



Towards a Data Union Strategy

A vision on the European data landscape

EuroSDR / EuroGeographics Workshop on Sustainable Business Models for
National Mapping and Cadastral Agencies in Europe
Brussels, 9 February 2026

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Joint
Research
Centre

European priorities

The goals ahead

European Commission Political Priorities 2024-2029



[A new plan for Europe's sustainable prosperity and competitiveness](#)



[A new era for European defence and security](#)



[Supporting people, strengthening our societies and our social model](#)

https://commission.europa.eu/priorities-2024-2029_en



[Sustaining our quality of life: Food security, water and nature](#)



[Protecting our democracy, upholding our values](#)



[A global Europe: Leveraging our power and partnerships](#)



[Delivering together and preparing our Union for the future](#)

European Commission Political Priorities 2024-2029



A new plan for Europe's sustainable prosperity and competitiveness



Boost productivity with digital tech diffusion

- Encourage investments in digital infrastructures to improve access to secure, fast and reliable connectivity.
- Continue to step up our enforcement of the EU digital laws.
- Step up investment in high-value technologies (supercomputing, IoT, quantum computing, semiconductors, genomics, space technologies...)
- Ensure access to supercomputing capacity for AI startups and industry via an [AI continent action plan](#).
- Boost new industrial uses of AI and improve public services.
- Ensure seamless, high-quality and at-scale data sharing with a [European Data Union Strategy](#) (Build on the earlier [European Data Strategy](#)).

Put research and innovation at the heart of our economy

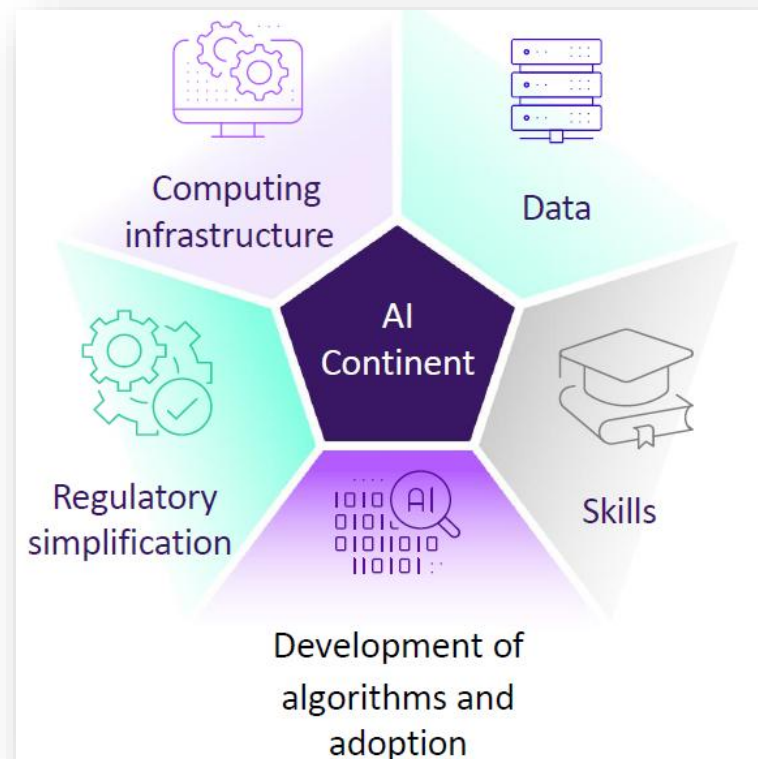
- Increase research spending to focus more on strategic priorities.
- Support green and digital transitions by developing high-value technologies.

European Commission Political Priorities 2024-2029



AI Continent Action Plan Making Europe a Global AI Leader

Roadmap to position Europe as a global frontrunner in artificial intelligence



AI Factories & Giga Factories

- Equipped with **state-of-the-art computing resources**

Data Labs

- Integrate & organise **data from different sources**
- Linked to **EU Data Spaces**
- Provide sovereign cloud **data-related services**

Data Union Strategy Unlocking Data for AI

Ensuring access to high-quality data for AI development



Brussels, 19.11.2025
COM(2025) 835 final

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN
PARLIAMENT AND THE COUNCIL

DATA UNION STRATEGY
UNLOCKING DATA FOR AI

<https://eur-lex.europa.eu/legal-content/ES/TXT/?uri=COM:2025:835:FIN>

EU data sharing

Lessons learnt from experience

EU data sharing - Experience

INSPIRE 1.0

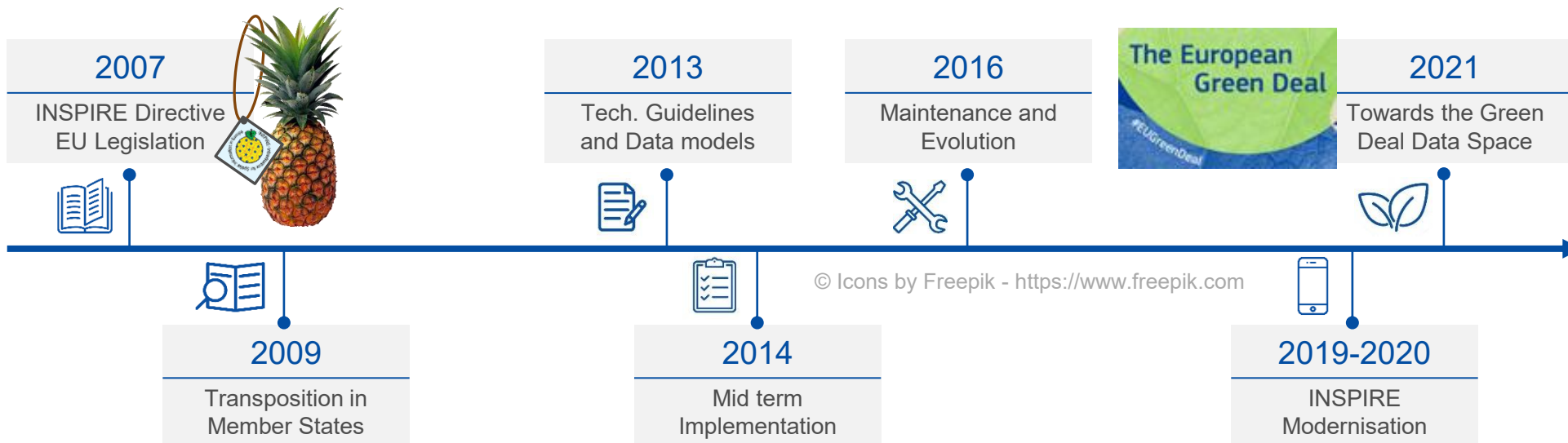


European Spatial Data Infrastructure

- Sharing of interoperable metadata, data and services across EU.
- Thematic domains: 34 spatial data themes



- Implementation roadmap:



Multi-faceted SDI

Perspectives:

- Legal.
- Organisational.
- Technical.

Implementation status

Lights and shadows.

- Objectives partially achieved.
- Heterogeneity of implementations across EU.
- Pan European coverage yet do be achieved.

EU data sharing - Experience

INSPIRE 1.0 – Lessons learnt



- **Worked** 😊
 - Data availability
 - Community
 - Ecosystem of Open-Source tools
- **To be improved** 😞
 - Interoperability through prescription
 - Rigid (legal & technical) framework
 - Data provider-centric governance
 - Data licensing often missing or unclear
 - Standards and technologies used were not always widely-adopted



Image generated through Artificial Intelligence

EU data sharing - Evolution

INSPIRE Directive simplification



Simplification of the INSPIRE Directive

The College of Commissioners has adopted the proposal for simplification of the INSPIRE Directive as part of an environmental simplification package.

NEWS ANNOUNCEMENT

10 December 2025 — Joint Research Centre — 1 min read



More info: [simplification package](#), [press release](#), [Q&A](#), [Factsheet](#).

*The College of Commissioners has adopted the **proposal for simplification of the INSPIRE Directive** as part of an environmental simplification package. The Parliament and Council will examine and negotiate the proposal under the ordinary legislative procedure. The proposal **aligns and modernises geospatial data sharing with the latest open data rules**, with the aim to **lower compliance costs for public authorities** and **facilitate access to high value geospatial data sets** for all public and private users.*

https://knowledge-base.inspire.ec.europa.eu/news-and-publications/news-delete/simplification-inspire-directive-2025-12-10_en

EU data sharing - Evolution

INSPIRE Directive simplification



Towards INSPIRE 2.0 / Green Deal Data Space

- A single data sharing regime for public data
 - **Alignment with the Open Data Directive**
- Removed
 - Rigid interoperability and network service requirements
 - Obligation on the Commission to operate a dedicated EU Geoportal (replaced by the European Data Portal: data.europa.eu)
 - Monitoring and reporting obligations for Member States (replaced with the Open Data Directive and High-Value Datasets reporting mechanisms)
- Remains regulated
 - Coordination
 - Metadata
 - Annex I, II & III data themes (without references to harmonisation rules)
 - Safeguards to ensure personal data and sensitive confidential information protection

EU data sharing - Future options

Approaches



- **Iterative interoperability**
 - Use-case driven, based on real needs
 - Start with minimal requirements
 - Incentivise higher levels of interoperability
- **Inclusive data governance model**
 - Multiple actors / Co-creation
 - Living ecosystem
 - Bringing knowledge and digital innovation
- **Alignment to Open Data**
 - High-Value Datasets & Environmental priorities



Image generated through Artificial Intelligence

EU data sharing - Future options

AI-readiness



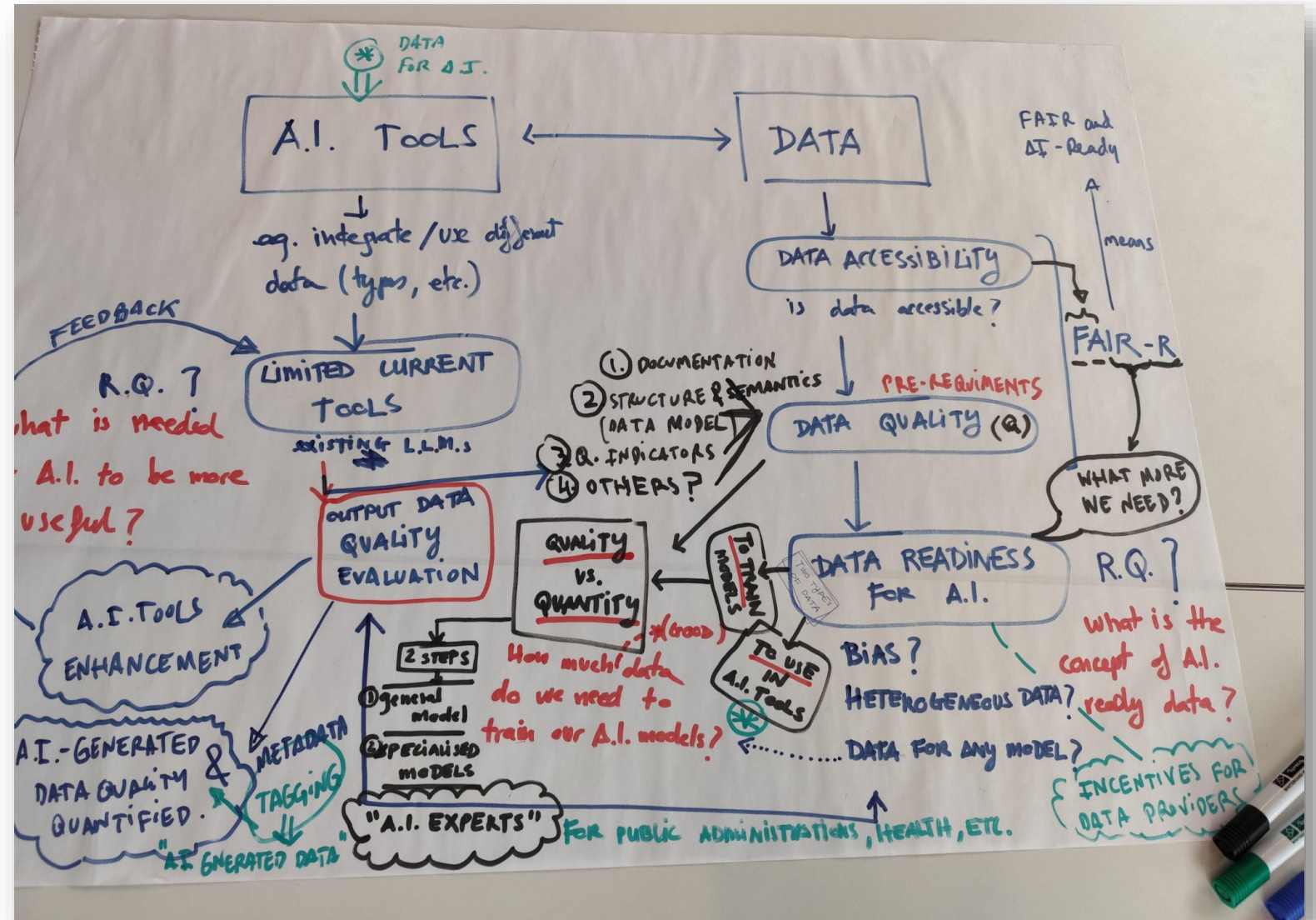
• AI-ready data

Understanding what it is

- Documentation
- Structure and semantics
- Provenance & Quality
- Others? (e.g., standards)

• AI-generated data

- Quality evaluation
- AI tools enhancement
- Capacity to achieve Interoperability



A changing landscape

A personal reflection on NMCCAs in the
EU data landscape

NMCAs in the EU data landscape

Re-shaping NMCAs own DNA



Image generated through Artificial Intelligence

NMCAs in the EU data landscape

Adaptation to the data ecosystem



- Spatial no longer Special?
- The role of public sector as primary provider of data is **changing**.
- A ‘broader’ ecosystem requires **blending data with third parties**.
- **Interoperability** and **data quality** are ‘must-haves’.
- **Varied ecosystem users** demand customized datasets.
- **Rapid response** and **increased efficiency** are absolutely required.
- **Resilience** and **sovereignty**.



Image generated through Artificial Intelligence

NMCAs in the EU data landscape

Personal reflections



Find new ways of adapting to the ecosystem, while doing our work better.

- **Investments**

- Innovation is required more than ever.
- Apply for EU funding.
- Resistance to adapt may lead to obsolescence and decreased relevance in the data market.
- Public-private partnerships may bring substantial gains.

- **Production systems**

- Boost Digitalization & Technical update.
- Ensure Scalability & Interoperability.
- Embrace AI in a pragmatic manner, ensuring efficiency and competitiveness.

- **Data & Data delivery**

- On-demand. Reinvent the Product Portfolio.
- Use clear and standardized Licensing.
- Ensure Interoperability with third party data.
- Deliver your data through Open APIs.

- **Quality / Change / Knowledge management**

- Ad-hoc data quality procedures are essential.
- Keep compliance with regulations and standards, public trust and confidence.
- Promote sovereignty and capacity building to apply new technologies successfully.
- Control risks and reduce critical dependencies.

Find the right balance / Focus on quick-wins / Avoid getting lost in complexity.

JRC.T4 research

Towards digital & data sovereignty

JRC.T4 team – Research + Digital Sovereignty

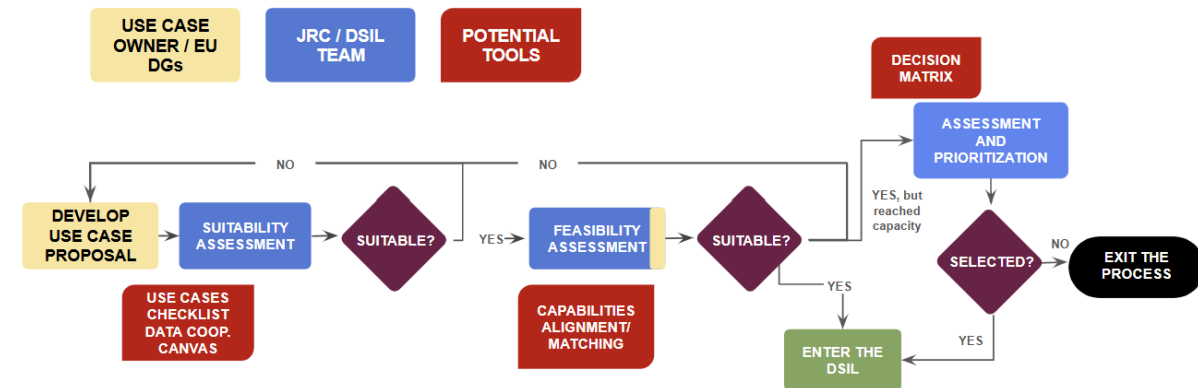


- **Towards a Common understanding of EU Digital Sovereignty**
 - EU Digital Sovereignty is intended as the EU's **capacity of exercising its independence in the digital domain while remaining open and connected to global networks.**
 - It focuses on the **ability to decide, invest, and innovate according to European values** of democracy, openness, and the rule of law.
 - Rather than implying isolation or protectionism, we describe Digital Sovereignty as **strengthening EU skills, infrastructures, and governance** to ensure that digital transformation **supports competitiveness, resilience, and trust.**

JRC.T4 team – Research Data Sharing (+Sovereignty) Innovation Lab



- Technical and governance experiments based on preselected policy-relevant use cases
- **Toolbox:** European cloud instances, stack of technical components, methods and approaches
- **Research topics** - Selection criteria
 - Clear policy demand and alignment with EC priorities
 - Evidence of potential societal, economic, or environmental benefits
 - Involvement of more than one stakeholder
 - Focus on data reuse
 - Comply with ethical, legal, sovereign and privacy norms and values
 - Measurable outcomes

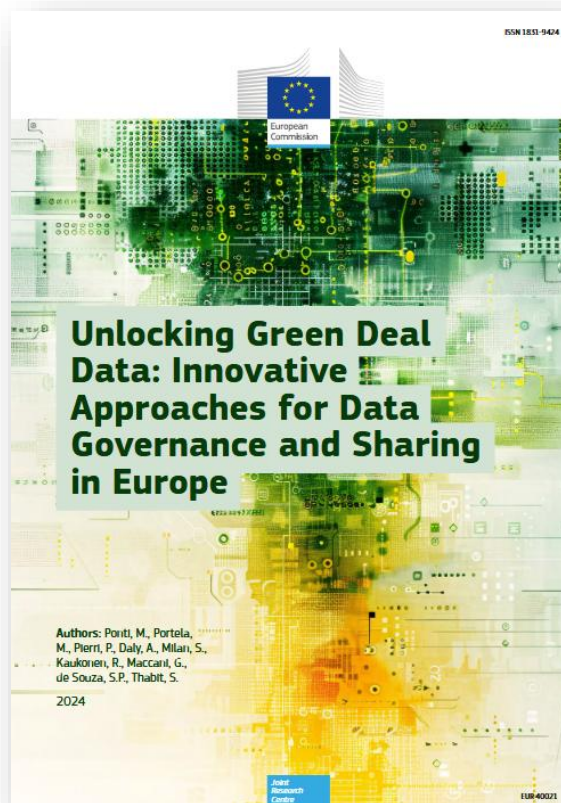
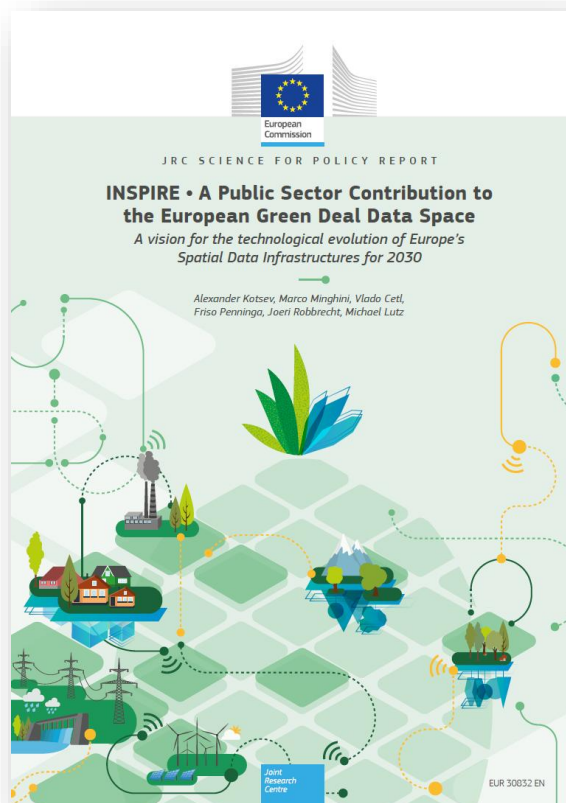


JRC.T4 team – Research examples

Science for policy support



- Scientific insights on how to improve environmental geospatial data sharing from a technical, organisational and legal perspective



JRC.T4 team – Research examples

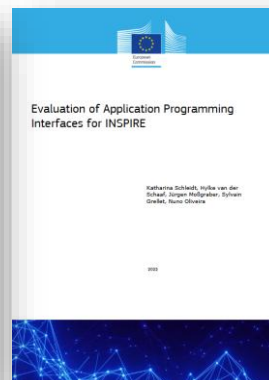
Data infrastructures modernisation

More examples available in the presentation Annex

- Some examples
 - Assessing modern standards (OGC APIs and STAC) for data sharing
 - Evaluating modern data encodings (GeoJSON, GeoPackage)
 - Testing approaches for AI-assisted metadata generation

Good Practice documents

Candidate	Endorsed
Guidance on High-Value Datasets (HVDs) tagging	
STAC as an INSPIRE predefined-access download service	
	GeoJSON encoding of INSPIRE datasets
	GeoDCAT-AP
	SDMX for Human Health and Population Distribution
	GeoPackage encoding of INSPIRE datasets
	Data-Service Linking Simplification
	OGC compliant INSPIRE coverage data and service implementation
	Guidance for the integration of dispersed WMS sources
	Guidelines for making spatial data downloadable via WMS services
	Setting up an INSPIRE Download service based on the OGC API-Features standard
	INSPIRE download services based on OGC SensorThings API



https://knowledge-base.inspire.ec.europa.eu/evolution/good-practice-library_en

Thank you



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Annex: JRC T4 research

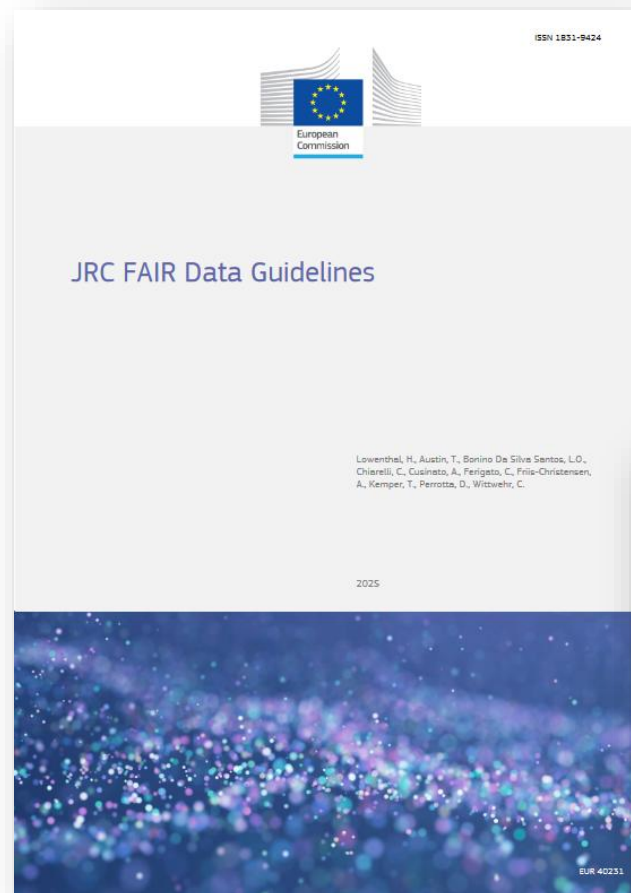
A sneak peek of our work



Relevant activities to NMCAs

FAIR data sharing: Guidelines

- Guidelines to support and enhance the FAIRness of (JRC) data



European Commission | Joint Research Centre Data Catalogue

Home | Datasets | Collections | About

European Commission > EU Science Hub > JRC Data Catalogue > Datasets

Search datasets [Search]

Filter by

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- LUISA (124)
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Sort by: Last updated

Datasets (3909)

Showing results 1 to 20

Last updated: 21 Nov 2025 | Recent visits: 3

FLOODS Satellite-derived flood depth maps for Europe

The dataset contains a catalogue of satellite-derived flood depth maps across Europe over the period 2015-2024 at 20m spatial resolution. The results rely on the systematic identification of flooded areas using the entire Sentinel-1 archive as provided by the ...

Last updated: 20 Nov 2025 | Recent visits: 29

GHSL GHS-WUP-COUNTRY-STATS R2025A – GHS-WUP country statistics by Degree of Urbanisation classes, multitemporal (1950-2100)

This product contains the summary statistics of the area, population and built-up surface by Degree of Urbanisation classes (both L1 and L2) for each country in the World (United Nation "Standard country or area codes for statistical use" (ST/ESA/STAT/SER.M/49...

Contributors: Last updated: 20 Nov 2025 | Recent visits: 71

<https://doi.org/10.2760/5646214>

Relevant activities to NMCAs

FAIR data sharing: ISO & GeoDCAT pilot



- Support the alignment of INSPIRE to Open Data
 - Transformation of INSPIRE / geospatial metadata to an Open Data format: (Geo)DCAT-AP
 - Community shared experiences & common solutions for identified issues
 - Metadata tagging to improve filtering in data.europa.eu
- Participating Member States (Phase 1)
- EU level leadership (ENV, OP, DIGIT, JRC)



<https://github.com/INSPIRE-MIF/GeoDCAT-AP-pilot>

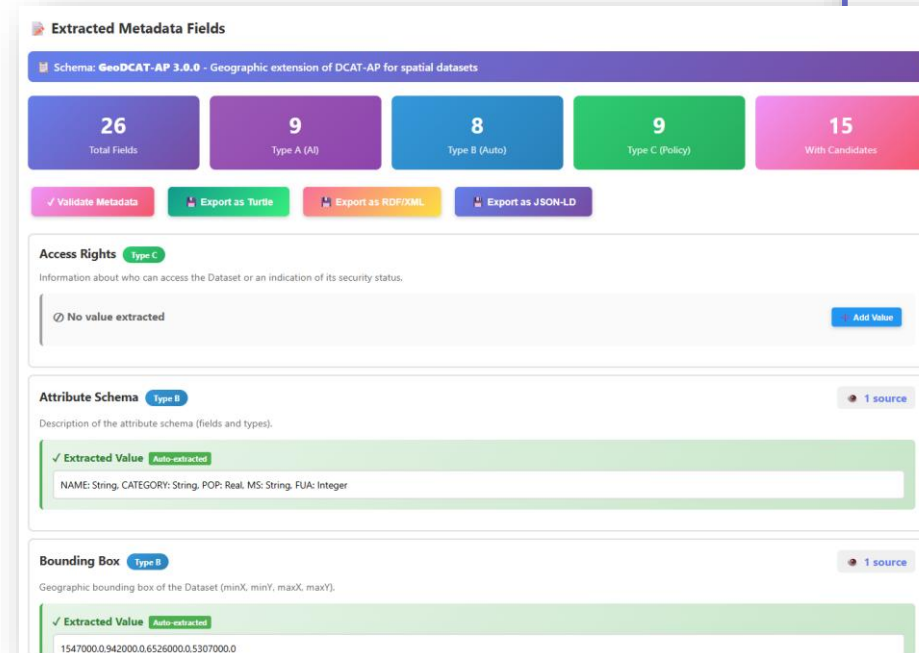
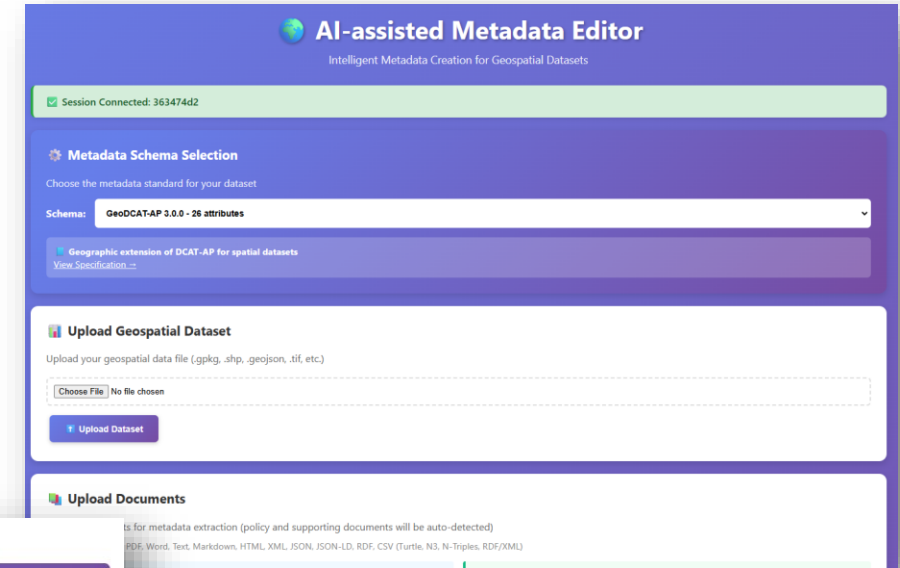
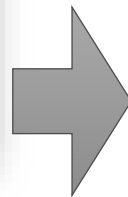
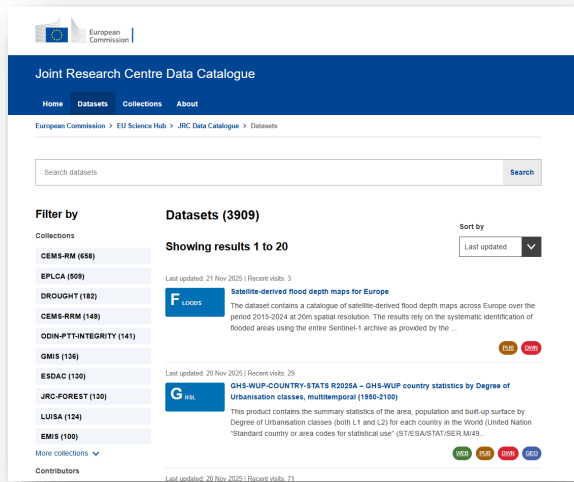
<https://data.europa.eu/doi/10.2760/9289518>

Relevant activities to NMCAs

AI for data sharing



- Support the automation of metadata generation through AI-assisted tools



Source: M. Di Leo



In-house technical enablers

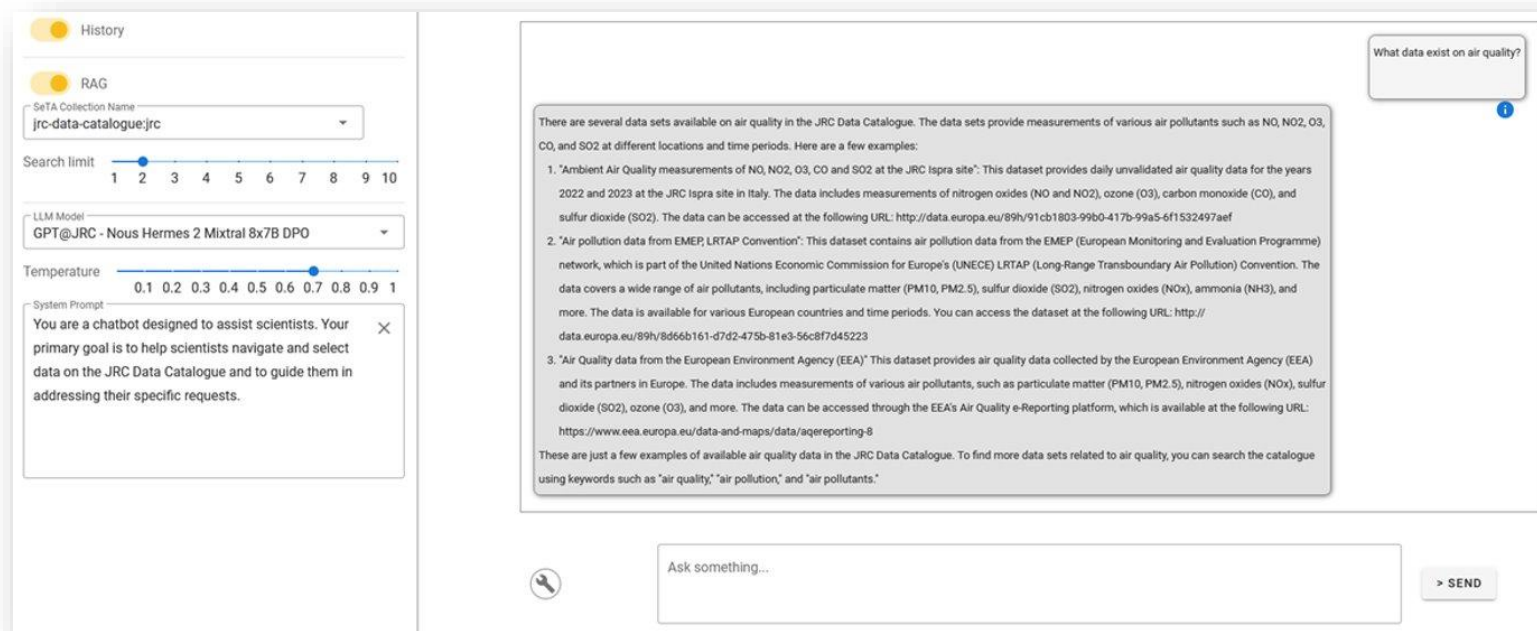
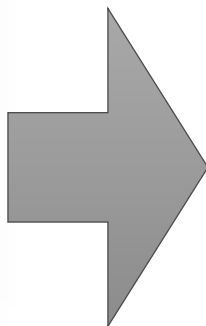
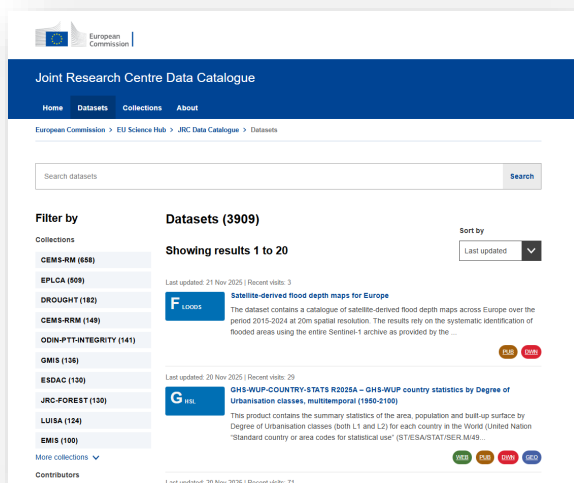




Relevant activities to NMCAs

AI for data sharing

- How AI and semantics converge to advance data sharing, automation, and interoperability across Europe: semantic search
- AI-ready data served through APIs (possible use of semantic text analysers to get unstructured data ready), use of LLMs and Model Context Protocol architecture for processing, user interface for querying.



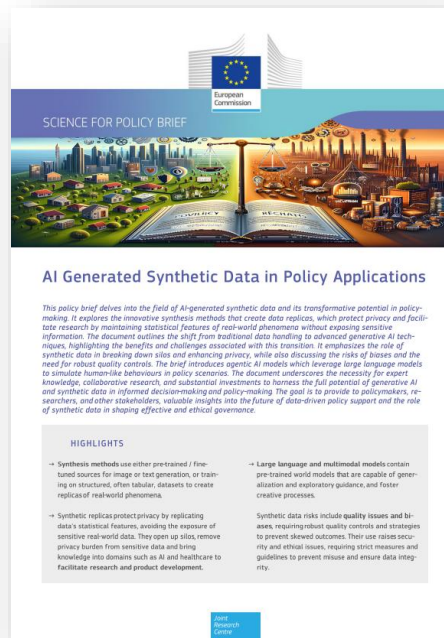


Relevant activities to NMCAs

Data for AI: Synthetic data & Privacy preservation

- Synthetic data

- Generated using microdata
- Preserving statistical distributions
- Personas instantiated through LLM
- Substitute / complement existing data



<https://publications.jrc.ec.europa.eu/repository/handle/JRC138521>

- Privacy preservation

- Access to data for AI without compromising privacy
- Evaluation of
 - Maturity
 - Deployment strategies & trade-offs
 - Availability of solutions, e.g.
 - Federated learning
 - Data visiting

<https://publications.jrc.ec.europa.eu/repository/handle/JRC134350>

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