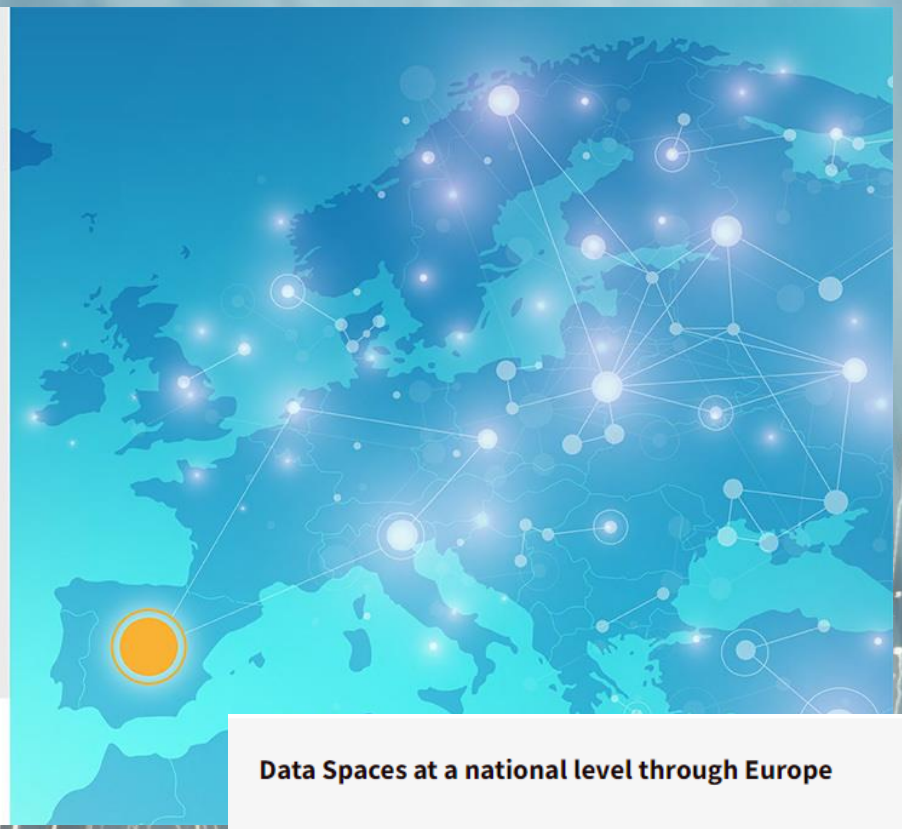
DATA SPACES IN EU

SYNERGIES BETWEEN DATA PROTECTION AND DATA SPACES

EU CHALLENGES AND EXPERIENCES OF SPAIN

2 October 2023 | Madrid

#dataspaces #EUchallenges



Data Spaces at a national level through Europe

Moderator: ***Alberto Palomo****, Chief of the Spanish Data Office,* ***Secretary of State of Digitalisation and Artificial Intelligence***

3 speakers:

- ***Eimear Farrell****, Scientific expert, EU data spaces and data governance, Digital Economy Unit,* ***EC Joint Research Centre***
- ***Rocío Báguena Rodríguez****, Head of Transport Technology and Studies Division,* ***Spanish Ministry of Transport***
- ***Maite Ambrós****, Deputy Director General of Innovation and Digitalisation,* ***Spanish Ministry of Agriculture, Fishing and Food***

Presentation of the Speakers

Eimear Farrell
Scientific expert, EU data spaces and data governance, Digital Economy Unit, JRC EU.

Rocío Báguena
Head of Transport Technology and Studies Division, Spanish MITMA.

Maite Ambrós
Deputy Director General of Innovation and Digitalisation, Spanish MAPA.

Alberto Palomo
Chief Data Officer Spanish Government, State Secretariat for Digitalisation and AI

EUROPEAN DATA SPACES

Scientific evidence supporting the establishment of common European data spaces

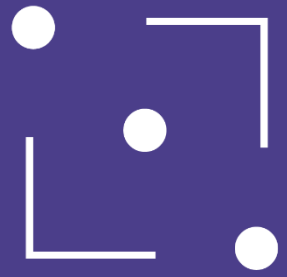
Eimear Farrell

Digital Economy Unit,
Joint Research Centre (JRC)

AEPD-ENISA event on Data Spaces in EU
Madrid, 2 October 2023

European Commission

Anticipate



Integrate

Impact

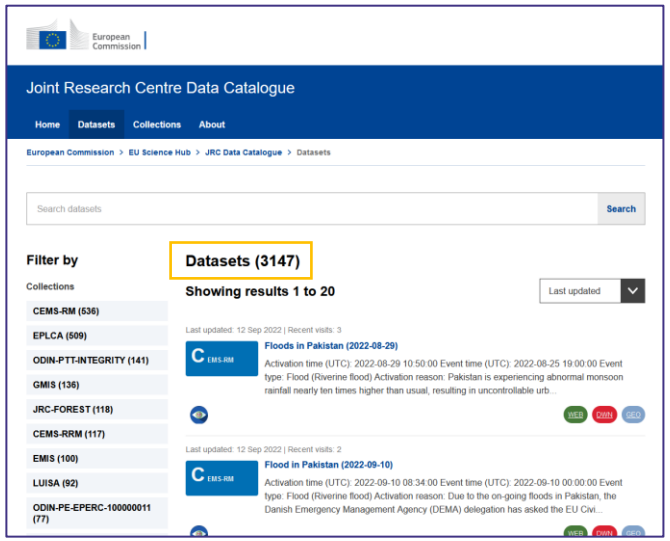
JRC mission

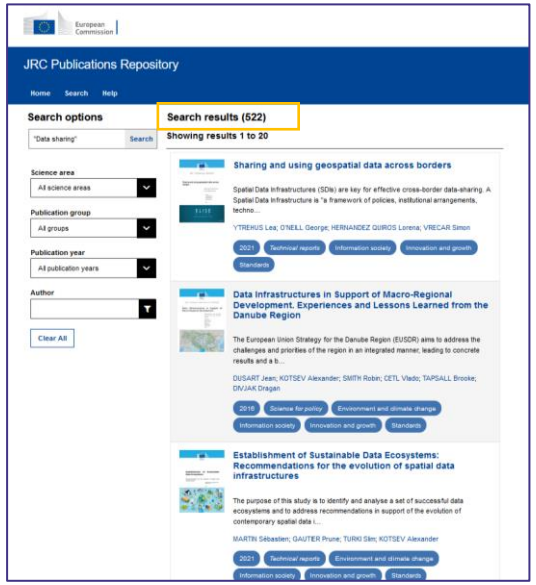
As the science and knowledge service of the European Commission our mission is to support EU policies with independent evidence throughout the whole policy cycle.

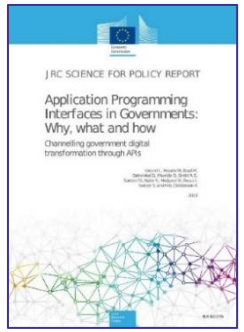
We are **independent**, **policy neutral** + work for **30 EC policy departments**.

Why the JRC?

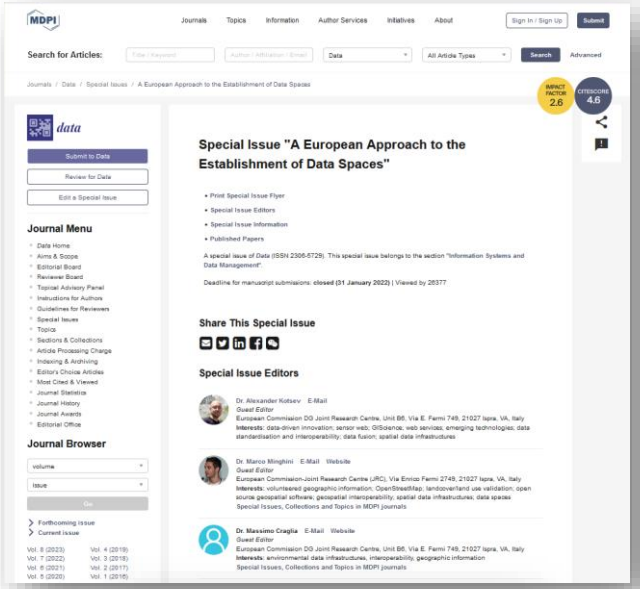
- JRC is a **provider** and **consumer** of data space data
- Own **data assets**
  - Science for policy mandate
  - 3000+ datasets
  - 500+ publications on data sharing
  - Own Big Data infrastructure (BDAP)
  - Corporate data-sharing culture incl. dedicated DG data strategy
  - Prominent role in standardisation initiatives
  - Coordinating Member State working groups







JRC reports on data sharing



Data sharing in JRC Work programme 2023-4

- Scientific support for EU legal and policy instruments on data sharing
- Multifaceted approach covering organisational and technical aspects
- Dedicated support to CION policy DGs, e.g.
  - **Green Deal data space** and its legal instruments
  - **Experimentation and testing** of technical building blocks
  - **Inclusive Data Governance** approaches
  - **Foresight** studies

JRC knowledge base on data sharing and use

Objectives

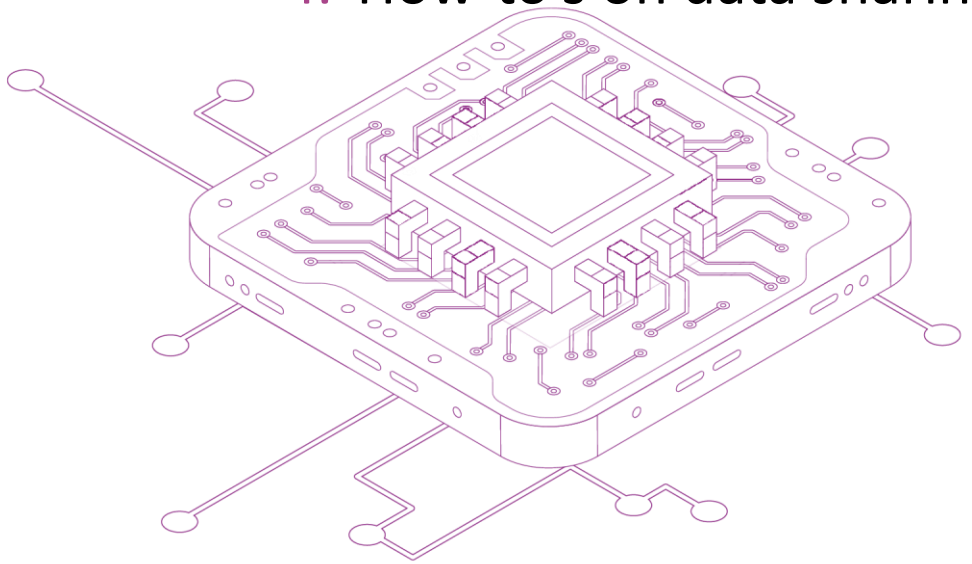
- **Identify, map and expose JRC resources** relevant to common European data spaces
- **Complement** other data space resources and activities

Intended audience

1. Policy **DGs**
2. Data space **stakeholders**
   - Data providers, standardisation bodies, early adopters of technology, user communities

Components

1. Science for Policy report
2. Interactive dashboard
3. Wiki
4. How-to's on data sharing



JRC Science for Policy report

https://europa.eu/!RBQXmx

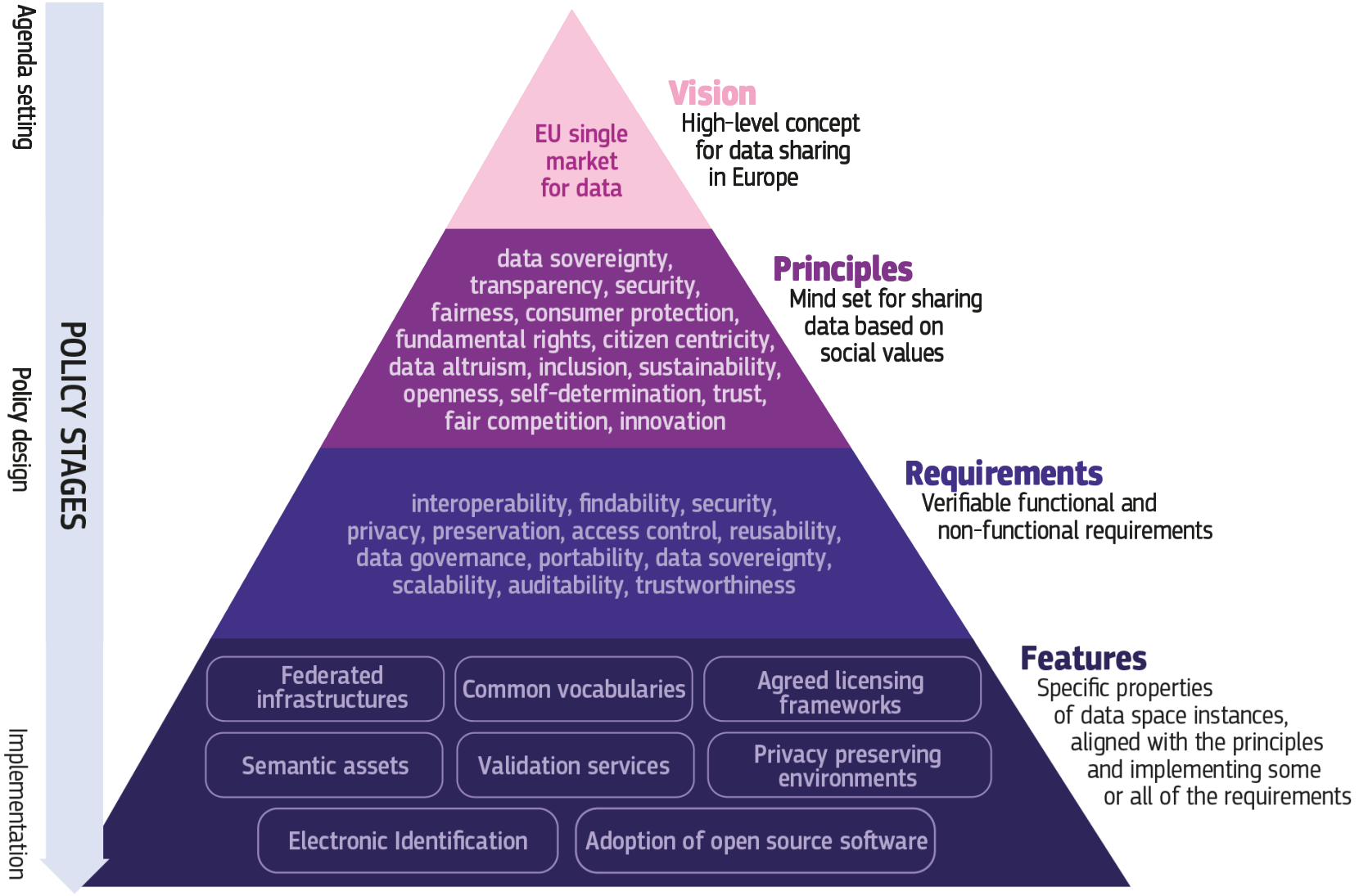
What?

- Scientific **techno-socio-economic perspective**
- Non-binding **recommendations/good practices**
- **Complementary** to other data space resources

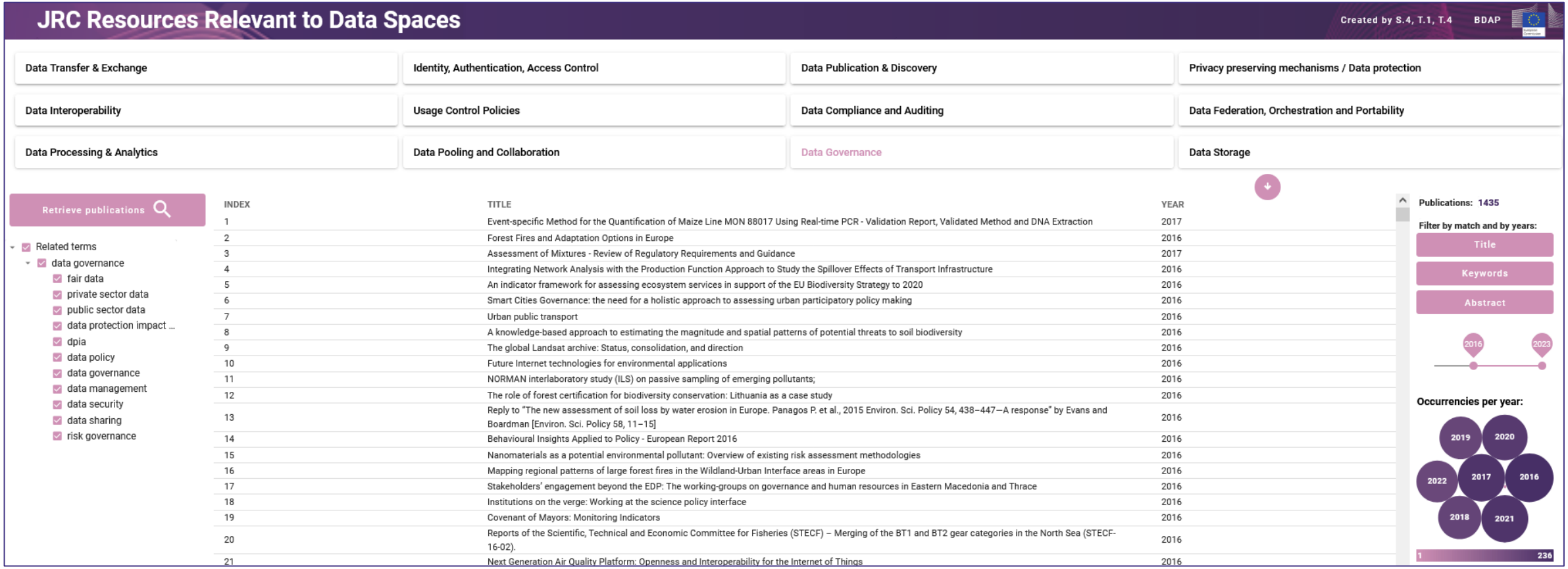
How?

- Input by **18 co-authors**
- **Co-creation** and **validation**
  - Within JRC
  - With policy DGs
  - Other stakeholders

JRC analytical lens

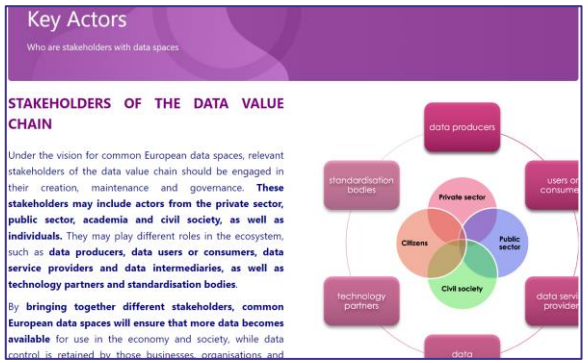


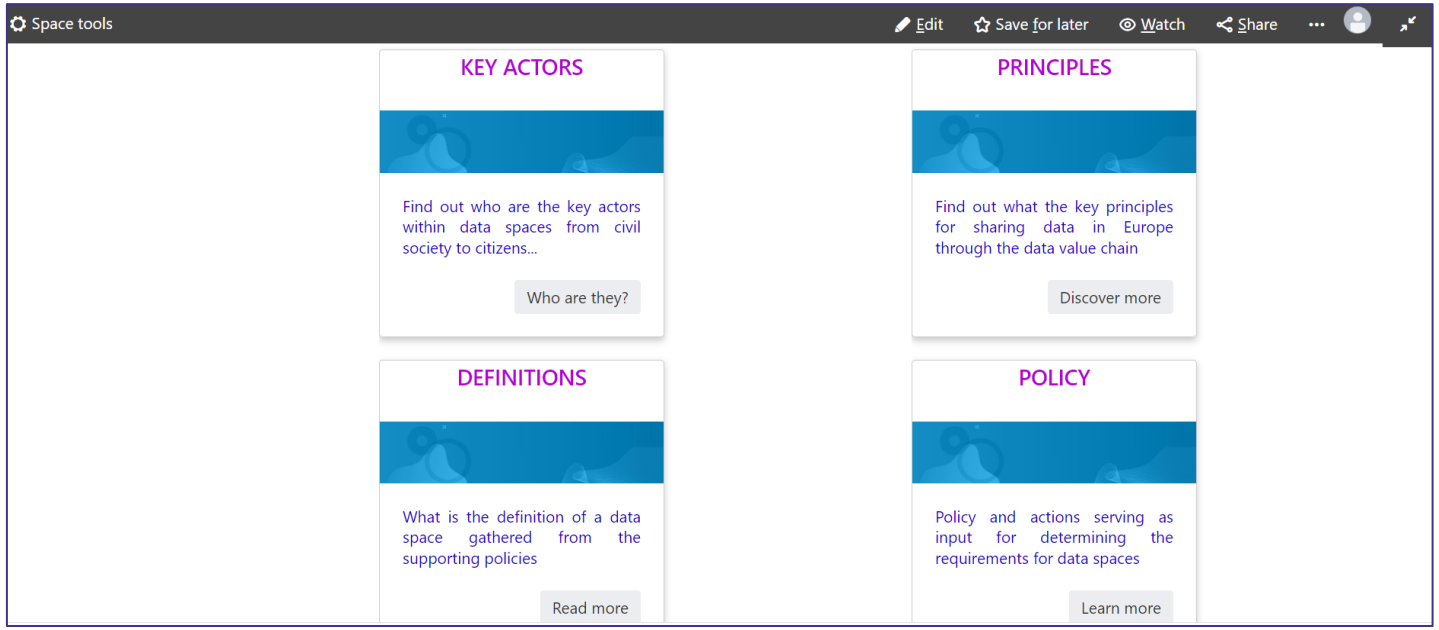
Dashboard: JRC resources mapped to requirements for European data spaces



https://jeodpp.jrc.ec.europa.eu/eu/dashboard/voila/render/DataSpaces/JRCResourcesData.ipynb

Wiki





https://wikis.ec.europa.eu/display/jrcdataspaceswiki/JRC+Data+Spaces+Knowledge+Base

Technical requirements for European data spaces

European Commission

Requirements elicitation

- **Input**

EUROPEAN COMMISSION

Brussels, 19.2.2020
COM(2020) 66 final

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS

A European strategy for data

EUROPEAN COMMISSION

Brussels, 23.2.2022
SWD(2022) 45 final

COMMISSION STAFF WORKING DOCUMENT

on Common European Data Spaces

European Commission | English | Search

Shaping Europe's digital future

Home | Policies | Activities | News | Library | Funding | Calendar | Consultations

Home > Activities > The DIGITAL Europe Programme – Work Programmes

The DIGITAL Europe Programme – Work Programmes

Overall objectives, scope, outcomes and deliverables as well as budget allocations, for each topic are described in the work programmes. On this web page you will find relevant documents and amendments for the work programmes once they have been adopted by the European Commission.

The current work programmes implementing DIGITAL are:

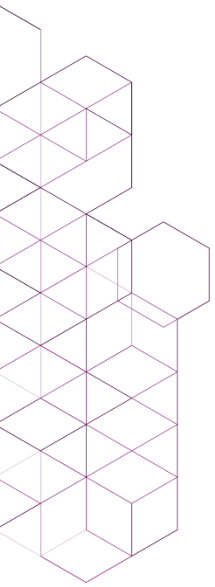
- DIGITAL Europe Work Programme 2023-2024 (.pdf)
- DIGITAL Europe - EDIH Work Programme 2021-2023 (.pdf), specifically dedicated to the European Digital Innovation Hubs
- DIGITAL Europe - Cybersecurity Work Programme 2023-2024 (.pdf)
- DIGITAL Europe - High Performance Computing (managed by the EuroHPC Joint Undertaking) : Decision No 03/2023 Amending the Work Programme and Budget for the year 2023 (.pdf)

- **Requirements**
  - functional and non-functional

Requirements elicitation

→ **Table 1: Selected list of EU policy provisions translated into functional and non-functional requirements for common European data spaces**

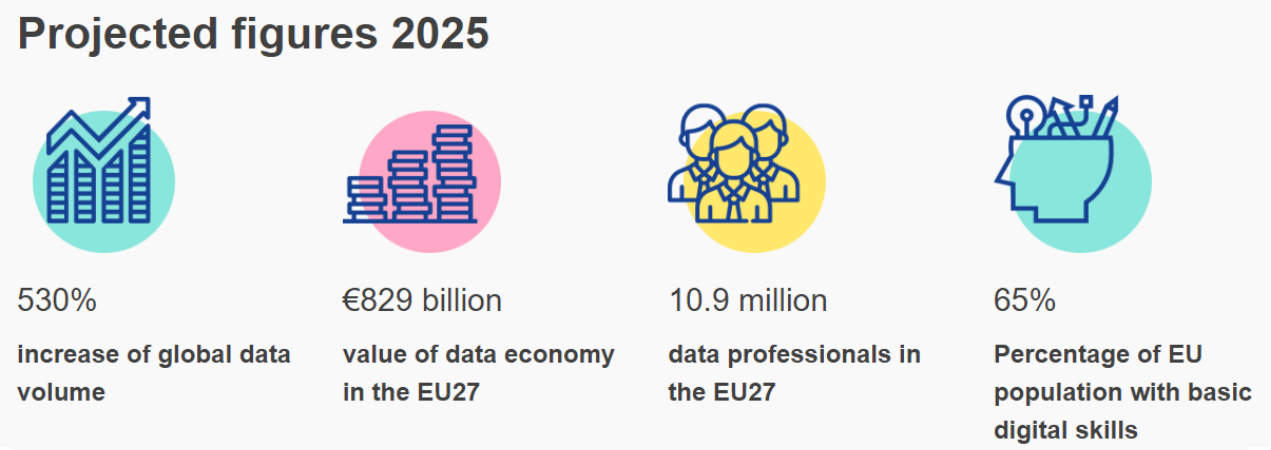
Policy provision	Functional requirements	Non-functional requirements
A secure and privacy-preserving IT infrastructure to pool, access, process, use and share data	Data transfer and exchange Data storage Data processing and analytics Data pooling and collaboration	Security Confidentiality
Data holders will have the possibility, in the data space, to grant access to or share certain personal or non-personal data under their control	Identity, authentication and access control Usage control policies	Confidentiality
… promote the development of tools to pool, access, use and share all types of data favouring the development of common open standards and findable, accessible, interoperable and reusable (FAIR) principles … data holders could use these tools to ease the uploading of data into data spaces, to give or revoke their authorisation to data and to change access rights and specify new conditions of how their data can be accessed and reused over time	Data transfer and exchange Identity, authentication and access control Usage control policies	Interoperability Auditability
Data that is made available can be reused against compensation, including remuneration, or for free	Transaction metering and billing	
Participants […] use the common technical infrastructure and building blocks which will allow the data spaces to be built in an efficient and coordinated manner	—	Maintainability Variability
The common technical infrastructure will have to […] integrate the cybersecurity-by-design principle	—	Security
Participation of an open number of organisations/ individuals	Identity, authentication and access control	Scalability
Common European data spaces could be developed on international standards, INSPIRE (for spatial data) and FAIR principles to favour interoperability, …exploitation of data on EU computing infrastructures (e.g., cloud and HPC) and be interconnected and progressively made interoperable	Data interoperability features Data processing and analytics	Interoperability Performance
European rules and values, in particular personal data protection, consumer protection legislation and competition law, are fully respected	Compliance monitoring and auditing Data protection	Auditability
Enhance the development of new data-driven products and services in the EU and thereby create the core tissue of an interconnected and competitive European data economy	Data processing and analytics	Sovereignty
Data spaces middleware: provide a full cloud stack with basic services that can also be operated at the edge, while foreseeing the subsequent integration of high-performance computing and far edge computing	Multi-tier support, federation, orchestration	Portability Performance
Data spaces middleware: provide a technical baseline to be used by all EU common data spaces to avoid duplication of effort and overlaps and to ensure a proper alignment of the various implementation approaches	—	Maintainability Variability
Data spaces middleware: 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 Provide a multi-cloud orchestration solution, with built-in identification and security management services	Data transfer and exchange Multi-tier support, federation, orchestration Identity, authentication and access Control	Portability Performance Security Maintainability
Data spaces middleware: provide data mapping services, data anonymisation and masking services	Privacy-preserving mechanisms Data interoperability features	Confidentiality Interoperability
Data spaces middleware: embed business intelligence services for multi-uses based on crosscutting, low power and software-enabled services	Data processing and analytics	—
Data spaces middleware: integrate an environmental tracking performance system to ensure services operate in a low power mode	—	Energy efficiency
Data spaces middleware: provide secure resource efficient data storage services	Data storage	—
Data spaces middleware: provide an "High Performance Computing as a service" connector to enable High Performance Computing resources to be accessible to users of the Cloud Federation	Multi-tier support, federation, orchestration	Performance Portability
Data spaces middleware: ensure that AI solutions […] can operate over the middleware platform Support sustainable and ultra-low latency digital twins' business applications Allow the hosting of highly specialised tools for complex business activities simulation, forecasting and modelling	Data processing and analytics	Performance
Data spaces middleware: provide secured communication, productivity and collaboration services Provide workflow management services Facilitate the integration with [cloud-to-edge] services and [their] marketplace	Data pooling and collaboration	Portability
A common European data space brings together relevant data infrastructures and governance frameworks in order to facilitate data pooling and sharing A clear and practical structure for access to and use of data in a fair, transparent, proportionate and/non-discriminatory manner and clear and trustworthy data governance mechanisms	Data pooling and collaboration Usage control policies Privacy-preserving mechanisms Data protection Data governance	Inclusivity Fairness Sustainability Trustworthiness Transparency



The Gist of Data Spaces

Context

- We live in the era of data! Vis-a-vis, **data-powered AI**
- Data can be reused without detriment (**non-rival resource**) → High degree of **scalability**
- Thus making it a digital priority: **EU Data Strategy**
- An essential building block for the **European single digital market**



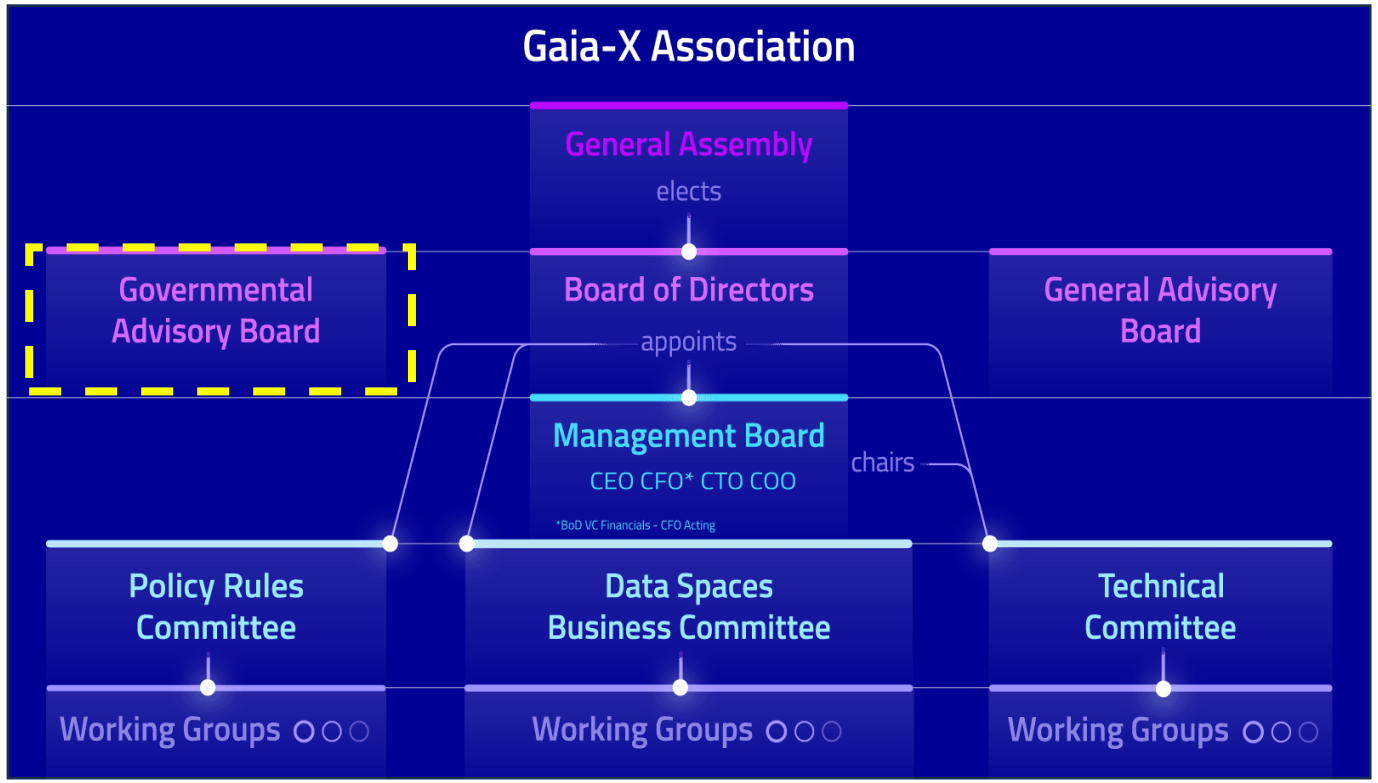
European data strategy (europa.eu)

Definition

- **A data space is a development framework** that enables the creation of a complete data ecosystem by providing an organisational, regulatory, technical and governance structure with the objective of facilitating the reliable and secure exchange of different data assets for the benefit of all actors involved, and ensuring compliance with all applicable laws and regulations
- A data space is nothing more than the modelling of the general conditions under which to deploy a voluntary, sovereign and secure sharing of data. A data space makes such **data-sharing tangible based on peer-to-peer interactions**, which collectively shape federated ecosystems (datasets + related services)

Gaia-X Governmental Advisory Board

Gaia-X's mission: To create an open, transparent, and secure federated digital ecosystem, where data and services respond to common rules and can securely built, composed, and re-utilised



Objectives:

- To ensure the **creation of synergies** between public policies and private industrial strategies
- To achieve **effective coordination** between governmental officials, accelerating the development of common data spaces

Gaia-X Lighthouse Projects

- Lighthouses aim to create **data platforms built on Gaia-X values**
- This will help create a **coherent data infrastructure ecosystem** (*matching supply & demand*)
- A great way of **build momentum**, with each project being an early adopter of Gaia-X technology

Agriculture

Agdatahub

Automotive Supply Chain

Catena-X

Smart Cities & Urban Data

ELINOR-X

Mobility, Transport & Tourism

EONA-X

Manufacturing, Industry 4.0

EuProGigant

Mobility, Transport

GAIA-X4 Future Mobility

Mobility

Mobility Data Space (MDS)

Energy

Omega-X

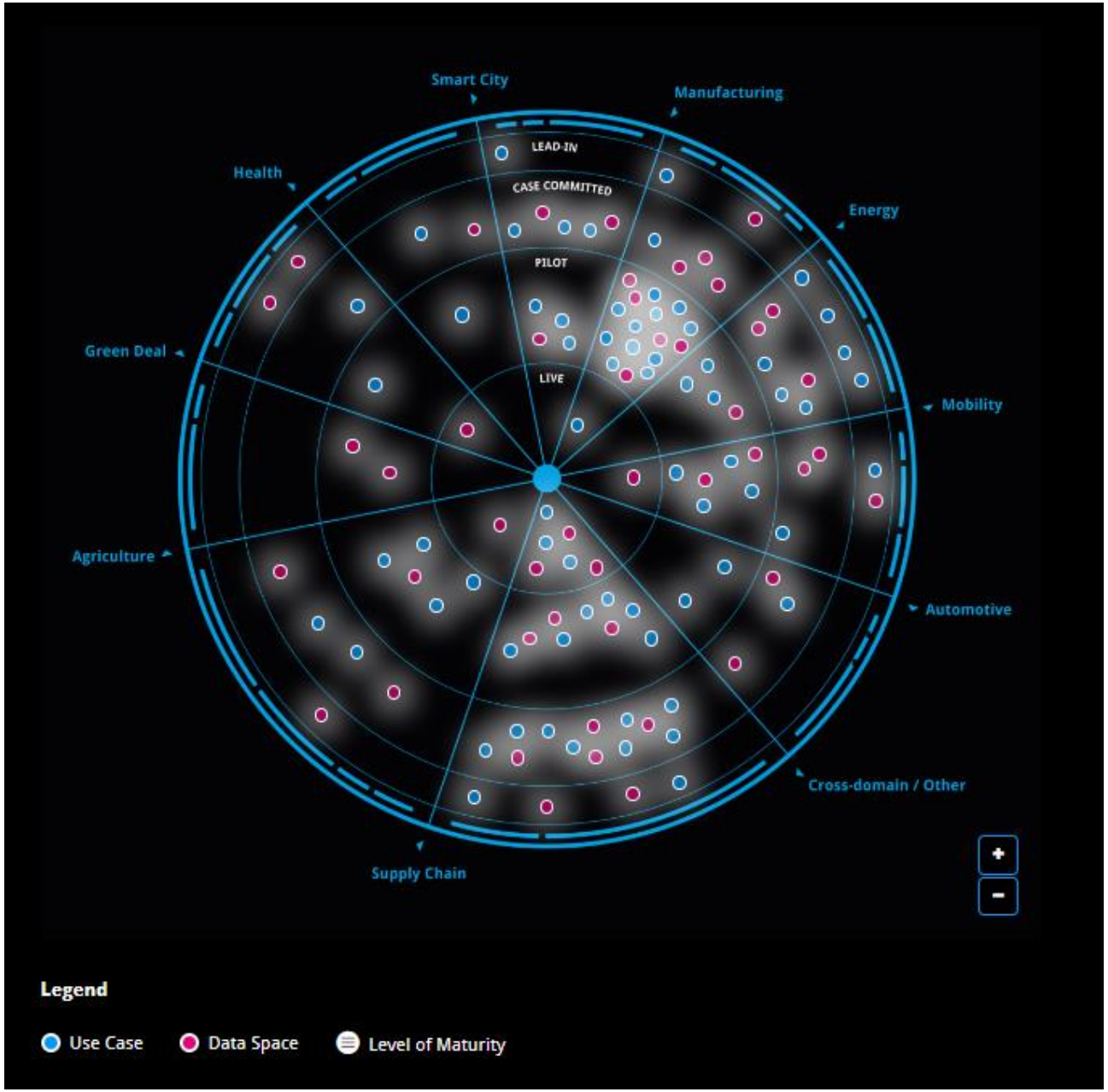
Electronics Supply Chain

SCSN

Cloud Services

Structura-X

IDSA/DSSC radar initiative



- A platform for **finding use-cases** to help organizations bring data spaces to life
- A tool **mapping data spaces** in a customer-friendly way
- Covering use cases ranging **different degrees of maturity** (from the phase of creating a business case, ..., to operating data spaces)

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Main data iniciatives and projects in the Ministry of Transport of Spain

Rocío Báguena.
Director of Division of Transport Studies and Technology
Ministry of Transport, Mobility and the Urban Agenda

MADRID, 2nd October 2023

Mobility Strategy EMSSC

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Estrategia de Movilidad
segura · sostenible · conectada · 2030

Pillar 5
Smart Mobility

Pillar 6
Smart Intermodal Logistics Chains

MEASURE 5.1.1. PROMOTE THE PUBLICATION OF OPEN DATA AND THE DEVELOPMENT OF MOBILITY APPLICATIONS

OTLE Observatorio del Transporte y la Logística en ESPAÑA

NAP Transporte Multimodal

MEASURE 5.1.3. ANALYSIS OF MOBILITY FLOWS AT NATIONAL LEVEL AND DEVELOPMENT OF NATIONAL TRANSPORTATION MODEL

HERMES

MEASURE 6.4.3. DESIGN AND IMPLEMENTATION OF THE TECHNOLOGICAL PLATFORM "SIMPLE "

SIMPLE
Simplificar | Digitalizar | Colaborar

NAP multimodal transport

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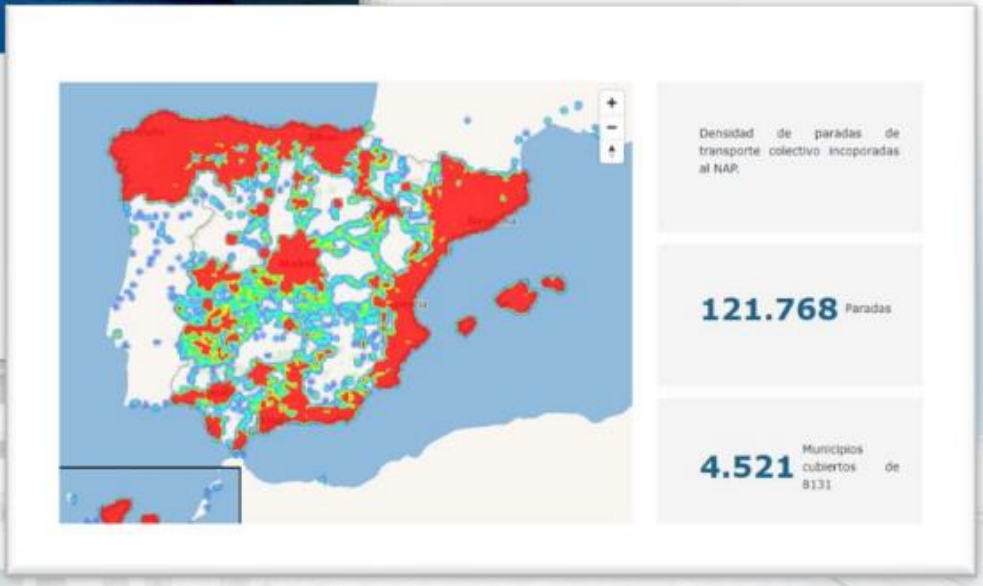

- National information about **transport offer** available in one portal which is official. Available since **june 2021**
- Objective: gather data from public and private agents and make it public to **apps developers** (and others)
- **117 data sets** available

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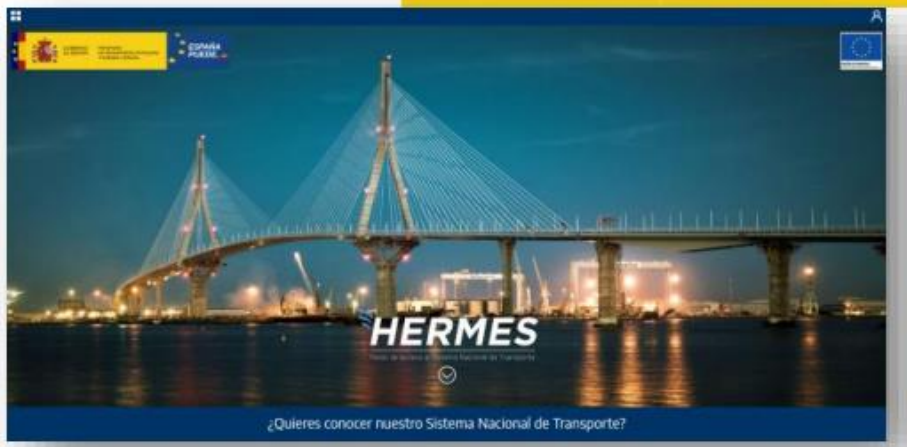
HERMES

Access Node to the National Transport System
It includes:

- **Transport Infrastructures**: a powerful Georreferenced Information System of Transport Infrastructures (with several visual displays)
- **Mobility**: Data from mobility studies based on bigdata technology
- **Future vision**: Aid tools for planning transport infrastructures and services such us National Transport Model (MNT) and tools for Cost-Benefit Analysis (ACB)



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www.mitma.gob.es/ministerio/proyectos-singulares/estudio-de-movilidad-con-big-data

Estudio de la movilidad con Big Data

Hoy en día, las nuevas tecnologías de Big Data e inteligencia artificial ofrecen unas posibilidades para la medida de la movilidad que eran inimaginables hace solo unos años. El MITMA utiliza desde 2017 estas tecnologías para el estudio de la movilidad a nivel nacional, compartiéndolos como **datos abiertos** para su reutilización.

Los estudios de demanda son una de las piedras angulares del MITMA para la monitorización, evaluación y planificación de mejoras en el Sistema Nacional de Transportes en favor de una **movilidad sostenible.**

Desde el 1 de enero de 2022, se está llevando a cabo un estudio de movilidad diario continuo, mediante la aplicación de tecnologías Big Data y de inteligencia artificial a los registros generados por los terminales de **telefonía móvil**, con el fin de conocer a fondo la movilidad en nuestro país.

- ✓ Mobility data inferred from mobile phones
- ✓ Two previous studies
- ✓ 2022-2023 current study:
  - Basic studies: hourly mobility at national level since January 2022
  - Complete studies
  - Road routes
- ✓ Open data

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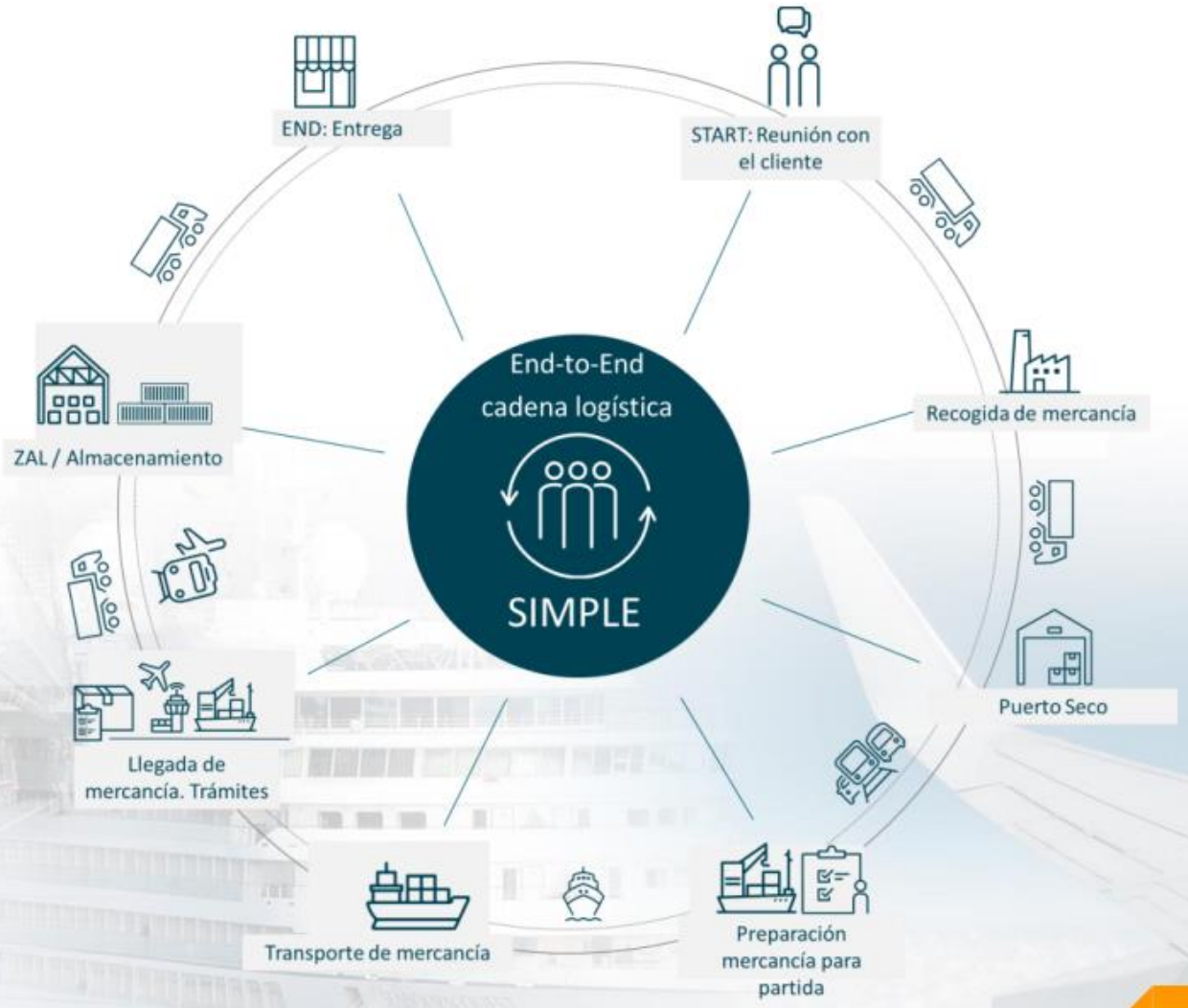
SIMPLE

Simplificar | Digitalizar | Colaborar

SIMPLE is a federated platform for integrated and digital management of freight transport related data (road, maritime and railway), in all different nodes of logistic chain



AgriFood Sector on Data Spaces

Maite Ambros Mendioroz

Head of the Unit of Innovation and Digitalization.
General Directorate of Rural Development, Innovation and AgriFood Training.
Ministry of Agriculture, Fisheries and Food

2nd October 2023

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MINISTERIO DE AGRICULTURA, PESCA Y ALIMENTACIÓN

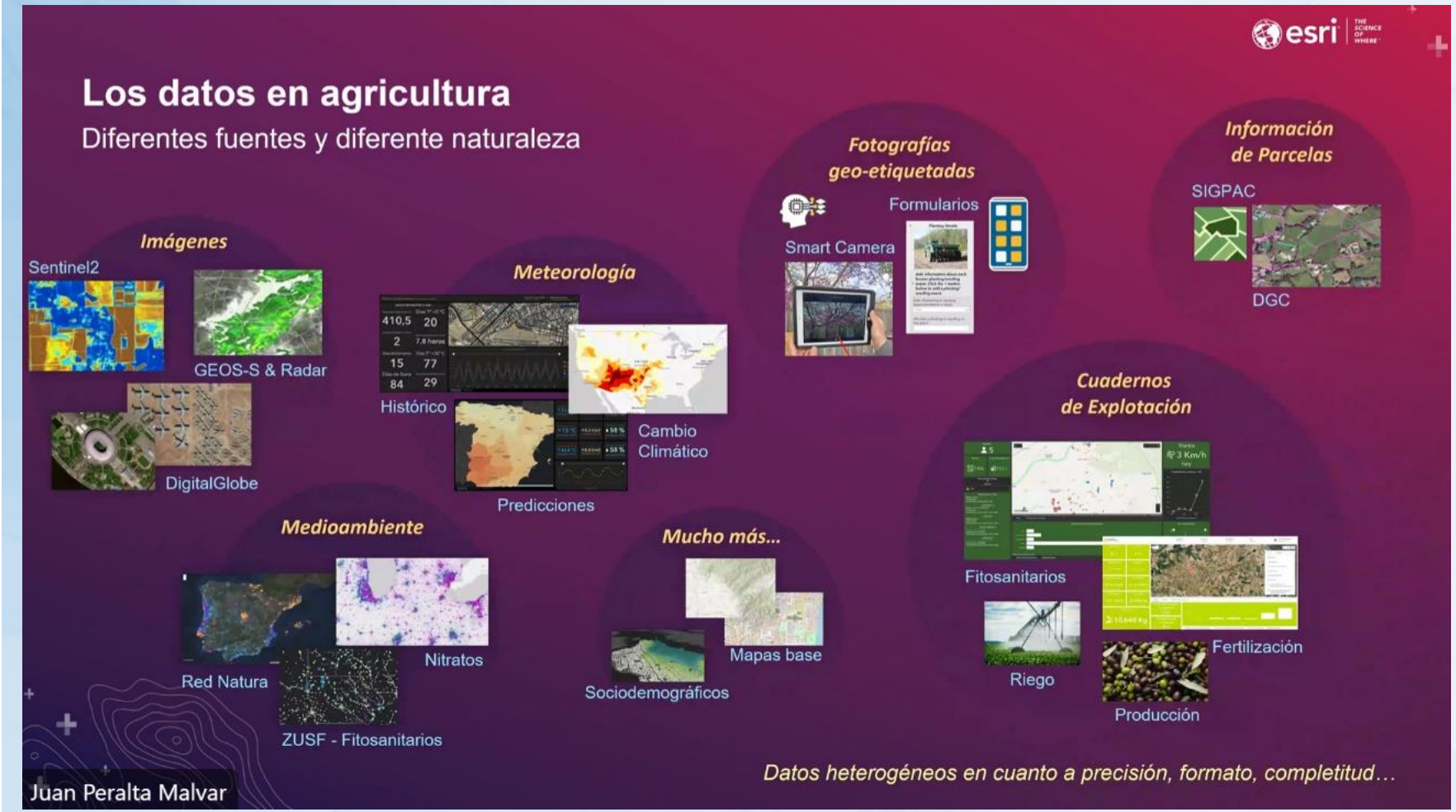
General Context…at a glance.

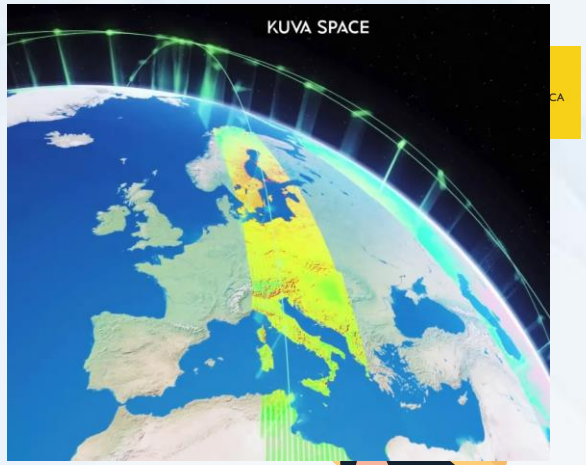
- **914.000 holdings, 30.000 industries** (90% SME, 23% industrial sector – ranks 1st) 23,9 million ha utilized agricultural area (half country)… 85% RA
- **650,000 producers** can **receive Common Agricultural Policy grants. Subsidies year 2022 = 4.037 million euros aid (20% agr. income)**
- **Many asymmetries in the value chains** (agricultural machinery industry, Agrochemical, Pharmaceutical and Veterinary Industries are big coorporates, the same applies to food retail sector)
- **Inflation: 14.1% increase in food shopping basket in the last year**

AgriFood Data context.

MINISTRY… OBSERVATORY OF DIGITALIZATION OF THE AGRIFOOD SECTOR.

- **Uptake of digitalization is increasing**
- **Too much emphasis on data for control and monitoring of the C. A. P. recipients of subsidies**
- **Long term concern about privacy and property of data.** 2018 Code of Conduct on agr. Data sharing by contractual agreement.
- **Relevant OPEN DATA policies, and e-government policies for the C.A.P.**
- **Widespread lack of knowledge about what a data space is.**
- **Horizon Europe CSA** AGRI DATASPACE inventory on data sharing in…





PLUS + official controls (maximum residues MRL's, pathogens …), plant and veterinary health alert networks (ONE HEALTH), certifications (organic, geographic denominations…), agri-food consumption data, traceability along the food chain.

2030 Targets for sustainable food production

PESTICIDES

Reduce the overall use and risk of chemical and hazardous pesticides

NUTRIENT LOSSES

Reduce nutrient losses by 50% whilst retaining soil fertility, resulting in 20% less fertilisers

ANTIMICROBIALS

Reduce sales of antimicrobials for farmed animals and aquaculture

ORGANIC FARMING

Increase the percentage of organically farmed land in the EU

#EUFarm2Fork #EUGreenDeal

European Commission

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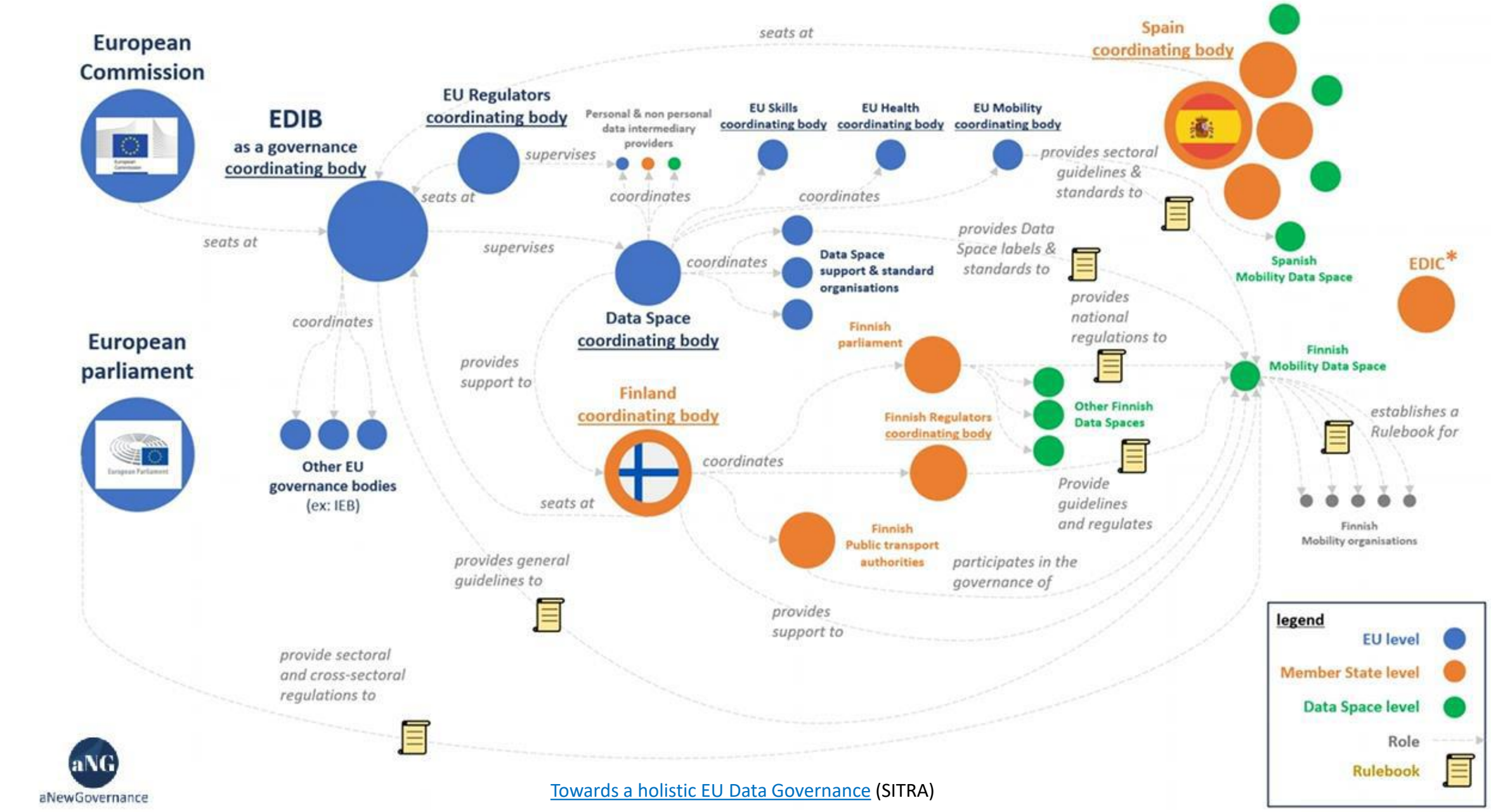
Plan de Recuperación, Transformación y Resiliencia

GOBIERNO DE ESPAÑA

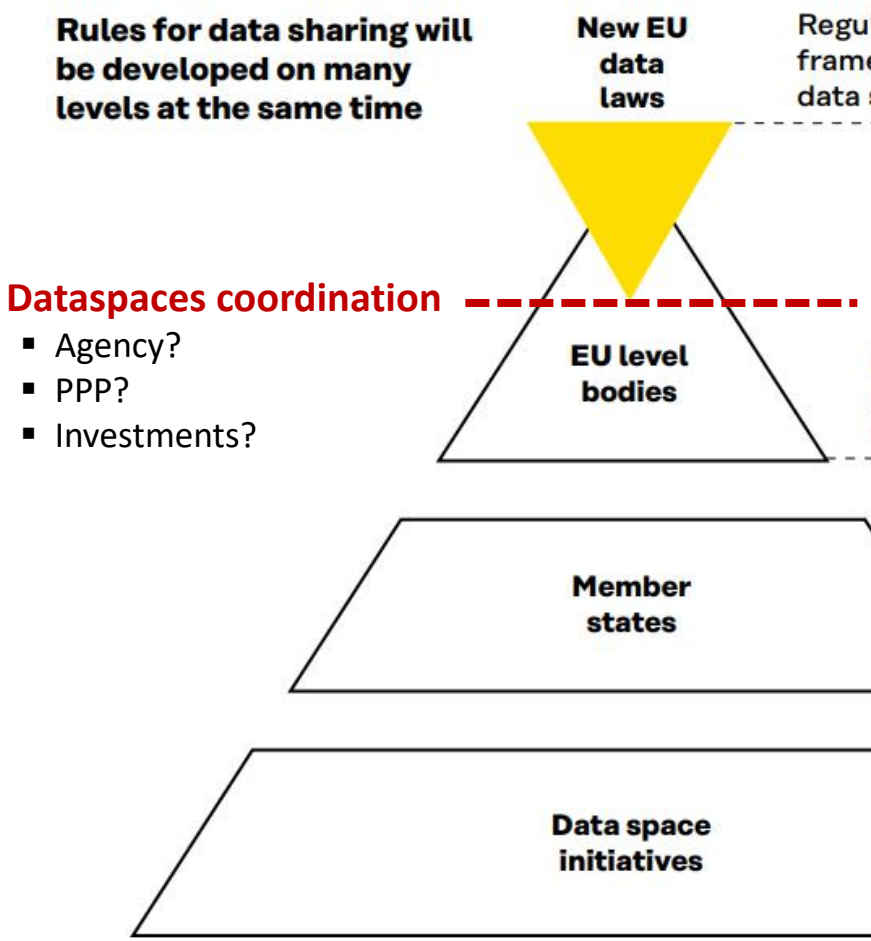
https://www.fega.gob.es/es/content/siex

The criticality of governance in data spaces



Towards a holistic EU Data Governance (SITRA)

The criticality of governance in data spaces



- Laws recently passed, now need market traction
- The next EC should ensure adequate compliance

- Strategy: EC's Directorate Generals
- Supervisors: EDBP, Comp authorities, EDIB, ENISA…
- Execution & support: EDICs, DSSC, Simpl, …

- This is the level of the Spanish National Data Office
- Member States' public policy + investments (e.g. NextGenEU)

- There are many sectoral initiatives on the way
- Also feeding from results of old Horizon + CEF programmes

Towards a holistic EU Data Governance (SITRA)

Governance of European data spaces

European Commission

What is Governance of European data spaces?

European Commission SWD, 2022

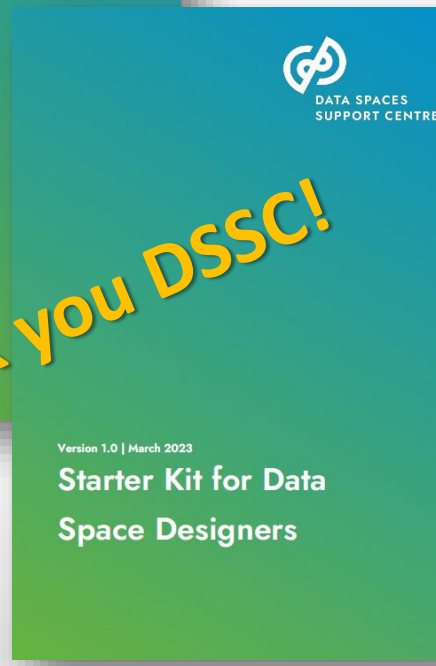
[Data spaces should]:

- *Bring~~[ing]~~ together relevant data infrastructures and **governance frameworks** in order to facilitate data pooling and sharing;*
- *include **data governance structures**, compatible with relevant EU legislation, which determine, in a transparent and fair way, the rights concerning access to and processing of data.*

DSSC

- *[A data space is] An infrastructure that enables data transactions between different data ecosystem parties based on the **governance framework** of that data space (*Glossary*); A data space is a distributed system defined by a **governance framework**, that enables trustworthy data transactions between participants while supporting trust and data sovereignty (*Blueprint v.0.5*)*
- ***Governance** is the creation, development, maintenance and enforcement of a **governance framework**.*
- ***Governance framework**: a set of principles, standards, policies (rules/regulations) and practices that define how a data space is governed and how decisions are made, created, and enforced by the Data Space Governing Authority (*Glossary*).*

DATA SPACES SUPPORT CENTRE



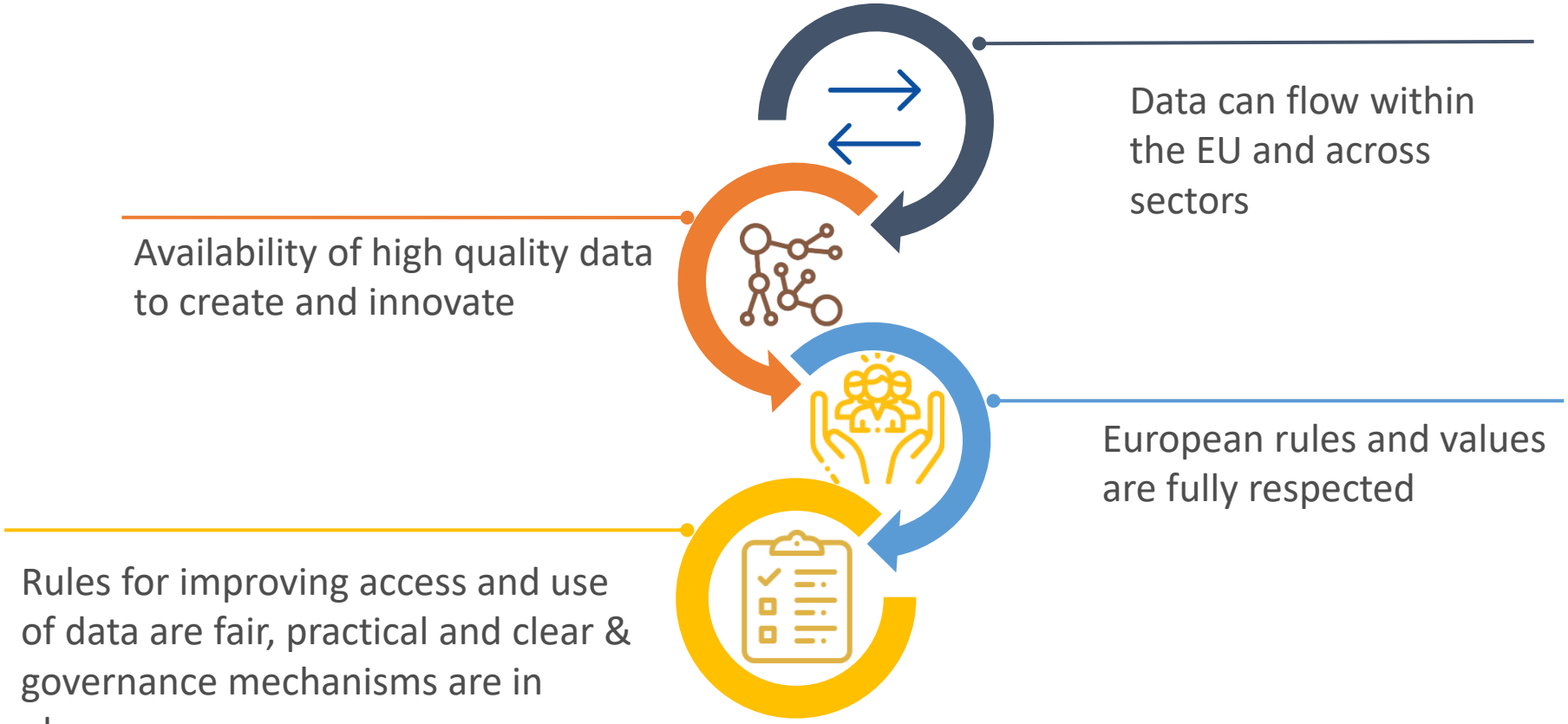
Thank you DSSC!

Generated from input received in
DSSC Governance Thematic Grou

r receives funding from the European
ne under grant agreement n° 101083412.

Governance context: European strategy for data

Creating a common European data space, a single market for data



Legal + policy context for EU data spaces

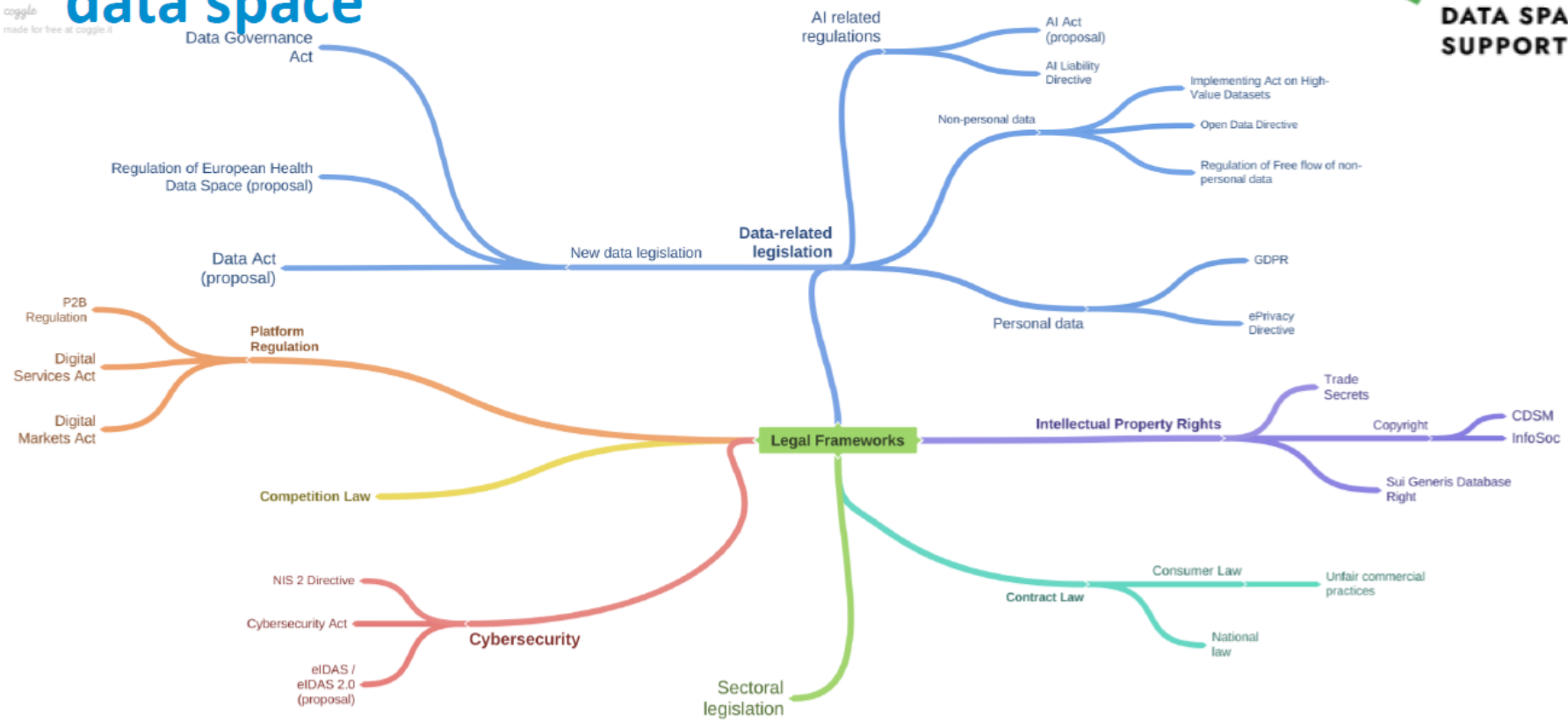
01 Horizontal Legal framework

02 Investment in data spaces

03 Governance

- Data Spaces Support Centre
  - Stakeholder engagement
  - Interlinking different data spaces
- European Data Innovation Board
  - Governance of data spaces
  - Technical, incl. approval of standards, building blocks

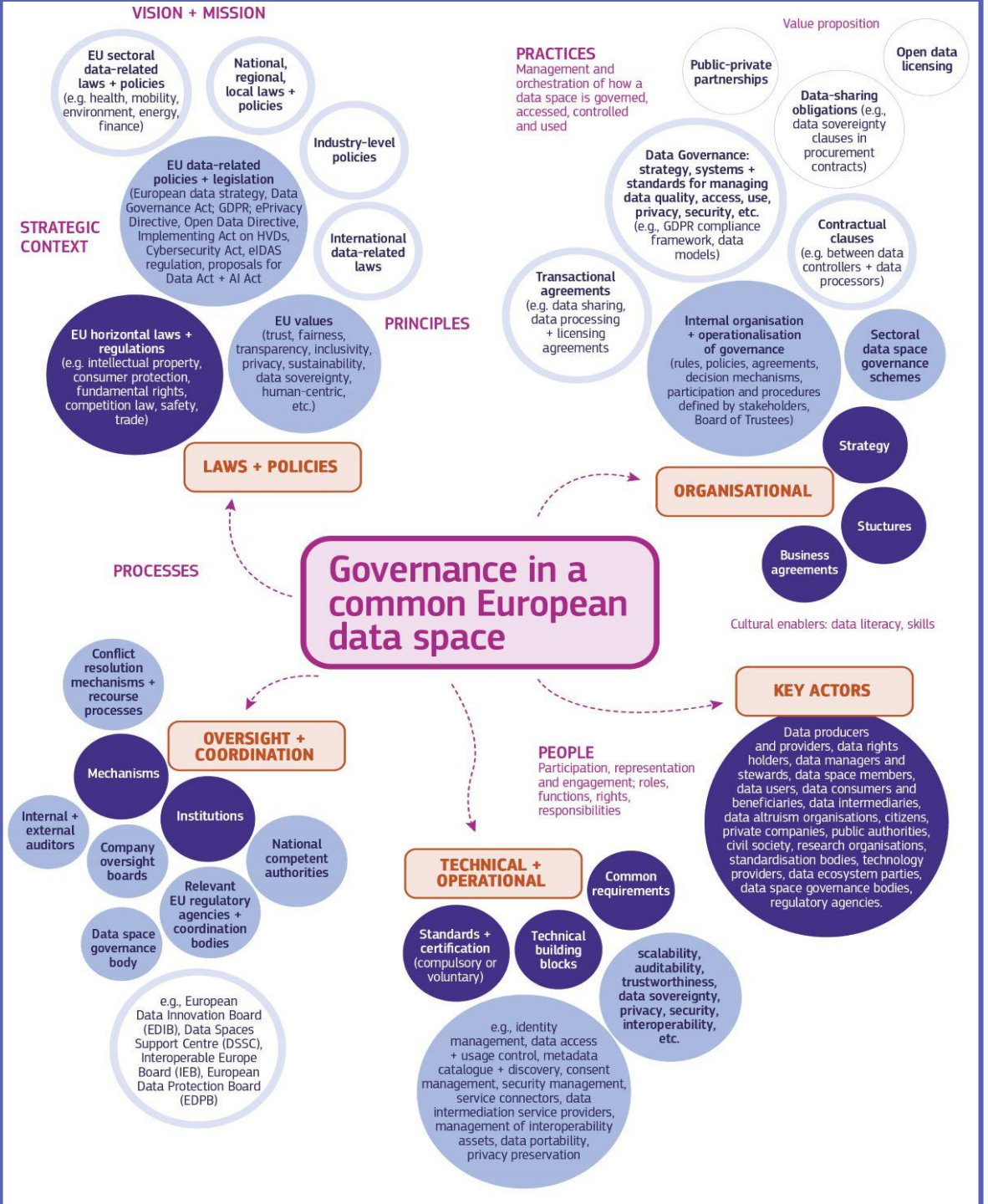
Legal frameworks with (potential) link to data space



→ **Focus on 'major' horizontal frameworks**

The Data Spaces Support Center receives funding from the European Union Digital Europe Programme under grant agreement n° 101083412.

Funded by the European Union



Multi-level governance considerations

- Horizontal legal frameworks (*EU, international, national, regional*)
- Sectoral legislation
- Sectoral data space-related legislation
- Data-related legislation, data governance models
- Principles and requirements (*elicited from EU policy documents*)
- Standards and protocols
- Individual data space governance schemes
- Institutional mechanisms
- Business, organisational aspects
- Roles, rights, responsibilities

How-to information sheets

European Commission

How-to's on technical and organisational aspects of data sharing

		How-to Information Sheets	Data Space Theme
TECHNICAL	1	How can stakeholders benefit from synthetic data in a data space?	Synthetic data
	2	How to choose the best software stack for a data space?	Software stacks
	3	How to ensure clear access and use conditions for a dataset in a data space?	Licensing
	4	How to ensure that datasets shared by different actors in a data space can be used together?	Interoperability
	5	How to ensure that technical requirements and standards are being followed?	Data validation
	6	How to facilitate the discovery of data in a data space?	Data discoverability
	7	How to select the most appropriate standards for a data space?	Data standards
	8	How to ensure that digital resources and data are uniquely referenced in a data space?	Data registers
	9	How to provide access to data in a data space?	APIs for data access
	10	How to preserve privacy and protect personal data and sensitive business data in a data space?	Privacy enhancing technologies
ORGANISATIONAL	1	Which actors are providing what types of data in scope of a data space?	Data Actors
	2	How to foster a people-centred approach to data in a data space?	Citizen data
	3	How can business benefit from sharing data in a data space?	Benefits to business in data spaces
	4	How can governments access private sector data of public interest?	Accessing data (B2G)
	5	How can data transparency for AI systems be increased in a data space?	Transparency – AI data in data spaces
	6	How to leverage voluntary data sharing in a data space?	Voluntary data sharing
	7	Which legal aspects should be considered when creating, providing or using novel data-driven solutions in data spaces?	Legal

Example 1: How to foster a people-centred approach to data in a data space?

What is the problem?

1

- Existence of large power **asymmetries** between who collect data and who create data
- Importance to **build a trustworthy environment** for sharing data in a data space.

Scenario

*A city district innovates public services and engages in greater data collection about the movements and activities of its residents. The city council establishes a partnership with a private company that run the digital infrastructure. Yet, **it fails to adequately inform citizens, who are neither involved nor consulted**. As a result, people feel powerless and lose trust in the city council.*

Proposed solution(s)

2

- Ensure **people's voices and interests** are represented
- Promote **digital literacy and skills** amongst the general public
- Enable **people to control** how **their data** are accessed, shared, used
- Provide **people** with opportunities **to collect data** for public good and to influence decision-making

Recommendations

- Adopt transparency measures
- Rely on trustworthy data intermediaries
- Implement privacy by design

Additional Resources

3

Craglia, M., et al. 2021. **Digitranscope: The governance of digitally-transformed society,** Publications Office of the European Union, Luxembourg

Ponti, M. and Craglia, M., 2021. **Citizen-generated data for public policy**, Publications Office of the European Union, Luxembourg

Micheli, M., Ponti, M., Craglia, M. and Berti Suman, A., 2020. **Emerging models of data governance in the age of datafication.** *Big Data & Society*, 7, 2.

Micheli, M., Delipetrev, B., Hupont, I. and Soler Garrido, J., **The landscape of data and AI documentation approaches in the context of new EU policies**, TBC. *Ethics and Information Technology*

Example 2: How to select the most appropriate standards for a data space?

What is the problem?

1

- Standards are enablers of interoperability
- Often they are chosen blindly without the necessary considerations
- Poor/immature standards that are not supported by clients and communities can do more harm than good

Scenario

- A business company needs to perform machine-learning analyses to evaluate the accessibility of green areas located across districts within a city.
- Collected data show a high degree of fragmentation:
  - data encodings are different, including non-standard formats & standard formats historically used by different communities and following different data models
  - ETL conversion is hard or impossible
  - some standards are new and software tools to retrieve and consume the data do not exist yet

Proposed solution(s)

- Prioritise well-known standards adopted by global communities
- Give preference to standards developed by international SDOs
- Consider the existence of a community behind standards
- Prioritise standards developed in a participative, agile and collaborative way
- Choose mature standards, avoiding standards in draft or not yet published

Recommendations

- Data providers
- Data Users
- Intermediaries

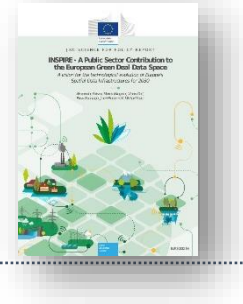
2

Additional Resources

Open Geospatial Consortium

ISO/TC 211

W3C®



3

Example 3: How to provide access to data on a data space?

What is the problem?

1

- Quick and effective access to datasets is crucial
- Often this represents a challenge due to the heterogeneity of technologies, standards and architectures

Scenario

- A developer needs to build an application to monitor citizens' exposure to air pollutants in a city, by using data from all air pollution sensors, traffic and road infrastructure.
- Data are made available by different data providers in a fragmented way:
    - some only provide static access to old measurements
    - some provide dynamic access to measurements in non-standardised, non-open and non machine-readable formats
- The application cannot only be implemented without simultaneous access to all the data sources.

Proposed solution(s)

- Use Application Programming Interfaces (APIs) as an effective way to provide access to data in modern digital environments
- Rely on industry standards to describe APIs, such as OpenAPI specifications

Recommendations

- Digital service providers
- Intermediate service providers & users
- Data providers
- Data space orchestrators

2

Additional Resources

OPENAPI

3

MITMA policies

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Estrategia de Movilidad

segura · sostenible · conectada · 2030

Pillars 5 and 6

Plan de Recuperación, Transformación y Resiliencia

Aids for digitalization of transport

Ley de Movilidad Sostenible

Project law which approval was interrupted due to elections. EDIM was included

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EDIM

- The Project law on sustainable mobility included a **National Mobility System**, being one of its pillars to implement a **Integrated Mobility Data Space (EDIM)**, digital and real time, between Administrations
- **Objective**: to guarantee availability of information for **better design of public policies**, facilitate **decisión-making process**, offer **sustainable and efficient mobility solutions**, and improve **crisis and emergency response capacity**
- **Data to be included**: transport offer, transport demand, costs of transport services, investments, transport infrastructures and terminals inventory,…
- Available to: administrations, management companies and professionals, organizations, associations and citizens (according to access levels)
- **Thought to be modular, scalable and distributed** (to be developed in several years)

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European Union

European Digital Decade Policy Programme (in force since January 2023) established a novel co-operation mechanism: **multi-country projects** (MCP)

- To facilitate the implementation of MCPs, the European Digital Decade Policy Programme has empowered the Commission to establish **European Digital Infrastructure Consortiums (EDIC)**, upon the **application of interested Member States**.
- Several countries (Spain included) are working to establish a **European Digital Infrastructure Consortium on Mobility and Logistics Data**

Primary goal: bridging the gap between project-based experimentation and the development and long-term availability and sustainability of a common data infrastructure, including data sharing and utilization

AgriFood Cooperatives of Spain

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cooperativas agro-alimentarias España

3.669

Empresas cooperativas agrarias

38.428

Millones de Euros facturados en 2021

+1 Millón

de socios en todo el territorio nacional

+123.700

Empleos directos generados por las cooperativas asociadas

AgriFood Cooperatives of Spain

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SIEX SIGC3X

¿Qué ofrece exactamente Cooperativas Agro-alimentarias de España?

hispatec agrointeligencia

esri

C3: **Cuaderno de Campo Cooperativo** (digital)=Cuaderno de explotación digital

- Captura de datos (normativa RD SIEX) por agricultores y/o técnic@s.
- Aplicativo 'off-line' para smartphones/tablets (agricultores).
- Aplicativo de escritorio (técnicos).
- Generación de recetas/recomendaciones.
- Conexión con la administración según plazos.
- Conexión con SIGCEX en tiempo real.
- Alertas.

SIGCEX: Sistema de Información Geográfica Cooperativa de las Explotaciones

- Análisis de la información, en tiempo real, procedente de C3.
- Monitorización de indicadores y sistema de alertas mediante cuadros de mando.
- Integración con fuentes de datos externas (AEMET, SENTINEL, etc.)
- Capacidad de creación de aplicativos propios adaptados a mis necesidades.
- Sólo requiere trabajo de análisis, aunque permite mucho más.

cooperativas agro-alimentarias España

AgriFood Cooperatives of Spain

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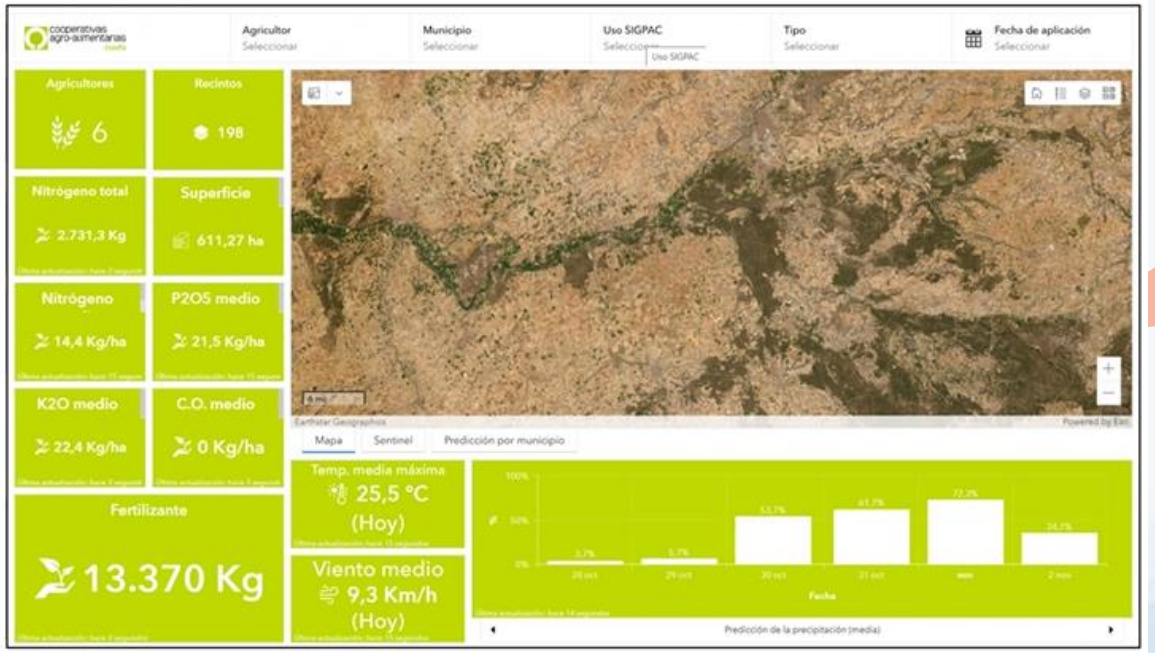
¿Cómo se implementará el sistema?

1. Formación en SIGCEX, despliegue de licencias y firma de acuerdos a tres partes entre cooperativa, federación y confederación.
2. Integración C3-SIGCEX-SIEX (una vez C3 y CUE estén habilitados).
3. Formación en C3 y despliegue del software. Firma de contratos entre cooperativa y soci@s en base al código de conducta sobre datos UE y COPA-COGECA.
4. 2023: Año de puesta en marcha para administración, C3 y SIGCEX→PRUEBAS



cooperativas agro-alimentarias España

esri

Data Sharing Initiatives incipient D.S.:

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- **Livestock farming sharing data initiatives:**

The European Agricultural Fund for Rural Development
Europe investing in rural areas

https://gc4sheep.com/ Federated Data Cloud Platform with Artificial Intelligence Layer for the Genetic and Reproductive Improvement of the National Dairy Sheep (AI for AI)

https://www.gesvac.org/ animal welfare+health dairy cattle Friesian breed

- **RuralTech. Recovery and Resilience Funds.**
- **Eno-data lake La Rioja** public procurement of innovative technology

AGROALNEXT
Plan complementario de Agroalimentación

Data Sharing Initiatives Agri Data S.:

https://agridataspace-csa.eu/dsis-map/

Data Sharing Initiatives Agri Data S.:

Dairy Sheep + Spanish AgriFood Cooperatives.

DIXITEGA DIGITALIZATION OF THE VALUE CHAIN OF IXP TERNERA GALLEGA . RDP EAFRD GALICIA.
https://juanadevega.org/es/proxectos/grupo-operativo-digitalizacion-de-la-cadena-de-valor-de-la-igp-ternera-gallega/

NEXTGENDATA
https://www.dihdatalife.com/en/edih/

I4DATA
https://data4food2030.eu/project/i4data/

Fiware Platform, in La Vega Innova. DIH of Ministry

https://lavegainnova.es/

Maite Ambros Mendioroz
Head of the Unit of Innovation and Digitalization.
General Directorate of Rural Development, Innovation and AgriFood Training.
Ministry of Agriculture, Fisheries and Food

Bzn-sgid@mapa.es

2nd October 2023

Full text available at: https://fefac.eu/wp-content/uploads/2020/07/eu_code_of_conduct_on_agricultural_data_sharing-1.pdf

E-government, revulsive for data spaces. LEGAL FRAMEWORK

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REGULATION (EU) 2021/2116 of 2 December 2021 on the financing, management and monitoring of the common agricultural policy.
Article 69 Geospatial animal based application system = Automatic application for CAP aid based on area and/or animals.

Royal Decree 1054/2022, of December 27, which establishes and regulates the **Information System for agricultural and livestock farms and agricultural production (SIEX)** , as well as the Autonomous Registry of agricultural farms and the **Digital Agricultural Holding Notebook.**

Order APA/204/2023, of February 28… minimum content of the … Digital Agricultural Holding Notebook

Article 69

Geo-spatial and animal-based application system

1. As regards the aid for the area-based interventions referred to in Article 65(2) and implemented under their CAP Strategic Plans, Member States shall require the submission of an application by means of the geo-spatial application form provided by the competent authority.

2. As regards the aid for the animal-based interventions referred to in Article 65(2) and implemented under their CAP Strategic Plans, Member States shall require the submission of an application.

3. Member States shall pre-fill the applications referred to in paragraphs 1 and 2 of this Article with information from the systems referred to in Article 66(1), point (g), and in Articles 68, 70, 71 and 73 or from any other relevant public database.

4. Member States may set up an automatic claim system and decide which applications referred to in paragraphs 1 and 2 it shall cover.

5. If a Member State decides to use an automatic claim system, it shall set up a system which enables the administration to make the payments to the beneficiaries on the basis of the existing information in the official computerised databases. Where there has been a change, that existing information shall be supplemented with additional information, where necessary, to cover that change. The existing information and additional information available through the automatic claim system shall be confirmed by the beneficiary.

6. Member States shall annually assess the quality of the geo-spatial application system in accordance with the methodology set up at Union level.

Where the assessment reveals deficiencies in the system, Member States shall adopt appropriate remedial actions or, failing that, shall be requested by the Commission to set up an action plan in accordance with Article 42.

An assessment report and, where appropriate, the remedial actions and the timetable for their implementation shall be submitted to the Commission by 15 February following the calendar year concerned.

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Plan de Recuperación, Transformación y Resiliencia

GOBIERNO DE ESPAÑA

https://www.fega.gob.es/es/content/siex

PERTE AGROALIMENTARIO. CITA SIEX. 20 millones de euros.

Hasta 2023 o … más

Eje 1: Fortalecimiento **industrial. MINCOTUR**

Eje 2: Digitalización del sector agroalimentario
Presupuesto: 454,35 M€ Gestor: MAPA Y MINECO

Eje 3: I+D+i
Presupuesto: 143 M€
Gestor: MAPA Y MICIN

AGROALNEXT
Plan complementario de Agroalimentación

DETALLE DE ACTUACIONES DEL EJE 2	GESTOR	PRESUPUESTO
2.1. **Impulso a la Estrategia de Digitalización del Sector Agroalimentario y del medio rural (C3.I5)**		
▪ **Línea AgroInnpulso de préstamos participativos con ENISA**	MAPA Y ENISA	33 M€
▪ **Hub de Innovación Digital**	MAPA	5,15 M€
▪ **Plataforma AKIS**		3 M€
▪ **Observatorio de Digitalización del Sector Agroalimentario**		1 M€
2.2. Proyectos innovadores AEI-Agri		12,2 M€
2.3. Ayudas del PNDR para apoyar la formación y el asesoramiento digital en el sector agroalimentario		3 M€
2.4. Desarrollo del Centro de Competencias Digitales		1 M€
2.5. Desarrollo de una lanzadera de proyectos tractores en el sector agroalimentario español: Sistema de Explotaciones Agrarias (SIEX)		20 M€
2.6. Programa de Espacios de Datos Sectoriales (C12.I1)	MINECO	50 M€
2.7. Programa de Kit Digital (C13.I3)	MINECO	275 M€
2.8. Programa de Agentes del Cambio (C13.13)	MINECO	27 M€
2.9. Medidas transformadoras en marco de conectividad digital (C15.I6)	MINECO	15 M€
2.10. Programa de Formación para expertos en transformación digital de las PYMES (C19.I3)	MINECO	9 M€
Total		**454,35 M€**

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Thanks!


DATA
SPACES
IN EU
SYNERGIES BETWEEN DATA
PROTECTION AND DATA SPACES
EU CHALLENGES AND
EXPERIENCES OF SPAIN
2 October 2023 | Madrid
#dataspaces #EUchallenges
aepd
enisa