2023 GEO DIALOGUE SERIES

Open Software Infrastructure Hardware

INSPIRE as an open infrastructure

Marco Minghini

European Commission, Joint Research Centre (JRC)

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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 sharing
  - data & service discovery (metadata)
  - network services
- based on the SDIs established and operated by the EU Member States.

https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32007L0002

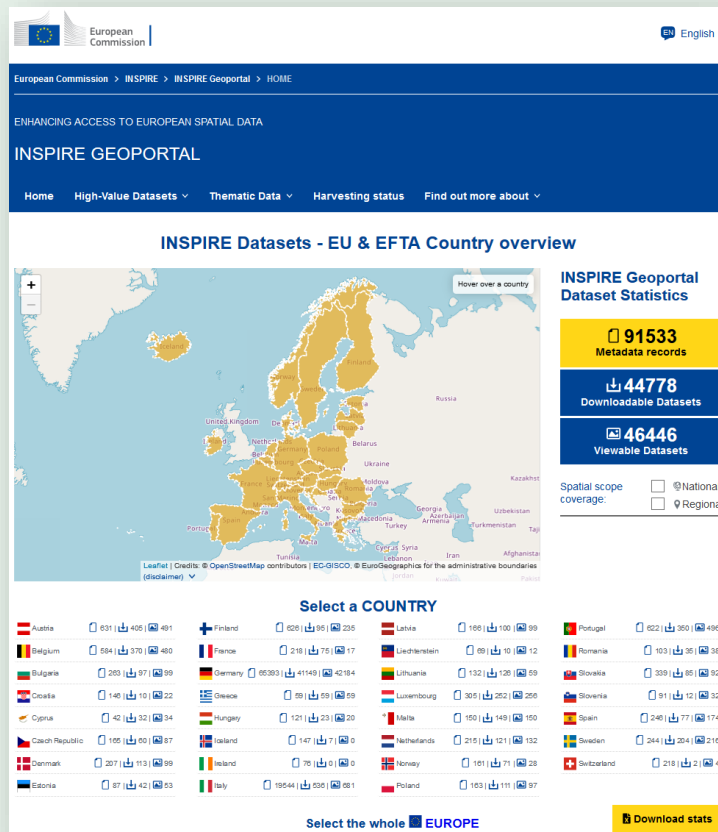# INSPIRE: an open infrastructure

- The INSPIRE legal framework led to the development and evolution of an open infrastructure
  - central components based on reusable, open source software solutions
  - technology-agnostic thanks to the reuse of open standards
  - inclusive, flexible and open governance approaches
  - library of open educational material
  - open repositories for artefacts and resources
  - future stronger link with EU open data policies
  - community

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Open source – INSPIRE central components

- INSPIRE (legal framework) as a catalyst for technological innovation
  - central components based on reusable, open source software solutions

INSPIRE Geoportal, based on GeoNetwork opensource

INSPIRE Reference Validator, based on the ETF Testing Framework

INSPIRE Registry, based on the Re3gistry

Open standards

- INSPIRE is by nature based on open standards – probably the largest uptake of OGC standards worldwide!

  - benefits for all players: data providers, users & standardisation bodies

- Only mature and well-supported standards should be considered for INSPIRE technical provisions:

  - selected standards should not only satisfy the legal requirements, but also simplify the lives of providers/users!

Open standards – Implementation stack

- INSPIRE-related software for data provision and consumption

Open governance approaches

- Inclusive and open governance approach since the beginning:
    - broad spectrum of users & implementers
    - INSPIRE MIG for organisational, legal and technical matters

- More agile governance approaches would help:
    - community-driven & based on online collaborative platforms

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Open governance approaches

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  - community-driven & based on online collaborative platforms

- INSPIRE Good Practices
  - a mechanism to introduce new approaches (standards, technologies, etc.) in INSPIRE

Good Practice documents

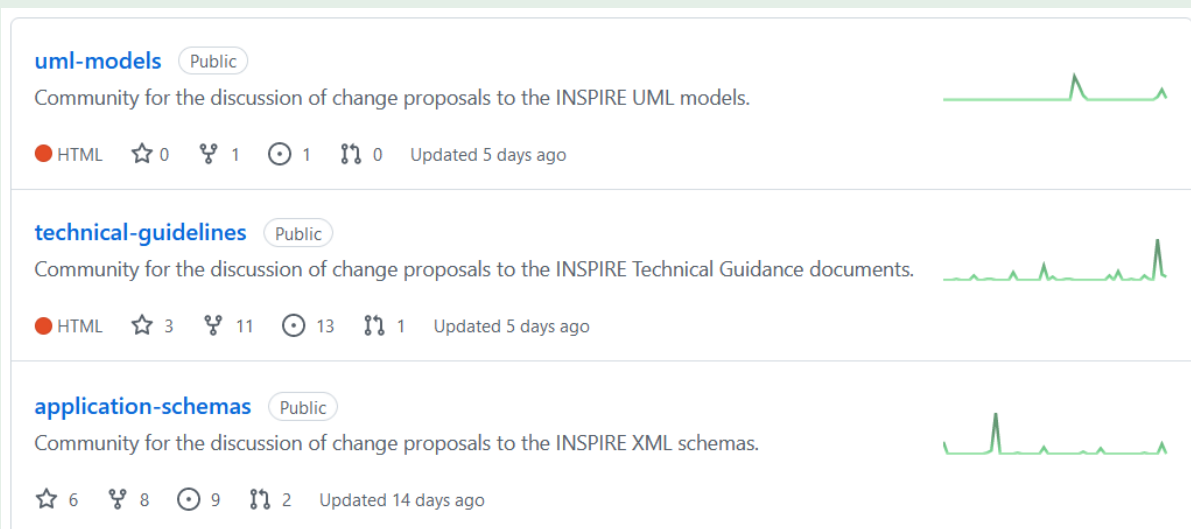| Candidate	Endorsed
GeoJSON encoding of INSPIRE Datasets	GeoDCAT-AP
	SDMX for Human Health and Population Distribution
	OGC API – Features as an INSPIRE download service
	OGC SensorThings API as an INSPIRE download service
	Building one access point to dispersed data sources
	Making spatial data downloadable via WMS services
	OGC compliant INSPIRE Coverage data and service implementation
	GeoPackage encoding of INSPIRE datasets
	Data-Service Linking Simplification

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

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- INSPIRE Good Practices
    - a mechanism to introduce new approaches (standards, technologies, etc.) in INSPIRE

- INSPIRE artefacts
    - a governance process to manage changes/updates to INSPIRE TGs, schemas and UML models

https://github.com/INSPIRE-MIF

uml-models `Public`
Community for the discussion of change proposals to the INSPIRE UML models.
🔴 HTML ⭐ 0 ⑂ 1 ⊙ 1 ⇊ 0 Updated 5 days ago

technical-guidelines `Public`
Community for the discussion of change proposals to the INSPIRE Technical Guidance documents.
🔴 HTML ⭐ 3 ⑂ 11 ⊙ 13 ⇊ 1 Updated 5 days ago

application-schemas `Public`
Community for the discussion of change proposals to the INSPIRE XML schemas.
⭐ 6 ⑂ 8 ⊙ 9 ⇊ 2 Updated 14 days ago

Open educational material

- Collection of openly-accessible training modules developed over the years
- User and developer guides for the software tools

Training library

List of current and updated training modules

MODULE METADATA	MODULE LINK
Monitoring and understanding emerging geospatial technologies	Access the module
From INSPIRE to e-Government	Access the module
Principles for Data and Metadata Harmonisation according to INSPIRE	Access the module
INSPIRE Network Services (UPDATE)	Access the module
Short video on benefits of INSPIRE	View the video

https://inspire.ec.europa.eu/portfolio/training-library

Open repositories for artefacts and resources

- INSPIRE-related resources are all freely and openly available (CC licenses)
  - INSPIRE TGs
  - INSPIRE UML models
  - INSPIRE schemas
  - Abstract and Executable Test Suites (ATS and ETS)

https://github.com/INSPIRE-MIF/technical-guidelines
https://github.com/INSPIRE-MIF/uml-models
https://github.com/INSPIRE-MIF/application-schemas
https://github.com/inspire-eu-validation

INSPIRE Technical Guidance documents

The purpose of this repository is to host the INSPIRE Technical Guidance documents (hereafter INSPIRE TGs) and manage the changes to them.

The issue tracker of this repository should only be used to submit and discuss change proposals to the TGs. Should you have any questions relating to the use of the TGs or relating to general INSPIRE matters please use the INSPIRE helpdesk.

The INSPIRE TGs describe detailed implementation aspects and relations with existing standards, technologies, and practices, see also https://inspire.ec.europa.eu/inspire-technical-guidance/57753.

Status

All INSPIRE TGs will be converted from the current pdf format to the AsciiDoc format and published in this repository, according to the order and timing defined in the conversion plan.

Currently, the following TGs have been converted:

- Metadata
  - Metadata-iso19139
- Services
  - Download Services
  - View Services
- Data
  - Coordinate reference systems
  - Elevation
  - Environmental Monitoring Facilities
  - Geographical Grid Systems
  - Hydrography
  - Land Use
  - Protected Sites
  - Soil

Link with open data policies

- INSPIRE does not require that data are shared under open licenses.

- Open Data Directive (2019) & Implementing Act on high-value datasets (2022)
  - datasets the re-use of which is associated with high socio-economic benefits

- To be made available
  - for free, under open access license (CC BY 4.0 or less restrictive)
  - in machine-readable formats
  - via APIs and (when relevant) as bulk downloads

- Categories of high-value-datasets:

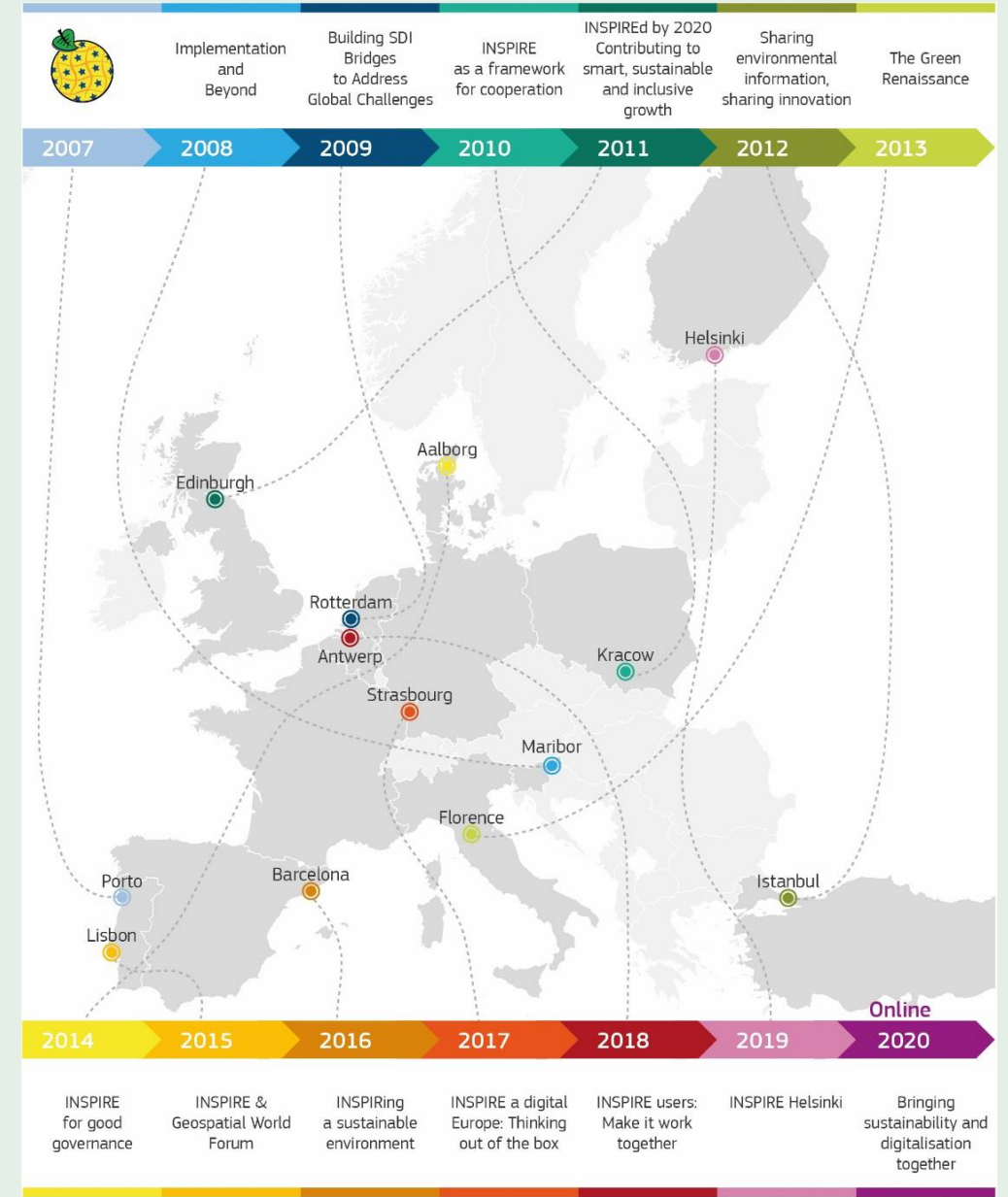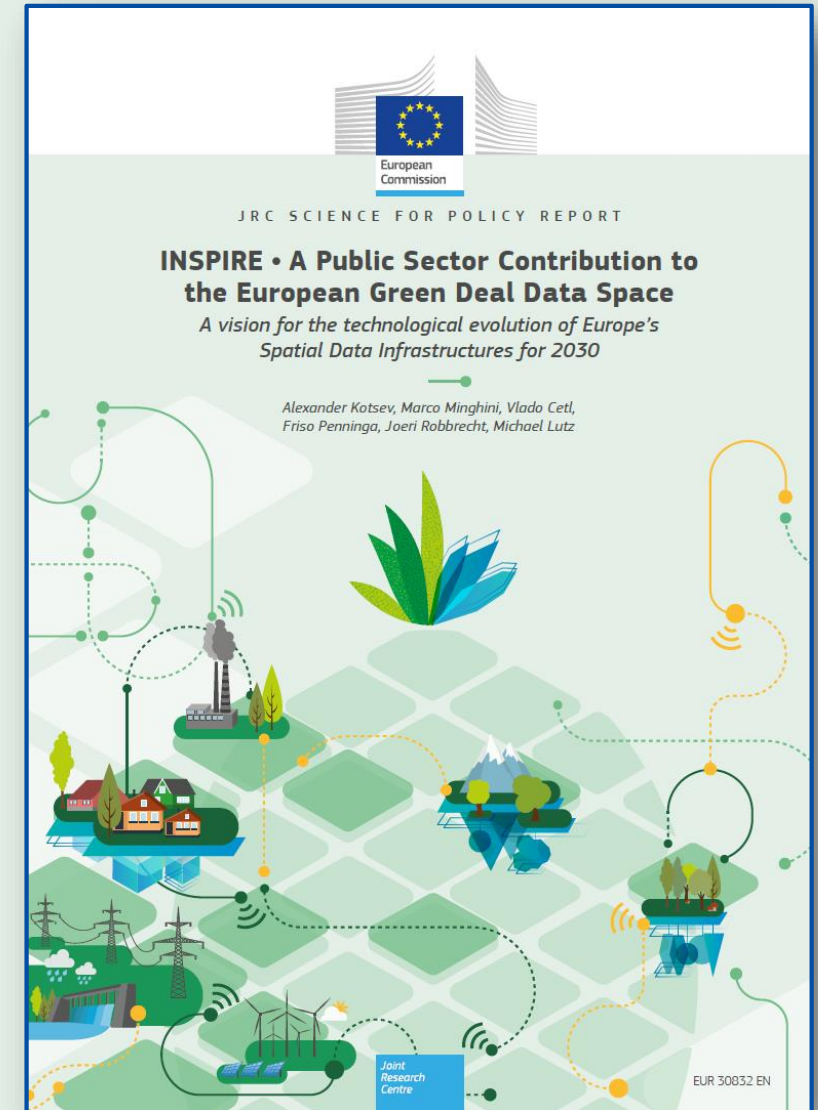| Geospatial	Earth observation and environment	Meteorological
Statistics	Companies and company ownership	Mobility

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Community

"A technical infrastructure is only as good as the social infrastructure underpinning it"

New JRC Science for Policy Report

- Title: INSPIRE – A Public Sector Contribution to the European Green Deal Data Space

JRC SCIENCE FOR POLICY REPORT

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

EUR 30832 EN

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

Thank you!

✉ marco.minghini@ec.europa.eu

🐦 @MarcoMinghini