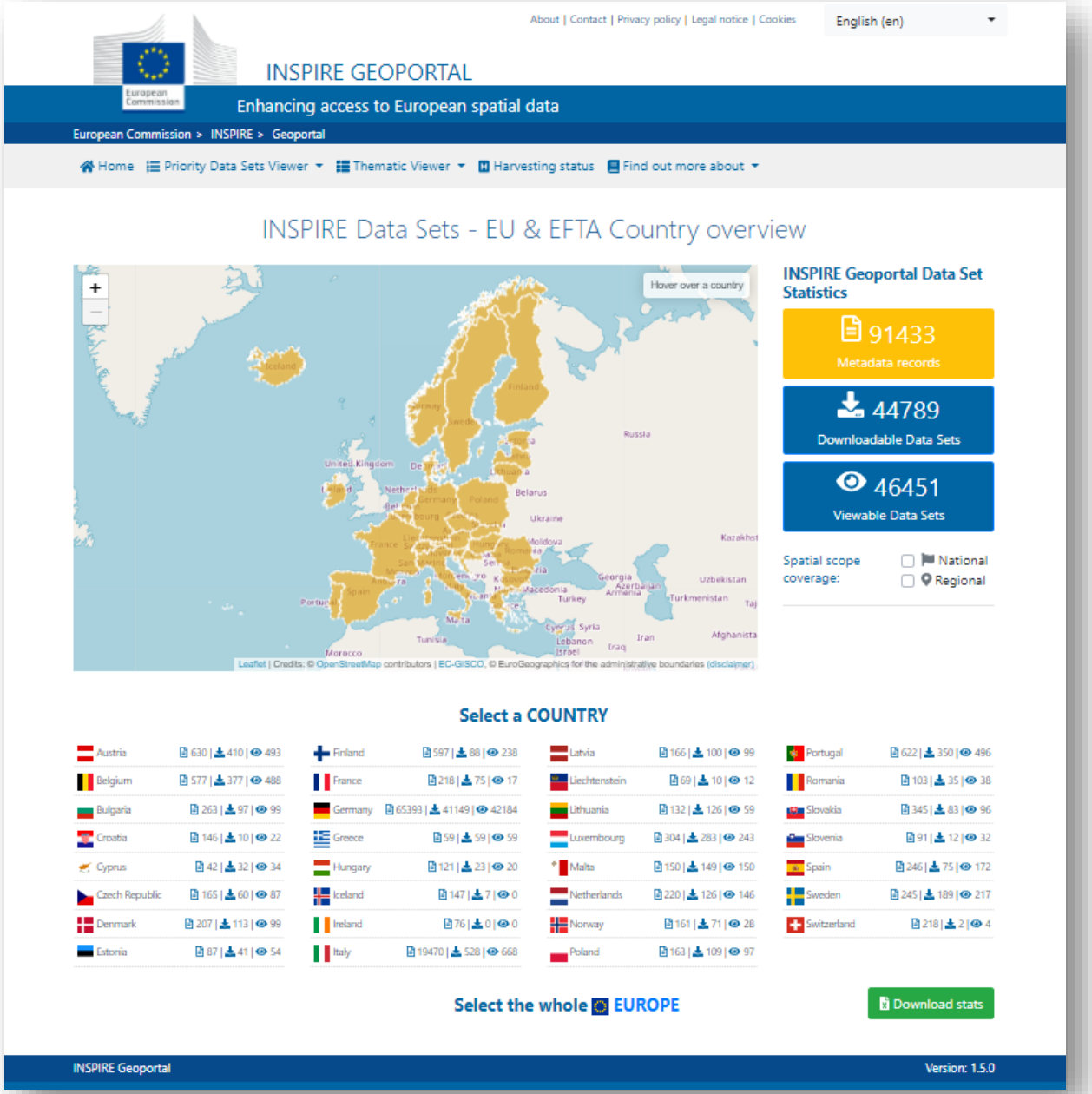
- Own development (GeoNetwork, in near future).

INSPIRE Geoportal
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.



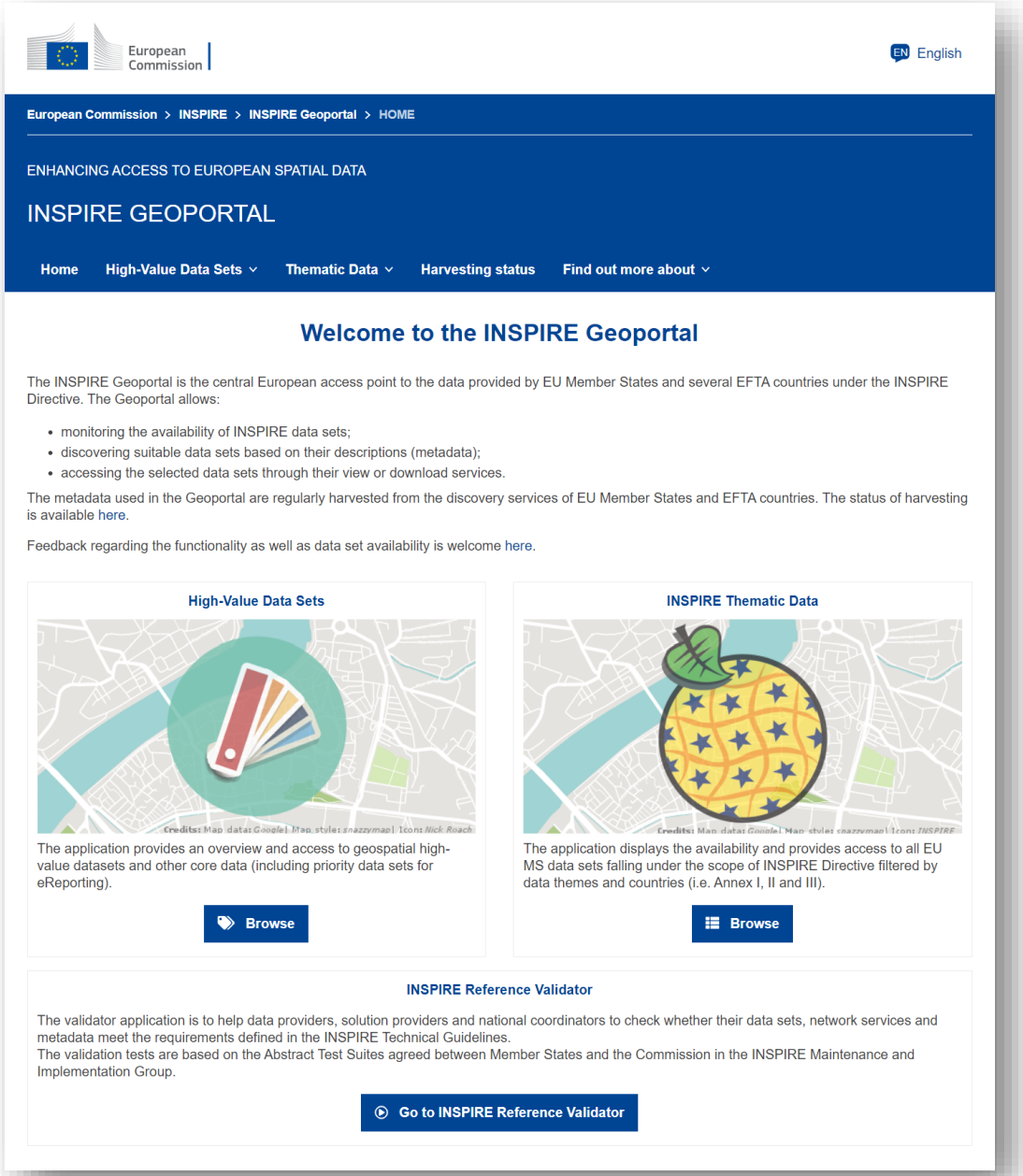
INSPIRE Geoportal
Revamp

Objectives

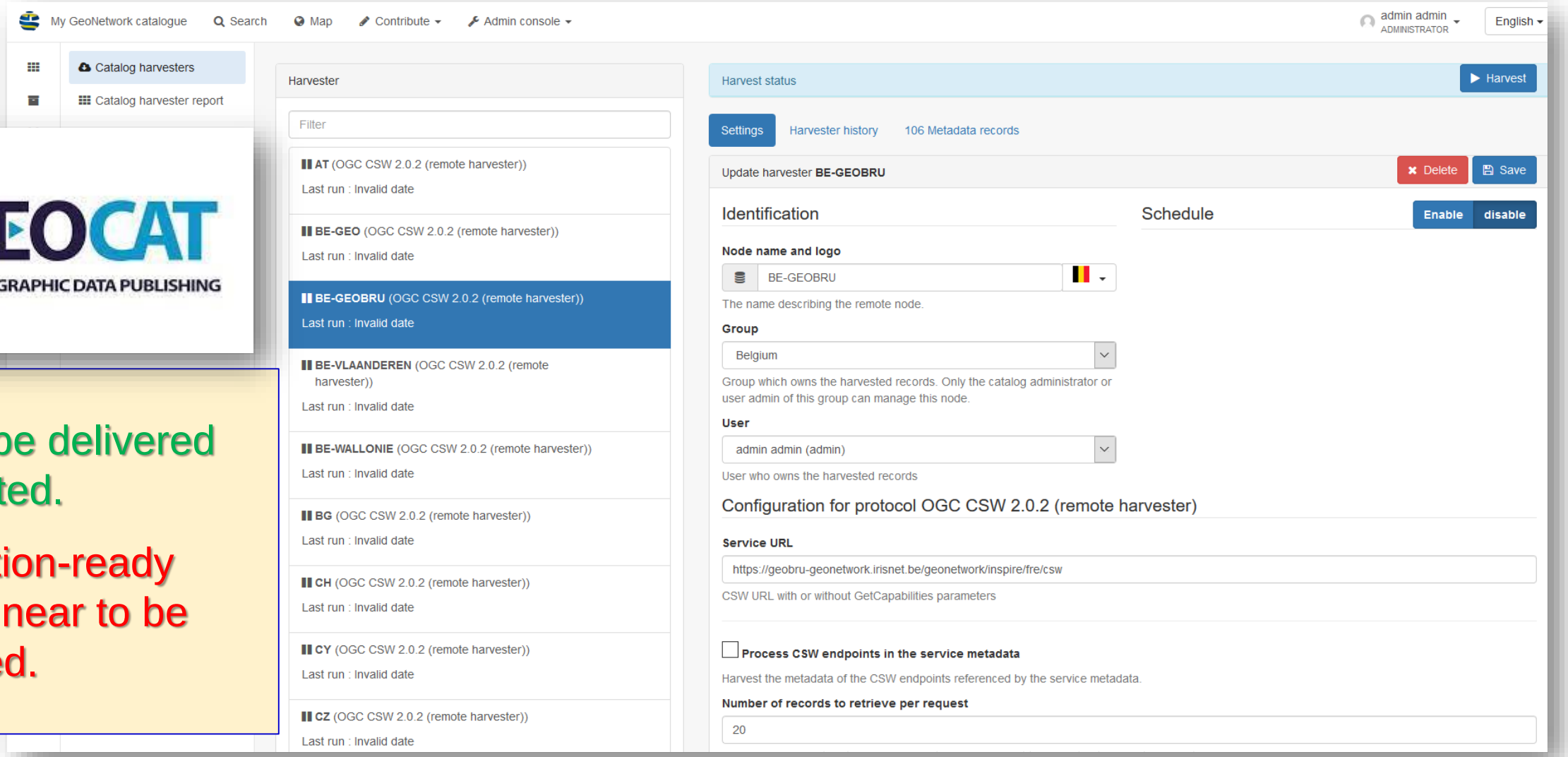
- Geoportal Backend: Ongoing
  - Migration to a GeoNetwork-based architecture.
    - Functionality of the current Geoportal is maintained.
    - Improved Harvesting processes and performance (use of micro-services).
  - Migration to a cloud environment: assure system availability / scalability.
- Geoportal 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.



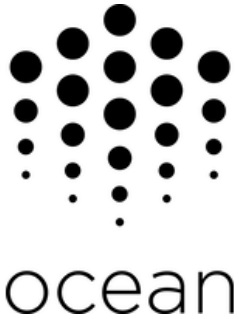
INSPIRE Geoportal
Revamp: Backend

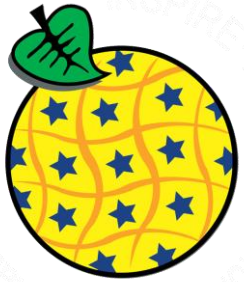


GEOCAT
GOVERNMENT GEOGRAPHIC DATA PUBLISHING

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

INSPIRE Geoportal future: Data spaces
Analysis of relevant data sharing initiatives





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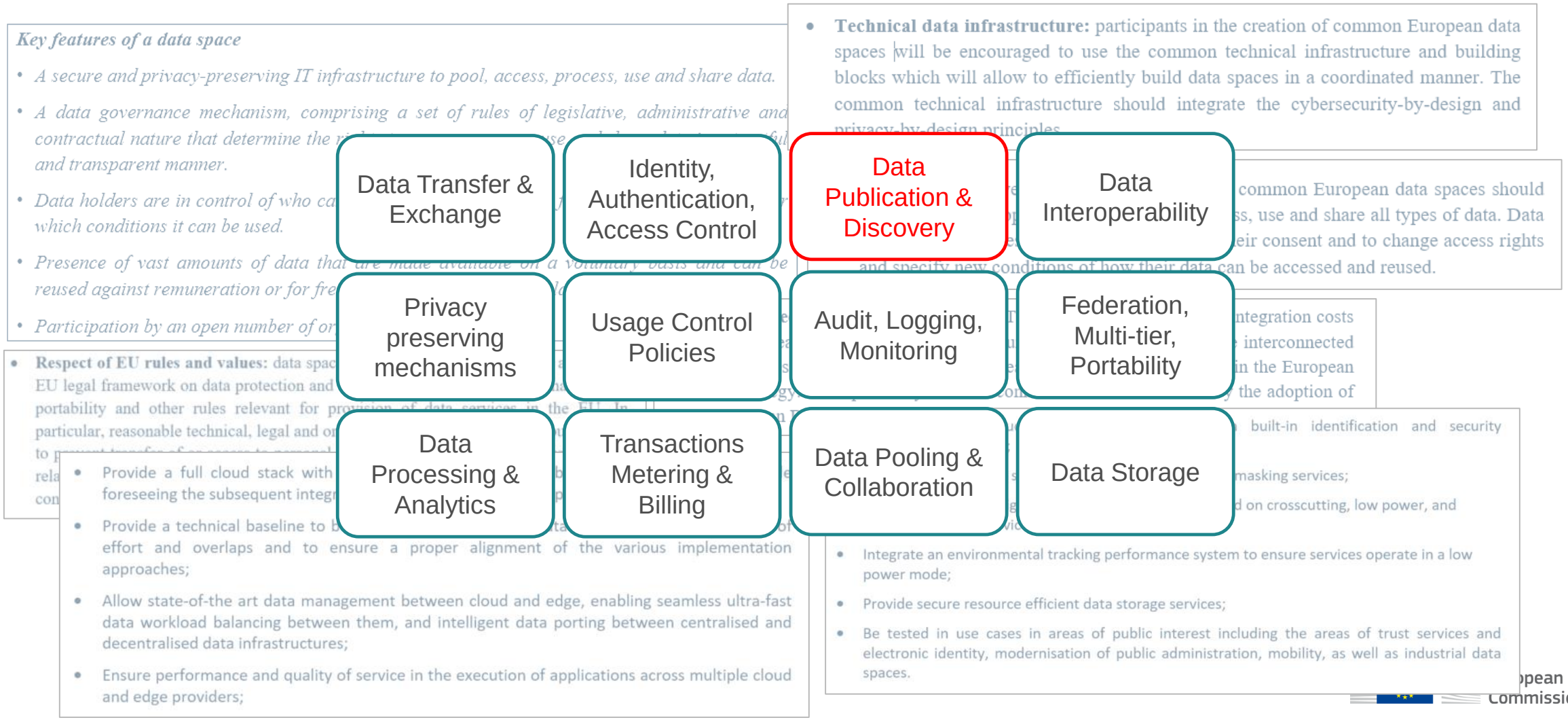
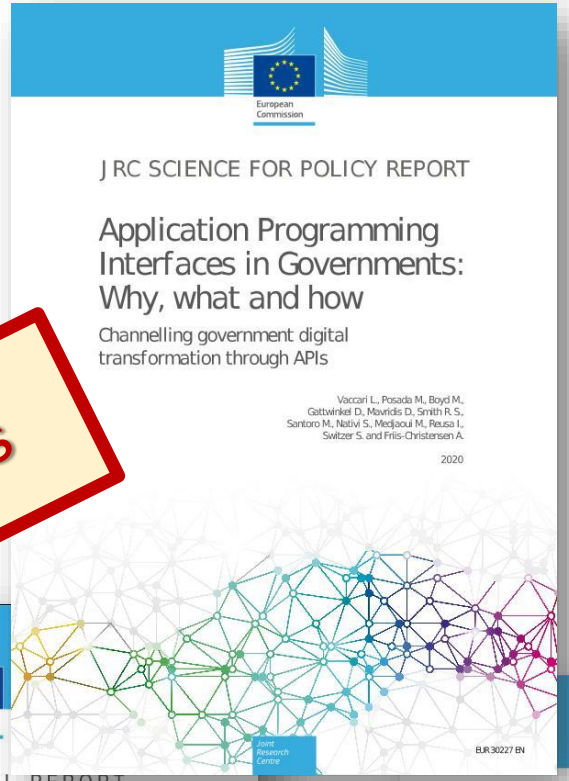
INSPIRE Geoportal future: Data spaces
Analysis of technical and non-technical requirements



Findings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INSPIRE • A Public Sector Contribution to the European Green Deal Data Space

A vision for the technological evolution of Europe's Spatial Data Infrastructures for 2030

Alexander Kotsev, Marco Minghini, Vlado Cetl, Friso Penninga, Joeri Robbrecht, Michael Lutz

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Sandbox experiments on the governance of data and technology

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Quantifying the Benefits of Location Interoperability in the European Union

Ulrich, P., Duch Brown, N., Kotsev, A., Minghini, M., Hernandez Quiros, L., Boguslawski, R., Pignatelli, F.

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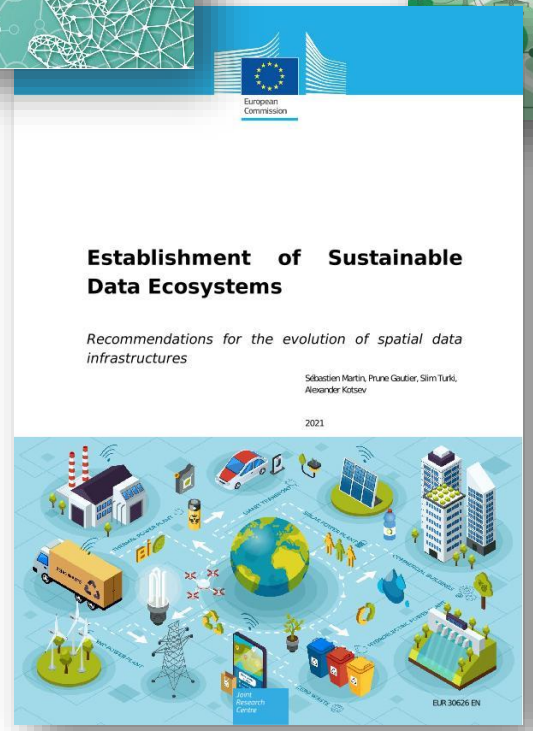
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Establishment of Sustainable Data Ecosystems

Recommendations for the evolution of spatial data infrastructures

Sébastien Martin, Prune Gautier, Slim Turki, Alexander Kotsev

2021

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Humanities & Social Sciences Communications

nature

ARTICLE

https://doi.org/10.1057/s41599-021-00851-5 OPEN

Check for updates

Collaboration matters: capacity building, up-scaling, spreading, and sustainability in citizen-generated data projects

Mara Balestrini[1], Alexander Kotsev[2], Marisa Ponti[3]✉ & Sven Schade[2]

Projects producing citizen-generating data (CGD) to provide evidence and to drive change have increased considerably in the last decade. Many of these initiatives build on multi-actor collaboration and are often supported by non-governmental organisations (NGOs), the public sector, businesses or community-based organisations. The joint efforts of these actors are often necessary to provide the resources and the support that citizens need to produce data. In return, organisations can harness the data to support their objectives. The recent growth (or up-scaling) of CGD projects has created opportunities, as well as challenges for capacity building and sustainability. These challenges can affect the continuity and effectiveness of these initiatives and, in turn, the quality and utility of collected data. This paper analyses two CGD projects to consider their social implications and the measures necessary to increase their capacity, up-scaling, spreading, and sustainability. The case studies on noise monitoring and invasive alien species describe, respectively, a bottom-up approach at city level and a top-down approach at the European level. Regardless of the approach, capacity building requires a process of infrastructuring that engages different actors, responds to matters of concern, assesses community capacities and needs, and develops a vision and action plan. Further, the appropriation and repurposing of technical systems is required to scale up and spread CGD projects. In this process, participants' activities are shaped by technologies, while the meaning and effects of technologies are shaped through participants' activities.

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!

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Thank you!

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