Public, academic and private engagement

A priority related to the European Strategy for Data

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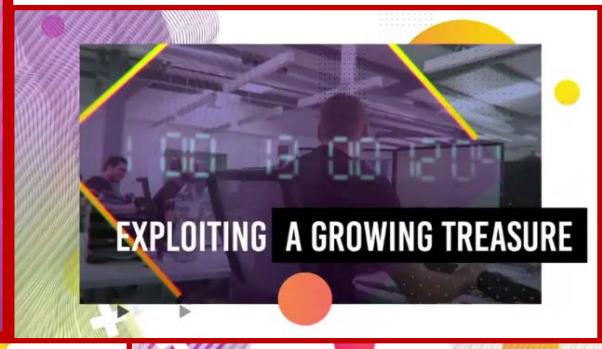
Jordi Escriu
European Commission
Joint Research Centre
Digital Economy Unit (B.6)

Regional Conference of the Regional Association VI on the Future role of National Meteorological and Hydrological Services: Leadership and Management, World Meteorological Organisation, 2nd - 4th Nov. 2022

A new context is ahead
New European digital society



European Commission

New policy context
European Strategy for Data

530%

increase of global data volume

From 33 zettabytes in 2018 to 175 zettabytes

€829 billion

value of data economy in the EU27

From €301 billion (2.4% of EU GDP) in 2018

10.9 million

data professionals in the EU27

From 5.7 million in 2018

65%

Percentage of EU population with basic digital skills

From 57% in 2018

New policy context
European Strategy for Data

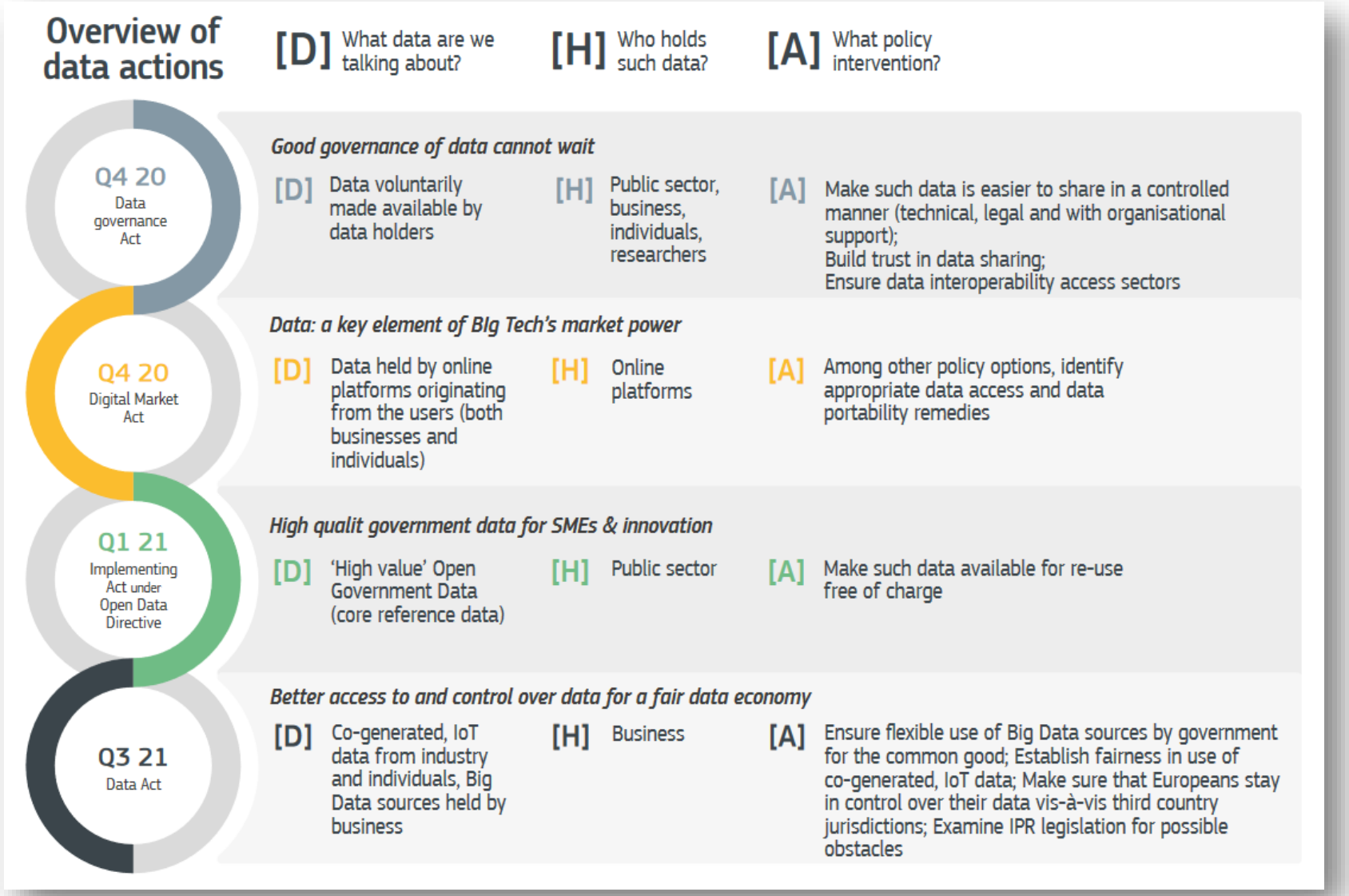
"Europe fit for the Digital Age"

1. Data Governance

2. Digital Market

3. Open Data

4. Data Act



New policy context
Data Governance Act

Entered into force on 23 June 2022

- Data Scope
  - Data voluntarily made available by stakeholders.
- Main actors involved
  - Public sector + Private sector (Business) + Individuals + Researchers
- Policy intervention
  - Make such data easy to share in a controlled manner (technical, legal and with organisational support), while ensuring data interoperability across sectors and Member States.
  - Build trust in data sharing.
- Expected results.
  - Facilitate data sharing by strengthening mechanisms to increase data availability and overcome technical obstacles to the reuse of data.
  - Development of common European data spaces in strategic domains in key sectors or domains.
  - Create wealth for society. Provide control to citizens and trust in companies.

https://digital-strategy.ec.europa.eu/en/policies/data-governance-act

https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32022R0868

New policy context
Digital Markets Act

Proposed by EC on
15 December 2020

Entered into force on
1 November 2022

- Data Scope
  - Data held by online platforms originated by the users (from both businesses and individuals).
- Main actors involved
  - (Large) Online platforms (qualifying as ‘gatekeepers’) - important gateways between business users and consumers.
- Policy intervention
  - Identify appropriate data access and portability remedies.
- Expected results
  - Assure fair practices by companies that act as gatekeepers in the online platform economy.

https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age/digital-markets-act-ensuring-fair-and-open-digital-markets_en

https://eur-lex.europa.eu/legal-content/en/TXT/?uri=COM%3A2020%3A842%3AFIN

https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32022R1925&from=EN

New policy context
Open Data

- Data Scope
  - ‘High Value’ Open Government data.
- Main actors involved
  - Public sector.
- Policy intervention
  - Make such data available for re-use free of charge.
- Expected results
  - Increased data availability and access, especially in the scope of the High Value Dataset categories: geospatial, earth observation and environment, meteorological, statistics, companies and company ownership, mobility.
  - Reduce heterogeneity in licensing by setting a common European approach for the licensing of the data, reusing existing licensing frameworks, e.g. Creative Commons.

Open Data Directive entered into force on 16 July 2019

The implementing act on High Value Datasets is expected to enter into force by end 2022

https://digital-strategy.ec.europa.eu/en/policies/legislation-open-data

https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019L1024&from=EN

New policy context
Data Act

Proposed by EC on
23 February 2022

- Data Scope
  - Co-generated, IoT data from industry and individuals.
  - Big Data sources held by business.
- Main actors involved
  - Private sector (Business).
- Policy intervention
  - Ensure flexible use of Big-Data sources by government for the public good.
  - Establish fairness use of Co-generated, IoT data.
  - Make sure that Europeans stay in control over their data vis-à-vis third country jurisdictions.
  - Examine Intellectual Property Rights (IPR) legislation for possible obstacles.
- Expected results
  - Making more data available for innovative use in line with EU rules and values.
  - Harmonised rules on fair access to and use of data, preserving incentives to invest in data generation.

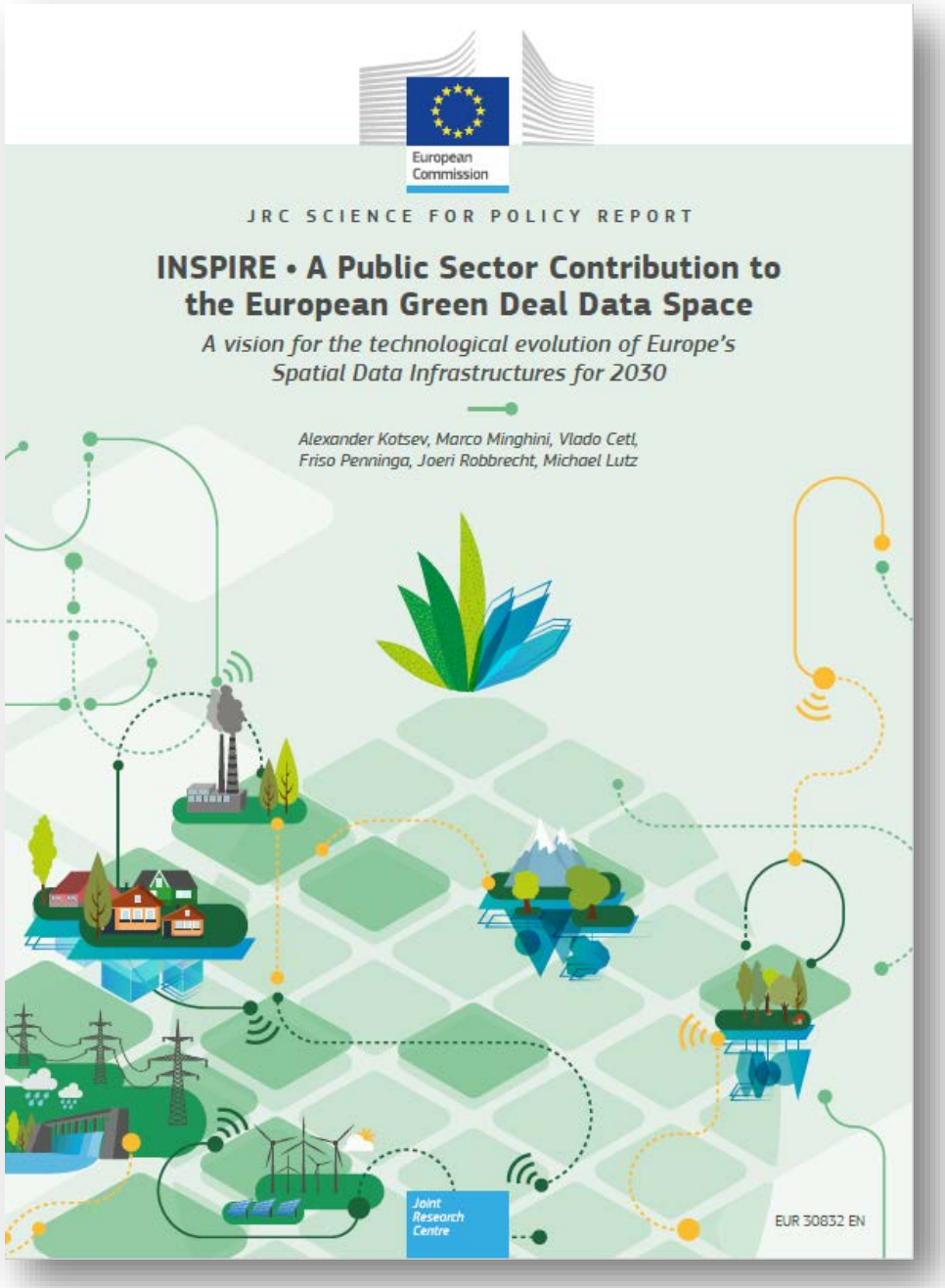
https://digital-strategy.ec.europa.eu/en/policies/data-act
https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2022%3A68%3AFIN

INSPIRE & new policy context
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 & new policy context
Vision

- Evolution to a data ecosystem (Green Deal Data Space).
- 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

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

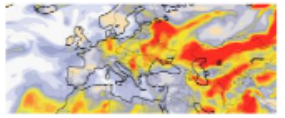
Public Administration

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

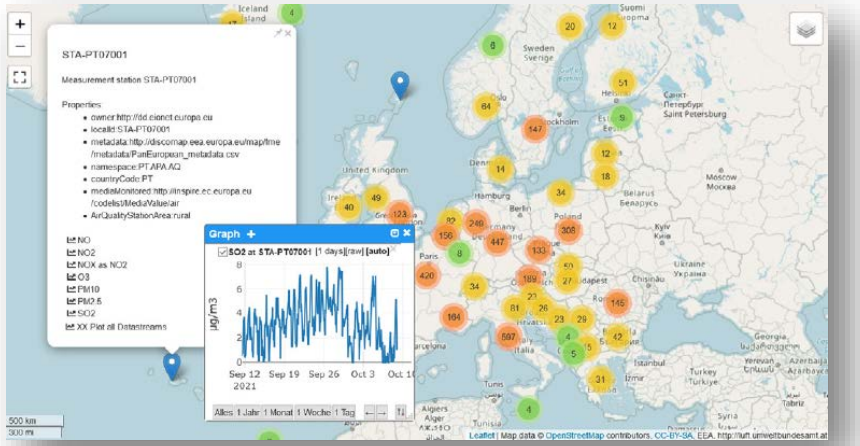
High Value Data sets



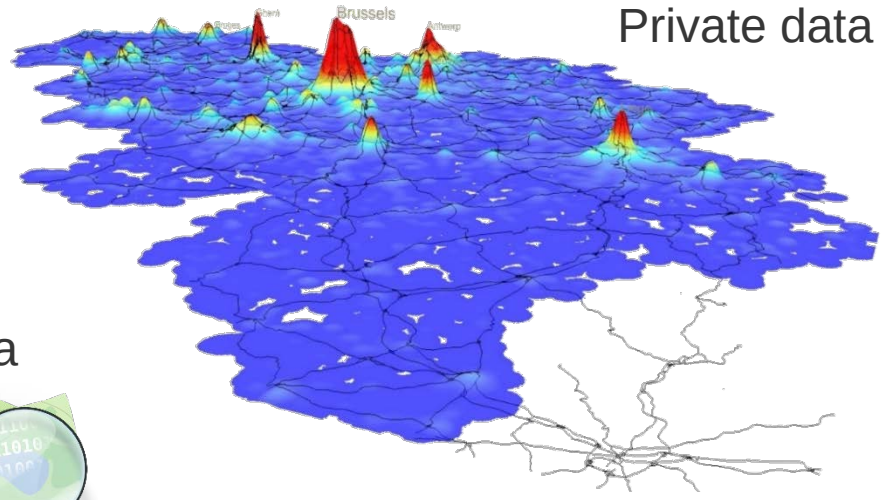
Public Sector

Research on Sectoral European Data Spaces
Technology trends: New data sources

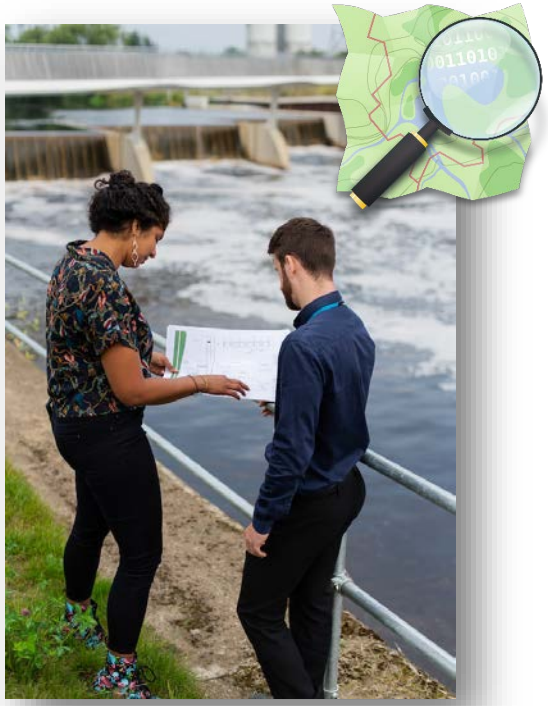
Internet of Things



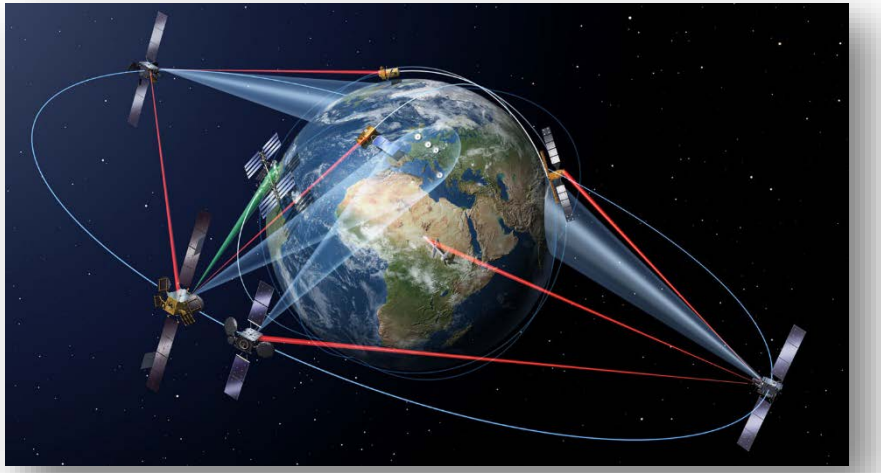
Private data



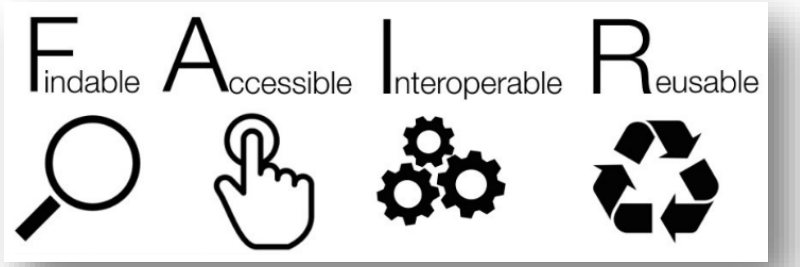
Citizen-generated data



Copernicus



Open research data



European Commission

Research on Sectoral European Data Spaces
Technology trends

- Extensive use of APIs – From data collection to data connection.
- Agile standards.
- Mature tools.
  - Multiple approaches for using & serving data.
  - Powerful ETL instruments.
- Novel architectures:
  - Federated cloud
  - edge/fog
  - Solid

photo by Looker Studio, image #315352794. Source: *stock.adobe.com*

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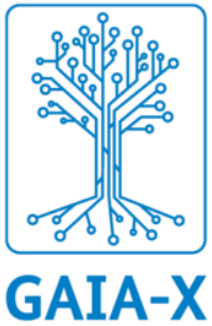
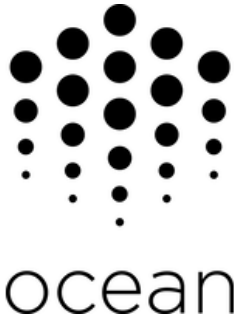
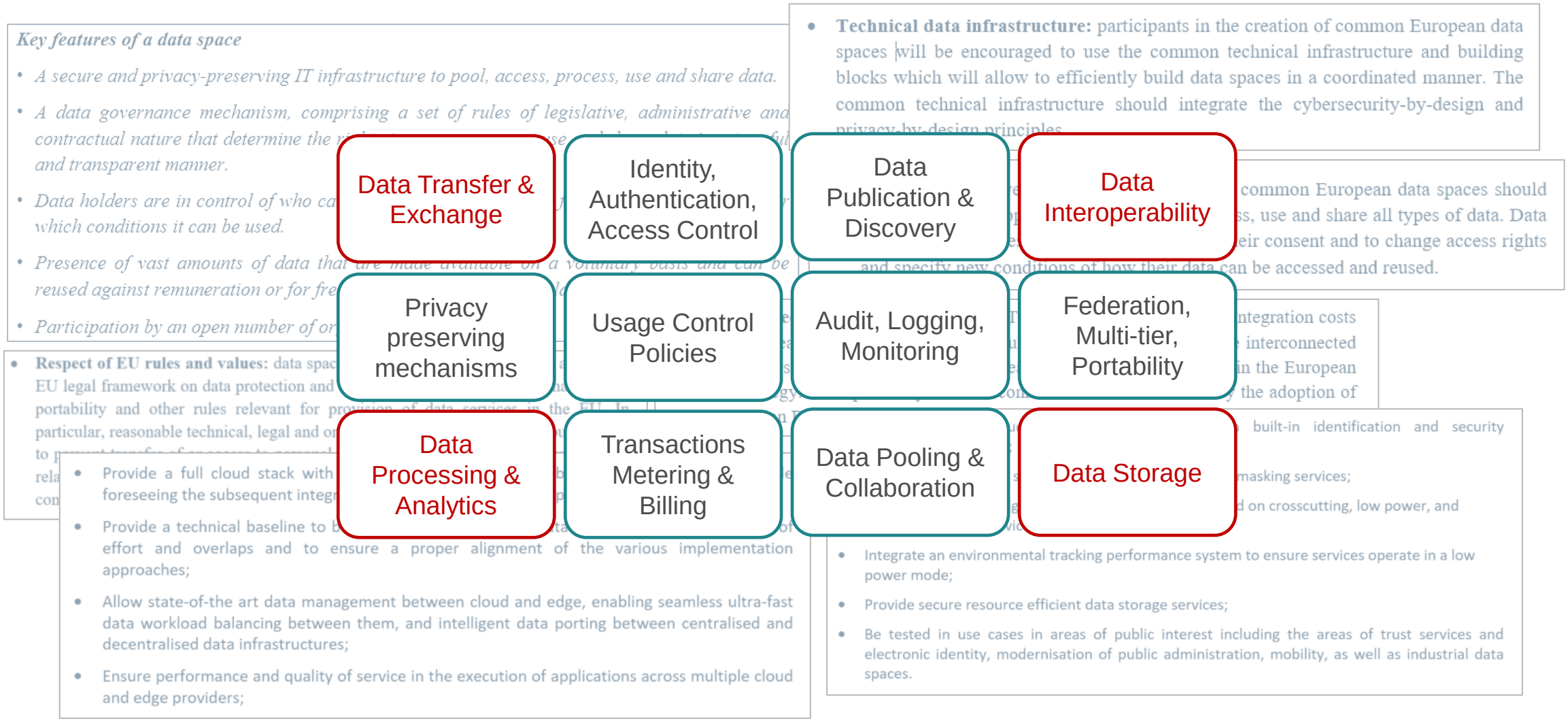
European Commission

Research on Sectoral European Data Spaces
Analysis of relevant data sharing initiatives

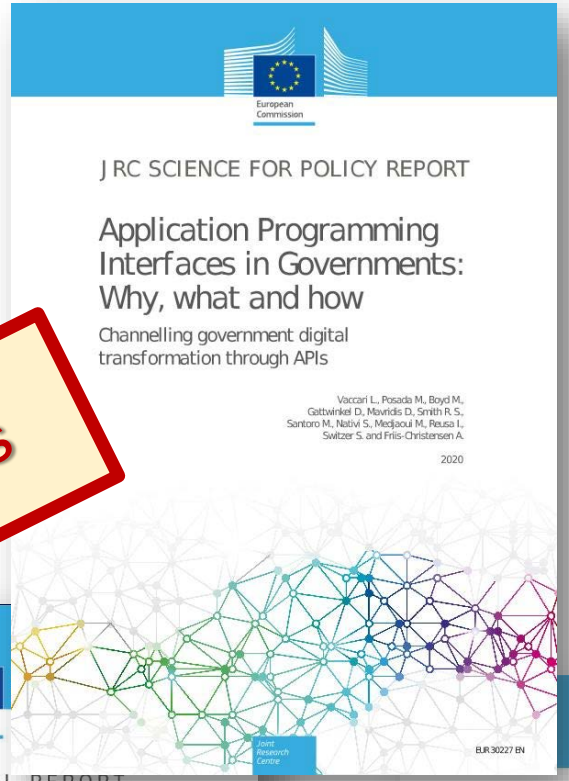




Research on Sectoral European Data Spaces
Analysing technical and non-technical requirements



Findings

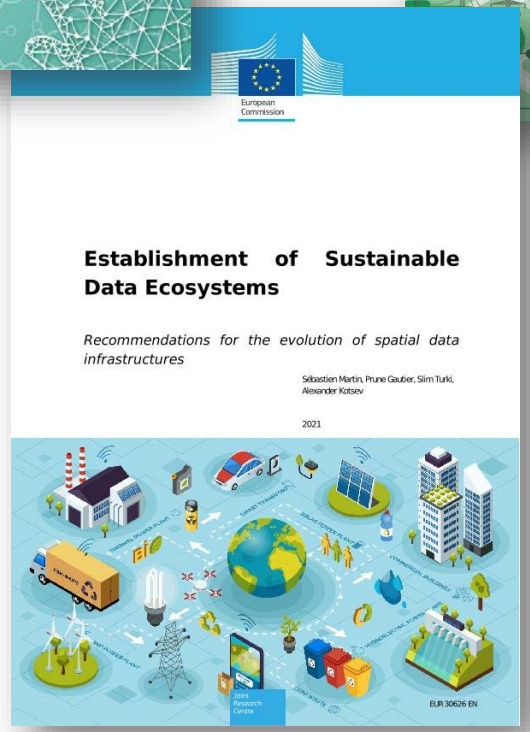

European Commission
JRC SCIENCE FOR POLICY REPORT
Application Programming Interfaces in Governments: Why, what and how
Channelling government digital transformation through APIs
Vaccari L., Posada M., Boyd M., Gattwinkel D., Mavridis D., Smith R. S., Santoro M., Nativi S., Medjaoui M., Reusa I., Switzer S. and Friis-Christensen A.
2020
Joint Research Centre
EUR 30227 EN


European Commission
JRC SCIENCE FOR POLICY REPORT
Artificial Intelligence and Digital Transformation: early lessons from the COVID-19 crisis
Craglia M. (Ed.), de Nigris S., Gómez-González E., Gómez E., Martens B., Iglesias M., Vespe M., Schade S., Michel M., Kotsev A., Milton L., Vesnic-Alujevic L., Pignatelli F., Hradec J., Nativi S., Sanchez I., Hamon R., Junklewitz H.
2020
EUR 30306 EN
AI
Joint Research Centre


European Commission
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
Joint Research Centre
EUR 30832 EN


European Commission
JRC TECHNICAL REPORT
Emerging approaches for data-driven innovation in Europe
Sandbox experiments on the governance of data and technology
Granell C., Mooney P., Jirka S., Rieke M., Ostermann F., van den Broecke J., Sarretta A., Verhulst S., Dencik L., Oost H., Micheli M., Minghini M., Kotsev A., Schade S.
2022
Joint Research Centre
EUR 30969 EN


European Commission
JRC TECHNICAL REPORT
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.
2022
Joint Research Centre


European Commission
Establishment of Sustainable Data Ecosystems
Recommendations for the evolution of spatial data infrastructures
Sébastien Martin, Prune Gautier, Slim Turki, Alexander Kotsev
2021
Joint Research Centre
EUR 30626 EN


Humanities & Social Sciences Communications
nature
ARTICLE
OPEN
Collaboration matters: capacity building, up-scaling, spreading, and sustainability in citizen-generated data projects
Mara Balestrini[1], Alexander Kotsev[2], Marisa Ponti[3,4] & 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.

Research on Sectoral European 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.

Research on Sectoral European Data Spaces
Research activities under GreenData4All (planned)

- Studies in support of the GreenData4All (revision of the INSPIRE Directive) impact assessment – for DG ENV:
  - Possible role of intermediaries in the Green Deal data space (extending on-going research on intermediaries by JRC for CNECT).
  - Options for including citizen science and user consent data (including data altruism) mechanism) in the Green Deal data space, building on top of Data Governance Act and Data Act.
  - Options to review the interoperability provisions/approach under INSPIRE in view of the upcoming Interoperable Europe Act, High Value Datasets Implementing Regulation and data space interoperability provisions in the Data Act.

Conclusions
Public, academic and private engagement

- The new digital society needs data to be easily flowing across sectors, fostering innovation, in line with EU rules and values.
- According the European Strategy for data, the public sector is no more the only one to be governed.
- Engagement of all sectors (public sector, academia, citizens, business) needs to be tackled:
  - According the legal framework derived from the EU Strategy for Data.
  - Through appropriate organisational frameworks and emerging technologies: Data Spaces.
  - Putting in place incentives for data altruism and collaboration for the benefit of society.
- Crucial roles:
  - Private sector: as data intermediaries, fostering innovative solutions.
  - Academia: bringing cutting-edge knowledge to the market (capacity building).
- Examples: Big Data capture, management, analytics and modelling.

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Thank you!

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