gaia-x

Market-X

MARKET EXHIBITION

13-14 MAY

2025 SPAIN VALENCIA

Tech-X

HACKATHON #8

In partnership with

gaia-x Hub Spain

ICT TECHNOLOGY CENTER

Welcome & Opening Market-X & Tech-X

09:30 – 10:10

- **Ulrich Ahle,** CEO, Gaia-X
- **Daniel Sáez Domingo,** Strategic Intelligence Director, ITI
- **David Rosa,** Valencia Innovation Capital Director

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ICT TECHNOLOGY CENTER

Welcoming words

Ulrich Ahle
CEO, Gaia-X

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2030 Forecast of the European Data Market & Economy

- In 2030, the EU27's data economy will be close to €1TN (8.6% CAGR*) - 6.5 % of EU27 GDP
- There will be 11.6M of data professionals by 2030, an annual growth of 7.0%
- There will be 333k Data Supplier companies by 2030 (4.5% CAGR)
- The EU Cloud Computing Market: $575B by 2030 (20.8% CAGR)
  - Out of which only 13%-16% is captured by providers

European Data Market study 2021-2023

Europe Cloud Comp Market Size & Outlook 2024-2030

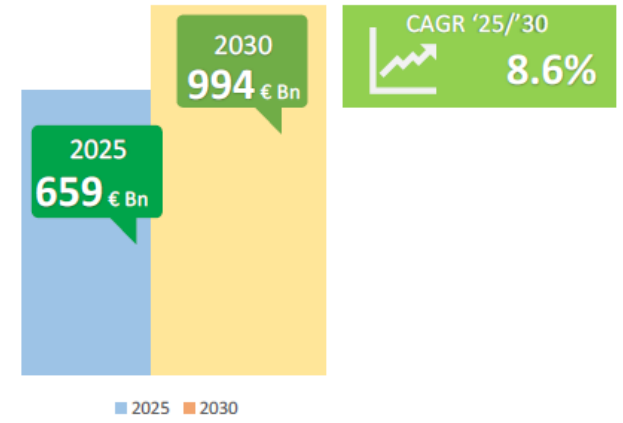
European Iaas/PaaS Market Research & *The future of European competitiveness*

Value of the Data Market

The marketplace where digital data is exchanged as "products" or "services" as a result of t elaboration of raw data.

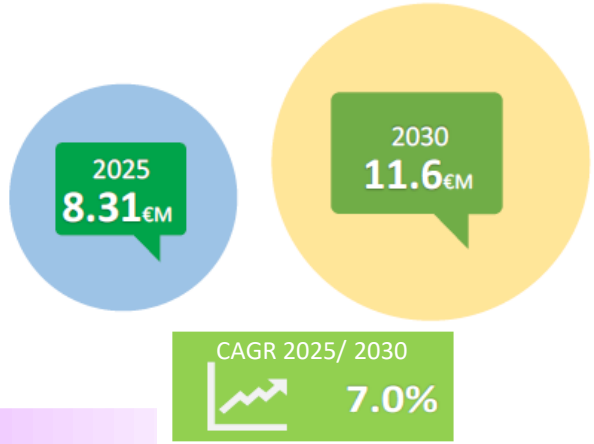
Value of the Data Economy

The Data Economy measures the overall impacts of the data market on the economy as a whole.



Number of Data Professionals

Workers who collect, store, manage, analyse, interpret, and visualise data as their primary or as a relevant part of their activity .



* *CAGR 2025-2030: Compound Annual Growth Rate*

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Europe’s Challenge

Draghi Report: The Growing Productivity Gap

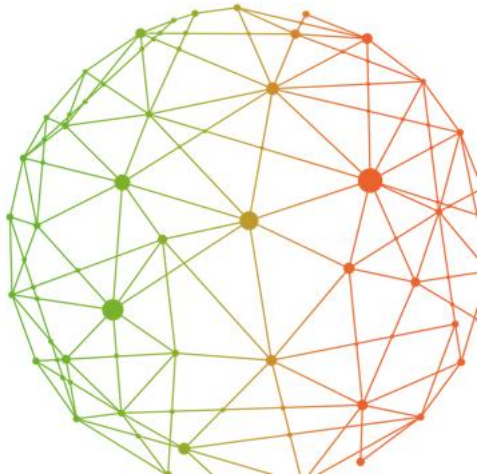
"The key driver of the rising productivity gap
between the EU and the US has been digital technology."

Mario Draghi, Draghi Report (2024)

Key insights from the Draghi Report:

- Europe is falling behind in breakthrough digital technologies.
  - **70% of AI foundation models** have been developed in the US since 2017.
  - **65% of the global and European cloud market** is controlled by three US hyperscalers.

- AI as **key driver of economic growth** and **innovation**.
  - Data is crucial for competitive AI, yet **Europe struggles with availability, interoperability, and scaling of data.**
  - **The paradox:** Europe produces **massive amounts of industrial data**, but it remains **siloed within companies and industries**.



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Europe’s Challenge

Draghi Report: Cross-Industry Data Sharing for Accelerating AI

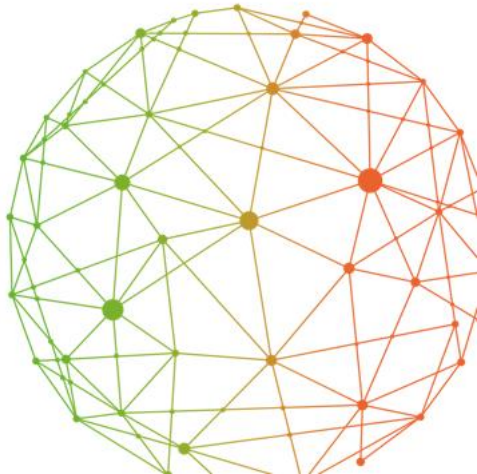
> “The EU should promote cross-industry coordination and data sharing to accelerate the integration of AI into European industry.“

Mario Draghi, Draghi Report (2024)

Draghi Report proposes a sector-specific AI strategy: "EU Vertical AI Priorities Plan":

- Shared AI model development across sectors: **Strategic AI integration in 10 key industries** (automotive, energy, healthcare, etc.)
- **Cross-industry data pooling** to overcome Europe's lack of large datasets (“for free”).
- **Balance in supporting European cloud industry** with securing key technologies amid US dominance.
- **Key challenges**: Companies hesitate to share **data (competition concerns, lack of incentives, regulatory uncertainty)**

The EU must leverage its data sharing ecosystem to enable the EU Vertical AI Priorities Plan.



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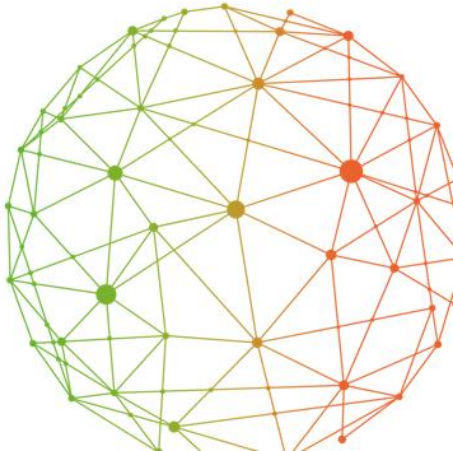
European Data Space Ecosystem

Current Status and Progress

- **Significant national and EU funding** has supported data spaces since 2019. With technology converging, the focus shifts to **adoption, value creation, and data utilization**.

- **Regulatory framework established:** Data Governance Act (DGA), Data Act (DA), and supporting infrastructure like Gaia-X and DSSC.
- While Agdatahub failed due to economic viability, successful projects like Catena-X, EONA-X or Energy data spaces optimize supply chains and production.
- New European data spaces in key industries (e.g., aerospace, energy, manufacturing) aim for **economic viability by 2027.**
- **From 2028, these data spaces will potentially enable industrial data use for AI training.**



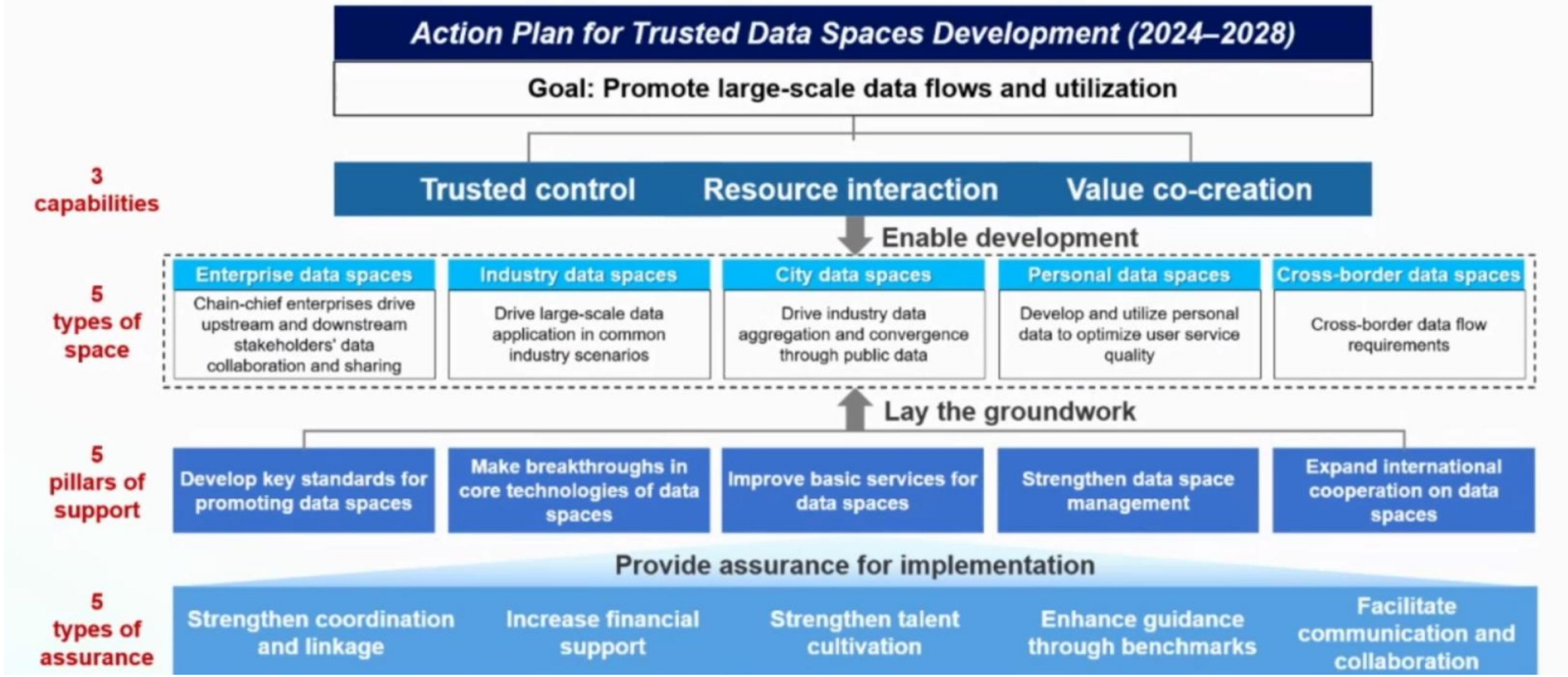
Public Funding for Data Space & Cloud Infrastructure in Europe

Source	Programme	€	Comment
Germany	National Funding	435 M	Data Ecosystems: Gaia-X Funding Competition (11 Projects); Manufacturing-X; Catena-X; Gaia-X 4 Future Mobility; EuProGigant; Energy Data-X; GXFS-DE
Spain	National Funding	502 M	150M € for industrial data spaces; 44M € for DS technologies; 1M € for Gaia-X Hub Spain; 900k € sovereign data R&D project; 149M € for Tourism and other singular projects. Still pending: 10M € for DS ref centre + promotion/ training; 127M € Data Kit Programme; 20M € Reuse of public data (HVDS)
France	National Funding	124 M	40M € Data4industry-X; 70M € for new call for tender; 14M € GFXS-FR
Luxembourg	National Funding	20 M	National funding for Gaia-X projects
Austria	National Fundning	23 M	Data space Technologies; Digital Product Passport; Production; Mobility; Energy; Healthcare
Denmark	National Funding	5 M	Gaia-X Hub
Flanders	Regional Funding	32 M	Flemish Smart Data Space; Athumi (Flemish Data Utility Company)
The Netherlands	National Funding	217 M	69M € Health-RI (health data sharing for secondary usage); 85M € from Dutch Metropolitan Innovations ecosystem; 51M € Digital Infrastructure Logistics/ Basic Data Infrastructure; 12M € CoE-DSC (Center of Excellence for Data Sharing & Cloud)
Finland	Sitra	3 M	Sitra invested 2,6M € of which 625k € was used to co-finance 5 pilot projects related to data spaces. The co-financing rate covered by Sitra per project was 70%, the rest 30% was covered by project consortia members.
EU	Digital Europe Work Programme 2021- 2024	657 M	300M € for topics supporting the deployment of the cloud-to-edge infrastructure and services, including the *Testing & Experimentation Facility* for Edge-AI; 357M € for topics deploying the sectorial data spaces and the related support activities, including the *High Value Data Sets* and *Digital Product Passport*. **These calls include the DSSC (14M €) and the procurement for Simpl (106M €).**
EU	EU4Health	280 M	Implementation of the *European Health Data Space*
EU	Horizon Europe	100 M	Energy Data Spaces and R&I projects
EU	Digital Europe Work Programme 2021- 2024	240 M	Destination Earth initiative
SUBTOTAL		**2,638 M**	**Public investment for interoperable data spaces based on European values**
France, Germany, Hungary, Italy, the Netherlands, Poland, Spain	IPCEI-CIS	1,200 M	The Member States will provide up to 1.2B € in public funding, which is expected to unlock additional 1.4B € in private investments.
SUBTOTAL		**1,200 M**	**Public investment for a federated cloud infrastructure**
TOTAL		**3,838 M**	**Public investment for a data-driven European economy**

China economy *China / Politics*

China aims for more than 100 ‘trusted data spaces’ by 2028 under national action plan

National Data Administration action plan marks major step forward in building integrated data market with secure links to other countries



Source:
National Data Administratio, China

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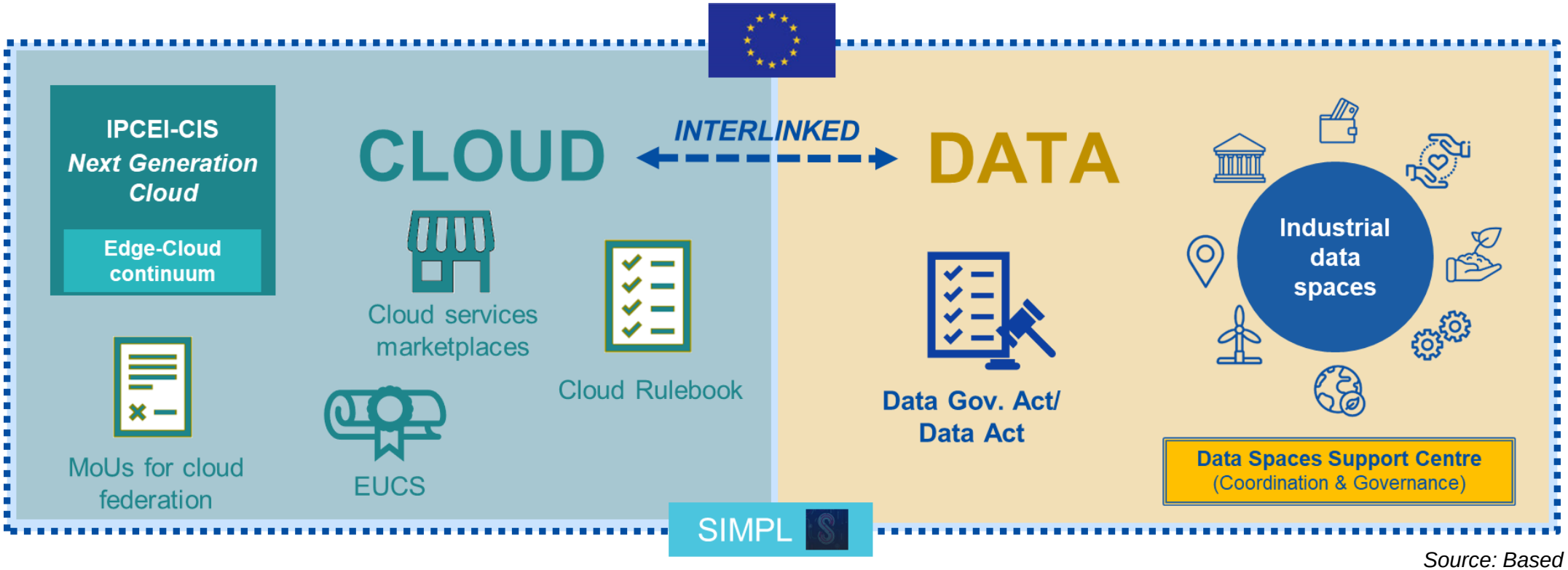
Alignment with the European Data Strategy

Acknowledging these facts, the European Data Strategy is a policy document containing different initiatives and plans to empower the Data Economy alongside the uptake of cloud, as a means to create efficiencies



Source: Based on EC

The interlinkage across data and cloud is significant when considering that **capitalising on data can be optimised via the enablement of a federated infrastructure** (as data replication is not a scalable paradigm, nor privacy-preserving)

Thus, the interplay of cloud and data prescribes a transition away from centralised platforms, currently capturing a large portion of two-sided markets, and instead highlights the **synergies arising within decentralised digital ecosystems**

Thank you!

Ulrich Ahle | ulrich.ahle@gaia-x.eu

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Welcoming words

Daniel Sáez Domingo

Strategic Intelligence Director, ITI

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OPPORTUNITIES

RISKS

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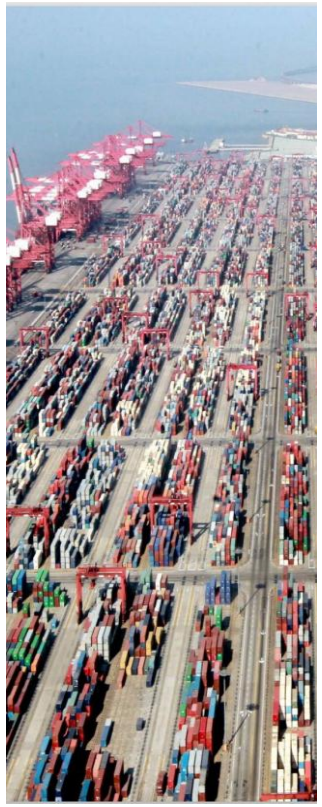
Opportunities



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Risks

PORTABILITY

SOVEREIGNTY **PRIVACY - SECURITY**

INTEROPERABILITY

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Data Driven economy needs

Tech. Convergence

Regulations & Standards

Awareness

Experimentation

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Very favourable framework for the development of the Data Economy

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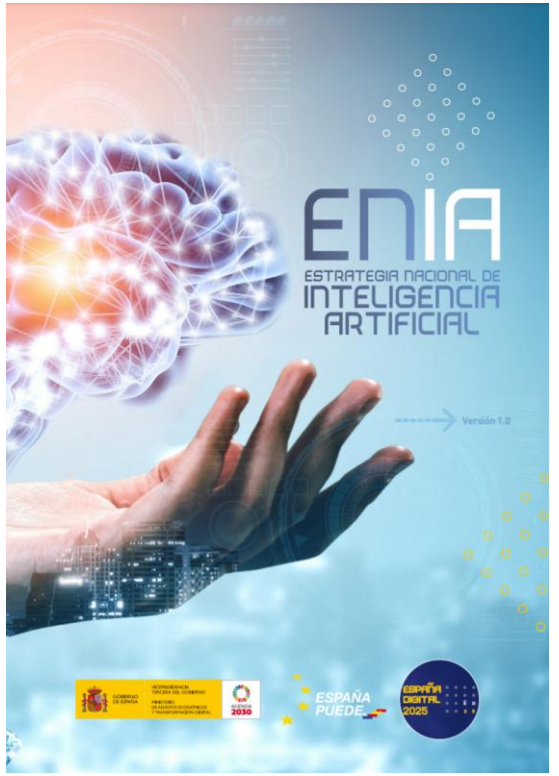
UNE
Normalización Española

Committee:

CTN 71/SC 43 - Data spaces



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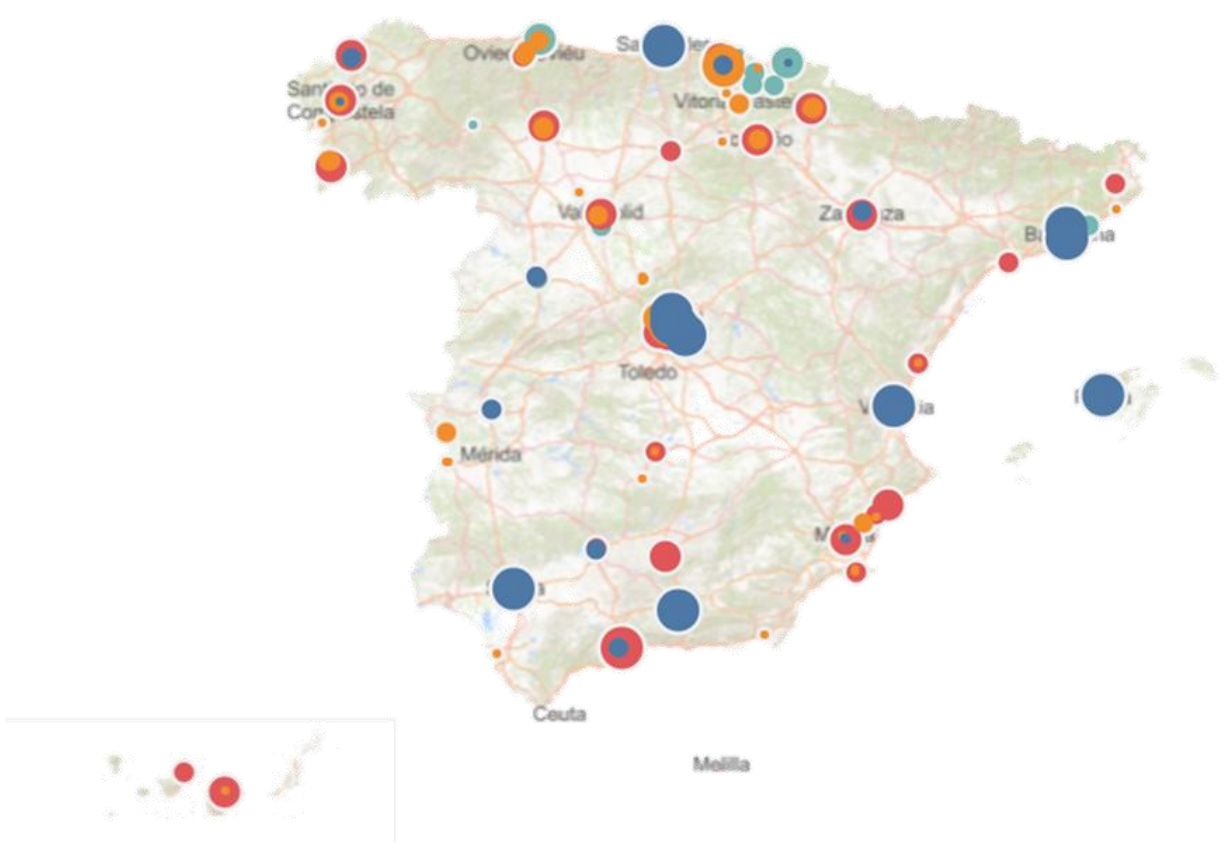
Strong technological ecosystem creating technology for the world



- Worldwide known companies
- Rich SME ecosystem
- Research Centres
- Universities
- Network of excellence
- Digital Innovation Hubs

44 MILLION EURO FOR PRODUCTS AND SERVICES

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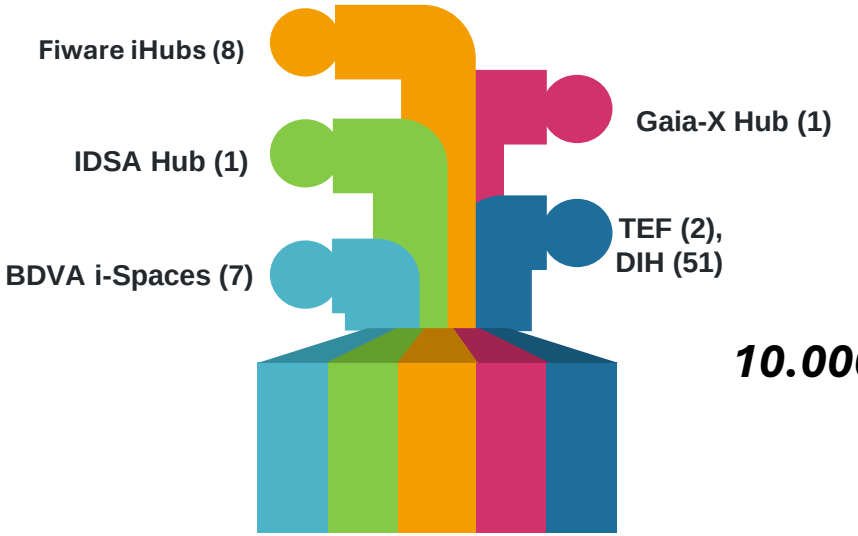
Strong Experimentation Ecosystem (TRUST)



10.000+ PYMES using services

Powerful infrastructures, knowledge, tools, data,
... ready to provide services for the
experimentation and innovation with Data and AI:

Data & AI sandbox

Accelerators of data driven innovation

Access point for SMEs and start-ups to the data economy

AI and data ethics

Training hub for data and AI

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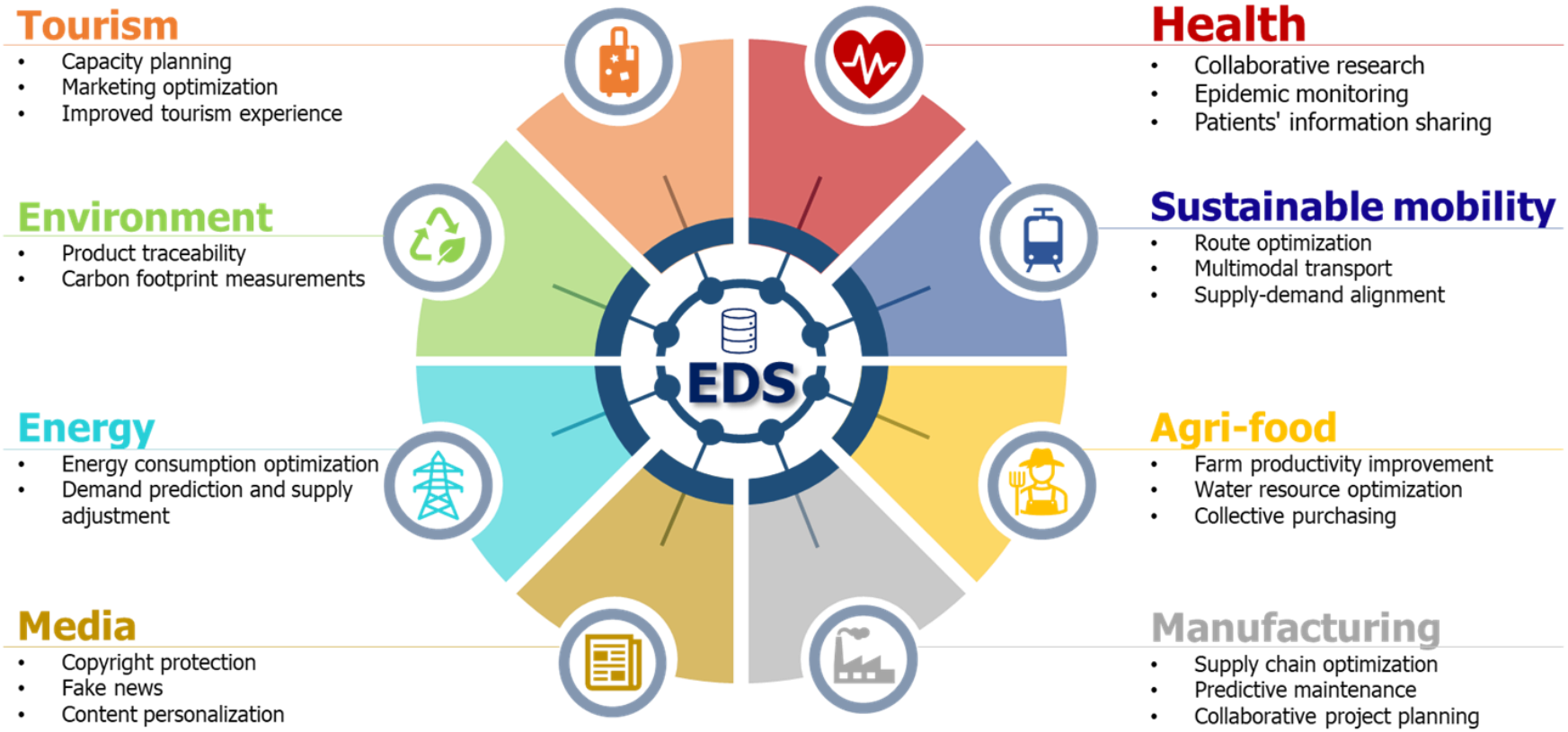
Lighthouse sectors



400 MILLION EURO FOR DATA SPACES

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Hub España

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Spanish Gaia-X Hub Official event (14th July 2021)

#GaiaX #MarketX25 #TechX25

Gaia-X España Association creation (18th March 2022)

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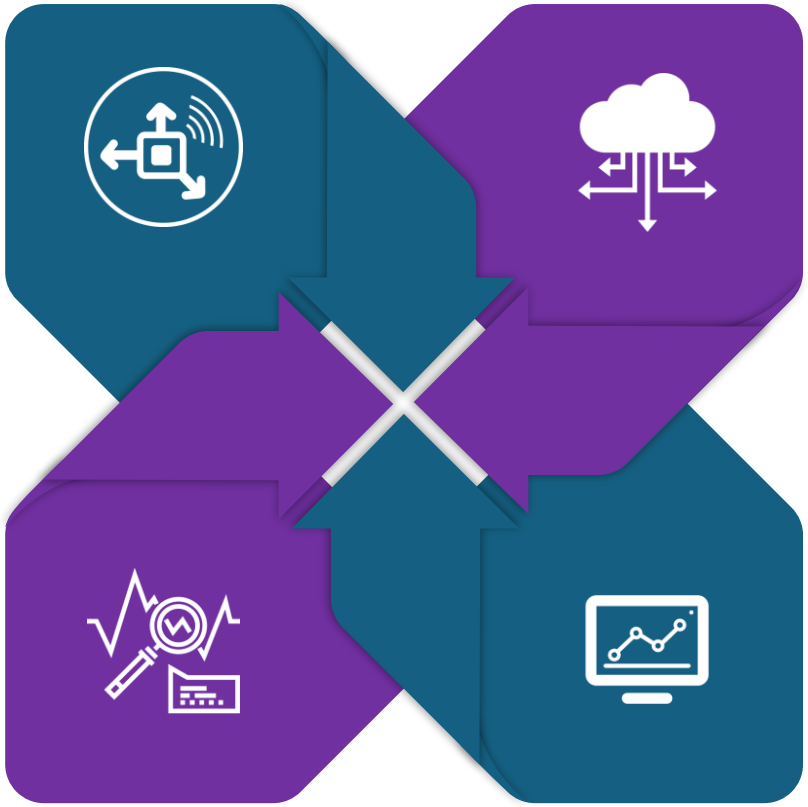
Goals & principles

Public-private collaboration

Consolidate the data economy in Spain, in order to enhance the competitiveness of the public and private sectors, by strengthening technology in the field of cloud computing **and artificial intelligence applied to data**.

Communication, awareness, and education about data, how it can be processed rigorously and demanding from the standpoints of **security and privacy,** the reason why it is an opportunity for the European industry, **the social** value of the data, and **ethics** in its handling.

Technological neutrality



Inclusiveness

Collaborate in the **creation and promotion of use cases and common data spaces at the European level** under the cloud model, with guarantees of trust, transparency, and interoperability, being a source of social and business innovation

Drive, support, and **promote initiatives for the creation of data spaces in Spain**, and to ensure that administrations, companies, and citizens have access to a single European-scale data market that is not subject to the restrictions of any dominant player.

Independence

Coordination and leadership

Economic sustainability

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Tech-X Bilbao (3rd – 4th May, 2023)

#GaiaX #MarketX25 #TechX25

Gaia-X Summit 2023 (9th-10th Nov, Alicante)

#GaiaX #MarketX25 #TechX25

First Spanish Data Spaces Summit (3rd-4th Dec, 2024, Madrid)

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A well coordinated Public Private Partnerchip

- Boost the **Data Economy** in Spain
- Promote the **creation of Data Spaces**
- Promote the **enrichment of Data Ecosystems** (Data Spaces KIT)
- **Guide, train, experiment**
- Promote the **creation of Technology**

Envisioning a bright future

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Thank you!

Daniel Sáez-Domingo | dsaez@iti.es

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Welcoming words

David Rosa

Valencia Innovation Capital Director

GaIaMon

Gotta catch 'em all!

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- **Gaiamons** are disseminated **all around the venue** and even in the **plenary session slides**
  - **Catch them all** to get a chance to...
    - Become the **best Gaiamon trainer**
    - And win a **Temporary Gaia-X Academy access** *(sharable if you already have a full access)*

- How? Each **Gaiamon** is linked to a **QR Code.**
  - **Find** the QR Codes
  - **Scan them** to be redirected to the **Gaiamon Game**
  - and **validate to catch** the Gaiamons

- You have collected **all the Gaiamons already**?
  - Wait for **the draw** at the end of the day
  - And discover **who the winners will be**!

One day I will be the best
I will fight without respite...

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GaIaMon

Gotta catch 'em all!

First, **Get connected** to the Gaia-X Academy

(and create an account if you don't already have one)

Stay aware: Wild Gaiamons will appear!

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GAIA-X FOR ★CHARITY★ PEOPLE·TECH·FUTURE

Gaia-X Merchandise

Support a good cause

SERVERS
NEED BACKUP
AND SO DO HUMANS.

SUPPORT OTHERS
AND MAKE A DIFFERENCE.

DATA DOES NOT FLOW ON RAINBOWS

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Which charities are you supporting during Market-X & Tech-X 2025?

Spanish Red Cross
Spain

FIND OUT MORE

The Red Cross provides international aid to help people around the world in emergencies and support refugees and survivors of trafficking, and those facing chronic hunger.

Casa Caridad
Valencia Spain

CASA CARIDAD VALENCIA

FIND OUT MORE

Casa Caridad delivers basic needs to the people at risk of social isolation and homelessness.

Why the Gaia-X Trust Framework matters

10:10 – 10:20

- **Christoph F. Strnadl**, *CTO*
  Gaia-X AISBL

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v1.20


What is trust?
(AI) generated

«The willingness of someone (= trustor) to engage in a risky behavior that stems from their vulnerability to the behavior of the other (= trustee)»

Mayer *et al.* (1995): An Integrative Model of Organizational Trust.

Definition 1 (From [4]). *Trust* is a relation between:

- an agent X (truster) which is a cognitive agent;
- an addressee Y (trustee) which is an agent in the broader sense of this term;
- a casual process (act/performance) and its results, viz. an act α of Y possibly producing an outcome p desirable because it includes (or corresponds to) a goal of X;
- a goal of X;
- a context C or situation or environment where X takes into account Y and/or where Y is supposed to act.

Below, using the notation introduced in [4], we abbreviate the trust relation as $TRUST(X, Y, C, \tau, g_X)$, meaning that X trusts (in the information provided by) Y in the context C for performing action α (executing task τ) and realising the result p that includes or corresponds to her goal g_X.

Cerutti *et al.* (2013): Context-dependent trust decisions with subjective logic.

How do we establish trust?

untrustworthy

trustworthy

-3 SD **trustworthiness** **+3 SD**[1]

1) standard deviation. Only 0.135% of evens lie outside +3 SDs (or – 3 SDs).

Source: Constantin Rezlescu *et al.* (2012): Unfakeable Facial Configurations Affect Strategic Choices in Trust Games with or without Information about Past Behavior.

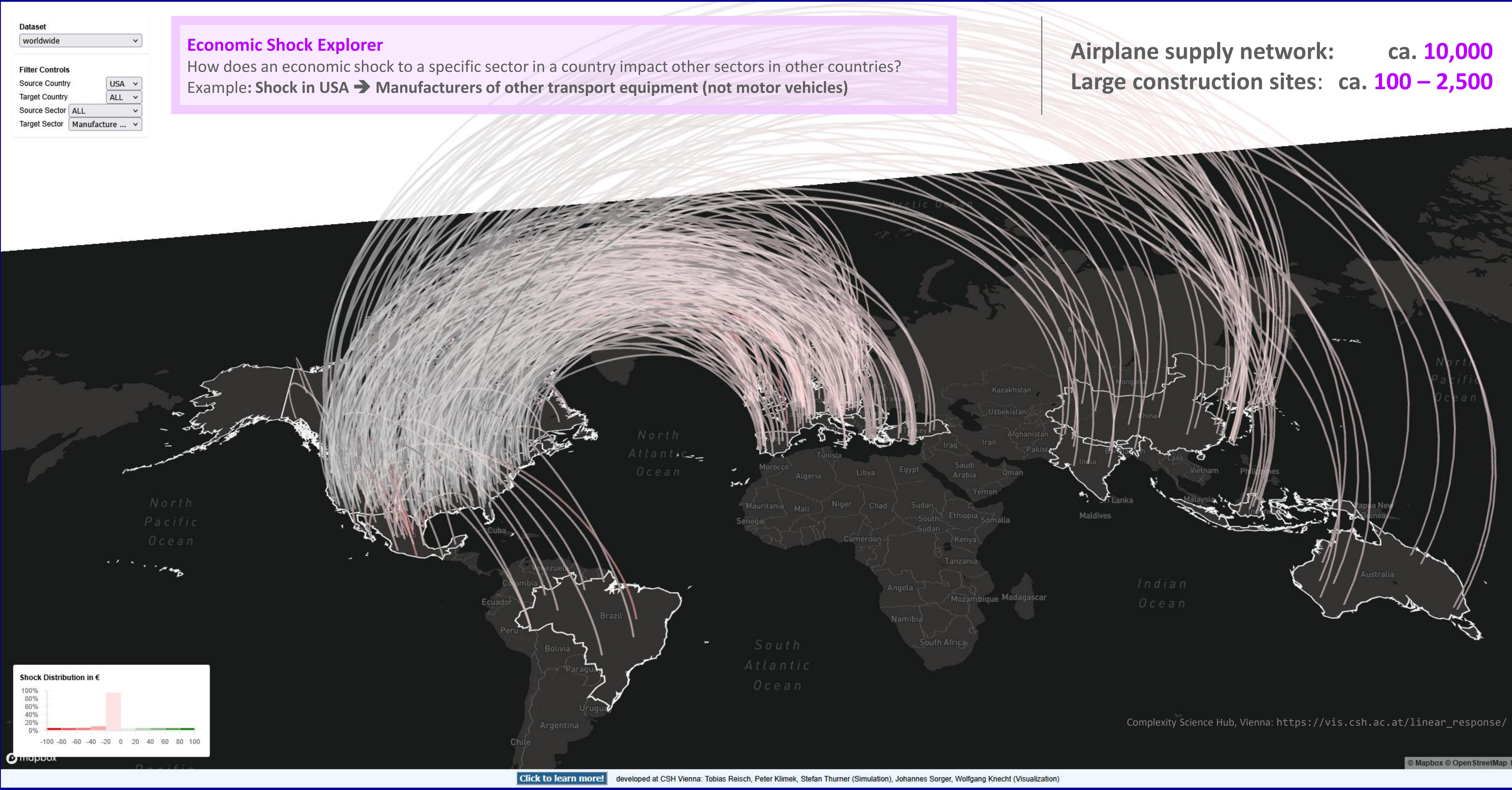
Economic Shock Explorer

How does an economic shock to a specific sector in a country impact other sectors in other countries?

Example: **Shock in USA ➔ Manufacturers of other transport equipment (not motor vehicles)**

Airplane supply network: ca. 10,000

Large construction sites: ca. 100 – 2,500



Gaia-X Trust Framework

technology agnostic

Gaia-X Compliance Document

Gaia-X Compliance: **Geography & Domain Extensions**

BYOC «Bring your own credential»

rules agnostic

Gaia-X Technical Compatibility

Gaia-X Trust Framework (1 page tech view)

Conformity to Ecosystem Rules

Gaia-X Compliance

- specifying conditions ICT[1] infrastructure and CSP[2] services have to fulfill in order to be "Gaia-X compliant"
- Gaia-X Standard Compliance & Label Levels 1-3
- Gaia-X Digital Clearing Houses (**GXDCHs**)

Gaia-X Compliance Document

`Gaia-X Compliance Engine`

Gaia-X Labelling Framework

- specifying an extension mechanism for Gaia-X Compliance
- **per domain**: health, finance, agriculture
- **per geography**: Japan, Korea, EEA

Gaia-X Labelling Framework Document[3]

`Gaia-X Compliance Engine Extension Mechanism`[4]

"Bring your own credential" (BYOC)[4]

- specifying a mechanism allowing the definition and compliance checking of arbitrary conditions for services (and data) offered within any digital ecosystem
- digital ecosystems have to provide this

Ecosystem Compliance Document

`Ecosystem Compliance Engine`

Gaia-X Technical Compliance

Common Vocabularies

- CSP service and ICT infrastructure ontology
- Industry standard for attestation of (arbitrary) claims
  CASCO (ISO/IEC 17000:2020):
  Eclipse Conformity Assessment Profile (CAP)
- Data spaces & ecosystems ontology (DSSC v1.5)
- CEN/CENELEC JTC 25 – Trusted Data Transactions

`Ontologies` **`TCK`[6]**

Interoperable Trust Architecture

- identity: W3C DID (`did:web`)
- credentials: W3C VC Data Model 2.0
- proofs: VC-JWT (IETF JWT + VC-JOSE-COSE), SD-JWT
- semantics: W3C RDF, W3C SHACL
- policy definition: W3C ODRL

Gaia-X Architecture Document Set

Software Components[7]

`Gaia-X Registry`

`Gaia-X Notary & Credentials`

`Gaia-X Credential Event Service (CES)`

`Gaia-X Tools & Libraries`

1) information & communication technologies 2) Cloud service providers 3) currently specified in the Gaia-X Policies & Rules Committee (PRC) 4) to be completed in Gaia-X CTO team/Gaia-X Lab team 5) unofficial name 6) technical compatibility kit 7) Loire release

WHY?

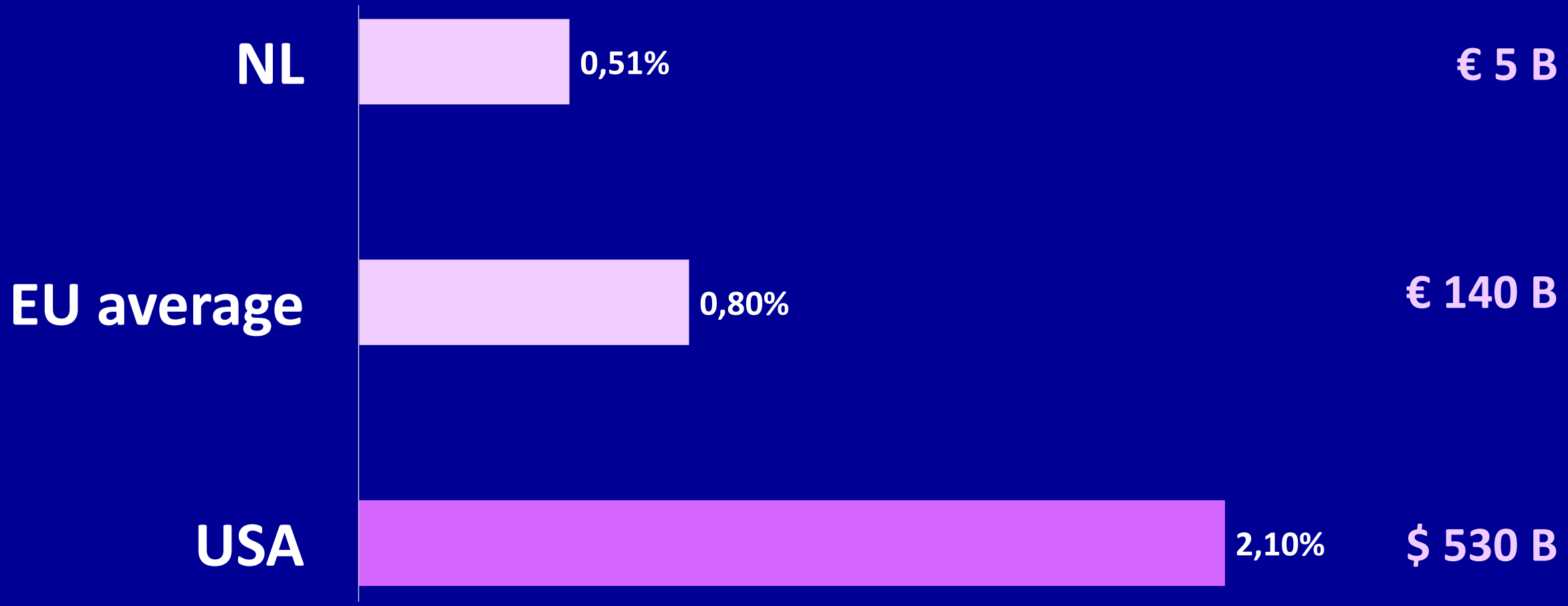
« Trust is an important **lubricant** of a social system. It is **extremely efficient**; it **saves a lot of trouble** to have a fair degree of reliance on other peoples' word. […] Trust and similar values, loyalty or truth-telling […] are goods, commodities; they have real, practical economic value; they **increase the efficiency of the system**, enable you to produce more goods […]. But they are **not commodities for which trade on the open market is technically possible** or even meaningful. »

Kenneth J Arrow (1974): The Limits of Organization.

positive network effects

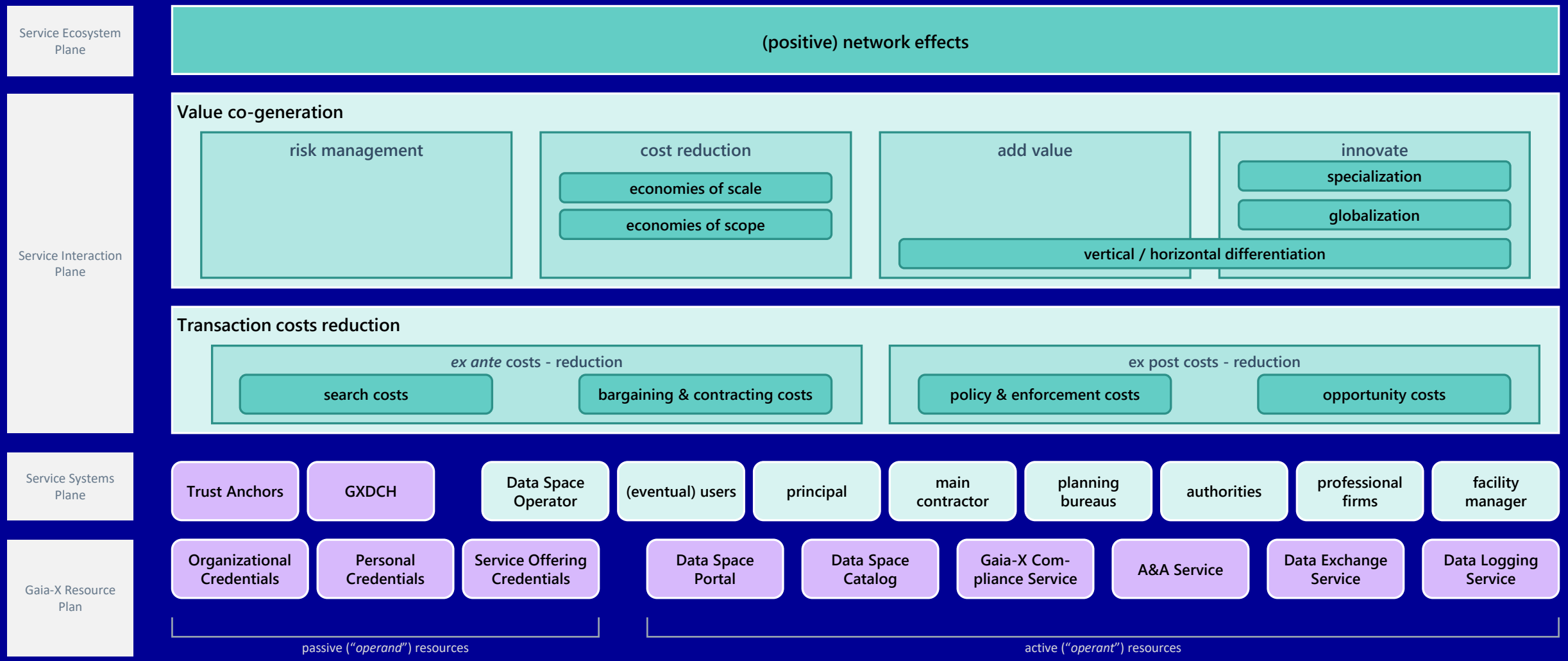
Transaction Costs

Legal Costs (% of GDP)



Source: Institute for Legal Reform (US): International Comparisons of Litigation Costs (2013); Institute for Legal Reform (US): US Tort Costs (2024); Gaia-X AISBL research

Gaia-X Value Framework



Source: iECO (https://ieco-gaiax.de/) 2023, EuProGigant (2024)

«Trust, but verify!»
(automatically)

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Thank you!

Christoph Strnadl | christoph.strnadl@gaia-x.eu

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Current State of Gaia-X: Compliant, Compatible & Catalogue Overview

10:20 – 10:30

- **Ulrich Ahle**, CEO, Gaia-X

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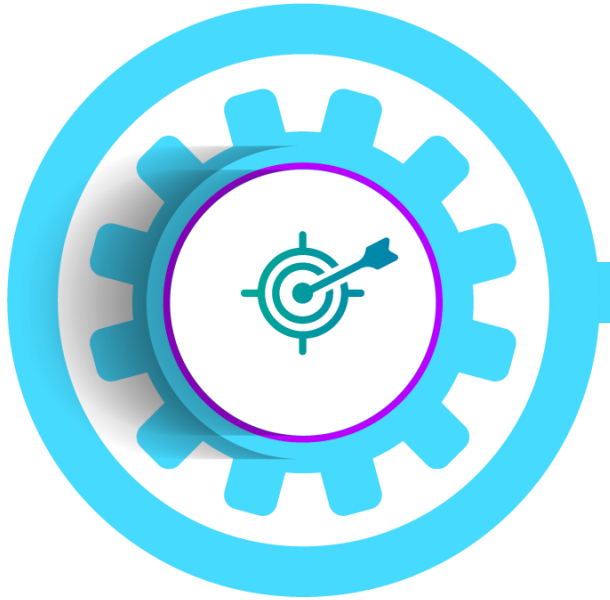
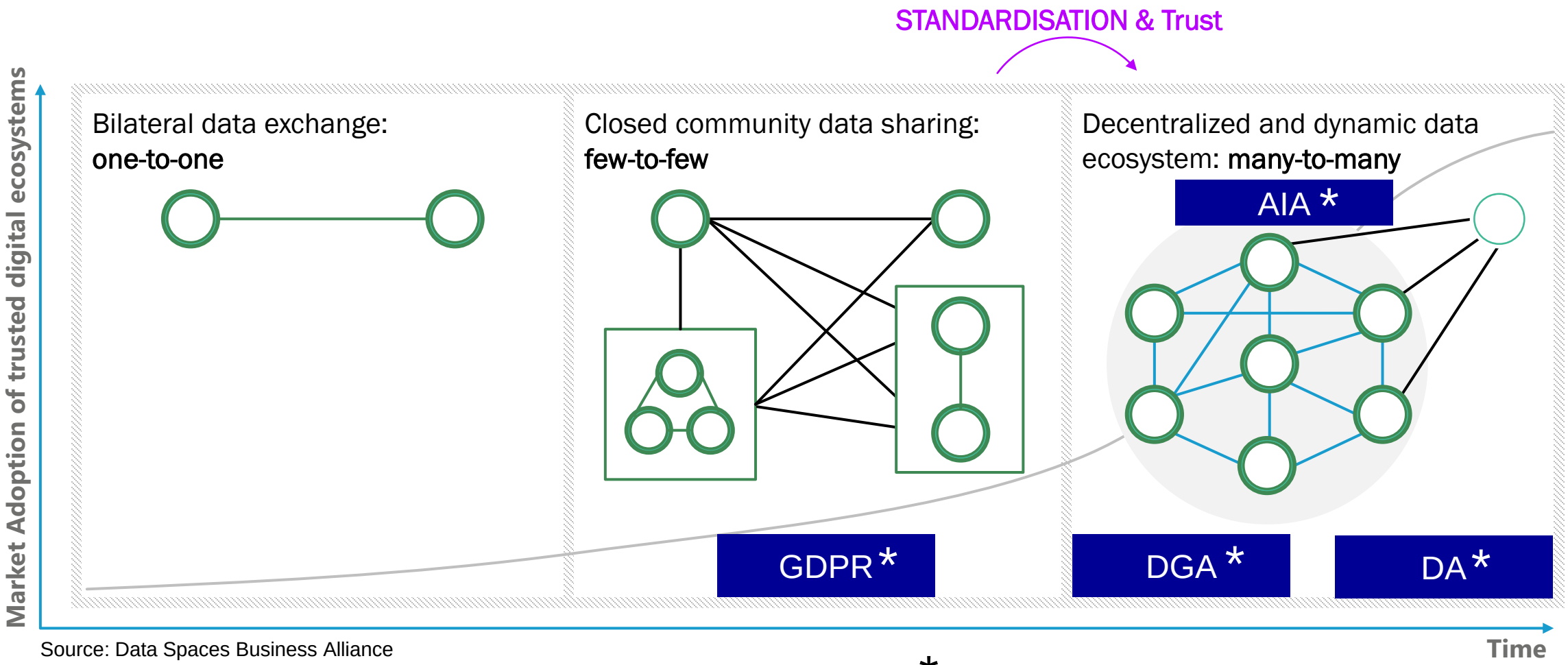
Gaia-X Vision

VISION



Enable trusted decentralised digital ecosystems

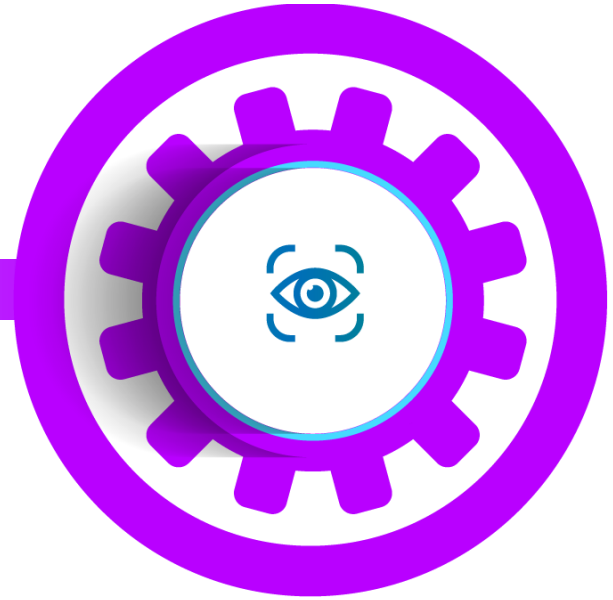
The demand for Data Spaces



Source: Data Spaces Business Alliance

* To be replaced for regions outside of Europe

Gaia-X Mission



MISSION

Creating the de facto standard to enable federated and trusted **data and infrastructure ecosystems**, by developing a set of specifications, rules, policies, and a verification framework

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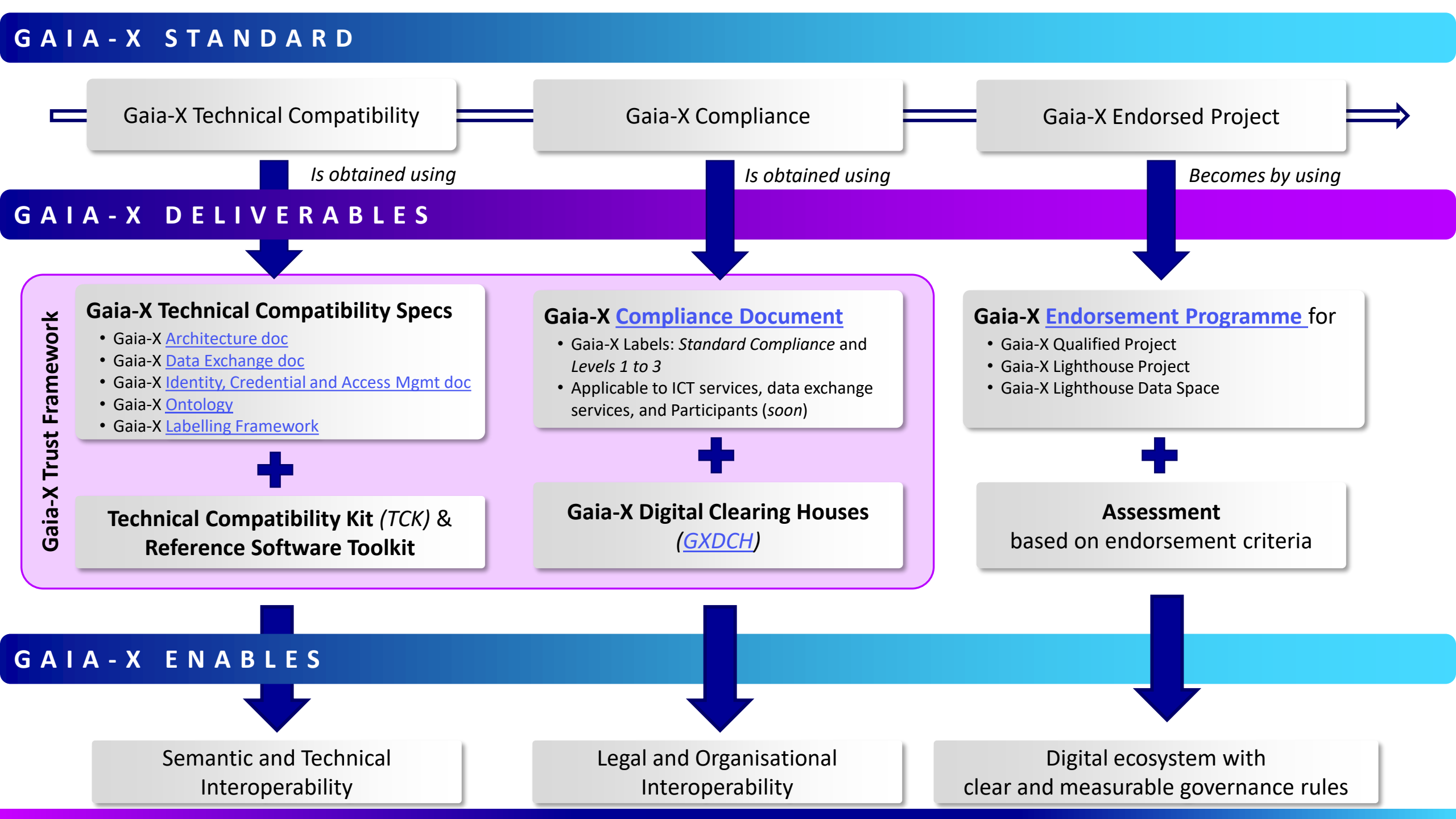

GAIA-X STANDARD
Gaia-X Technical Compatibility
Gaia-X Compliance
Gaia-X Endorsed Project
Is obtained using
Is obtained using
Becomes by using
GAIA-X DELIVERABLES
Gaia-X Trust Framework
Gaia-X Technical Compatibility Specs
• Gaia-X Architecture doc
• Gaia-X Data Exchange doc
• Gaia-X Identity, Credential and Access Mgmt doc
• Gaia-X Ontology
• Gaia-X Labelling Framework
Technical Compatibility Kit (TCK) & Reference Software Toolkit
Gaia-X Compliance Document
• Gaia-X Labels: Standard Compliance and Levels 1 to 3
• Applicable to ICT services, data exchange services, and Participants (soon)
Gaia-X Digital Clearing Houses (GXDCH)
Gaia-X Endorsement Programme for
• Gaia-X Qualified Project
• Gaia-X Lighthouse Project
• Gaia-X Lighthouse Data Space
Assessment based on endorsement criteria
GAIA-X ENABLES
Semantic and Technical Interoperability
Legal and Organisational Interoperability
Digital ecosystem with clear and measurable governance rules

The Gaia-X Compliance Document is based on end user requirements

- **62 Criteria** are paving the way for an **Automated Compliance in Europe**
- **Compliance documents for regions outside of Europe with other legislations to be developed by the regions with support from Gaia-X**

	STANDARD COMPLIANCE	LEVEL 1	LEVEL 2	LEVEL 3
Declaration of Service or Product	✓	✓	✓	✓
Signed with verified method (e.g. eIDAS)	✓	✓	✓	✓
Automated validation by GXDCH	✓	✓	✓	✓
Automated verification by GXDCH*	✓	✓	+	+
Data Exchange Policies	✓	✓	✓	✓
Certified Label Logo		✓	✓	✓
Data protection by EU legislation		✓	✓	✓
Manual verification by CAB			✓	✓
Provider Headquarter within EU				✓

*not all criteria can be automated, “+” means automated verification of the evidence issuer (Standard & CAB)

New Releases of Gaia-X Documents

- **Compliance Document 25.03**

Insertion of Gaia-X Compliance Criteria for Participants

- **Architecture Documents 25.05**

New completely refactored Architecture Document (chapters on *Understanding the Gaia-X Digital Ecosystems, Trust Framework Architecture, Gaia-X Implementation of Data Transactions, Gaia-X Technical Compatibility specifications*)

- **White Paper on Geographical and Domain Extensions of the Gaia-X Framework**

The paper explores how the Gaia-X Trust Framework could be extended to different domains and geographic regions to help ensure regulatory compliance across different industries and international jurisdictions. The paper outlines potential scenarios for extensions (examples in the domains of finance, mobility, aerospace and defense).

From Gaia-X Summit

Lighthouse Data Spaces

Automotive Supply Chain
Catena-X

NEW
Aeronautics, Space Sector
Cooperants

NEW
Infrastructure & Technology
Dynamo

NEW
Manufacturing, Industry 4.0, AI & Cloud Services, Mobility, Aeronautics & Space, Agriculture
Pontus-X

Qualified Projects

Construction
Digital TER-X 2050

Research, Infrastructure & Technology
FAIR Data Spaces

NEW
Agriculture
RegenAg-X

3 new Lighthouse Data Spaces

5 new Lighthouse Projects

1 new Qualified Project

Lighthouse Projects

Manufacturing
Accurate

NEW
Agriculture
AgrospAI

Infrastructure & Technology
Boot-X

NEW
Health
Dataspace4Health

Manufacturing, Industry 4.0
Data4Industry-X

Mobility, Transport & Tourism
EONA-X

Energy
Energy data-X

Manufacturing, Industry 4.0
EuProGigant

Finance
EuroDaT

NEW
Manufacturing
Flex4Res

Mobility & Transport
Gaia-X4 Future Mobility

Health
HEALTH-X dataLOFT

NEW
Cloud Services
Infrastructures Data Space (InfraDS)

Mobility
Mobility Data Space (MDS)

Energy
Omega-X

Education
PROMETHEUS-X

Manufacturing
SCSN

NEW
Cloud Services
Sovereign Cloud Stack

Cloud Services
Structura-X

Health
TEAM-X

Learn more about Gaia-X endorsed projects here

Gaia-X Digital Clearing House Providers

In production

GXDCH by **Aire Networks**

GXDCH by **ARSYS**

GXDCH by **ARUBA**

NEW

GXDCH by **CISPE**

GXDCH by **deltaDAO**

NEW

GXDCH by **Neustra**

GXDCH by **OVHcloud**

NEW

GXDCH by **Pfalzkom**

NEW

GXDCH by **Proximus**

GXDCH by **T-Systems**

GXDCH by **NTT Data**

Signed in deployment

Pipeline

4 new GXDCH

Learn more about Gaia-X Digital Clearing Houses

The Gaia-X Hubs

Connecting local ecosystems to a global community

EUROPE 19

- Hub Austria
- Hub Belgium
- Hub Denmark (NEW)
- Hub Finland
- Hub France
- Hub Germany
- Hub Greece
- Hub Hungary
- Hub Italy
- Hub Slovenia
- Hub Netherlands
- Hub Norway (NEW)
- Hub Poland
- Hub Portugal
- Hub Romania
- Hub Slovakia
- Hub Luxembourg
- Hub Spain
- Hub Switzerland (NEW)

INTERNATIONAL 3

- Hub Japan
- Hub Korea
- Hub USA

IN PROGRESS 6

- Hub Africa
- Hub Estonia
- Hub Czech Republic
- Hub Sweden
- Hub United Kingdom
- Hub Ireland

3 new Hubs

Learn more about hubs here

Gaia-X Use Case Testimonials

Demonstrating the value of Gaia-X

Discover how businesses are leveraging Gaia-X technology to transform industries. We invite all members to share their success stories, which shape the future!

https://gaia-x.eu/community/ecosystems/use-case-testimonials/

Meet Our Evangelists

Enrique Areizaga Sánchez
Tecnalia

Enrique Areizaga Sánchez is a high-level researcher at Tecnalia and was the CEO of GPONDoctor Ltd, an SME specializing in fiber-to-the-home technologies.

Kai Meinke
deltaDAO AG

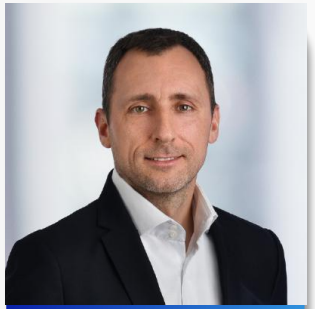
Kai Meinke is the Co-Founder and Business Lead at deltaDAO AG, dataspace ecosystem operation, integration, and consulting company based in Hamburg, Germany.

Thomas Komenda
deltaDAO AG

Thomas is a Business Developer & Product Owner at deltaDAO AG. His industrial engineering background shapes his understanding of data and the critical role of AI in manufacturing, mobility and other key sectors.

Tom Last
Elbtech

Tom Last is a tech entrepreneur, software developer and cofounder of tech startup elbtech. With an enthusiasm for innovative technologies and building meaningful solutions, he is dedicated to driving innovation in the tech community.

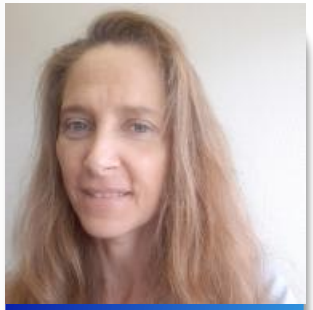


Christian Linder
German Aerospace Center (DLR)

Christian Linder is a professional associated with the German Aerospace Center (DLR), contributing to innovative research and projects in the field of transportation systems and infrastructure.

Stefan Dumss
Posedio

Stefan Dumssis is a dedicated engineer, with a background in aeronautics, in both mechanical and industrial engineering. He is currently a Senior Researcher at Posedio working on data spaces and policy-based access control with verifiable credentials.



Catherine Simonnin
Orange

Catherine Simonnin has been working in the IT architecture domain for the last 19 years in different domains and entities of Orange. She has always been looking for new technology challenges and innovative solutions even in management domain.

Find out more on our website: www.gaia-x.eu/community/evangelist-programme

Gaia-X Academy

https://academy.gaia-x.eu

Thank you!

Ulrich Ahle | ulrich.ahle@gaia-x.eu

In partnership with gaia-x Hub Spain

ICT TECHNOLOGY CENTER

Networking Coffee

10:30 – 11:30

In partnership with gaia-x Hub Spain

ICT TECHNOLOGY CENTER

gaia-x

10:45 - Guided tours in the Expo Area

Programme Tech-X Workshop Room
11:30 - Gaia-X Compliance: Loire 101

12:00 - An Integrated Open-Source SaaS Solution for Implementing Data Spaces

12:20- UPCxels – A User Centric Data Space

12:35 - Expanding the Gaia-X Trust Framework to the World

Infrastructure Ecosystem Panel

Moderator:
Pierre Gronlier, CINO, Gaia-X

11:30 – 12:15

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ICT TECHNOLOGY CENTER

- **Alban Schmutz,** CEO, Cloud Data Engine
- **Zigor Gaubeca**, Network Architect, Aire Networks
- **Leonardo Camiciotti,** Executive Director, TOP-IX Consortium, Fulcrum Project (online)
- **Mauro Brambilla**, COO, Dynamo
- **Oriol Izquierdo,** Dataspace delivery lead, T-Systems Iberia

Aerospace Ecosystem Panel

Moderator:
Roland Fadrany, COO, Gaia-X

12:15 – 13:00

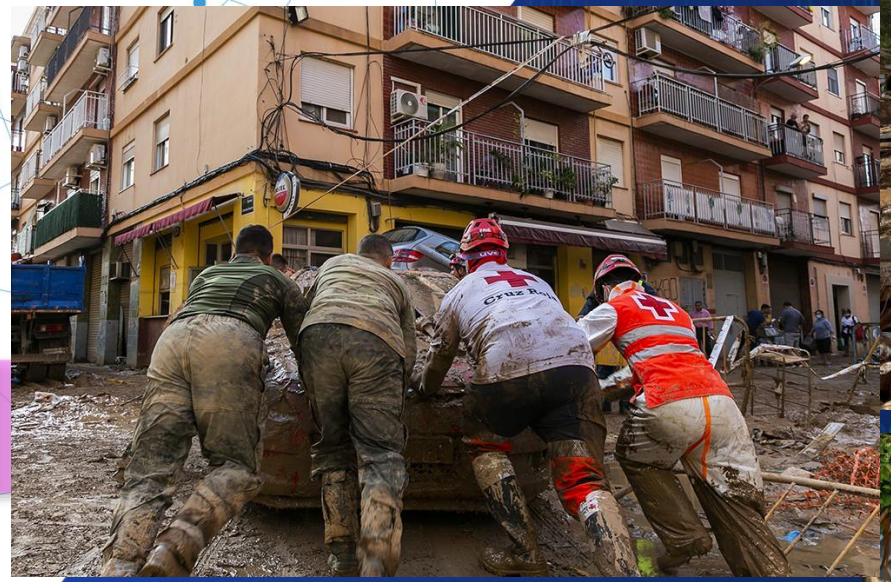
- **Caroline Lange,** Project Manager Digitalization, Consortium Coordinator (online)
- **Kai Meinke**, Co-Founder and Business Lead, deltaDAO AG
- **Arno Scheidenreiter,** Founder & CEO of neusta aerospace GmbH
- **Sandra de Lucas**, Head of Digital International (Roofs & Affiliates), Airbus

In partnership with gaia-x Hub Spain

ICT TECHNOLOGY CENTER

Cruz Roja Valencia

13:00 – 13:05



In partnership with

gaia-x Hub Spain

ICT TECHNOLOGY CENTER

Networking Lunch

13:00 – 14:00

In partnership with gaia-x Hub Spain

ICT TECHNOLOGY CENTER

GaIaMon

Gotta catch 'em all!

gaia-x

13:15 - Guided tours in the Expo Area

Programme Tech-X Workshop Room

14:00 - Enhancing Manufacturing Resilience Through Gaia-X – Insights from Flex4Res

14:15 - Real-World Gaia-X Trust Framework Implementation with GXDCH and eIDAS Integration

14:45 - From Trust to Transaction: How eIDAS-Based Identities Enable New Business Models in Data Spaces

15:00 - Standardisation around Gaia-X

15: 15 – The (new) Gaia-X Conceptual Model

Keynote: Spanish Plan for the Promotion of Sectoral Data Spaces

14:00 – 14:15

- **Ruth del Campo**, General Director of Data, Spanish Ministry for the Digital Transformation

In partnership with gaia-x Hub Spain

ICT TECHNOLOGY CENTER

Plan for the promotion of Sectoral Data Spaces 2024-2026

May 2025

GOBIERNO DE ESPAÑA
MINISTERIO PARA LA TRANSFORMACIÓN DIGITAL Y DE LA FUNCIÓN PÚBLICA
SECRETARÍA DE ESTADO DE DIGITALIZACIÓN E INTELIGENCIA ARTIFICIAL
DIRECCIÓN GENERAL DEL DATO
Plan de Recuperación, Transformación y Resiliencia
Financiado por la Unión Europea
NextGenerationEU

Europe at a Crossroads: shaping a competitive digital future

CHALLENGES

- Europe is falling behind in digital competitiveness
- Slow adoption of digital technologies.
- Digital dependeny: lack of leading global tech companies.

OPPORTUNITIES

- The rise of Generative AI: transforming all sectors.
- Key regulatory initiatives (Data Governance Act, Data Act, European Health Data Space Regulation)

VISION

- Accessible, interoperable data
- Focus on high-impact, market-driven solutions

National Strategy to foster a data-driven economy.

Empowering the key players in the data ecosystem:

- **Promoters of data spaces**
- **Participants**
- **Digital Industry**

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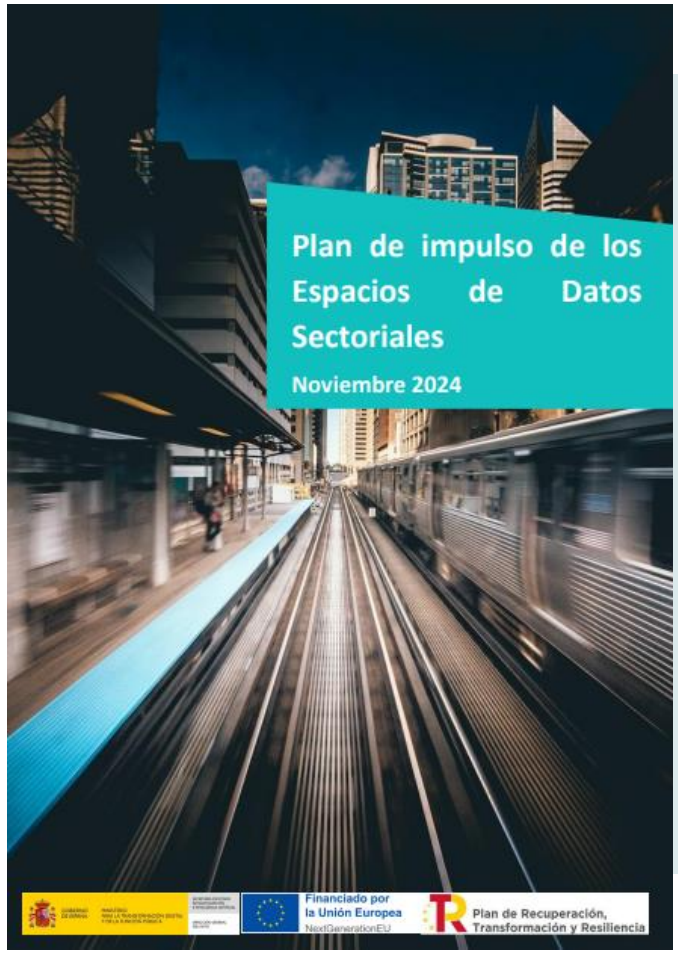
DIRECCIÓN GENERAL DEL DATO

Financiado por la Unión Europea
NextGenerationEU

Plan de Recuperación, Transformación y Resiliencia

Plan for the promotion of Sectoral Data Spaces



BUDGET
500M.€
Plan de Recuperación, Transformación y Resiliencia

TIMEFRAME
2024-2026
Plan de Recuperación, Transformación y Resiliencia

6
AXES

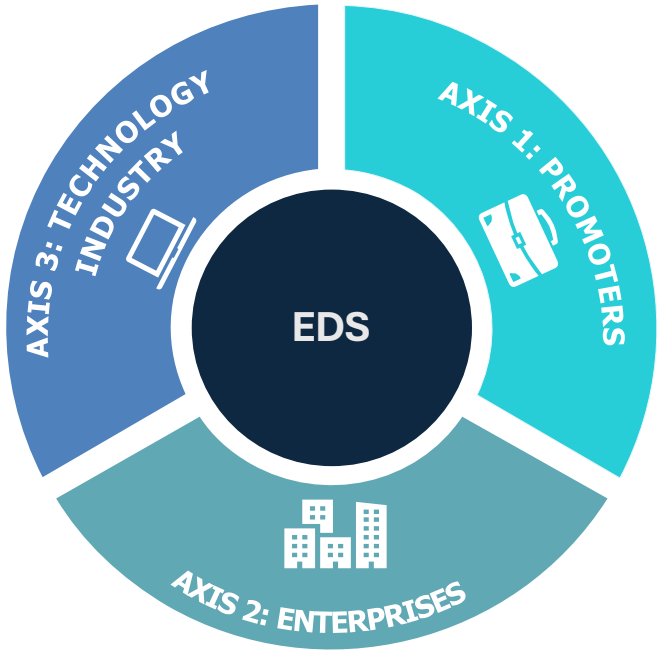
11
INITIATIVES

Presentation of the Plan for the Promotion of Sectoral Data Spaces

21 de noviembre de 2024

AXES: Plan for the promotion of Sectoral Data Spaces

AXIS 4: Public sector data of sectorial interest



AXIS 5: Enablers

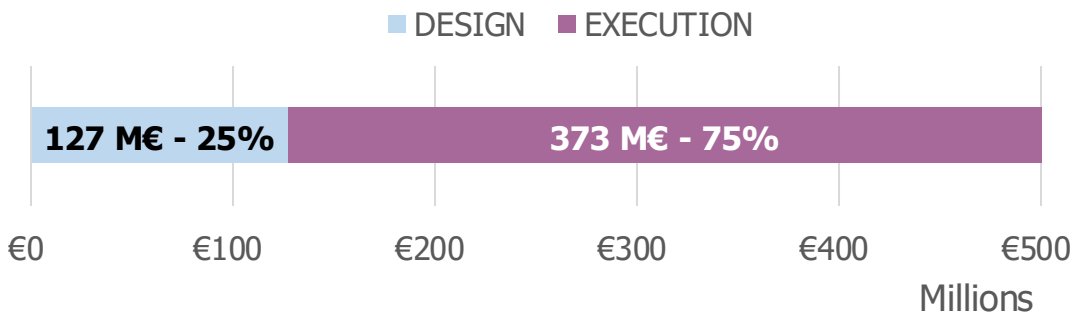
AXIS 6: Communication and awareness

Catálogo de Iniciativas

AXIS	ID	INITIATIVE	BUDGET M€	TOTAL M€	%
1	#01	Demonstrators and use cases	110	160	40%
	#02	Use cases for the tourism sector	50		
2	#03	Data Space Kit	127	127	25%
3	#04	Technological products and services for Data Spaces	44	44	9%
4	#05	Public data demand management	20	20	4%
5	#01	Demonstrators and use cases	40	139	20%
	#06	Tourism Data Space Platform	35		
	#07	New Language Economy Data Space	12		
	#08	Smart Urban Infrastructures Data Space	13		
	#09	Regional Development Data Spaces	39		
6	#10	Communication and Awareness	5	5	1%
-	#11	Reference Centre for Sectorial Data Spaces	5	5	1%
TOTAL			500	500	100%

Status of the Plan

10 / 11 initiatives in execution



ID	INITIATIVE	STATUS	PROGRESS
#01	Demonstrators and use cases	Execution	*22 %*
#02	Use cases for the tourism sector	Execution	43 %
#03	Data Space Kit	Design	87 %
#04	Technological products and services for Data Spaces	Execution	5 %
#05	Public data demand management	Execution	25 %
#06	Tourism Data Space Platform	Execution	74 %
#07	New Language Economy Data Space	Execution	22 %
#08	Smart Urban Infrastructures Data Space	Execution	29 %
#09	Regional Development Data Spaces	Execution	*21 %*
#10/ 11	Reference Centre for Sectoral Data Spaces	Execution	*21 %*

Initiatives: Demonstrators and use cases

Target

Partially-fund the **costs of promoters** of data spaces in strategic sectors to **support the development of demonstrators and use cases.**

BUDGET
150 M.€

EXECUTING BODY
SEDIA

REGULATION
GRANTS

RELEVANT ACTORS
ECONOMIC ACTORS

AXIS 1: PROMOTERS

AXIS 5: ENABLERS

Calendar

Initiatives: Technological products and services for Data Spaces

Target

Support the development of the ICT industry by providing **funding support** for the **development of technology products and services** based on or focused on **business data.**

BUDGET
44 M.€

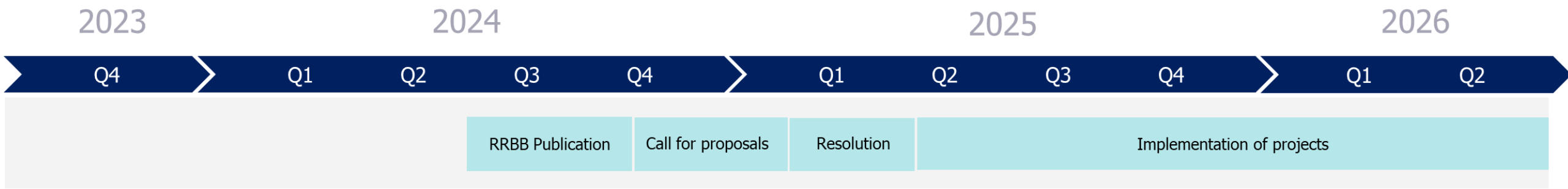
EXECUTING BODY
SEDIA

REGULATION
GRANTS

RELEVANT ACTORS
ECONOMIC ACTORS

AXIS 3: TECHNOLOGY AND INDUSTRY

Calendar



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SECRETARÍA DE ESTADO DE DIGITALIZACIÓN E INTELIGENCIA ARTIFICIAL
DIRECCIÓN GENERAL DEL DATO
Financiado por la Unión Europea
NextGenerationEU
Plan de Recuperación, Transformación y Resiliencia

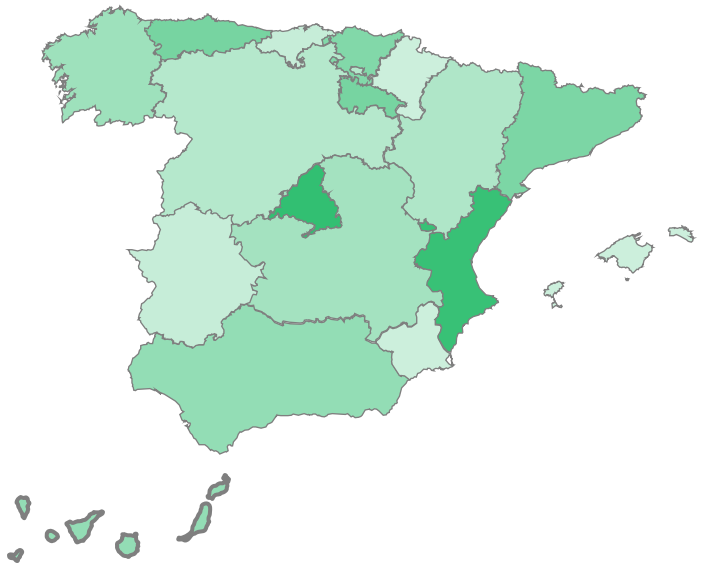
Map of project implementation across regions

192 M€

Mobilised investment

102

Projects underway



⚠ **Provisional data.** Initiatives currently under implementation with final award results.

The map shows **grants awarded** visualized under the regionalised initiatives. It includes data from the 1st Call for Demonstrators and use cases, the Last Mile Call, the Language Valley Data Space, and the RETECH Data Spaces (C12 and C14).

Key Highlights:

- **Full territorial coverage** in terms of **funds execution** under the Sectoral Data Spaces Promotion Plan.
- **Madrid and Comunidad Valenciana** are the regions with the **highest mobilised investment.**
- The Promotion Plan has mobilised an estimated **investment** of **192 M€ across 102 projects.**

Map of project applications for calls under evaluation

244 M €

Mobilised investment

266

Projects submitted

⚠ **Provisional data on submitted applications.**

DCU2: 2nd Call for Demonstrators and use cases
PSED: Technological products and services for data spaces

Key Highlights:

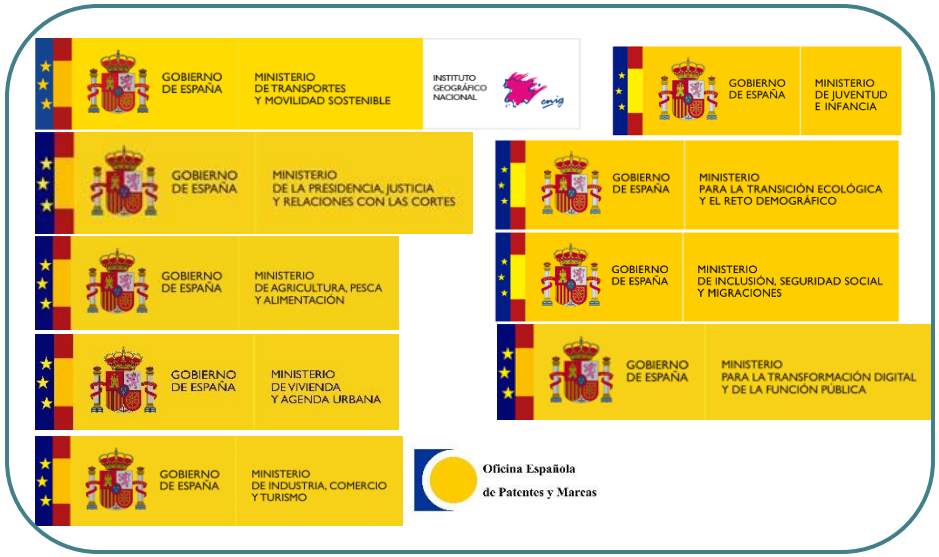
- The **distribution** of funding across both calls shows some **variations**, but together they cover the **entire territory**.
- **Madrid, Cataluña and the Comunidad Valenciana** are the regions with the **highest requested funding** across both calls.
- The total **mobilised investment** amounts to **244 M€**, with a total of **266 submitted projects.**
- The **provisional resolution** for both calls is expected in the next days**.**

Initiatives: Public sector data demand

Target

Satisfying the demand for **quality public sector data,** obtained from its proper governance and management, as a driver for the development of **sectoral data spaces.**
The initiative is focused on the **creation of a centralized catalogue of datasets** from ministries and agencies, with the aim of making them available to sectoral data spaces to drive innovation, research and, ultimately, foster the data-driven economy.

BUDGET
20 M.€



Status

A project is currently underway at MINECO.
Upcoming projects will be launched at MIVAU, MAPA, MPJRC, and CNIG.
Work is also ongoing with MITECO, MISSM, OEMP, Social Security, and MJIN.

Initiative: Reference Centre for Sectorial Data Spaces

GOVERNANCE

Target

The Reference Centre for Sectoral Data Spaces will support both the governance of the Plan and the deployment of data spaces. The Centre will be responsible for:

- **Monitoring and analyzing the data sharing market and data spaces in Spain**, offering guidance and support the alignment with European interoperability frameworks.
- **Creating and operating** the **network of demonstrators and shared infrastructures**, as well as the **Trusted List of Data Spaces.**
- Designing and implementing the **Awareness, Promotion and Training Plan (#10).**
- Leading the process of **data spaces standardization** and data-sharing ecosystems, representing in international forums (CEN/CENELEC), and developing the reference model and architecture.

EXECUTING BODY
SEDIA

BUDGET
9,6 M€

Status

IN IMPLEMENTATION

- Launched in **April 2025**

Initiative: Reference Centre for Sectorial Data Spaces

CRED

The activities of the Reference Centre will be orchestrated around **4 LINES OF ACTION**, which will develop a set of services and products to support the deployment of data spaces.

1	Market intelligence, monitoring and governance	Data spaces and ecosystems radar Data technology and industry radar Dashboard / impact indicators	Sectoral, technological and market studies National forum of data spaces
2	Opportunity discovery and interest / demand generation	Communication and Engagement Plan Content and Community Platform	Training Plan
3	Comprehensive support to ecosystems and deployment monitoring	Monitoring and support agents for the deployment of data spaces	Data Space Kit support / facilitator service
4	Technical guidance and enablers develoment	Interoperability Reference Framework Trusted List of ED	Network of Demonstrator Centres Catalogues of common elements


Upcoming
initiatives

Data Space Kit

IN DEVELOPMENT

AXIS 2 / COMPANIES

Target

Grants aimed at entities with economic activity or public administrations that consume or provide data, to cover the costs related to connecting to data spaces.

The aid will cover the necessary costs for preparing data and connecting to existing data spaces.

BUDGET
127 M.€

INSTRUMENT
GRANT

EXECUTING BODY
Red.es

Status

PROCEDURE

- Publication of the call of proposal in Q2 2025
- Call publication in Q3 2025
- Communication events and info days in Q3 2025
- Application window opens in Q4 2025

Action Plan: Governance

MINISTERIO PARA LA TRANSFORMACIÓN DIGITAL Y DE LA FUNCIÓN PÚBLICA

Highest authority of the governance system

SECRETARÍA DE ESTADO DE DIGITALIZACIÓN E INTELIGENCIA ARTIFICIAL

Responsible for the management and monitoring of the Action Plan

Dirección General del Dato (DGDATO)

- Leads and drives the Action Plan.
- Coordinates and oversees the implementation of measures.

Reference Centre for Sectorial Data Spaces

- Attached to the DGDATO.
- Develops the Technical Reference Framework and coordinates networks of common infrastructures and capabilities.

National Forum of Sectorial Data Spaces

- Main instrument for public-private cooperation.
- Facilitates ongoing dialogue and advisory support.

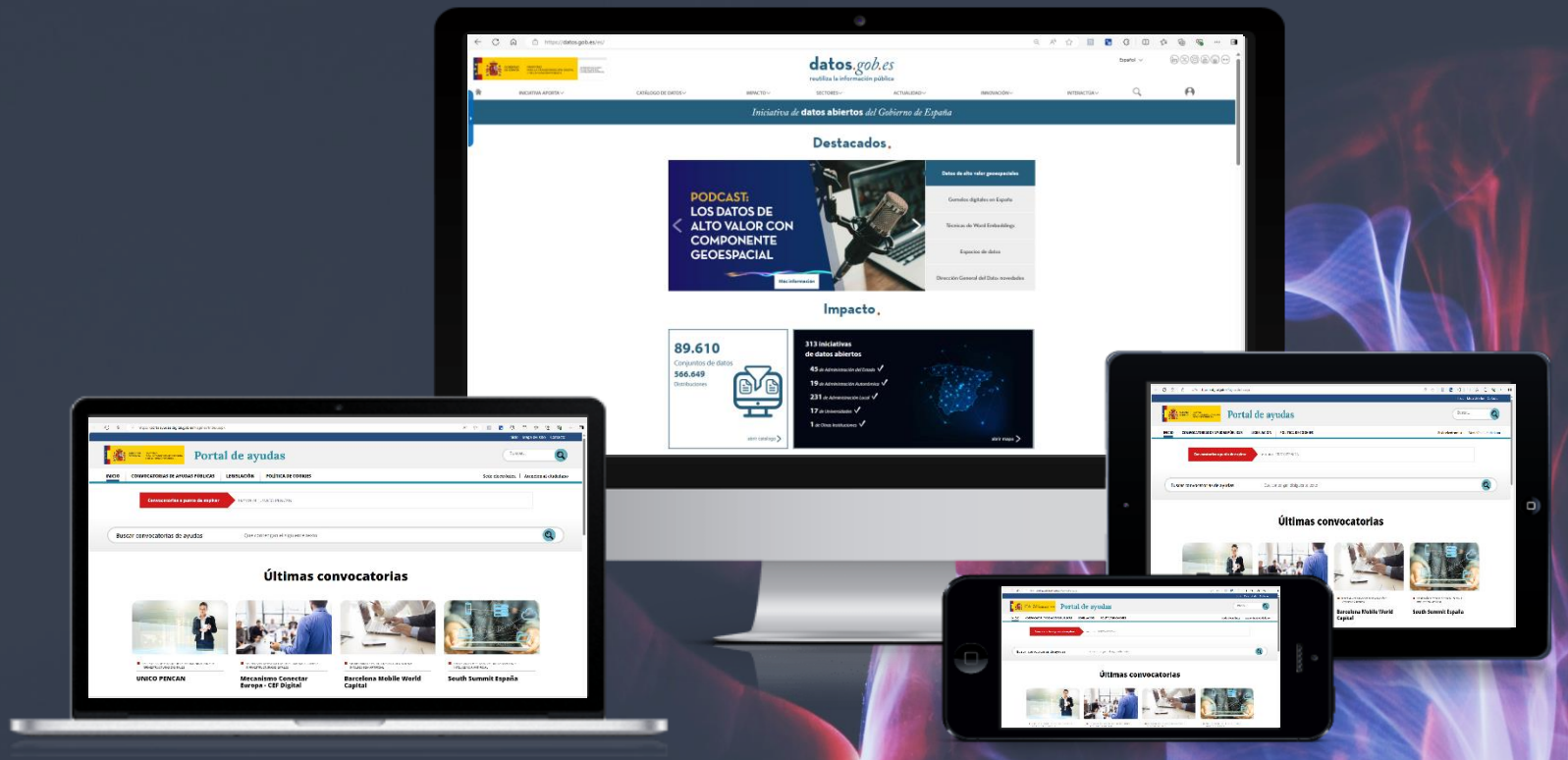
Data Working Group of the Sectorial Conference on Digitalization

- Coordination with the Autonomous Communities.
- Led by the DGDATO.

Data Working Group (GTDATO)

- Led by the DGDATO.
- Involves general directorates and units of the AGE, as well as reference organizations and entities.

Thank you



+ información sobre Espacio de datos

https://datos.gob.es/es/

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NextGenerationEU

Plan de Recuperación, Transformación y Resiliencia

Gaia-X Certification Programme

14:15 – 14:30

- **Roland Fadrany,** COO, Gaia-X

In partnership with gaia-x Hub Spain

ICT TECHNOLOGY CENTER

Launch - Gaia-X Certification Program

Become certified and boost your business

Roland Fadrany | COO Gaia-X European Association for Data and Cloud

Gaia-X Certification Program

	Gaia-X certified Advisor	Gaia-X certified Orchestrator
Organizational Level	Any member company can become a **“Certified Advisor”** Logo and co-branding	Any member company can become a **“Certified Orchestrator”** Logo and co-branding
Individual Level	Employees* can obtain individual certificates after completing curricula in the Gaia-X Academy **“Functional Advisor”** **“Technical Advisor”**	Employees* can obtain individual certificates after completing curricula in the Gaia-X Academy **“Functional Expert”** **“Functional Advisor”** **“Technical Advisor”**
other requirements	Gaia-X Membership Gaia-X Advisor Agreement	Gaia-X Membership Gaia-X Orchestrator Agreement

*Minimum one employee, holding all required academy certificates, or one employee per required academy certificate

We proudly present…

Our first certified Advisors & Orchestrators

Gaia-X certified Advisor

DAWEX

Insentis

DETECON CONSULTING

deltaDAO

Gaia-X certified Orchestrator

deltaDAO

In progress

T Systems

Tourism, Smart Cities & Mobility Ecosystem Panel

Moderator:
Francisca Rubio, General Manager, Gaia-X Hub Spain

14:30 – 15:15

In partnership with gaia-x Hub Spain

ICT TECHNOLOGY CENTER

gaia-x

- **Antonio Sánchez,** Business Development Manager AnySolution
- **Oriol Izquierdo,** IT Manager, T-Systems Iberia
- **Antonio J. Jara**, CSO, Libelium
- **Ernesto Faubel,** Chair of the EDIC on LDT (WG), Head of Smart City Office & Data Management
- **Jim Ahtes**, Head of Data Space Innovation, i2CAT Foundation
- **Steffen Dean Turnbull**, Research Associate Safety-Critical Data Infrastructures

DEPLOYTOUR
European Tourism Data Space

ANYSOLUTION

Co-funded by
the European Union

DEPLOYTOUR Common European Tourism Data Space

Antonio Sánchez - Anysolution

ANYSOLUTION

SMART DATA COMPANY

NADIA

DATES
European Data Space for Tourism

DEPLOYTOUR
European Tourism Data Space

D3HUB

TANGO
DIGITAL TECHNOLOGIES ACTING AS A GATEKEEPER TO INFORMATION AND DATA FLOWS

Phoenix 4.0

SMART ERA
Your community, our future

CyclOps

Spade
physical-cyber drones ecosystem
agriculture • forestry • environment

Data4Food 2030

QuantiFarm

CEADS
COMMON EUROPEAN AGRICULTURAL DATA SPACE

DEPLOYTOUR

European Tourism Data Space

In the framework of the European Digital Europe Programme, supported by the European Commission, DEPLOYTOUR aims to **develop a trusted Common European Tourism Data Space (ETDS).**

It is **built on the blueprint developed by two preparatory actions** for the European Tourism Data Space:

DATES European Data Space for Tourism

TOURISM DATA SPACE

Programme Digital Europe

DIGITAL- 2023-CLOUD-DATA-AI-05

DATATOURISM-Data Space for Tourism

EU Funding: 50%

Consortium: 15.3M euros

Coordinator:
ANYSOLUTION

Participants:
43 organizations from 13 countries

Duration:
3 years

Kick off:
Mallorca
November 2024

OBJECTIVES

By enabling decentralized, secure, and trusted data sharing, DEPLOYTOUR unlocks new opportunities for collaboration, innovation, and growth in tourism.

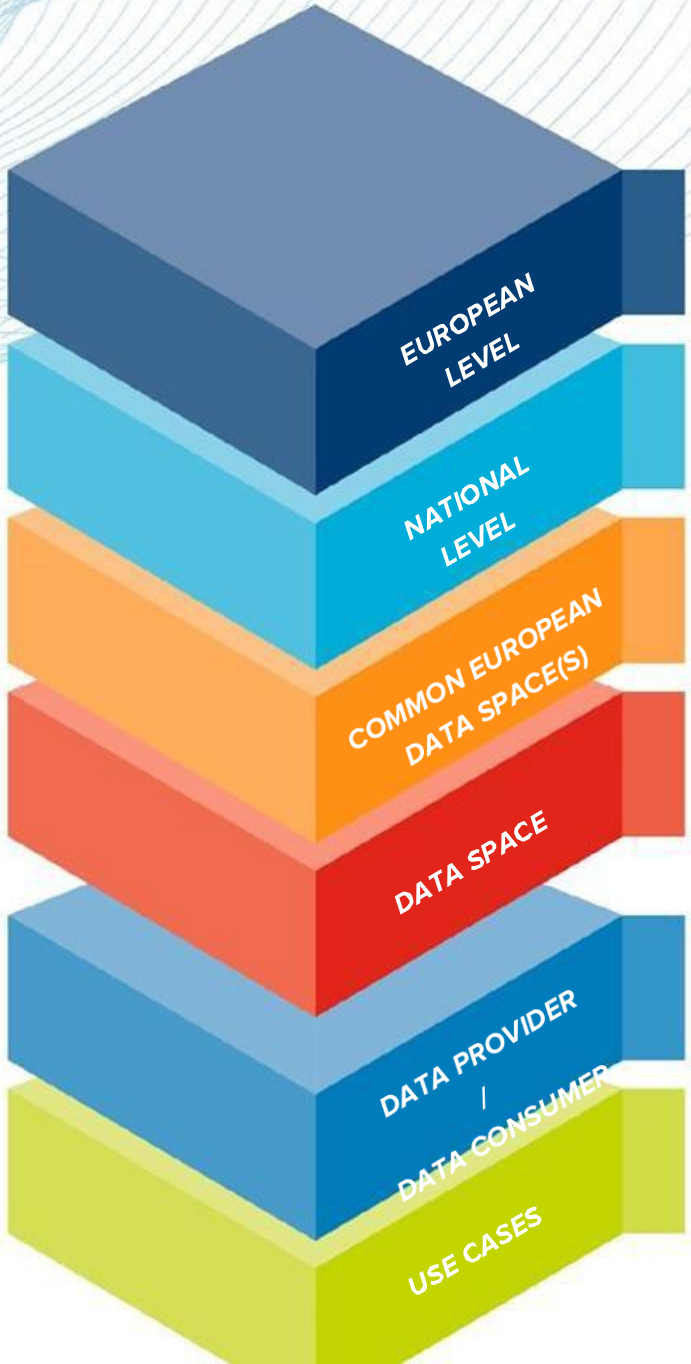
It aims to:

Develop a trusted and secure **Common European Tourism Data Space** to improve data access and sharing, fostering **innovation** and new business models.

Strengthen EU digital sovereignty by establishing a federation of data spaces with common governance.

Boost tourism competitiveness and sustainability by supporting digital and green transitions while **empowering SMEs and DMOs** in their transformation.

CONTEXT



SIMPL	DSSC	EDIB		
National and local initiatives (national access points)	EDIC (association of member states)			
DEPLOYTOUR	deployEDMS	Common Cultural Data Space		
Thematic Data Space (for example EONA-X)	Territorial Data Space (for example Austrian Data Space)			
Fundamental norms (W3C), protocols (Gaia-X, IDSA, Eclipse), European norms (CEN/CENELEC + ETSI), Legal requirements (Data Governance Act), Domain specific choices (data models)				
Hotels, Short-stay accommodation, Camping grounds, Restaurants, Beverage activities, Ski resorts, Themes parks, Travel agencies, Tour operators, Organisation of conventions and trade shows, Cultural and creative industry, Museums, DMOs, tourism associations…				
Sustainable Tourism	DSSC	Mature destinations	Tourism SMEs	Cultural heritage

HIGH LEVEL ROADMAP

Requirements gathering

- Mapping of uses cases and requirements
- Agnostic technical requirements for a DS

Data sources and Data Products

- Gather all data sources needed for each use case
- Define Data Products base on data sources
- Benchmark of partners solutions

Define data models

- Requirements for DS catalogue
- Identify relevants standards in the tourism domain
- Adoption of standard vocabularies and data models

Architecture desing

- Adapt existing architecture elements from the preparatory action
- Integrate aspects from references architectures (DSSC, IDSA, SIMPL, FIWARE and Gaia-X)

Development of DS components

- Identify and adapt already existing components from other DS
- Align with the SIMPL iniciative
- Implement connectors and building blocks (CaaS)

Deployment of DS components

- Methodology strategy to deploy in the pilots
- Deployment of the connectors
- Analysis of the performance of the data space

Governance layer: Rolebook and Rulebook. Clear rules and roles for the actors of the data space ensuring compliance

PROJECT MILESTONES

DEPLOYTOUR addresses the challenges of fragmented and inaccessible tourism data by enhancing access to information through:

Deploy the technical infrastructure of the Common Tourism European Dataspace (ETDS)

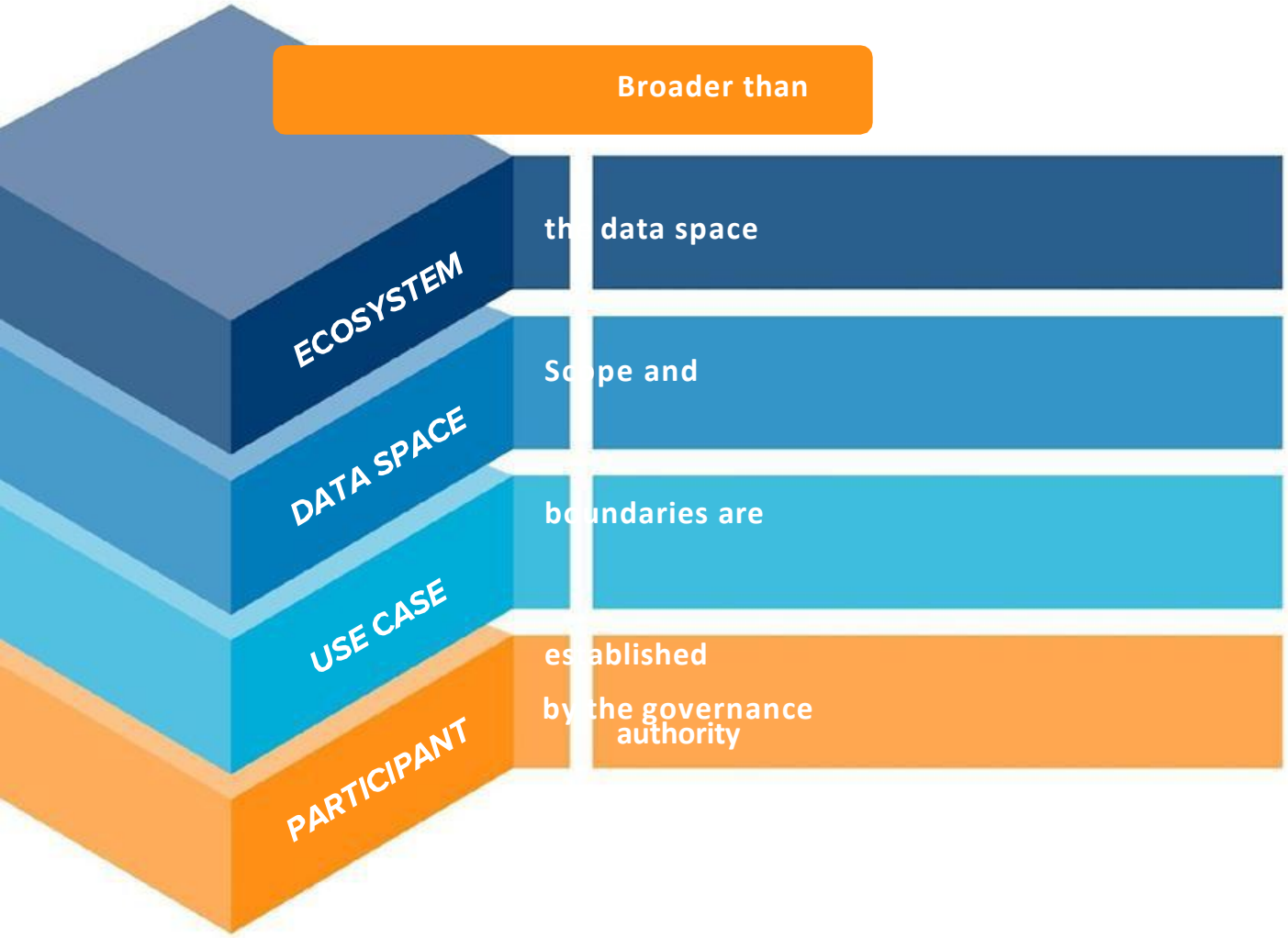
Implement five use case pilots that will act as demonstration of the tangible advantages the ETDS can bring and its impact on the European tourism sector

Define a governance framework by developing the rules and roles of the different stakeholders involved in governing the future ETDS

Ensure the interoperability, transversality, and synergies with other data and tourism initiatives

Implement a sound dissemination, **communication and exploitation strategy**

GOVERNANCE ASPECTS



Layers of Interoperability

Inside the layers
Between the layers

- **Organisational**
- **Legal**
- **Semantic**
- **Technical**

- Seamless
- Efficient
- Compliant
- Traceable
- Trustful

TRANSVERSALITY, COMPLEMENTARITY AND SYNERGIES

Synergies with other data spaces, projects and initiatives:

- Mobility data space, deployEMDS
- Smart Cities Data Space
- Green Deal
- Media data space, TEMS
- Skills data space
- Cultural Heritage data space
- D3HUB
- DSSC
- SIMPL
- EDIC
- National, local initiatives
- Ministries
- …

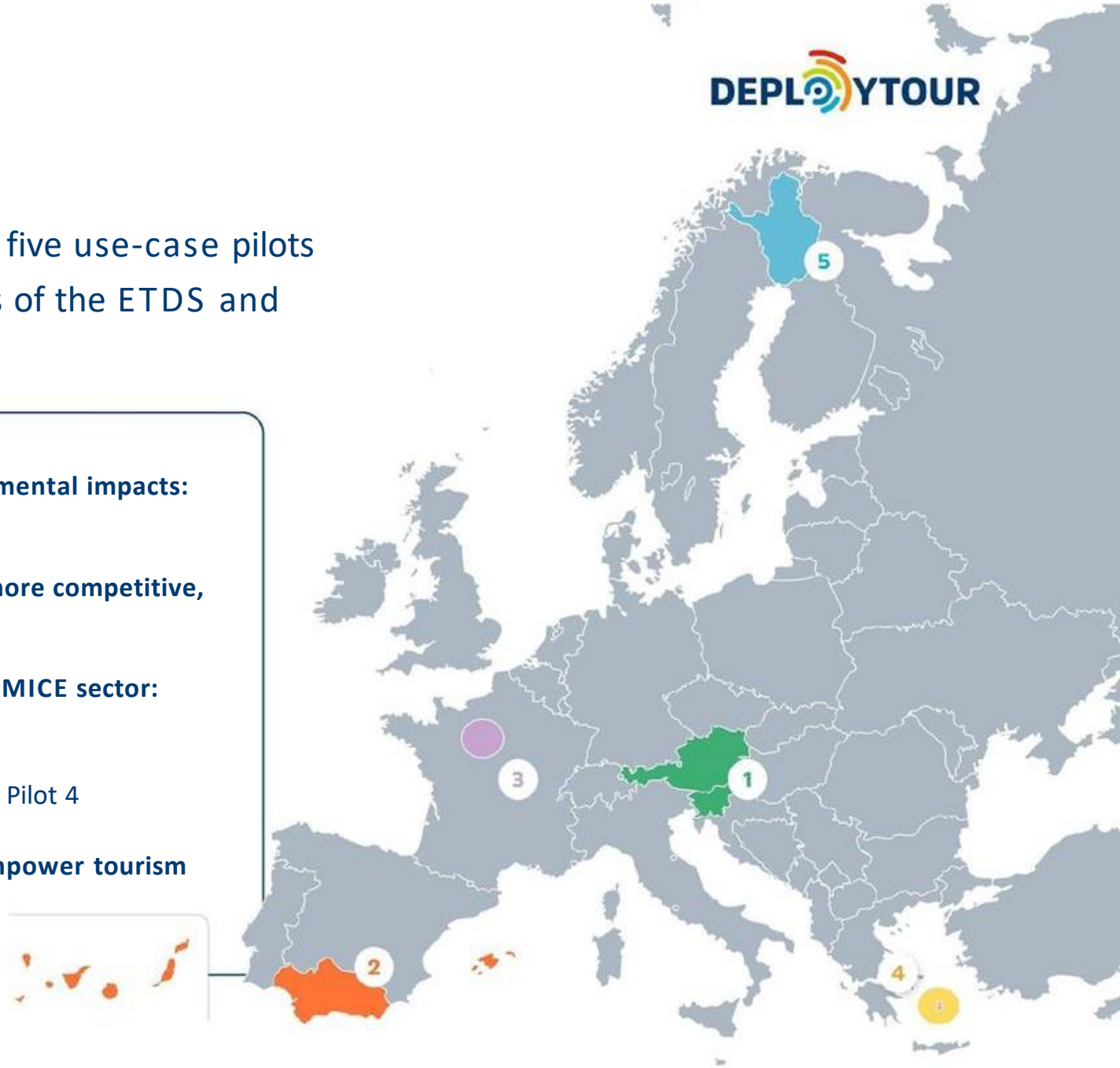
DEPLOYTOUR supports the Tourism Transition Pathway's pledges to advance the strategy for digital and sustainable transition.

To generate and ensure sound synergies to reinforce complementarities, avoid overlapping and generate new added value.

DEPLOYTOUR USE CASE PILOTS

The DEPLOYTOUR consortium is implementing five use-case pilots across Europe to show the tangible advantages of the ETDS and address key challenges in tourism:

1. **Tourist overcrowding in natural areas and environmental impacts:** Use Case Pilot 1
2. **Transforming mature destinations to make them more competitive, resilient, and sustainable:** Use Case Pilot 2
3. **Meeting hyper-personalized client demands in the MICE sector:** Use Case Pilot 3
4. **Managing high-seasonality destinations:** Use Case Pilot 4
5. **Addressing the lack of a centralized platform to empower tourism SMEs:** Use Case Pilot 5



USE CASE PILOT 2

Resilience and Competitiveness in Mature Destinations

Location: Canary Islands, Andalusia and the Balearic Islands (Spain).

Challenges: The need to transform the tourism offerings, accessing and utilizing relevant data and developing tailored, data-driven solutions that empower tourism SMEs.

Solutions: Utilizing data insights to enhance the sustainability and competitiveness of popular destinations.

Innovating to attain better resilience and competitiveness in mature destinations:

- Developing a dashboard for DMOs to monitor and drive sustainable tourism practices
- Providing tailored tools and services for SMEs to improve their business strategies by leveraging processed data
- Enabling tourism companies to act as both data providers and consumers

ENGAGE WITH THE PROJECT

Synergies & Collaborations

- Meet DEPLOYTOUR at key tourism & data events across Europe
- Visit **www.deploytour.eu** to not miss any events!
- Participate in our regular webinars with other initiatives

Communication and Dissemination activities

- Subscribe to the Newsletter to follow the updates of the project
- Follow DEPLOYTOUR on social media and visit our website for regular updates

Follow us!


DEPLOYTOUR
European Tourism Data Space
Co-funded by
the European Union
www.deploytour.eu
Co-funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Health and Digital Executive Agency (HaDEA). Neither the European Union nor HaDEA can be held responsible for them.

SEGITTUR Dataspace

Oriol Izquierdo Robert
Datasapce manager
T-Systems Iberia

In partnership with gaia-x Hub Spain

ICT TECHNOLOGY CENTER

Introduction - SEGITTUR

- SEGITTUR is a Spanish **state-owned company** under the Ministry of Industry, Trade, and Tourism responsible for **driving the innovation**.

- The “Plataforma de Destinos Inteligentes”, implements the **first national public dataspace in Spain**.

- The goal of the project is to enhance business innovation of the **smart destinations network** and its **business ecosystem**.

Introduction – The Dataspace

- Acknowledge the **core values of the dataspaces,** enabled by T-Systems
- One of the main goal is to focus on the “**better tourism data**”.
- Enable a more **sustainable tourism.**
- Create **New business models** for the business ecosystems.

GaiaMon
Gotta catch ‘em all!

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SEGITTUR
turismo e innovación

Interoperability and standarization

- **Semantic standardization** - SEGITTUR tourism **ontology** to standardize data formats across all stakeholders in the **tourism value chain**, facilitating seamless data exchange and integration.

- **Technical standardization**:
  - Eclipse Dataspace Components (**EDC**) and the **IDSA protocol**, which is advancing towards ISO certification.
  - Evaluating how to implement the **Gaia-X Trust Framework.**
  - **Flexible** approach to integrate with **other frameworks**, to adapt to future technologies and market trends.

Global vision

- **National level** - SEGITTUR dataspace is part of a broader **national strategy** to support the sector's digital transformation.

- **European level** - SEGITTUR is and will be aligned with the **EC**, so any standard adopted by the EC will also be considered by SEGITTUR.

- **Other approaches**:
  - SEGITTUR is in **bilateral conversations** between Fiware and T-Systems.
  - **DATES** project dataspace blueprint recommends the **EDC.**

Engagement Campaign

- The goal is to **bring in participants** to the dataspace.
- Conversations with the **smart destinations network** and its **business ecosystem.**
- To define the right **use cases** to bring the right **stakeholders in.**

Thank you!

Oriol Izquierdo

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ICT TECHNOLOGY CENTER

Tourism, Smart Cities & Mobility Ecosystems Panel

Smart Cities

- **Ernesto Faubel**
- Head of Smart City & Data Management Office
- Municipality of Valencia

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Smart Cities layers

Commitment with Standards

ISO 37120 · WORLD COUNCIL ON CITY DATA · ITU · SUSTAINABLE DEVELOPMENT GOALS · UNE Normalización Española

Cooperation & Collaboration

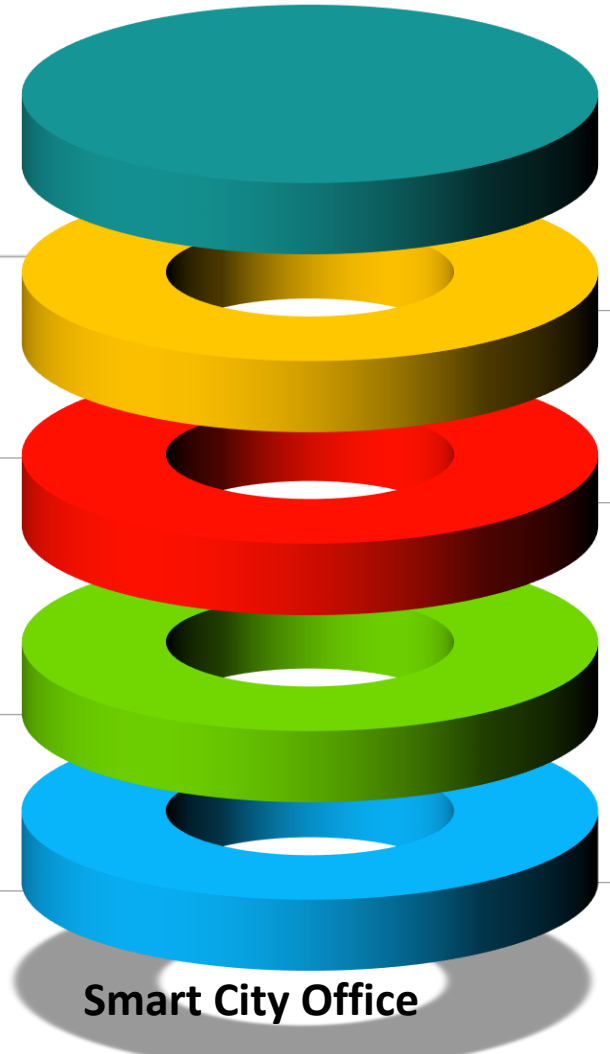
RECI SmartCities · U4SSC · LIVING-IN.EU · OPEN & AGILE SMART CITIES

Digital Transformation of Services

- 30% of services integrated in platform
- 50 public tenders, smart clauses.

Connectivity

- Connectivity strategy
- Coordination of deployment of IoT and 5G



http://smartcity.valencia.es/smart-city-office/

Innovation Ecosystem

Smart Solutions

- Citizens dashboard
- City dashboards
- Specific dashboards

Enabler Smart Elements

- Urban Data Platform
- Geographical Information System
- Open Government Portal
- CityApp

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Smart Cities Components

gaia-x

Citizens & City Officers

Personal | Telephone | City WEB | City App | Electronic Office | Citizen Dashboard | Geoportal | OGOV Portal | Citizen Participation | Open Data

City Services

Certified digitization | Catalog of Procedures | Electronic signature | Electronic Registry | Electronic Payment

Administrative Information Systems

SOA

E-ADMIN. PLATFORM | URBAN DATA PLATFORM | CITY DB | GIS

City IT Core

Balanced ScoreCard | BI tools | APIs

Mobility Mng. | Lighting Mng. | Waste Mng. | Environmental

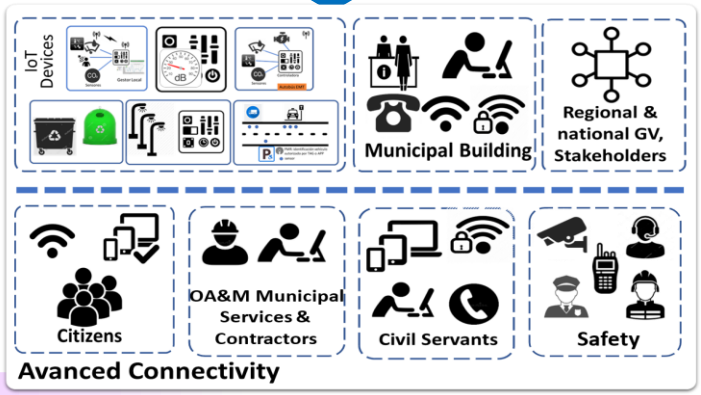
Smart Services & Apps

Gateway

Integration BUS (ESB) | Integration (ETL) | Security | Audit | IoT

External

Cloud Services | External Partners | Regional & National Government | Other Stakeholders | API



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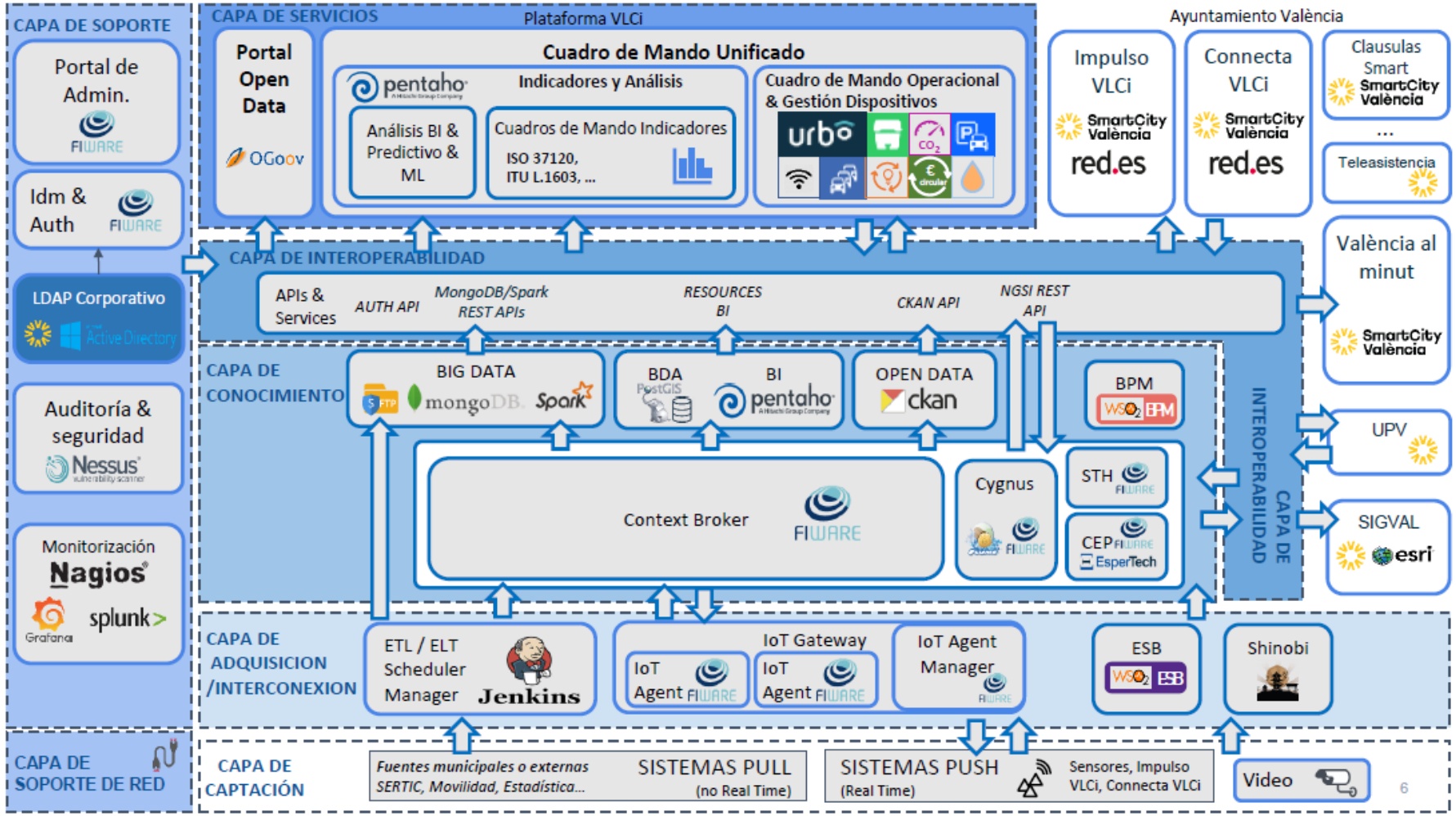
VLCi Platform Architecture



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Current situation

- VLCi Platform based on Fiware
- CitCom.ai project
- Participation in Data spaces projects
- Role of LDT CitiVERSE EDIC

Thank you!

Ernesto Faubel| efaubel@valencia.es

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gaia-x Hub Spain

ICT TECHNOLOGY CENTER

Mobility data spaces: connecting local, national and European initiatives

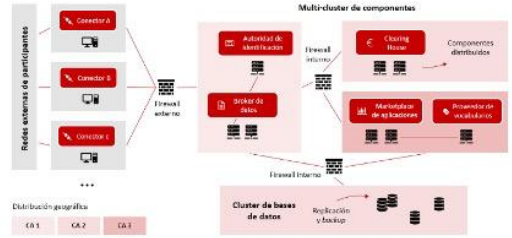
Tuesday, 13 May 2025

Jim Ahtes
Head of Data Space Innovation
i2CAT Foundation

In partnership with gaia-x Hub Spain

ICT TECHNOLOGY CENTER

i2CAT: Evolving data spaces



gaia-x

R&D capacity for use case implementation, co-development and experimentation

Integration with other areas of digitalization (e.g. IoT, AI/ML, Digital Twins, PET, blockchain, etc.)

Testbed infrastructure: provide tools, components and services to quickly implement demonstrators and test new added-value data services in data space environments.

Alignment with **local sector priorities and stakeholders**

example

Our collaboration

Development of regional strategy with local government (Catalonia)

Active participation in national hubs and ecosystems

Alignment with **regional and national strategies**

i2cat

What we do

Active participation in **European standards groups, associations** and collaborations with lighthouse projects

Lower barriers and accelerate co-development of data space use case **demonstrators and pilots** with public and private sectors.

Advance state of the art in data sharing standards and technology.

Collaborate with private sector in **joint-development and tech transfer** to enable and enrich data spaces.

Support **strategy development** with regional government and verticals with local and European stakeholders.

Our impact

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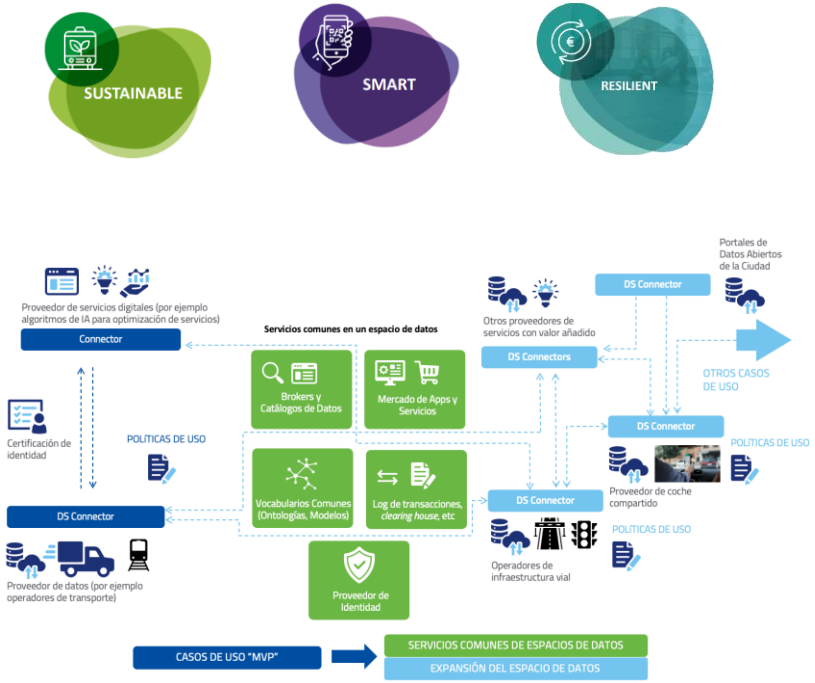
i2cat

Data space addressing European Mobility Strategy

- 100% digital freight transport
- Automated mobility at scale
- Integrated Ticketing
- Operational multimodal Trans-European Transport network (core network)

- Close-to-zero road fatalities
- Majority of vehicles zero-emissions
- Operational multimodal Trans-European Transport network (comprehensive network)

2030 → **2050**



Such a digital transformation depends on the availability, access and exchange of large volumes of data

- Lack of a data market in the EU
- Rapidly evolving obligations, standards and regulations
- Incompatible tools and systems; different standards
- Lack of governance frameworks for the various mobility value chains

Data spaces can help address these challenges

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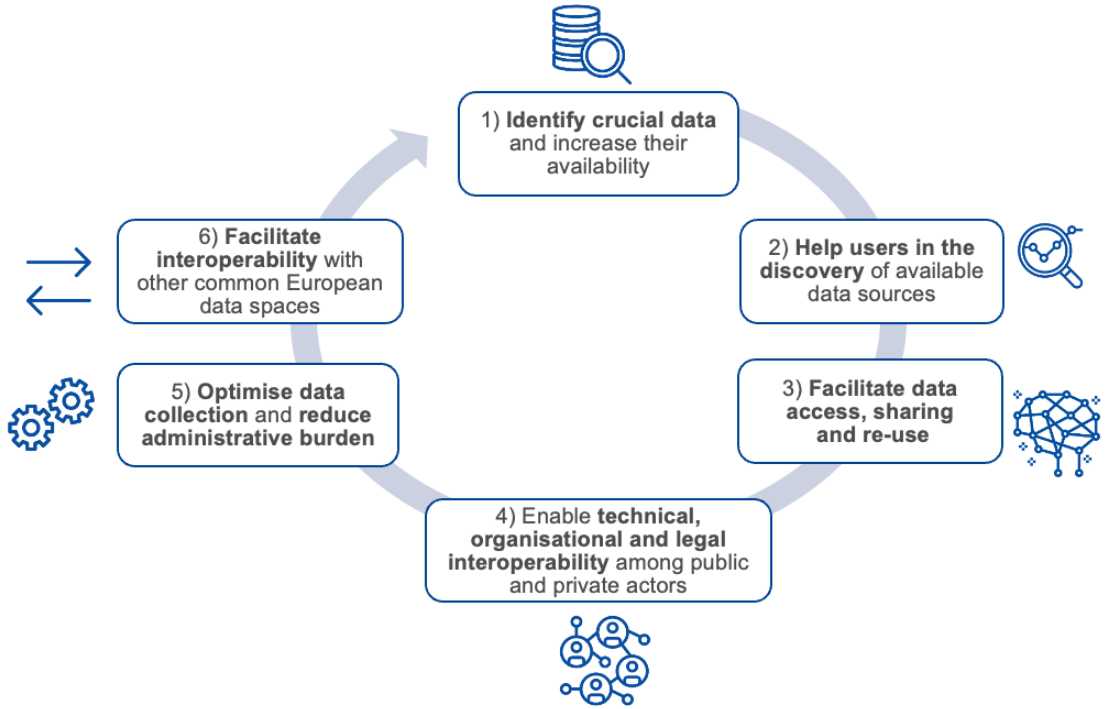
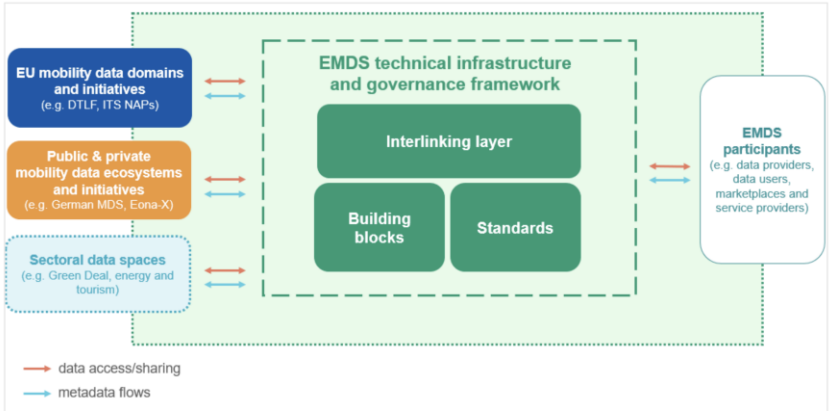
EU vision for the European Mobility Data Space





European Commission

EU vision for the European Mobility Data Space

Urban and rural mobility

Multimodal Mobility and Transportation

Cooperative, Connected and Automated Mobility (CCAM)

Road safety

Sustainable alternative fuels

Logistics

Maritime transport

Aviation

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New generation of diverse Spanish mobility data space use cases in development

Showcased at Gaia-X Spain Summit

Interoperability for mobility services via data spaces

Testing Data Space for Cooperative, Connected and Automated Mobility (CCAM)

Dynamic management of public transport

Data sharing in intermodal logistics and last-mile distribution

Data space for connected vehicles

On-demand pedestrian maps for accessibility

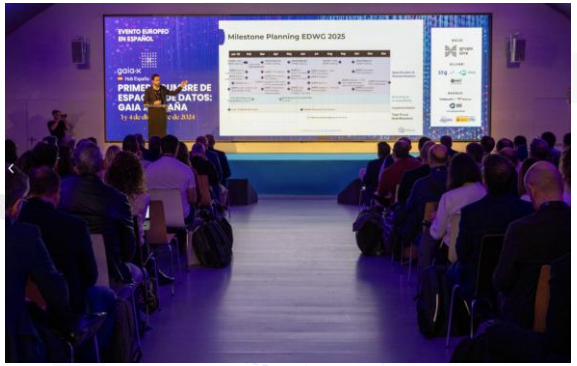
Promoting climate neutrality in Europe with data space for sustainable mobility

Urban traffic optimization through data space and ecosystem of digital services

AI applied to the optimization of bus arrival time prediction (INESData)

Data space approach of the Cartagena Low Emission Zones

Multi-operator ecosystem for on-demand transport



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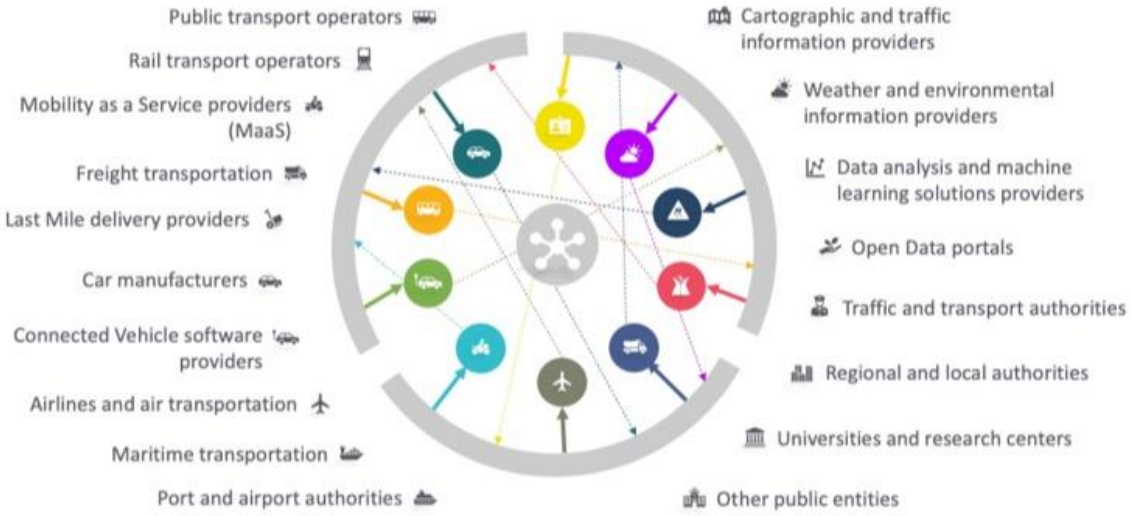
The challenge: accelerating local mobility data space development while ensuring European interoperability

Challenges:

- First iterative implementations of use cases taking place in parallel to evolution of architectures, standards and protocols.
- Regulation and governance aspects exist on local, national and EU level.
- Diversity of mobility sectors, value chains and data sources.



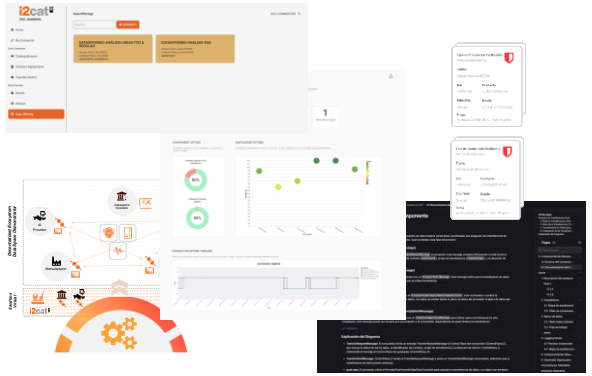
Local initiatives, with regional and European scope:

Local demonstration centres to help accelerate implementation of European standards on a local level, with eye on alignment and interoperability (Spain is investing heavily on this concept).

Iterative operational models that extend local governance schemes to evolving EMDS framework.

Regional forums to support the full lifecycle of data space use case development – from design to implementation to demonstration.

Supporting the development of local mobility data spaces with European interoperability



Design

- Technical support on European architectures, standards and protocols for interoperability.
- Methodologies for data characterization (data sources => data products) and infrastructure requirements analysis (data space onboarding)
- Organisaitonal and regulatory compliance support for governance model development

Implementation

- Infrastructure and services to facilitate development, testing, and demonstration, enabling interoperable, secure and sovereign data exchange with EU standard.
- Workshops, support desk and technical documentation

Demonstration

- Local, national, and European stage for demonstrations to present and scale the use case

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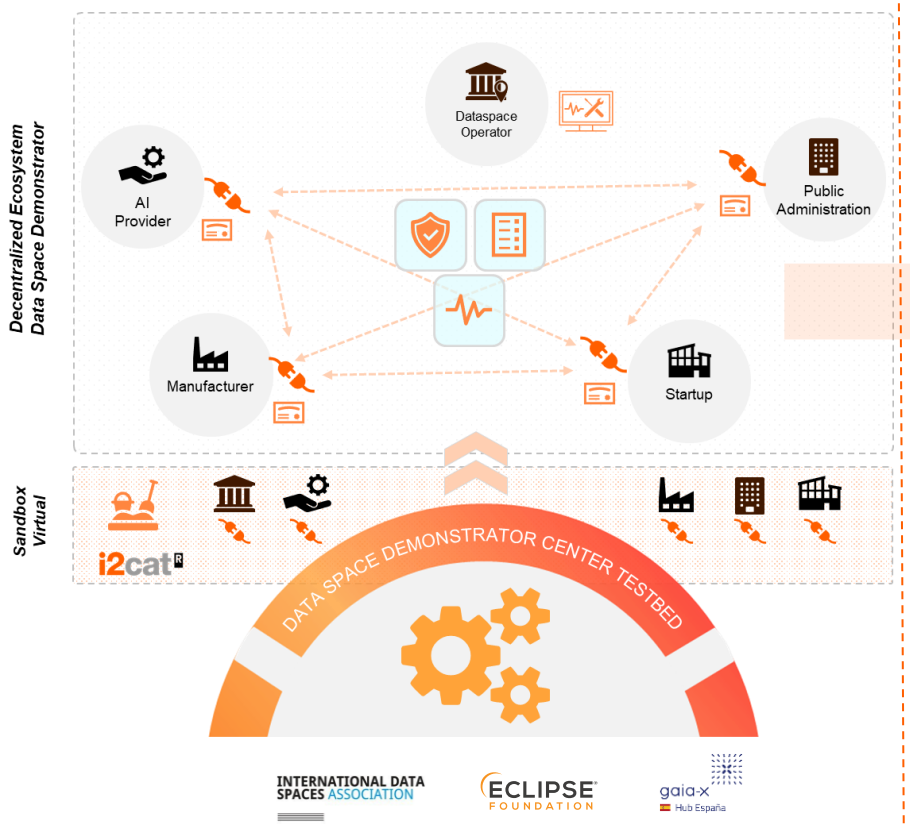
Data Space Demonstration Centre of Catalonia

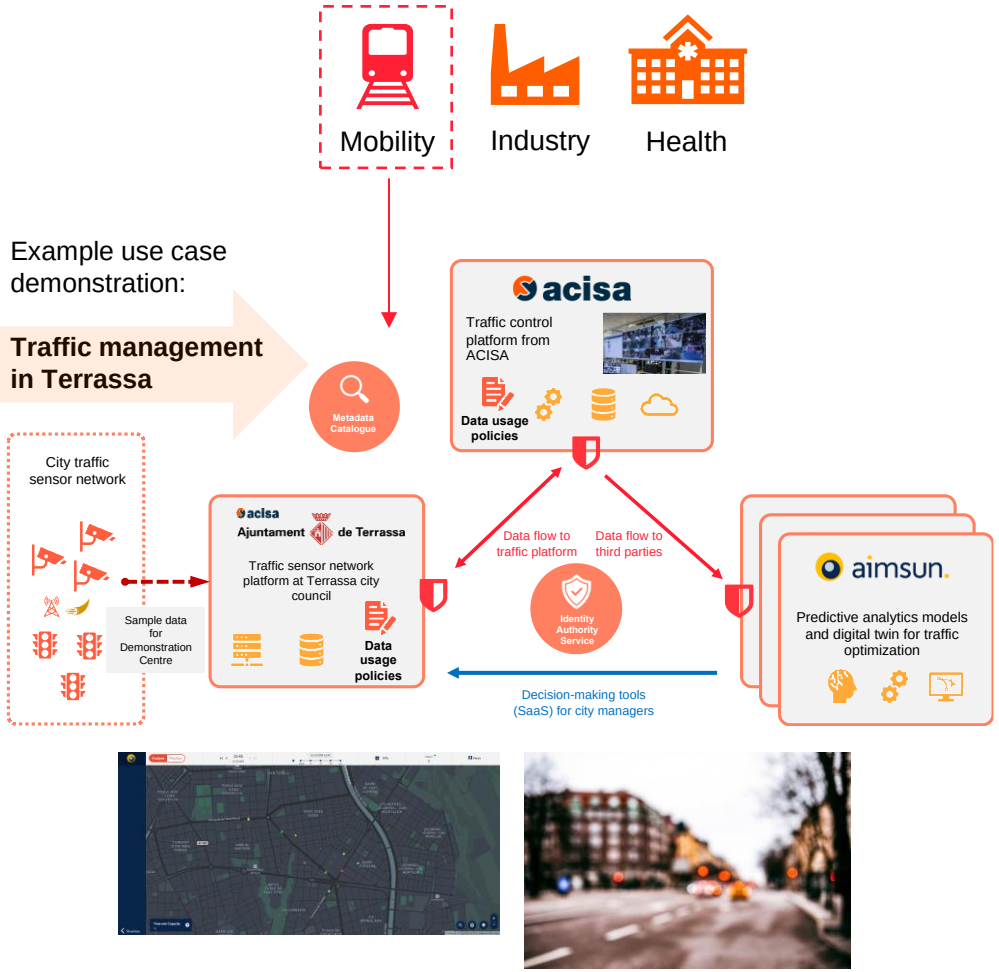
Local initiative, European standards:
Regional incubator for data space development, experimentation and piloting

- Deploys testbed infrastructure for building a data space MVP pilot, with sandbox, on-premise connectors and governance services.
- Reduces time and cost in iterative data space development.
- Ensures local data infrastructure investment aligns with European standards, interoperability frameworks and regulations.
- Provides the tools and environment to teach and onboard companies and administrations to become data space participants and operators
- Co-finances use case development and demonstrations.



Example use case demonstration:

Traffic management in Terrassa



From use case conceptualization to implementation, deployment and piloting

Finançat per la Unió Europea NextGenerationEU · Pla de Recuperació, Transformació i Resiliència · Next Generation Catalunya · Generalitat de Catalunya

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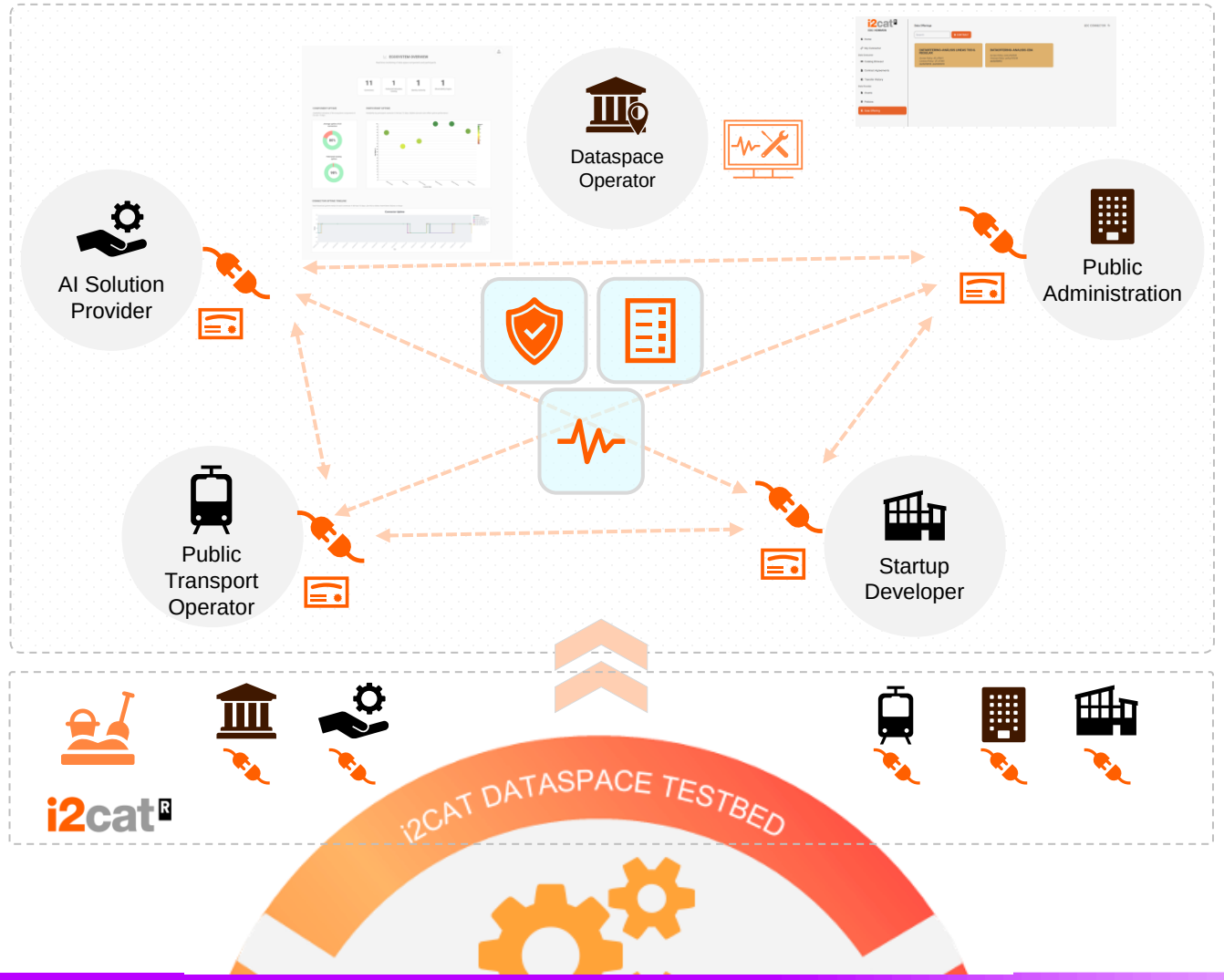
Data Space Demonstration Centre of Catalonia

i2CAT's testbed for data space development



Connectors:

- Each entity has a Connector, securely connecting them to the data space ecosystem. Sits on top of their Data Source/Sink (e.g. API).
- Connectors provided based on Eclipse Dataspace Components framework and Data Space Protocol
- Defines usage policy and manages secure data sharing (B2B, G2B, G2G).
- Extensibility for added-value services, e.g. data anonymization.
- Includes two data planes, for both events and real-time data.

Federated Metadata Catalogue:

- Metadata catalog to consolidate the decentralized data offerings, facilitate discoverability.

Identity Authority Service:

- Manages the identity of the participants of the ecosystem, certifying them and authorizing participation in the data space.
- Supporting self-sovereign identity, including Verifiable Credentials and Decentralized Identifiers. Exploring extension to Gaia-X Trust Framework in 2025-2026.

Observability Engine:

- Enables traceability within the ecosystem.
- Manage communication and data transfer logs between entities.
- Provides data space operator with info and context to manage the ecosystem.

Data Space Governance Portal:

- Integrates data space management tools and provides and an easy-to-use UI.

Sandbox:

- Virtual environment for initial testing of a data space deployment.
- Complements latter steps of on-premise deployments as a first step.

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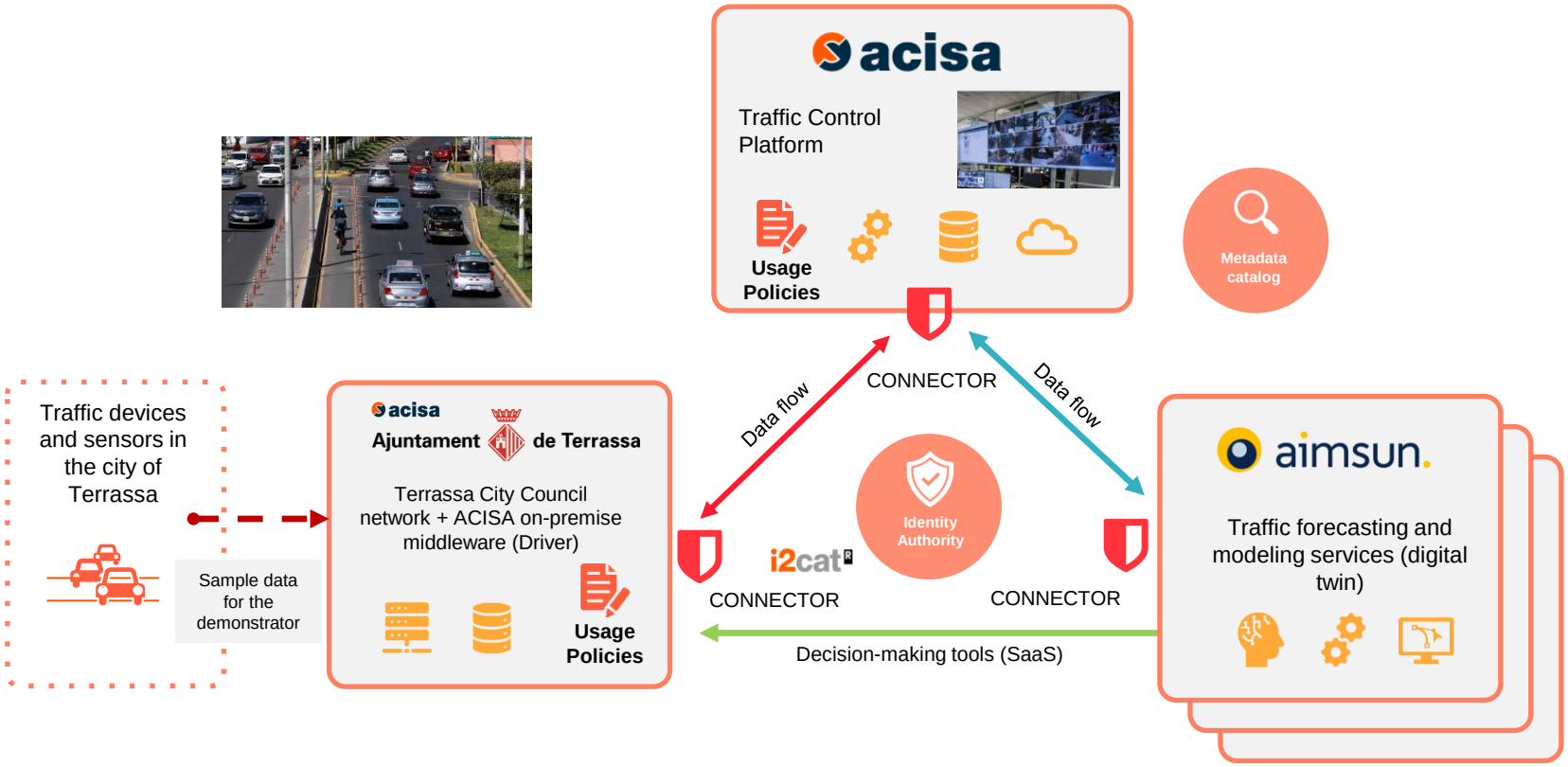
Use Case: Urban traffic optimisation with data spaces and digital twins

Pilot collaboration between Acisa, Aimsun, i2CAT and part of the Data Space Demonstration Centre of Catalonia



Benefits *towards* optimising urban traffic (city traffic operators)

- Improve urban traffic planning and management (city council and transit authority) through a scalable ecosystem of devices, sensors and data, and digital services.

Value *from* digital service providers (SMEs) to unlock benefits

- Development of digital twin solutions, predictive analytics, and decision support tools (value-added products/services replicable to other customers)

Creating the conditions

- Facilitate the municipality's access to a dynamic market of competitive digital service providers.
- Standardize interfaces and exchange protocols to facilitate the discovery and consumption of data for value generation.

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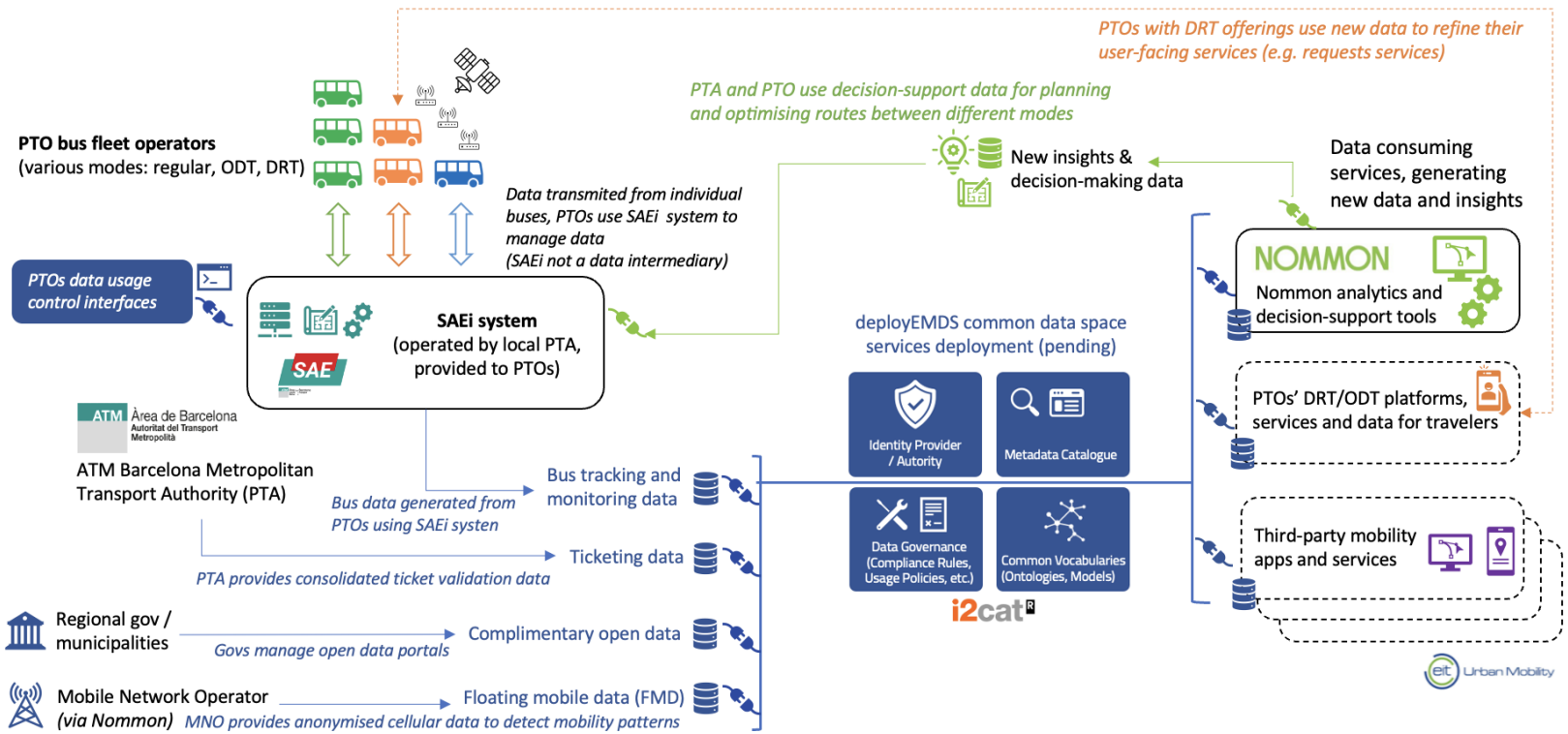
Use Case: Multi-operator data space ecosystem for bus fleets and on-demand transport

Pilot collaboration between ATM Barcelona, Nommon, i2CAT and onboarded PTO in deployEMDS



Benifits *towards* evolving mobility services (Public Transport Operators, Public Transit Authorities)

- Improve PTO planning of mobility services between regular, on-demand and demand-response transit (DRT) through AI-powered predictive analytics
- Optimise services and improve traveller experience (vehicles, capacity, frequency, etc.)

Value *from* digital service providers (SMEs) to unlock benefits

- Development of competitive AI-driven predictive analytics solutions, decision-support tools and other value-added apps and services (replicable for other clients)

Creating the conditions

- Facilitate PTO access to a dynamic market of digital service providers while maintaining control over the use of data (create trust for accelerated B2G and B2B data and value exchange)
- Standardise interfaces, exchange protocols and promote semantic interoperability between bus transport modes (facilitate data discovery and consumption for value generation)
- Provide a scalable public-private governance model between various profiles in the value chain (establish a competitive and fair data/service market for small and large digital service providers alike)

This project has received co-funding from the Digital Europe Programme under grant agreement no. 101123520.

Takeaways:

Aligning local initiatives with EU frameworks and standards:

Local demonstration centres to help accelerate implementation of European standards in local mobility use cases.

Iterative operational models that extend local governance schemes of local mobility value chains to evolving EMDS framework.

Regional forums to support the full lifecycle of data space use case development – from design to implementation to demonstration.

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Thank you!

Jim Ahtes

Head of Data Space Innovation, i2CAT

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In partnership with gaia-x Hub Spain

ICT TECHNOLOGY CENTER

Gaia-X 4 Future Mobility

13.05.2025

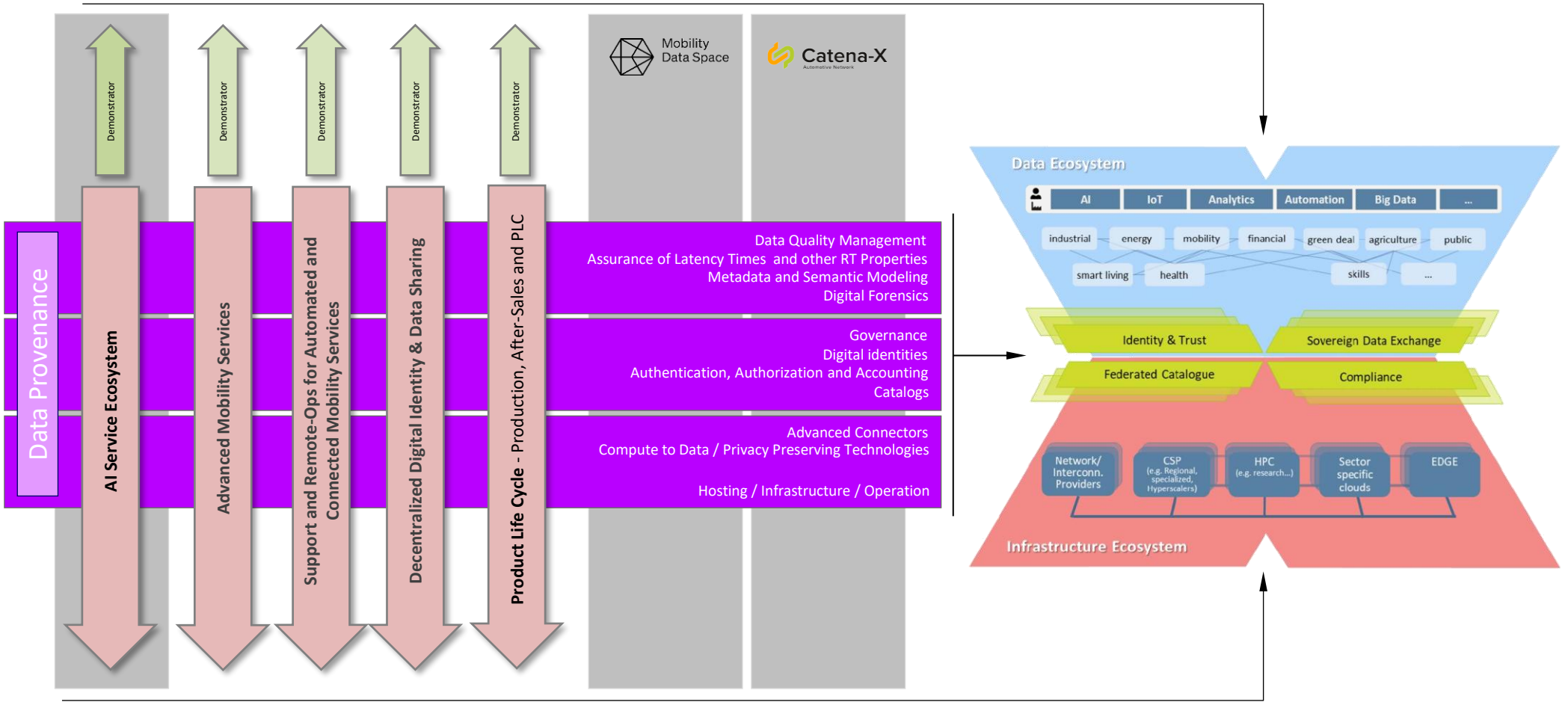
- **Steffen Turnbull**, Research Associate, DLR

In partnership with gaia-x Hub Spain

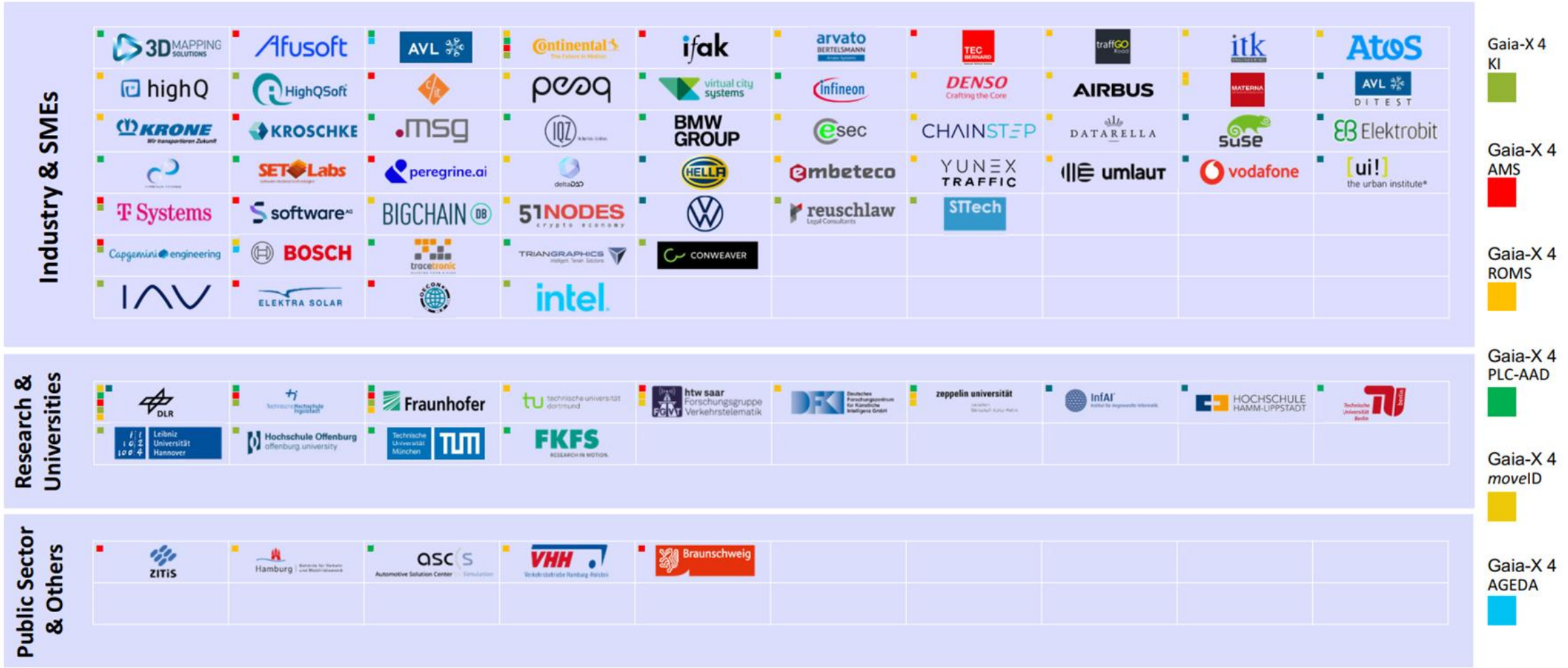
ICT TECHNOLOGY CENTER

GAIA-X 4 Future Mobility

Applications | Core-Services | Basics



Participants



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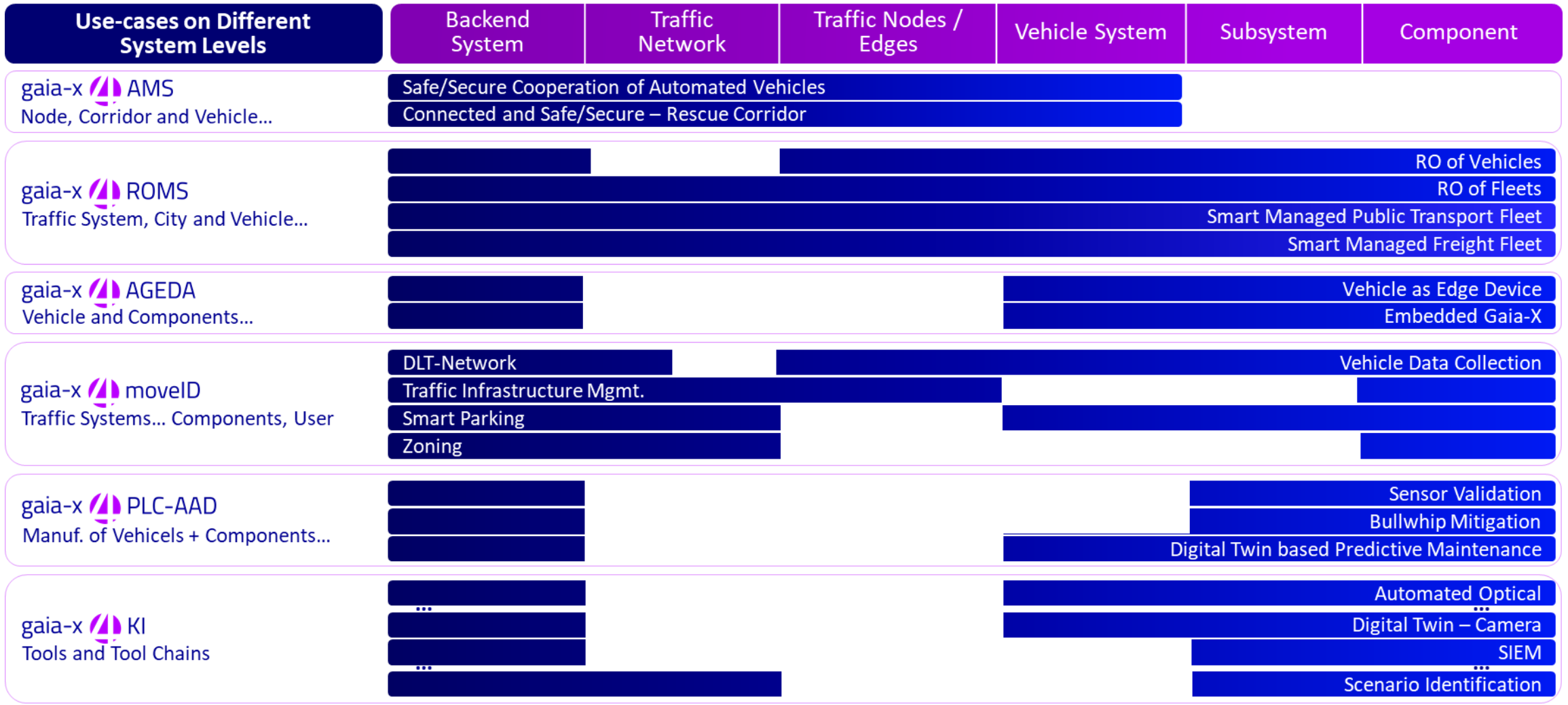
20+ Use Cases



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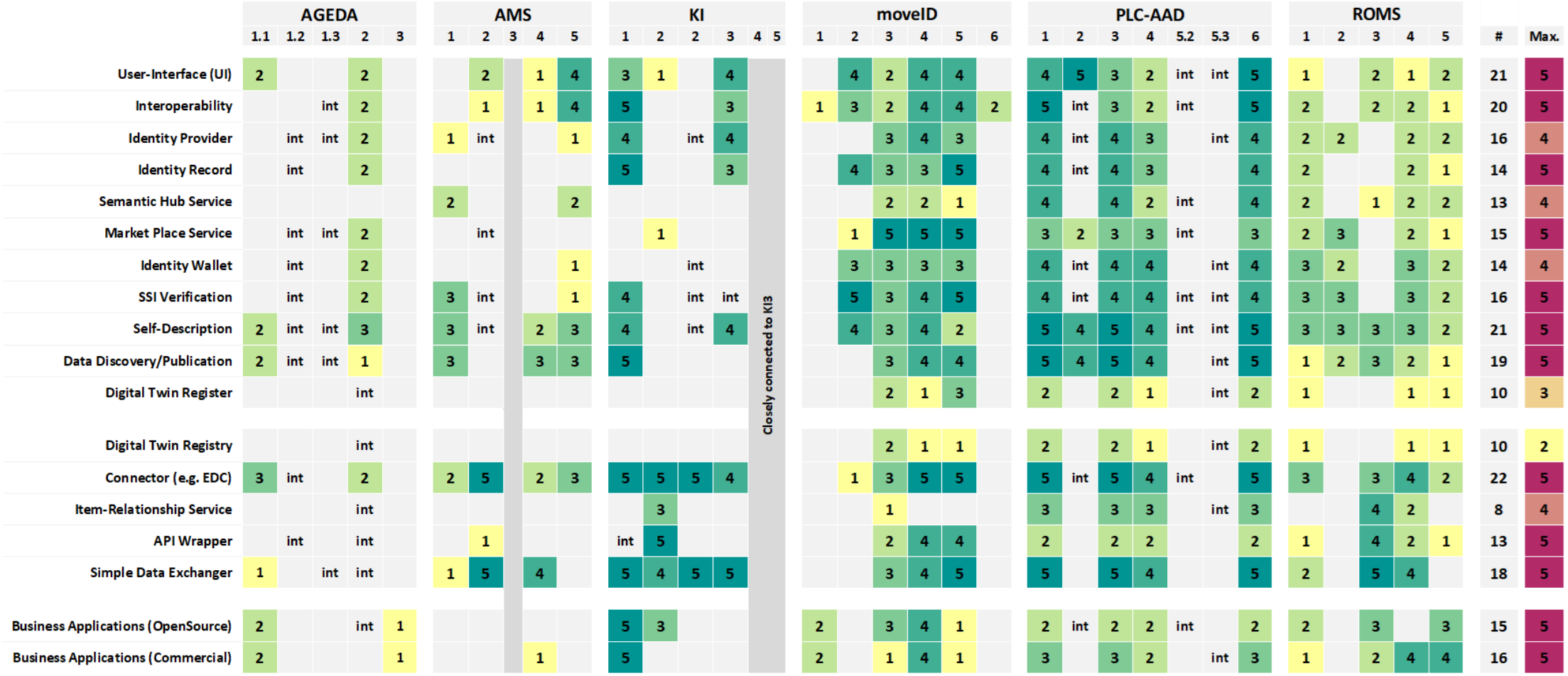
Use Cases – Synergies



	AGEDA					AMS					KI						moveID						PLC-AAD						ROMS						
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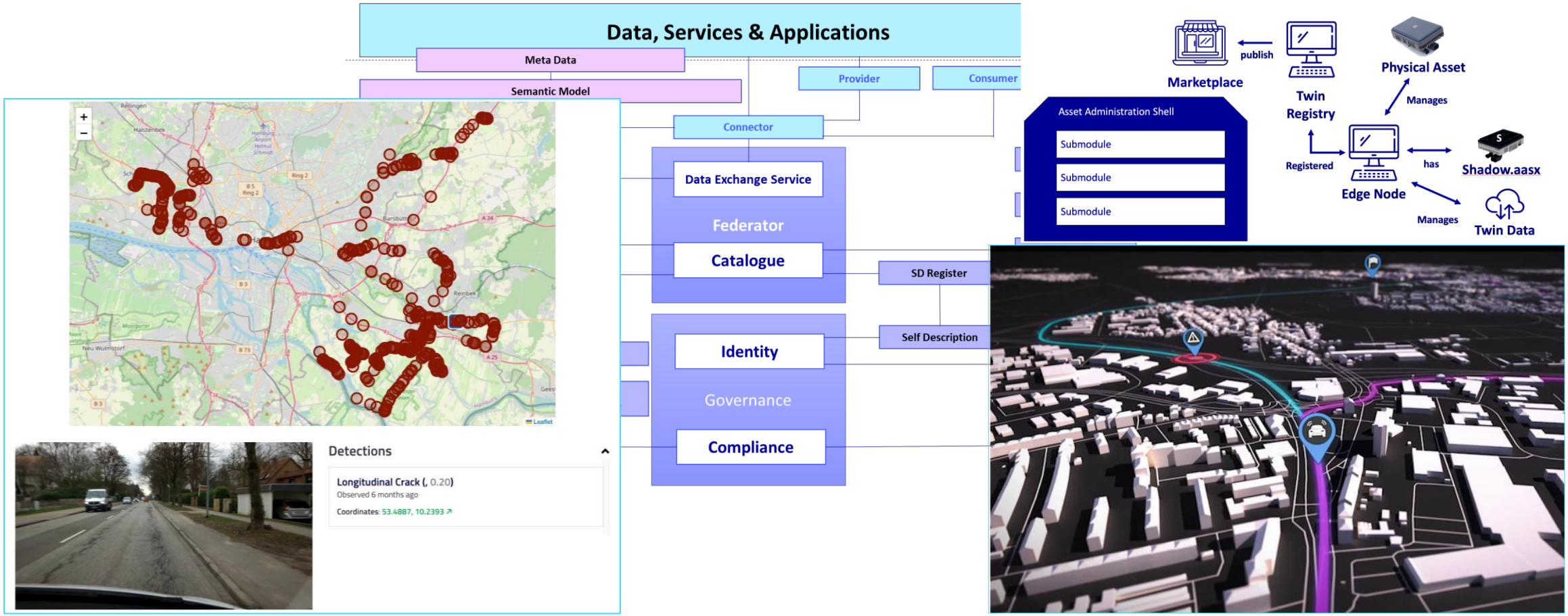
Identity Record		int		2							5			3				4	3	3	5		4	int	4	3			4	2			2	1	14	5
Semantic Hub Service						2				2									2	2	1		4		4	2	int		4	2		1	2	2	13	4
Market Place Service		int	int	2			int					1						1	5	5	5		3	2	3	3	int		3	2	3		2	1	15	5
Identity Wallet		int		2						1			int					3	3	3	3		4	int	4	4		int	4	3	2		3	2	14	4
SSI Verification		int		2		3	int			1	4		int	int				5	3	4	5		4	int	4	4	int	int	4	3	3		3	2	16	5
Self-Description	2	int	int	3		3	int		2	3	4		int	4				4	3	4	2		5	4	5	4	int	int	5	3	3	3	3	2	21	5
Data Discovery/Publication	2	int	int	1		3			3	3	5								3	4	4		5	4	5	4		int	5	1	2	3	2	1	19	5
Digital Twin Register				int															2	1	3		2		2	1		int	2	1			1	1	10	3
Digital Twin Registry				int															2	1	1		2		2	1		int	2	1			1	1	10	2
Connector (e.g. EDC)	3	int		2		2	5		2	3	5	5	5	4				1	3	5	5		5	int	5	4	int		5	3		3	4	2	22	5
Item-Relationship Service				int								3							1				3		3	3		int	3			4	2		8	4
API Wrapper		int		int			1				int	5							2	4	4		2		2	2			2	1		4	2	1	13	5
Simple Data Exchanger	1		int	int		1	5		4		5	4	5	5					3	4	5		5		5	4			5	2		5	4		18	5
Business Applications (OpenSource)	2			int	1						5	3					2		3	4	1		2	int	2	2	int		2	2		3		3	15	5
Business Applications (Commercial)	2				1				1		5						2		1	4	1		3		3	2		int	3	1		2	4	4	16	5

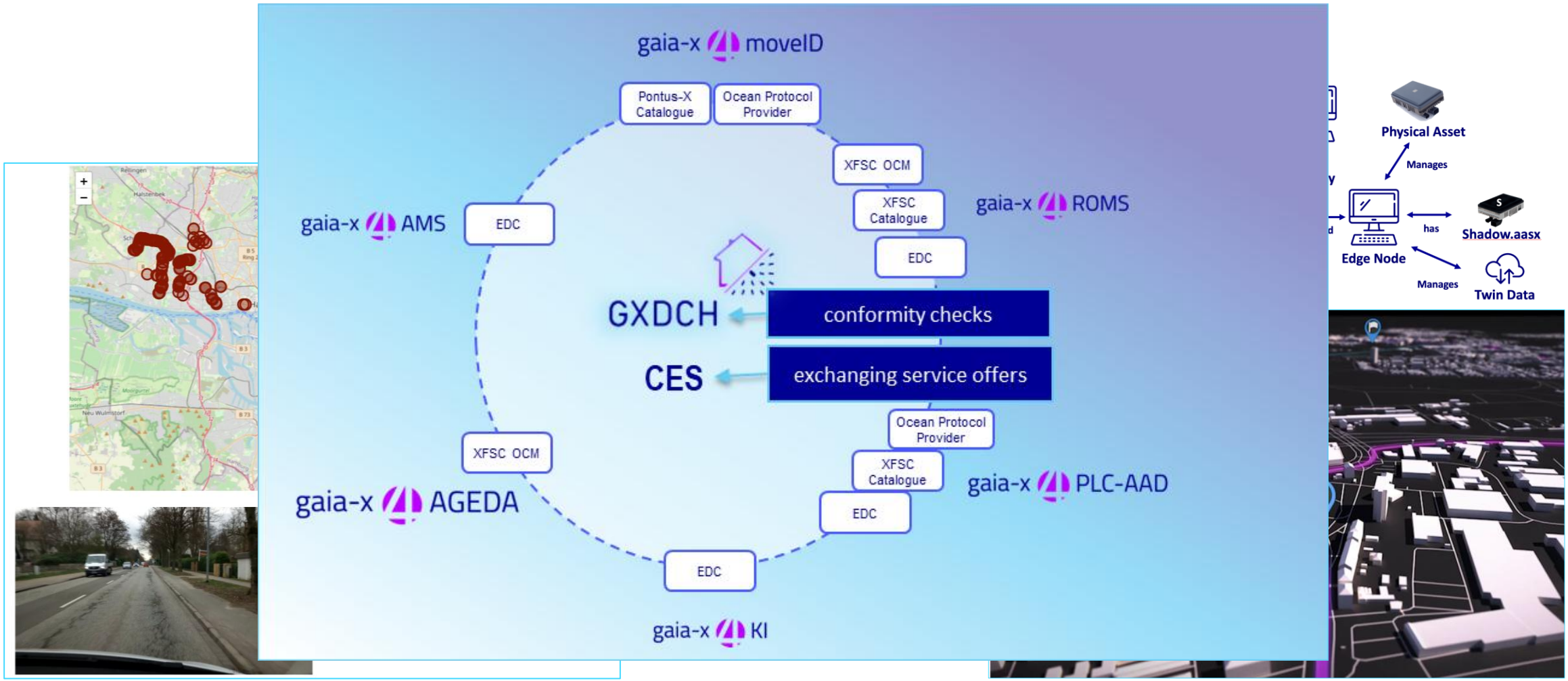
Closely connected to KI3

What we achieved



#GaiaX #MarketX25 #TechX25

What we achieved



#GaiaX #MarketX25 #TechX25

Thank you!

Steffen Turnbull | steffen.turnbull@dlr.de

In partnership with gaia-x Hub Spain

ICT TECHNOLOGY CENTER

Agriculture Ecosystem Panel

Moderator:
Francisca Rubio, General Manager, Gaia-X Hub Spain

15:15 – 16:00

In partnership with gaia-x Hub Spain

ICT TECHNOLOGY CENTER

gaia-x

- **Paco Conde Fernández,** President & Co-founder, ZERTIFIER
- **Roberto García**, Associate Professor, Deputy Vice-Rector for Knowledge Transfer, Universitat de Lleida
- **Aniket Bharatrao,** Universitat Politècnica de Catalunya
- **María del Mar Roldán**, Universidad de Málaga
- **Pablo Coca,** Director General, CTIC

RegenAg-X

Leading the Future of Regenerative Agriculture Through Secure Data Sharing

Agriculture Ecosystem Panel

Paco Conde, ZERTIFIER
President

In partnership with gaia-x Hub Spain

ICT TECHNOLOGY CENTER

Enabling Gaia-X with Web3-Based Data Sovereignty

gaia-x MEMBER

ZERTIFIER® BLOCKCHAIN CERTIFIED

gaia-x

➡️ **Founded** in **2021,** based in Cornellà del Terri (Catalonia)

➡️ **Mission:** Build **digital trust** ecosystems aligned with European values

➡️ **Focus areas:** Real-World Assets (RWA), Decentralized IDs, tokenized data flows

Empowering Gaia-X with Web3

Data Space Projects

REGENAG-X

- **Promote regenerative practices** through **data traceability** and reward mechanisms (monetization).
- **EU co-funded (EIT Food)** part of the **Tech4RegenAg Project**
- **Gaia-X Qualified Project**

DS4PED (Data Space for Positive Energy District)

- **7 European partners** and under the umbrella of **DS4SSCC**
- **Zerti Power**, our Web3-based platform that **certifies (certification of origin)** and tokenizes **surplus solar energy** to ensure that EV chargers operate on 100% green power
- Leveraging federated data spaces to advance **energy efficiency**, **mobility**, and sustainability.

Architecture

gaia-x MEMBER

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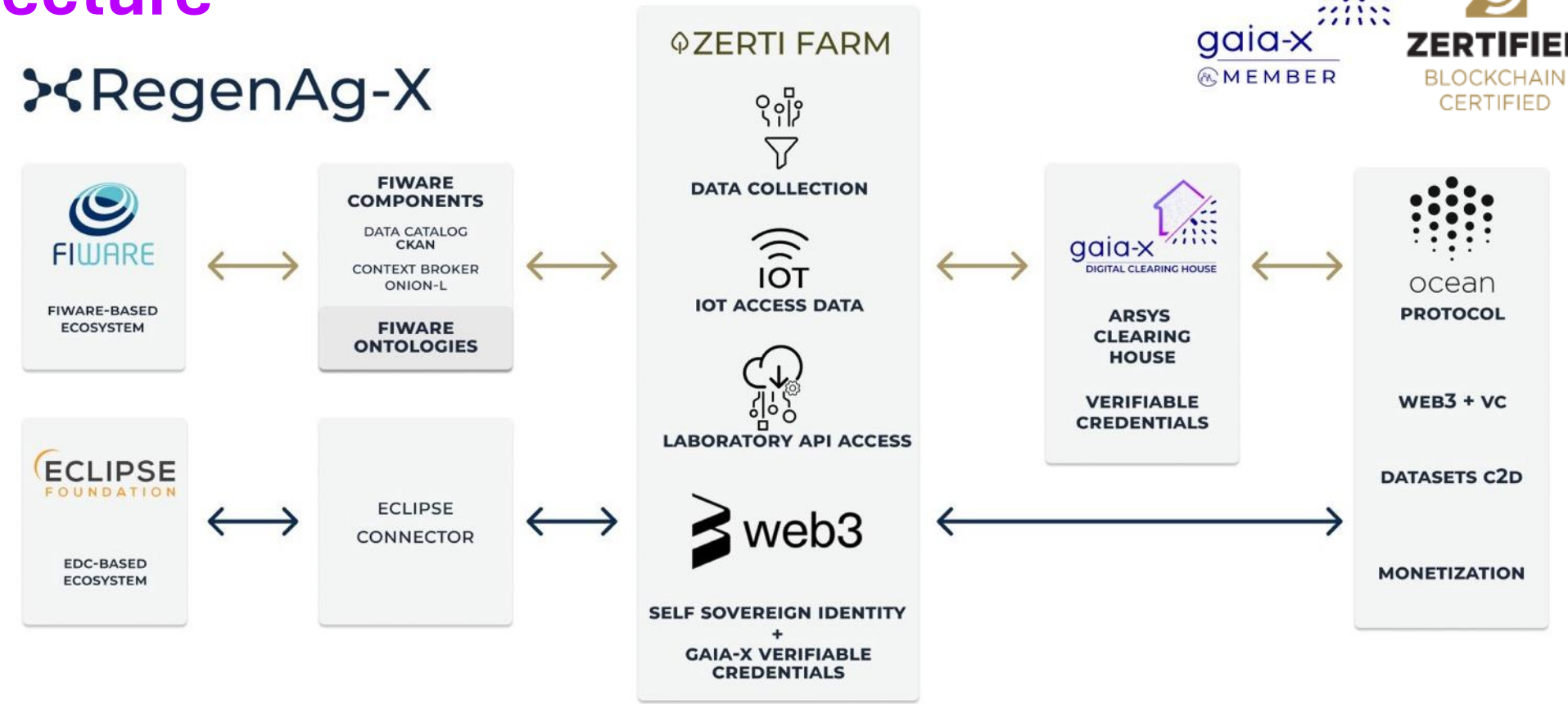

- **Data acquisition** via device IOT sensors and API lab tests access
- **Web3-native identity** (Metamask/Web3Auth) as root identity
- Identities **compliant with Gaia-X** standards
- **Ocean Protocol** as the single **federated marketplace**
- Seamless **publishing** and **monetization** through smart contracts

Zertifier is **fully aligned** with **Ocean Enterprise**'s mission to build decentralized, sovereign, and monetized data ecosystems

#GaiaX #MarketX25 #TechX25

RegenAg-X

Agrifood Data Space for regenerative Agriculture

Tech4RegenAg

ZERTIFIER®
BLOCKCHAIN
CERTIFIED

Thank you!

Paco Conde | paco.conde@zertifier.com

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ICT TECHNOLOGY CENTER

AgrospAI – Agrifood data space for sovereign data sharing and AI services

May 13th, 2025
15:15 – 16:00: Agriculture Ecosystem Panel

Roberto García,
Universitat de Lleida

AgrospAI team:
- Rosa Gil
- Zihan Chen
- Jordi García
- Christian López
- Claudia Colás
- Aleix Segura
- Pol Jaimejuan
- Joan Piñot

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ICT TECHNOLOGY CENTER

Spanish call for sectorial data spaces

AgrospAI
Agri-food data space demonstrator for sovereign data sharing and Artificial Intelligence services

Jan'25 – Jun'26

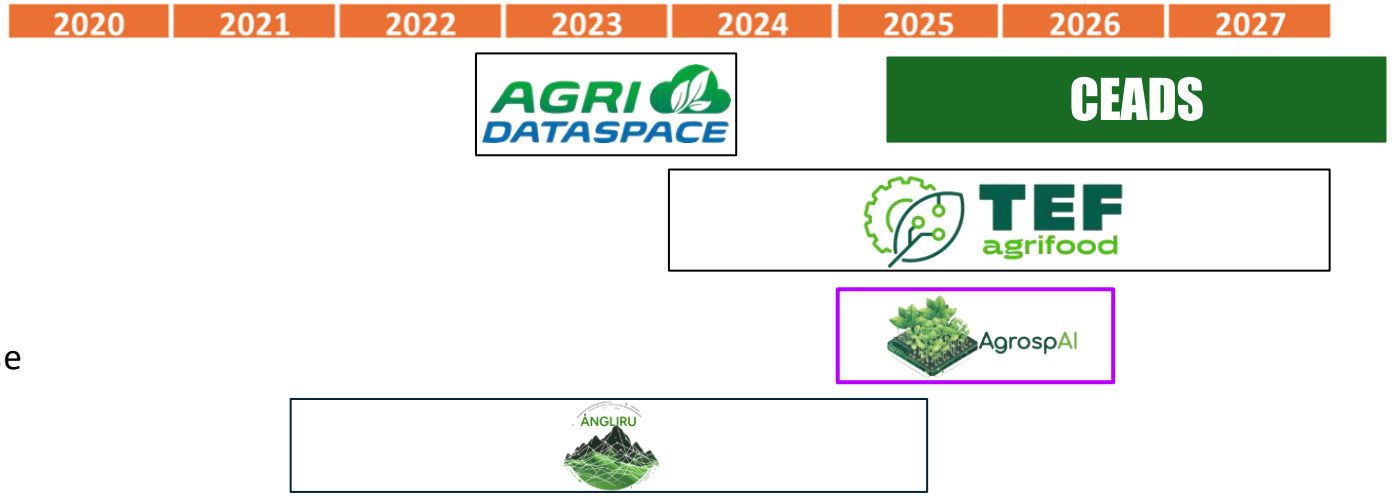
750K €

6 consultants

For participant onboarding and use case deployment

Sovereignty by design

Guarantee control on sensible and personal data



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MINISTERIO PARA LA TRANSFORMACIÓN DIGITAL Y DE LA FUNCIÓN PÚBLICA
SECRETARÍA DE ESTADO DE DIGITALIZACIÓN E INTELIGENCIA ARTIFICIAL
Plan de Recuperación, Transformación y Resiliencia

AgrospAI

gaia-x

Initial AgrospAI ecosystem, and growing...

- Data providers:
  - i+Porc — Spanish pig sector cluster
  - FEMAC — Catalonian agriculture machinery manufacturers
  - Plant Health Defence Associations of Catalonia
- Data processing and tech providers:
  - ZERTIFIER® BLOCKCHAIN CERTIFIED
  - LEITAT managing technologies
  - GrupoTragsa
  - Blockchain @UBC
- Compute infrastructure provider:
  - arsys
- Pontus-X ecosystem provider:
  - deltaDAO
- Federated data spaces:
  - TEF agrifood
  - PSNC

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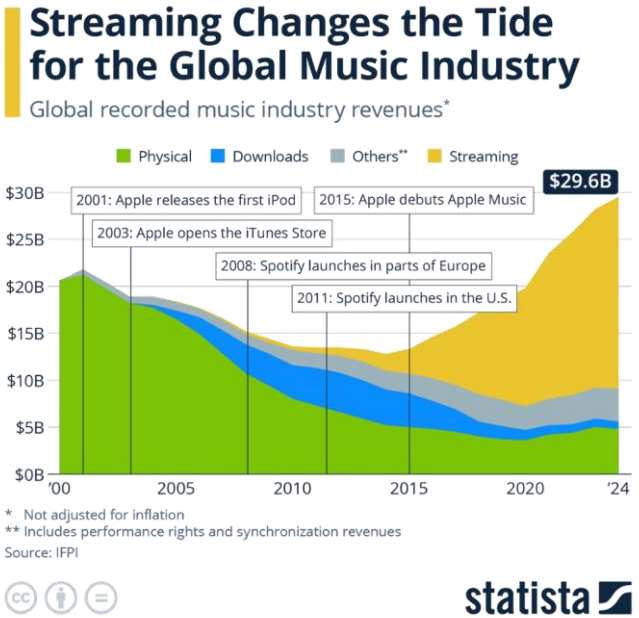
AgrospAI

How to motivate data sharing?

1. Data **monetization** (tokenization) as an **incentive**
2. Trustful environment for data sharing without loosing their **control**
   - The "tragedy" of the digital, so **easy** to copy and distribute...
     - **Example**: digital music, Digital Rights Management (DRM),... and "**streaming**"
   - For data... **Data Sovereignty by Design**?



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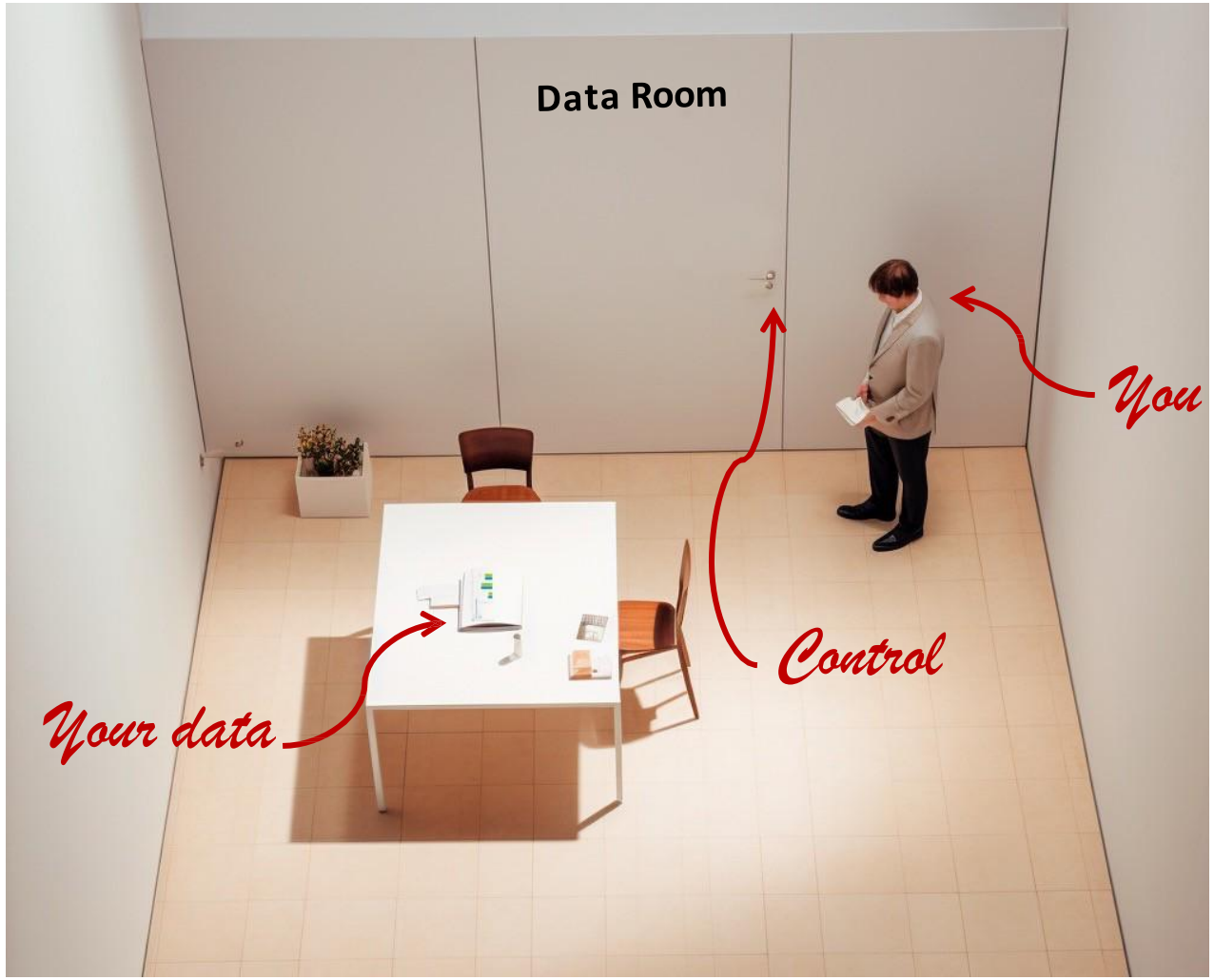
Data Self-Sovereignty by Design

- **Your data**:
  - **Never** “leaves the room”
- **You**:
  - In **control** on who “enters” and what they “take out” with them

  - ✗ Full or partial copies
  - ✓ Aggregated data
  - ✓ AI trained models
  - ✗ Personal data
  - ...

daro1995_a_bird-view_of_the_inside_of_a_whole_room_without_wind_1b2e5c91-5513-471d-9673-6c6493a76c11



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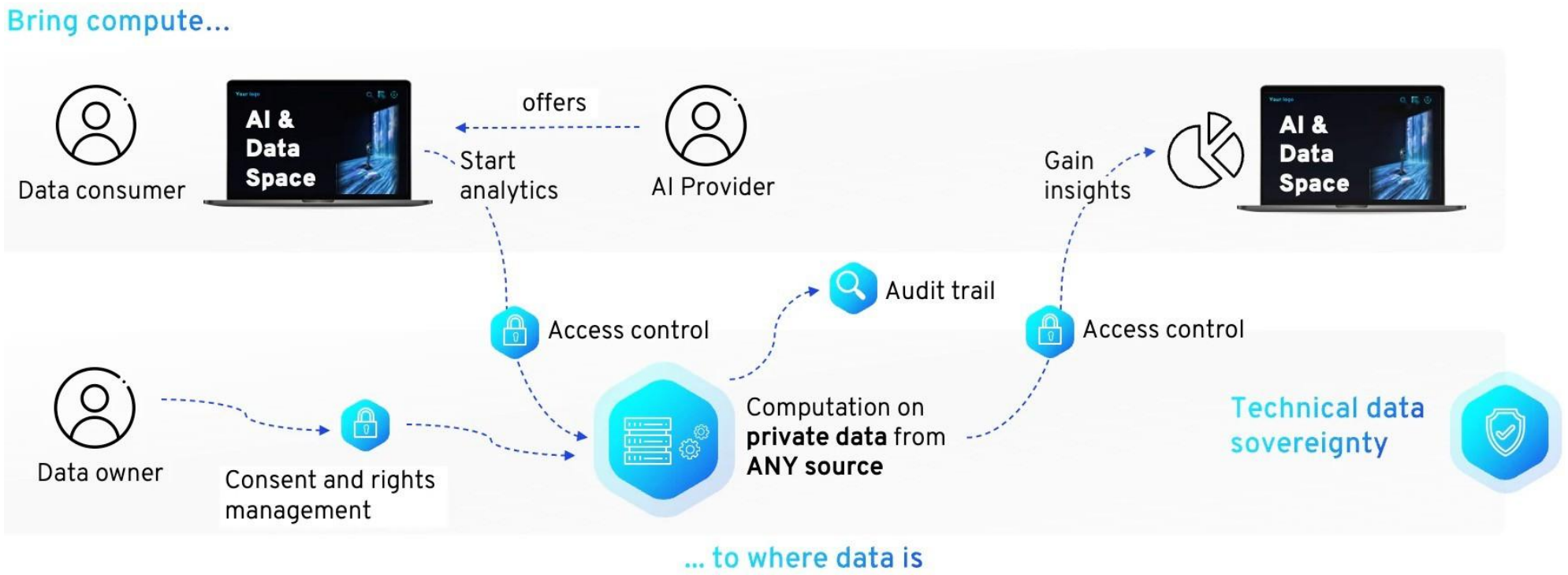
Digital “Data Rooms”: Compute-to-Data



Source: deltaDAO

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Pontus-X Ecosystem: Sustainable Business Models

Settle transactions instantly in Euro. Pay per use and subscription models for data, AI applications and infrastructure.

Curated and trusted data

Applica0ons , & AI models

Infrastructure Resources

	DATASET	5 EUROe for 1 hour
+	COMMUNITY FEE	0.01 EUROe
+	ALGORITHM	10 EUROe for 1 day
+	COMMUNITY FEE	0.02 EUROe
+	INFRASTRUCTURE RESOURCES	0.998 EUROe for 600 seconds
=		16.028 EUROe
&	CO2 COMPENSATION	0.25 EUROe

Source: deltaDAO

AI & Software Owners
Access data inaccessible before for training & sell high quality so>ware on demand

Data Providers
Curate, provide, mone0ze siloed data & gain and offer insights on valuable data

AI, Data & Infrastructure Markets

Control

IP – and privacy preserving

Trustless/ self-verifying

Infrastructure & Service Providers
Provide execution environments, cloud services, and more.

Consumers
Consume data products off the shelf.

Ecosystem & Federa<on Service Providers and Developers

#GaiaX #MarketX25 #TechX25

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Plan de Recuperación, Transformación y Resiliencia

Agri-food Data Space Demonstrator for Sovereign Data-Sharing and Artificial Intelligence Services

powered by gaia-x

AI-based Animal Well-being Assessment without Images Leakage

COMPUTE | ALGORITHM | CVC-SEG-T

Image Recognition and Tracking for Animal Well-being Monitoring

Universitat de ...

A computer vision service developed by the Centre de Visió per Computador (CVC) performing automatic image segmentation and tracking to identify and monitor pig movements in the input se...

1

4 sales

Pontus-X Devnet

COMPUTE | DATASET | CEP-PEN-I

Pig pen images sequence for animal well-being assessment

Centre d'Estudi...

A sequence of images from video surveillance of one of the pens in the Centre of Swine Studies of Catalonia (CEP), an experimental pig farm managed by a consortium made up of the Diputació de Ll...

2,5

4 sales

Pontus-X Devnet

Precision Pig Feeding Semantic Data Integration and Sovereign Data Pooling

COMPUTE | ALGORITHM | CEP-MP

CEP's CSV Data Mapper and Semantic Data Pooler

Universitat de ...

This algorithm supports the "Pay-as-you-go" approach when sharing data through a data space. Instead of requiring that publish...

Free

2 sales

Pontus-X Devnet

DOWNLOAD | ALGORITHM | UDL-EDA

Exploratory Data Analysis

Universitat de ...

Generate an Exploratory Data Analysis (EDA) report for the input tabular data. The input data is loaded using pandas and then the E...

0,1 EUROe

17 sales

Pontus-X Devnet

COMPUTE | DATASET | CEP-FEED

CEP - Automatic Pig Feeding - 2021 S1 - 982091062894496

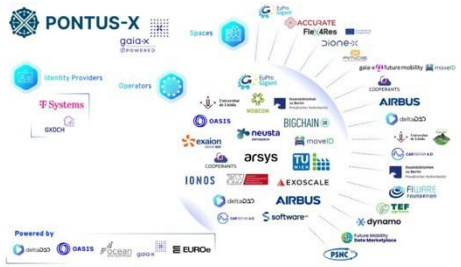
Centre d'Estudi...

Automatic pig feeding data collected at the (Centre of Swine Studies of Catalonia), a consortium made up of the Diputació de Lleida, the ...

1 EUROe

5 sales

Pontus-X Devnet



The Gaia-X Powered Ecosystem on DLT

The principle of decentralization is a perfect fit for **Distributed Ledger Technology**. Ocean Enterprise is a fully open-source technology stack, leveraging DLT and decentralization, aiming to give control back to the owners of data services. Pontus-X is built on top of Oasis Network showcasing how future industrial digital service ecosystems work today.

LEARN MORE ↗

Data Sovereignty by Design

One core concept of AgrospAI is the **Compute-to-Data (CtD)** approach. Compute-to-Data is the functionality that solves the current trade-off between the benefits of using private data and the risks of exposing it. It allows data consumers to run compute jobs on private data while the data stays on-premise with the data provider, who retains control.

LEARN MORE ↗

https://portal.agrospai.udl.cat

AgrospAI

Use cases:

Computer Vision for Animal Well-being

Pig pen images sequence for animal well-being assessment

GEN-X Testnet

Owned by 0x38f8...840d
Accessed with GXAT

COMPUTE | DATASET | Published about 2 months ago

A sequence of images from video surveillance of one of the pens in the Centre of Swine Studies of Catalonia (CEP), an experimental pig farm managed by a consortium made up of the Diputació de Lleida, the Regional Council of La Noguera, the Torrelameu Town Hall and the Universitat de Lleida.

The images can be used by animal well-being assessment algorithms available from the compute section on the right. These algorithms perform automatic image segmentation and tracking to identify and track pig movements in the sequence of images. Additionally, it is also possible to monitor the visits of pigs to defined areas of interest like the automatic feeding machine or the waterer bowl. This allows for the automatic generation of metrics that can be used for animal well-being assessment.

Data sovereignty is guaranteed by design through a Data Room implemented using "Compute-to-Data". The algorithm visits the image sequence inside the data room, where they are analysed, and just the computed metrics leave the room. Consequ :opied to the data room and destroyec

The available animal well ıces of images:

Movement metric pe

Example:
{
"0": 2438.47332765506
"1": 533.901713362219
"2": 1411.65804681223
"3": 1481.51841068206
"4": 1863.63840709936
"5": 2910.04105534933
"6": 665.621168130787
"7": 702.4427292321657,
"8": 1212.4275062016434,
"9": 1331.9712414388393
}

Time spent on the automatic feeding machine area per pig

Example:
{
"0": { "frames": 5, "time": 0.2 },
"1": { "frames": 0, "time": 0 },
"2": { "frames": 0, "time": 0 },
"3": { "frames": 0, "time": 0 },
"4": { "frames": 1, "time": 0.04 },
"5": { "frames": 8, "time": 0.32 },
"6": { "frames": 0, "time": 0 },
"7": { "frames": 0, "time": 0 },
"8": { "frames": 0, "time": 0 },
"9": { "frames": 12, "time": 0.48 }
}

Job finished

Select a Compute Environment

UdL Data Room
CPU | GPU | max duration: 1 hour
0.01 OCEAN / minute

Select an algorithm to start a compute job

Search by title, datatoken, or DID...

CIDAI pig farm Mask R-CNN segmentation & Tracking (CUDA) (UDL)
GXAT | did:op:5375665bed1605ab035e0fcacf3a440e740...
Free

You will pay 0.6 OCEAN

ORDER COMPUTE JOB

You bought this dataset already allowing you to use it without paying again. You already bought the selected algorithm, allowing you to use it without paying again. In order to start the job you also need to pay the fees for renting the c2d resources. Please note that network gas fees still apply, even when using free assets.

I agree to the Terms and Conditions

Access allowed

Your Compute Jobs HIDE

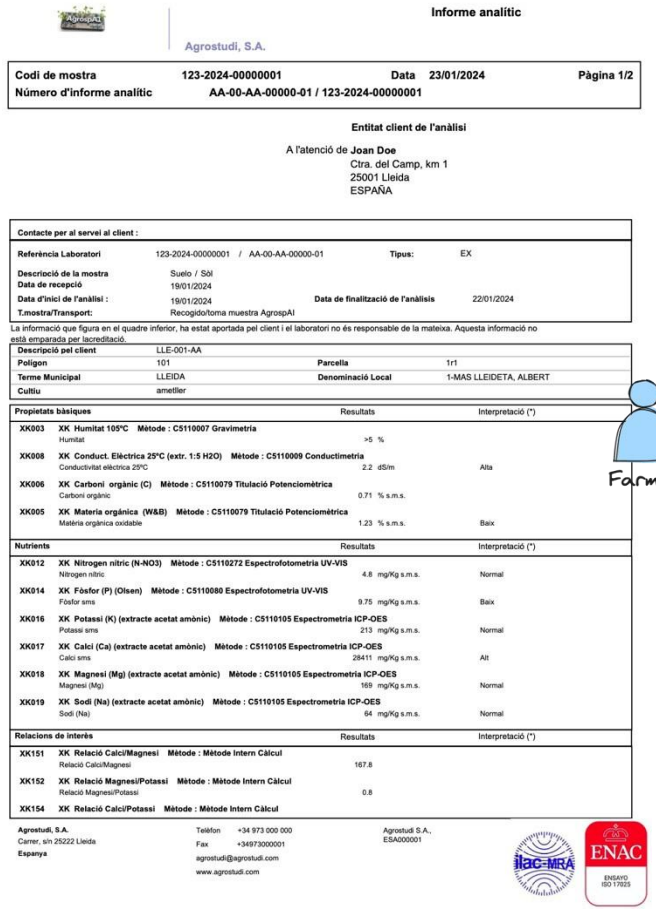
STATUS	ACTIONS	FINISHED
JOB FINISHED	SHOW DETAILS	about 2 months ago
DATA PROVISIONING ...	SHOW DETAILS	about 2 months ago

- **Compute** animal well-being metrics **without revealing** farm **images**
  - Images and algorithm loaded into the **data room**
  - **Just metrics** can be **downloaded**
- **Monetization**:
  - data, algorithm and computation infrastructure

AgrospAI

Use cases:

GenAI for Soil Analysis Report Data Extraction & Integration



Informe analític

Agrostudi, S.A.

Codi de mostra	123-2024-00000001	Data 23/01/2024	Pàgina 1/2
Número d'informe analític	AA-00-AA-00000-01 / 123-2024-00000001		

Entitat client de l'anàlisi

A l'atenció de **Joan Doe**
Ctra. del Camp, km 1
25001 Lleida
ESPAÑA

Contacte per al servei al client :

Referència Laboratori	123-2024-00000001 / AA-00-AA-00000-01	Tipus:	EX
Descripció de la mostra	Suelo / Sòl		
Data de recepció	19/01/2024		
Data d'inici de l'anàlisi :	19/01/2024	Data de finalització de l'anàlisis	22/01/2024
T.mostra/Transport:	Recogido/toma muestra AgrospAI		

La informació que figura en el quadre inferior, ha estat aportada pel client i el laboratori no és responsable de la mateixa. Aquesta informació no està emparada per lacreditació.

Descripció pel client	LLE-001-AA		
Polígon	101	Parcella	1r1
Terme Municipal	LLEIDA	Denominació Local	1-MAS LLEIDETA, ALBERT
Cultiu	ametller		

Propietats bàsiques	Resultats	Interpretació (*)
XK003 XK Humitat 105ºC Mètode : C5110007 Gravimetria Humitat	>5 %	
XK008 XK Conduct. Elèctrica 25ºC (extr. 1:5 H2O) Mètode : C5110009 Conductimetria Conductivitat elèctrica 25ºC	2.2 dS/m	Alta
XK006 XK Carboni orgànic (C) Mètode : C5110079 Titulació Potenciomètrica Carboni orgànic	0.71 % s.m.s.	
XK005 XK Materia orgànica (W&B) Mètode : C5110079 Titulació Potenciomètrica Matèria orgànica oxidable	1.23 % s.m.s.	Baix

Nutrients	Resultats	Interpretació (*)
XK012 XK Nitrogen nitric (N-NO3) Mètode : C5110272 Espectrofotometria UV-VIS Nitrogen nitric	4.8 mg/Kg s.m.s.	Normal
XK014 XK Fòsfor (P) (Olsen) Mètode : C5110080 Espectrofotometria UV-VIS Fòsfor sms	9.75 mg/Kg s.m.s.	Baix
XK016 XK Potassi (K) (extracte acetat amònic) Mètode : C5110105 Espectrometria ICP-OES Potassi sms	213 mg/Kg s.m.s.	Normal
XK017 XK Calci (Ca) (extracte acetat amònic) Mètode : C5110105 Espectrometria ICP-OES Calci sms	28411 mg/Kg s.m.s.	Alt
XK018 XK Magnesi (Mg) (extracte acetat amònic) Mètode : C5110105 Espectrometria ICP-OES Magnesi (Mg)	169 mg/Kg s.m.s.	Normal
XK019 XK Sodi (Na) (extracte acetat amònic) Mètode : C5110105 Espectrometria ICP-OES Sodi (Na)	64 mg/Kg s.m.s.	Normal

Relacions de interès	Resultats	Interpretació (*)
XK151 XK Relació Calci/Magnesi Mètode : Mètode Intern Càlcul Relació Calci/Magnesi	167.8	
XK152 XK Relació Magnesi/Potassi Mètode : Mètode Intern Càlcul Relació Magnesi/Potassi	0.8	
XK154 XK Relació Calci/Potassi Mètode : Mètode Intern Càlcul		

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Espanya

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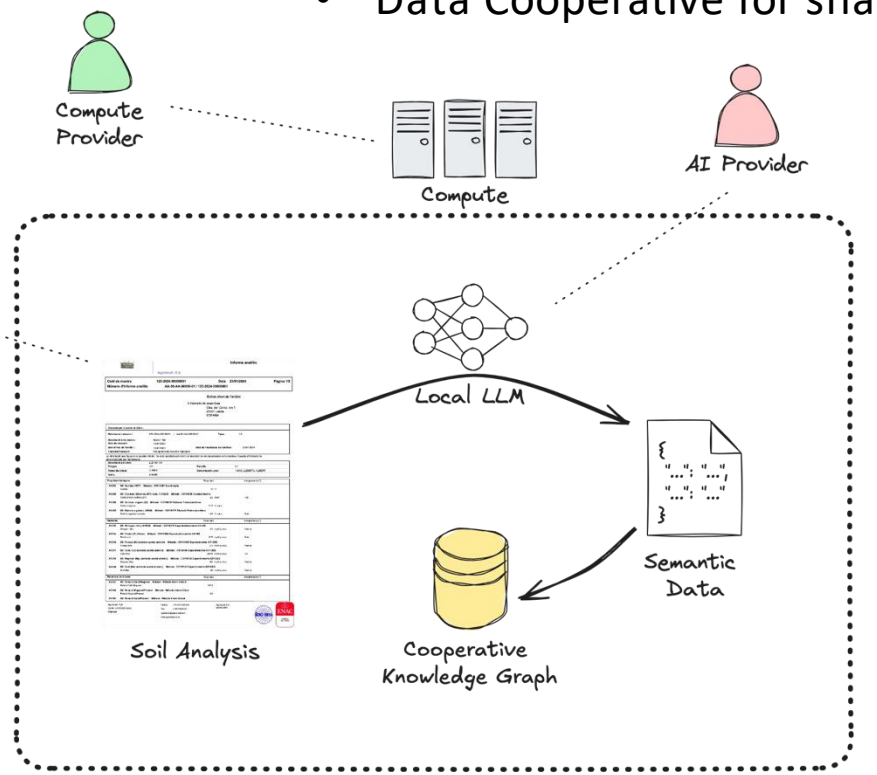
www.agrostudi.com

Agrostudi S.A.,
ESA000001

- Local LLM for sensitive and private data processing
- Sovereign data storage and integration
  - Data Cooperative for shared ownership




```
@prefix saref: <https://saref.etsi.org/core/> .
@prefix s4agri: <https://saref.etsi.org/saref4agri/> .
@prefix om: <http://www.ontology-of-units-of-measure.org/resource/om-2/> .

ex:SoilSample_0123456_1 a s4agri:Soil .

ex:Measure_0123456_1_Humidity a saref:Measurement ;
  saref:isMeasurementOf ex:SoilSample_0123456_1 ;
  saref:hasValue "1.160"^^xsd:float ;
  saref:isMeasuredIn om:percent ;
  saref:relatesToProperty ex:SoilHumidity .
```

Thank you!

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More details | https://agrospai.udl.cat

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- Jordi García
- Christian López
- Claudia Colás
- Aleix Segura
- Pol Jaimejuan
- Joan Piñot

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ICT TECHNOLOGY CENTER

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Financiado por la Unión Europea NextGenerationEU
GOBIERNO DE ESPAÑA MINISTERIO DE ASUNTOS ECONÓMICOS Y TRANSFORMACIÓN DIGITAL
España | digital 2026
Plan de Recuperación, Transformación y Resiliencia

Project funded by the Secretary of State for Digitalization and Artificial Intelligence and the European Union.

agrixels

Agricultural information standard oriented to Artificial Intelligence based services for agri-food use cases.

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IDEAI

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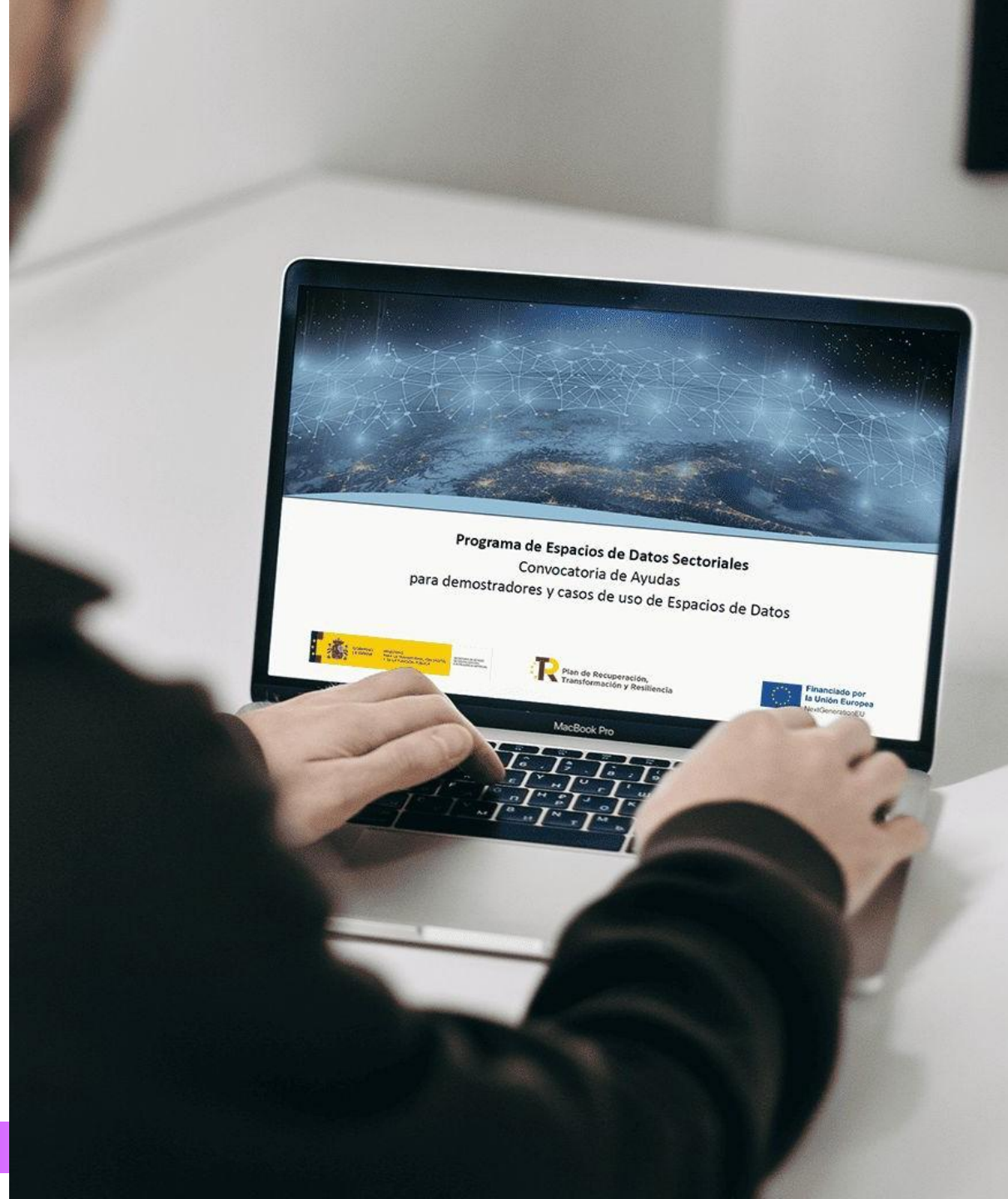

Who is participating in Agrixels?

Agrixels promotes the **public-private collaboration**, involving administrations, companies, clusters, technology centers, agricultural cooperatives and central markets, ensuring broad representation and sustainability of the project.

Agrixels is a UPC project that develops an agricultural information standard to improve the interoperability and use of data in the agri-food sector.

Structures and standardizes dispersed data, facilitating its analysis with AI

Integrates multiple sources, unifying information from companies, administrations and citizen science.

Scalable and adaptable, incorporating new challenges, actors and technologies.

USE CASE 1

Climate sustainability in outdoor crops

Objective

To assess the impact **of heat and water stress** on crops and improve agricultural planning, considering **consumption preferences** and changes in consumer habits.

Current problems

Climate predictions inaccurate and not locally focused

Impact of **climate stress** on production

Disconnection between production and demand

What can improve it?

Climate models adjusted to each agricultural zone

Adaptation strategies to improve yield and quality.

Data analysis for **aligning supply and market**

USE CASE 2

Environmental Impact of Farms

Objective

To quantify and reduce the **carbon footprint** on farms, promoting **sustainable practices** and facilitating access to the **carbon market.**

Current issues

Impact of **climate change** on soil fertility

Agriculture contributes to GHG emissions

Lack of incentives for sustainable practices

What can improve it?

Real-time measurement of temperature, humidity and carbon.

Monitoring of practices that reduce and fix carbon

Accurate data to access **economic benefits**

UPCxels

Agri-food data space complemented with multi-sector data and AI-based data analytics services

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Aniket Satbhai
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@upc.edu

Team: 14 new contracts and 4 UPC faculty members

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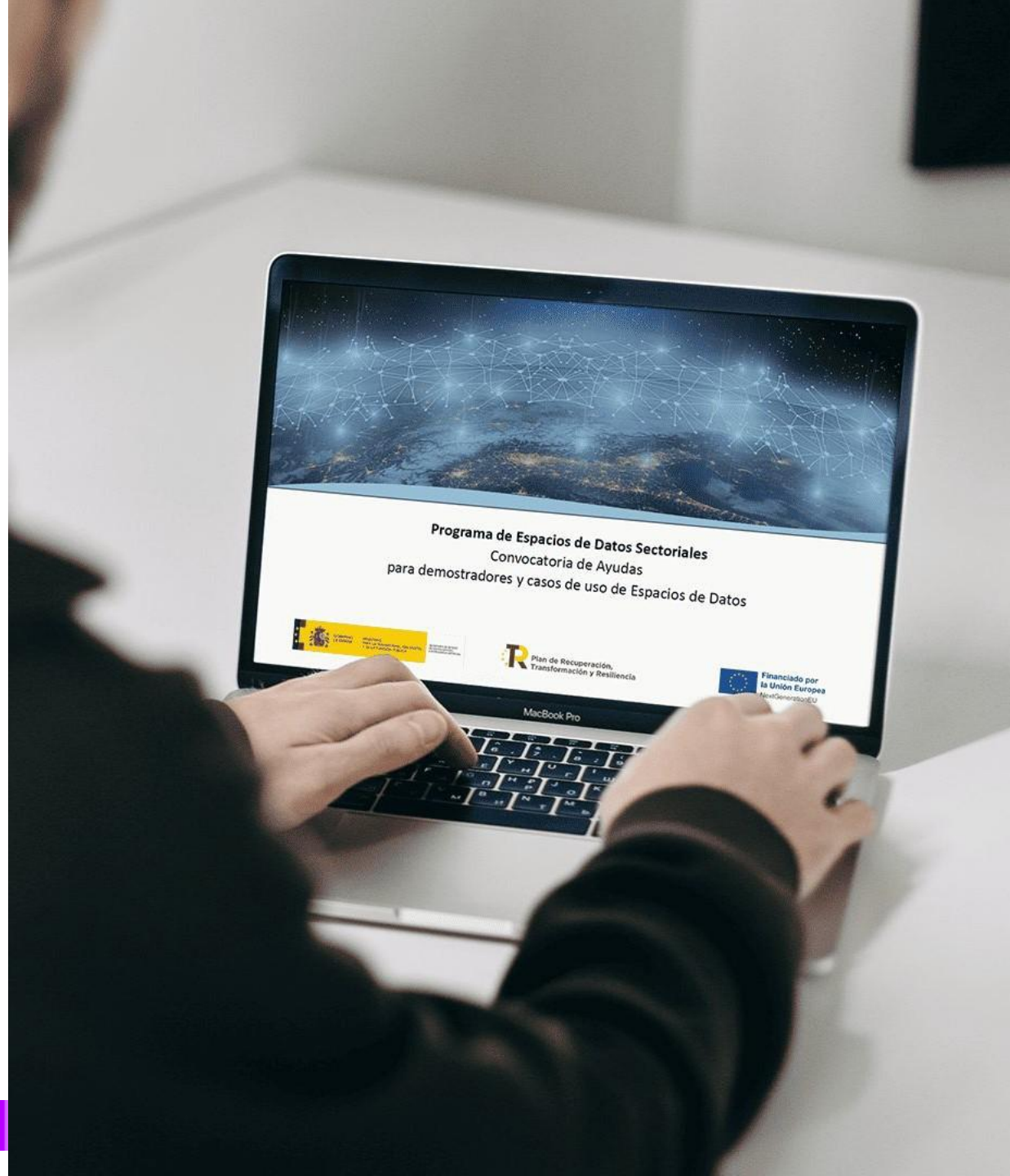
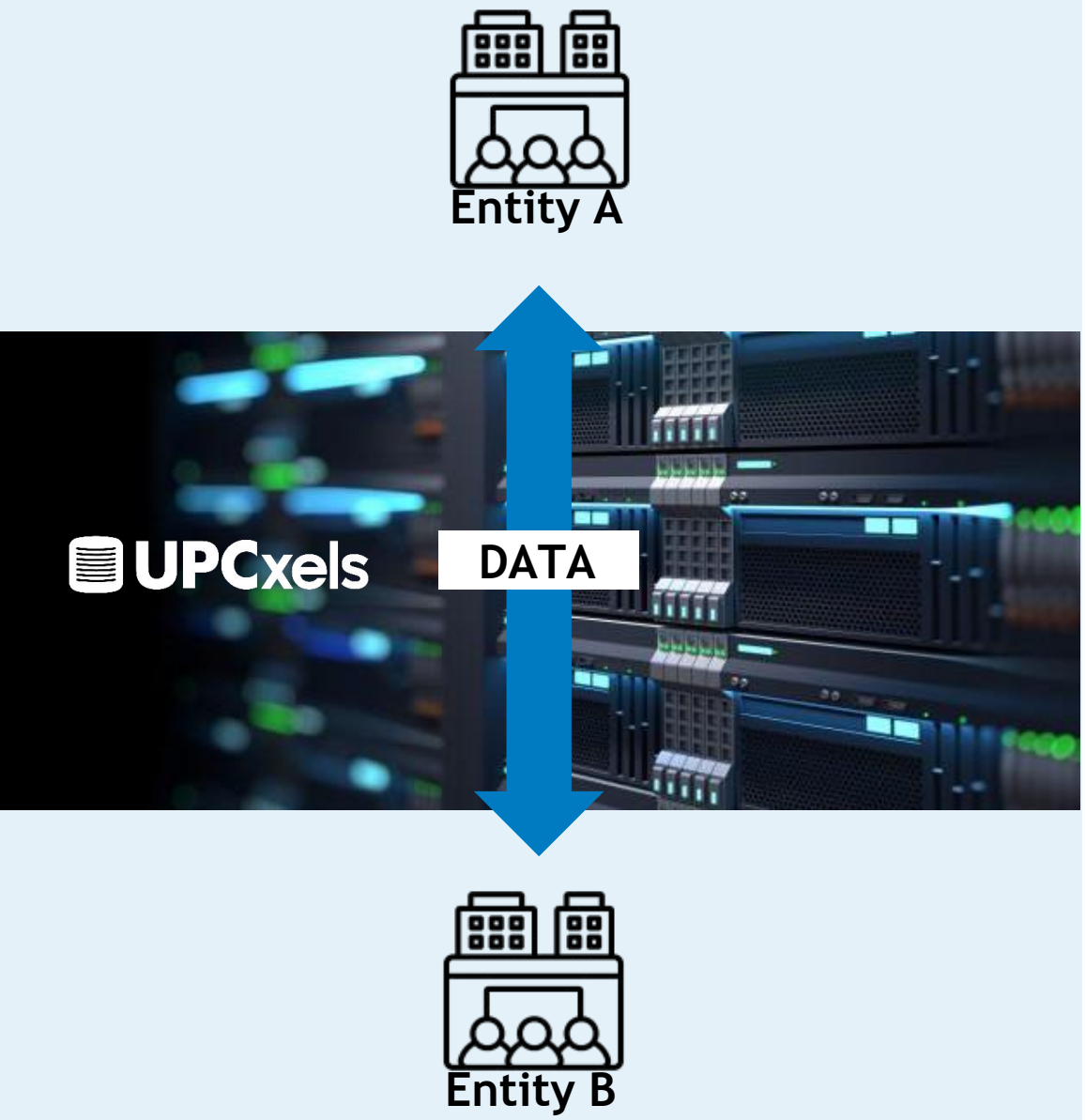




UPCxels

Demonstrator center

UPCxels, managed by the Universitat Politècnica de Catalunya, is a **platform for the sharing, access and analysis of agri-food data** with integrated AI.

It facilitates collaboration between farmers, administrations, companies and researchers.

Demonstration space to validate AI technologies and models in agriculture

Secure exchange of data, ensuring transparency and control over its use

2.1 Architecture: designed based on business needs

1

We listen to companies

We analyze:

- Technological capabilities
- Limitations
- Needs

2

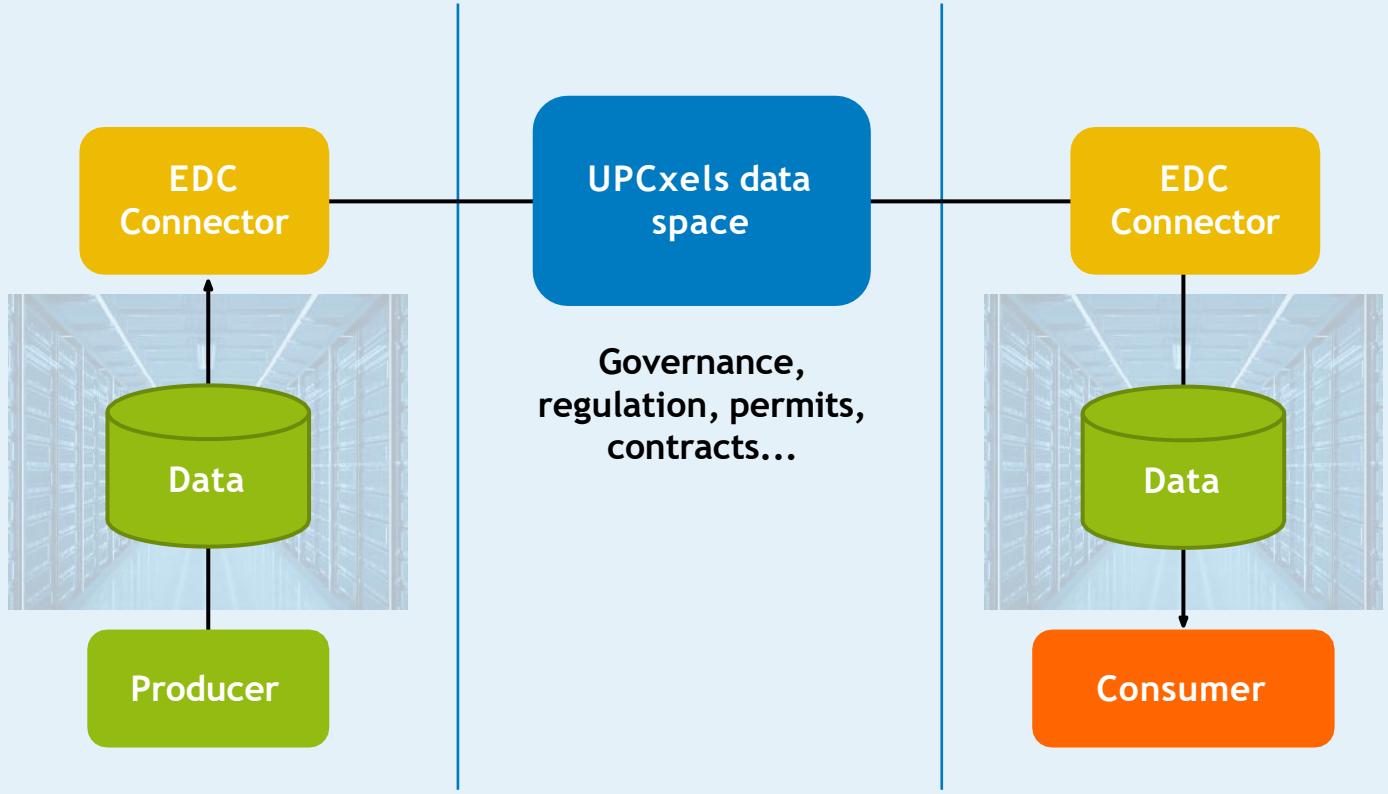
We design a flexible architecture:
UPCxels evolves to offer customized solutions

Software Architecture

- **Connector -** Eclipse Data Space
- **Datalake -** Apache Hudi
- **Credentials:** Gaia-X and DID:WEB

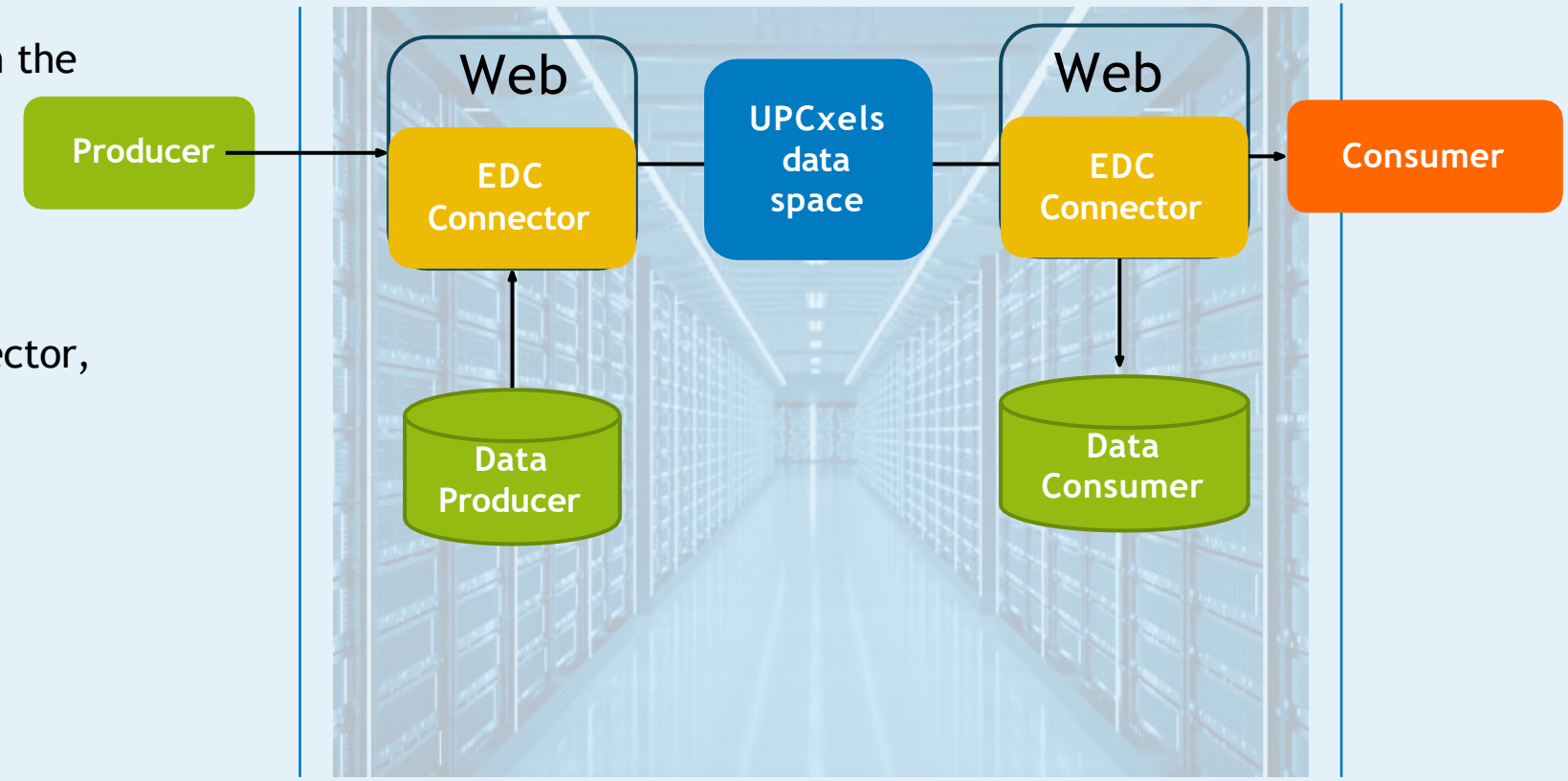
Limitations:

- Lack of technological capacity to run a connector on their infrastructure.
- Lack of interest: they do not want to take on this management.
- A copy of the data ends up at the consumer.



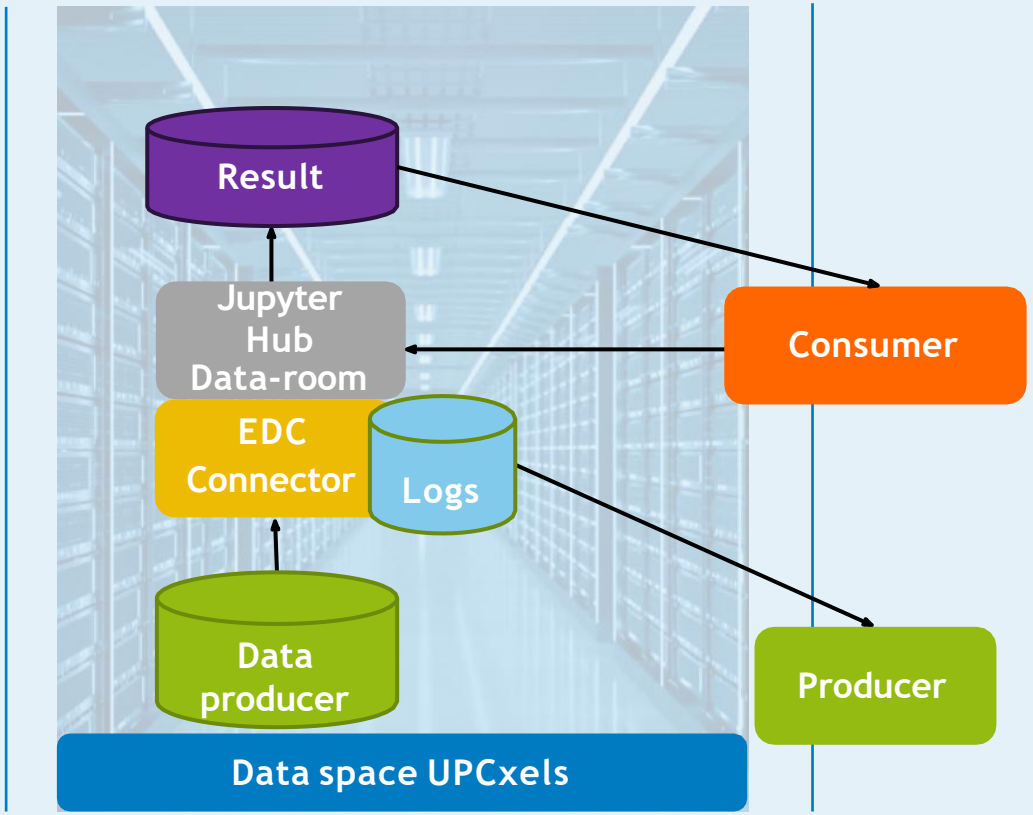
Software Architecture: Connector-as-a-service

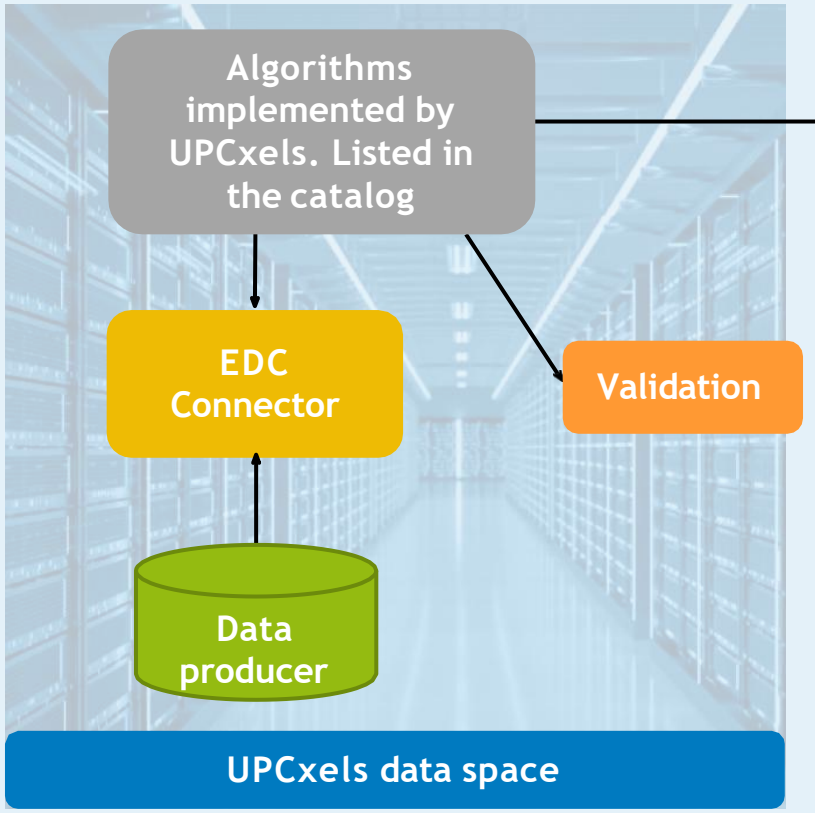
- The data and the EDC connector reside in the UPCxels infrastructure.
- Each company will have its own replicated infrastructure.
- Developing a 'web wrapper' for the connector, which will allow companies to:
  - Configure access policies.
  - Consult activity logs.
  - Upload data.
  - Delete data or uninstall the connector.
- This is NOT the ideal mode.



Producer and consumer operate within the data space

Software Architecture: Where are the algorithms executed?





** The producer of the data can also be the consumer of the result.*

The algorithm is validated by UPCxels.

2.2 Infrastructure

Physical hosting: **Datacenter UPC**

ISO 9001 and ISO/IEC 27001:2013 certified.

Open-source community software:

Eclipse, Gaia-X

All software used in the data space will be **open-source and public.**

2.3. Interoperability

What type of interoperability do we consider?

- Framework defined by **GAIA-X**
- We will generate **Verifiable Credentials**
- Standard Data Models
  - **ED Data Model** specified in the project **DEMETER**
- We use the **Eclipse catalog**
- We use the **Eclipse Data Space Connector**
- Identity based on Distributed Identity DID using the **DID:WEB method.**
  - Management of decentralized web identifiers
- As a trust framework we will use **W3C Verifiable Credentials**
  - Compatible with GAIA-X

What security and transparency do we provide to companies with UPCxels?

UPCxels guarantees an environment where **all actions and agreements are recorded**, ensuring traceability, privacy and authorized access.

Digital contracts formalize data sharing.

Legal registry documents information management

Advanced encryption protects data from unauthorized access.

gaia-x
DIGITAL CLEARING HOUSE

External validation (Gaia-X Clearinghouse)

EVENT REGISTRATION

User: Company A

FIELD-1 data has been **shared** with company B on date DD/MM/YYYY

Company B has **accessed** to the data on DD/MM/YYYY HH:MM

You have **expired** the permission to company B for FIELD-1 data.

FIELD-1 data has been **deleted** from the platform on DD/MM/YYYY date

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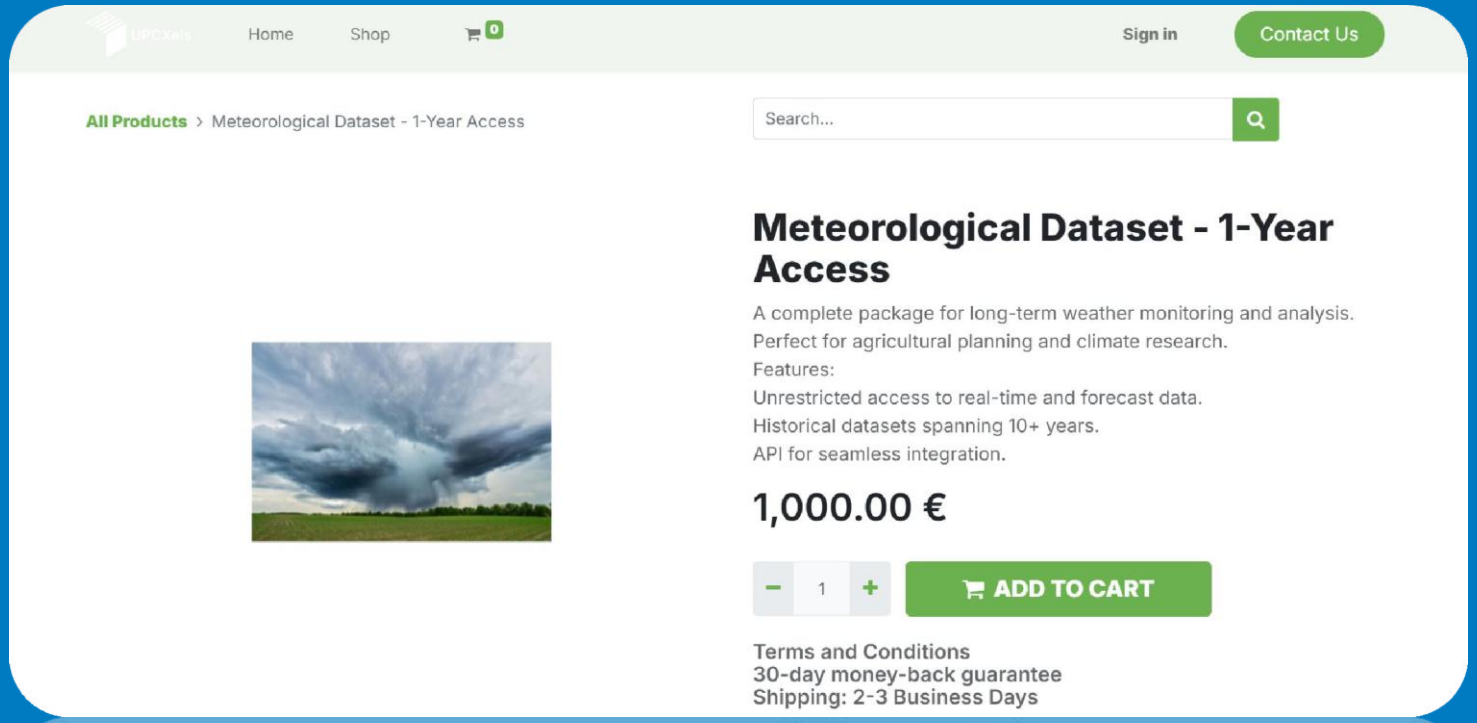
4. UPCxels Governance Framework

What is it?

- ✓ **Management and coordination model** of the UPCxels data space.
- ✓ It guarantees a secure, ethical and efficient **exchange** of data between organizations.

Clear rules	Access, use and traceability of data
Participation agreements	Definition of roles, responsibilities and rights of participants
Based on international and European European standards	IDSA Rulebook, Gaia-X guidelines, DSSC and Data Office
Regulatory compliance	RGPD, Data Act, Data Governance Act...
Data sovereignty	Core Principle
Data policies	Regulation of who has access and under what conditions
Governance Committee	Neutral and independent and without commercial interests

5. Marketplace: access, share and commercialize



Easily accessible online platform where users can **share, consult and market** data and services.

Data catalog public / private

Catalog of AI algorithms

Indicated:

- Access conditions
- Location data (Demonstrator, Company, Public Administration)
- Contact person

6. What impact does it have on companies, administrations and research?

Private companies	**Increased efficiency and profitability** thanks to access to strategic data.
Public administrations	Updated data for **to design evidence-based policies**, optimizing management and promoting sustainable models.
Research and innovation	**Promoting new technologies**, predictive models and optimization tools.

Data sharing opportunities

- **More accurate and agile decision making.**
- **Reduction of uncertainty** and greater response capacity.
- Creation of **new business models** and emerging markets.
- Promotion of the circular economy and the **commercialization of data.**
- A more competitive and innovative **ecosystem**.

Thank you!

Contact us at: upcxels.ideai@upc.edu

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Demonstration Center for the Agri-Food Data Space in Andalusia (EDAAn)

- **María del Mar Roldán García**, Associate Professor, Universidad de Málaga

In partnership with gaia-x Hub Spain

ICT TECHNOLOGY CENTER

Demostration Center

The Demonstration Center acts as a launchpad for developing data spaces and pilot projects in the agri-food sector in the Andalusia region.

Objectives

Boost engagement and raise awareness in the sector

Develop training and capacity-building tolos

Deploy a data space management platform for the agricultural sector

Validate technologies, run proof-of-concept tests, and offer an incubator for pilot projects

Use cases

01 | Water Stress

02 | Harvest Prediction

03 | Crop Monitoring: Pests and Diseases

04 | Detection of Groundwater Users

05 | Integrated Data Infrastructure

06 | CITRIDATA (UCO)

07 | FERTIDATA (HISPATEC)

ÁGORA Datalab

During the early stages of the incubator, the initial pilot projects will be led by the Demonstration Center through ÁGORA Datalab.

Capabilities	R+D+i
Curated catalog of relevant technologies	Scalable data processing solutions
Technical requirement assesstment	Cross-federation connectivity services
Support for proof-of-concept development	Semantic data integration and interoperability
Hands-on workshops on data spaces technologies	

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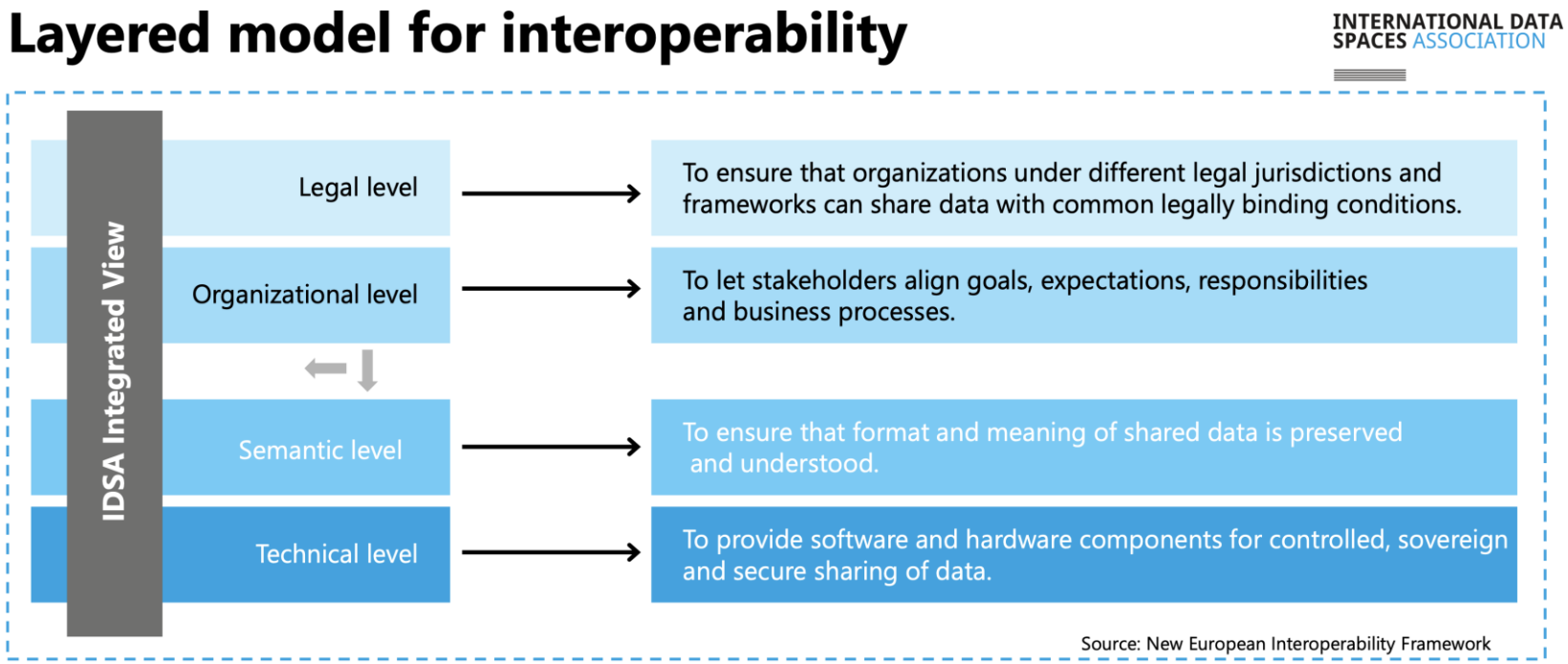
Model for interoperability

- The International Data Spaces Association (IDSA) implements the following four layers of interoperability:



Interoperability maturity

Less interoperable

More interoperable

Level	Technical layer	Semantic layer	Organizational layer	Legal layer
0	There is no common architecture or interoperable components in the Data Space.	No semantic alignment; data is interpreted locally without standardization.	No organizational coordination among Data Space participants.	No legal agreements specifically governing data exchange.
1	A Data Space is deployed based on existing reference architectures.	Shared data lacks formal or ontological descriptions.	Minimum participation rules exist for Data Space actors (e.g., entry criteria, exclusion grounds).	Each organization enforces its own legal terms, with no common framework regulating relationships within the Data Space.
2	All Data Space components implement the Data Space Protocol (DSP).	Controlled vocabularies aligned with the IDSA Information Model are used.	An internal organizational structure is defined, including technical, legal, and operational roles or committees.	Drafts of common legal principles are developed, inspired by initiatives such as IDSA, Gaia-X, and the Data Spaces Support Centre.
3	Verifiable Credentials (VCs) and Federated Identity are in place.	Ontologies are systematically applied to the data assets in the Data Catalog.	Governance indicators and mechanisms for continuous improvement are established.	Specific contract addenda are created, including common clauses for usage, reuse, security, etc.
4	The structure of Verifiable Credentials is aligned with Gaia-X.	Vocabularies and ontologies are aligned and shared across multiple Data Spaces.	The Data Space applies a shared governance framework, interoperable with other spaces.	The Data Space operates under a unified legal framework, accepted by all participants and aligned with relevant regulations (e.g., GDPR, Data Act, DAA).

Aldana Montes, J. F., & Benítez Hidalgo, A. (2025). *La escalera de la interoperabilidad en los espacios de datos* (IT-LCC-2025-01). ÁGORA Datalab. https://hdl.handle.net/10630/38530

Interoperability maturity

For the initial pilot on functional interoperability between Centers, the goal is to achieve at least Level 2 across all four layers.

Level	Technical layer	Semantic layer	Organizational layer	Legal layer
0	There is no common architecture or interoperable components in the Data Space.	No semantic alignment; data is interpreted locally without standardization.	No organizational coordination among Data Space participants.	No legal agreements specifically governing data exchange.
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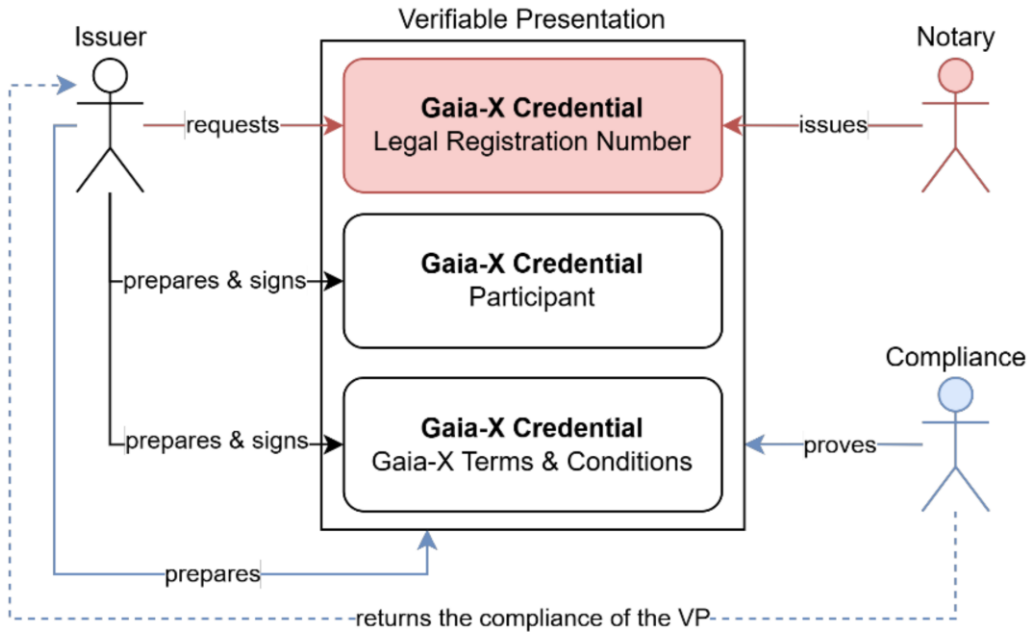
Gaia-X Trust Framework

To get a user or organization officially recognized as a Gaia-X participant…

- First, they need to generate and sign a set of Verifiable Credentials — think of these as digital proofs that confirm certain facts about them.
- Then, these credentials are bundled together into what's called a Verifiable Presentation.
- Finally, this package is sent to the Gaia-X Digital Clearing House (GX-DCH) where it goes through a final validation step.



Compliance Gaia-X Trust Framework (Tagus)

Thank you!

María del Mar Roldán García |

mgarcia@uma.es

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ICT TECHNOLOGY CENTER

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CTIC RuralTech

gaia-x

DataSpace Demonstrator

Agri-food

Agriculture Ecosystem Panel

Pablo Coca
Director General
CTIC Centro Tecnológico

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ICT TECHNOLOGY CENTER

Promoter seresco

- IT company established in **1969**
- Leader in the Spanish **ICT Sector**
- Workcenters in several Spanish cities (Oviedo, Vigo, Madrid and Barcelona)
- More than 1000 employees
- Listed on the Spanish **BME Growth**
- Specialized in the área of Agri-Food with dedicated tools
- **GAIA-X Spanish Hub** Member

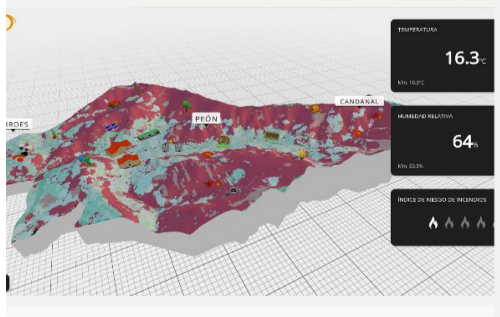
GOBIERNO DE ESPAÑA
MINISTERIO DE ASUNTOS ECONÓMICOS Y TRANSFORMACIÓN DIGITAL
SECRETARÍA DE ESTADO DE DIGITALIZACIÓN E INTELIGENCIA ARTIFICIAL
DIRECCIÓN GENERAL DE DIGITALIZACIÓN E INTELIGENCIA ARTIFICIAL

Plan de Recuperación, Transformación y Resiliencia

Financiado por la Unión Europea
NextGenerationEU

gaia-x

CTICRuralTech



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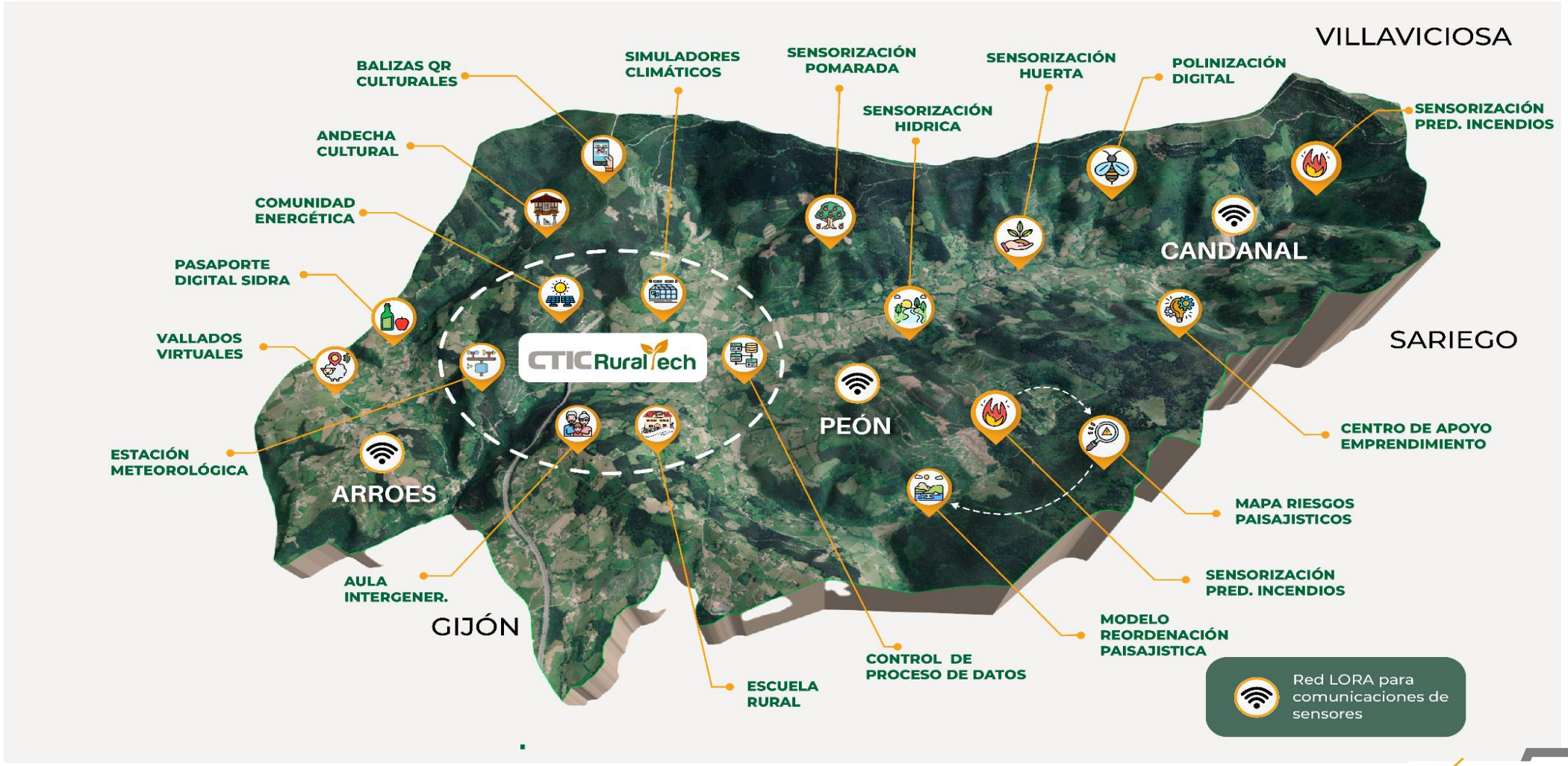
CTICRuralTech
DataSpace Demonstrator
Agri-food


VILLAVICIOSA
BALIZAS QR CULTURALES
SIMULADORES CLIMÁTICOS
SENSORIZACIÓN POMARADA
SENSORIZACIÓN HUERTA
POLINIZACIÓN DIGITAL
SENSORIZACIÓN PRED. INCENDIOS
ANDECHA CULTURAL
SENSORIZACIÓN HIDRICA
COMUNIDAD ENERGÉTICA
CANDANAL
PASAPORTE DIGITAL SIDRA
SARIEGO
VALLADOS VIRTUALES
CTICRuralTech
PEÓN
CENTRO DE APOYO EMPRENDIMIENTO
ESTACIÓN METEOROLÓGICA
ARROES
MAPA RIESGOS PAISAJISTICOS
SENSORIZACIÓN PRED. INCENDIOS
AULA INTERGENER.
GIJÓN
MODELO REORDENACIÓN PAISAJISTICA
CONTROL DE PROCESO DE DATOS
ESCUELA RURAL
Red LORA para comunicaciones de sensores

Ecosystem

Alimentos del Paraíso (DOP/IGP Asturias)

Consejo Regulador Denominación de Origen Sidra de Asturias
Indicación Geográfica Protegida Chosco de Tineo
La Faba de Asturias Pura Manteca
Indicación Geográfica Protegida Consejo Regulador Faba Asturiana
Promiel Asturias

Empresa Singular

Grupo El Gaitero

Sector Público

Principado de Asturias | Consejería de Medio Rural y Política Agraria

Sector agroalimentario

cooperativas agro-alimentarias Principado de Asturias
Asincar cluster agroalimentario

Sector Investigador Agro

SERIDA
Servicio Regional de Investigación y Desarrollo Agroalimentario de Asturias
agro Tech UPC

Architecture

Plan de Recuperación, Transformación y Resiliencia

Financiado por la Unión Europea NextGenerationEU

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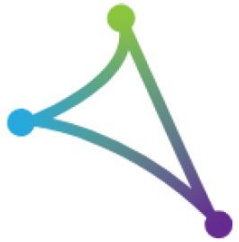
Data Space

Agri-Food

Built on...



Eclipse Dataspace Framework

Provides the implementation of the connector

gaia-x

Gaia-X Trust Framework

Services and models to describe and validaste participants

DATA CELLAR

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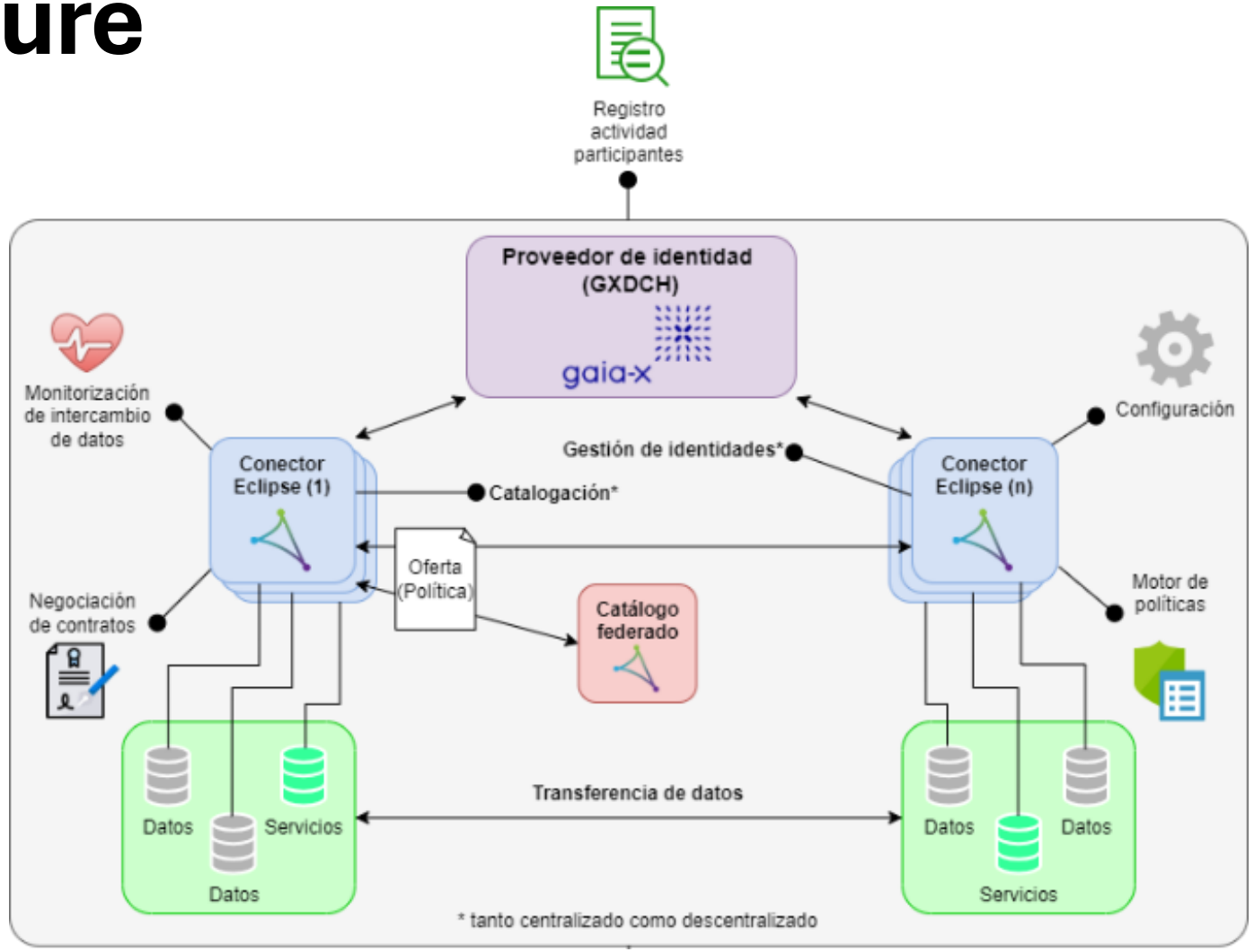
DataSpace Demonstrator

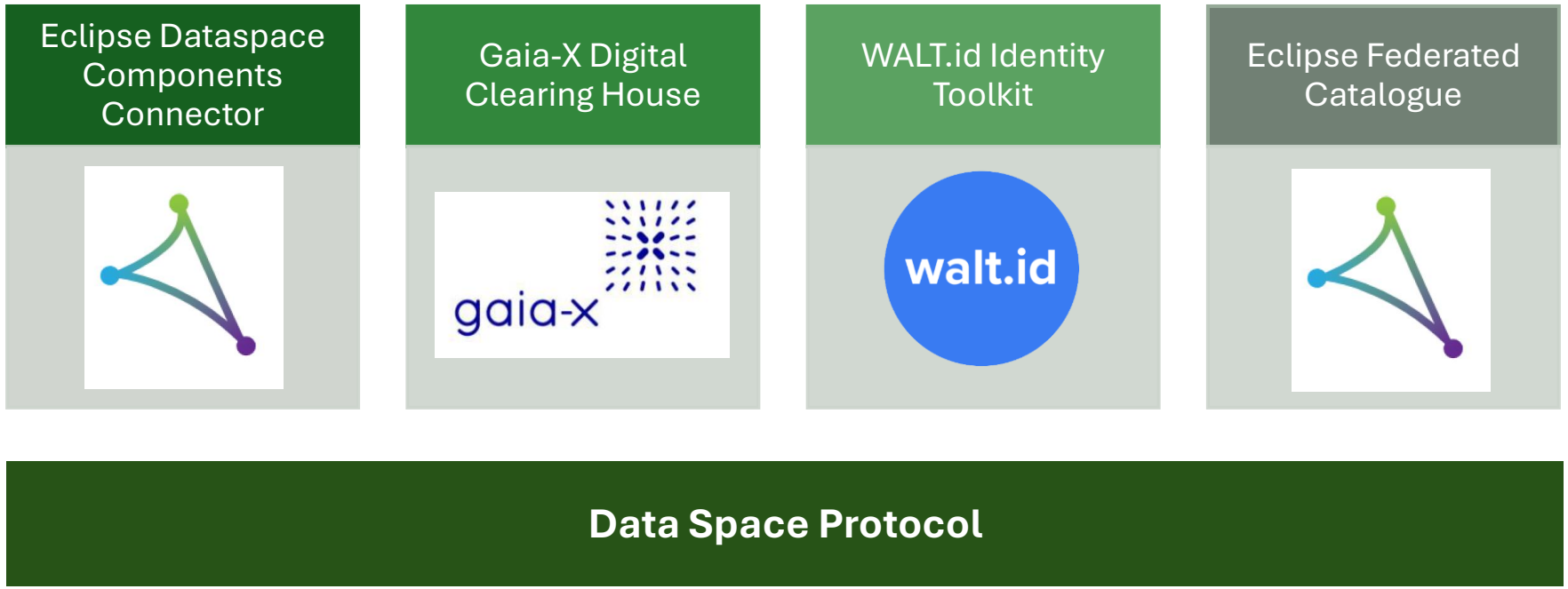
Agri-food

Architecture



GaiaMon
Gotta catch 'em all!

Stack


Eclipse Dataspace Components Connector
Gaia-X Digital Clearing House
gaia-x
WALT.id Identity Toolkit
walt.id
Eclipse Federated Catalogue
Data Space Protocol

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UPC
UNIVERSITAT POLITÈCNICA DE CATALUNYA
BARCELONATECH

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Thank you!

Pablo Coca | pablo.coca@ctic.es

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ICT TECHNOLOGY CENTER

Networking Coffee

16:00 – 16:30

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ICT TECHNOLOGY CENTER

Programme Tech-X Workshop Room

16:30 - Data Spaces Specification language (DSSL) and its Maturity and Interoperability Score

Health Ecosystem Panel

Moderator: Daniel Sáez Domingo, Strategic Intelligence Director, ITI

16:30 – 17:15

- **Ronny Stritzke,** Software Architect, Bundesdruckerei-Gruppe
- **Ignacio Blanquer**, Full Professor, Polytechnic University of Valencia, Technical Lead of the Central Hub in EUCAIM
- **Josep Redon,** Professor of Medicine,University of Valencia, Head of the Internal Medicine Service, Hypertension Unit, Hospital Clínico Universitario of Valencia
- **Ralf Hustadt**, Data & AI Go-to-Market Director, NTT DATA, Inc. (Online)

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Manufacturing Ecosystem Panel

Moderator:
Thomas Hahn, Chief Expert Software, Siemens AG Germany

17:15 – 18:00

- **Wolfgang Kniejski,** Senior Project Manager, EIT Manufacturing
- **Jose Bujosa**, Automotive Account Executive,T-Systems Iberia
- **Thomas Hahn**, Chief Expert Software,
- Siemens AG Germany
- **Laurent Lafaye**, Co-CEO, Dawex

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EuProGigant

- **Dr. Wolfgang Kniejski**
  Senior Project Manager
  EIT Manufacturing East GmbH

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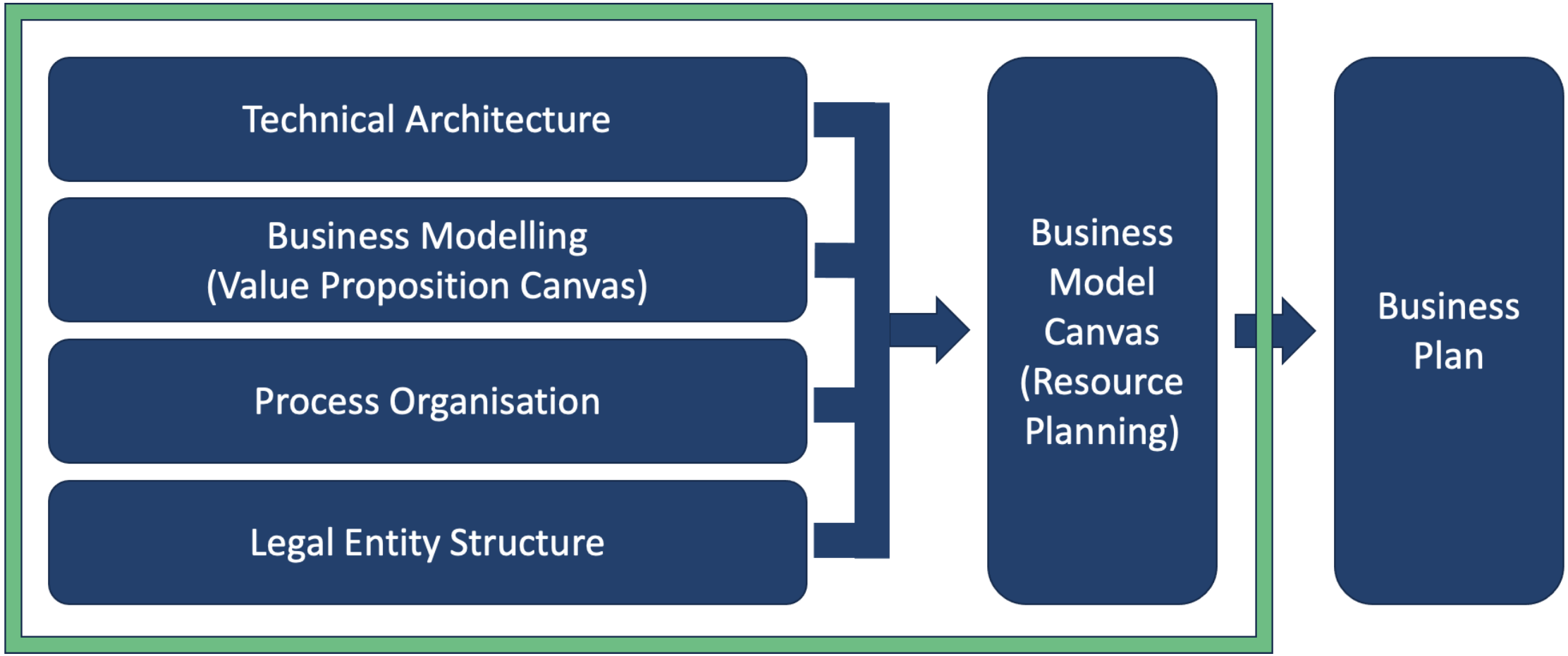
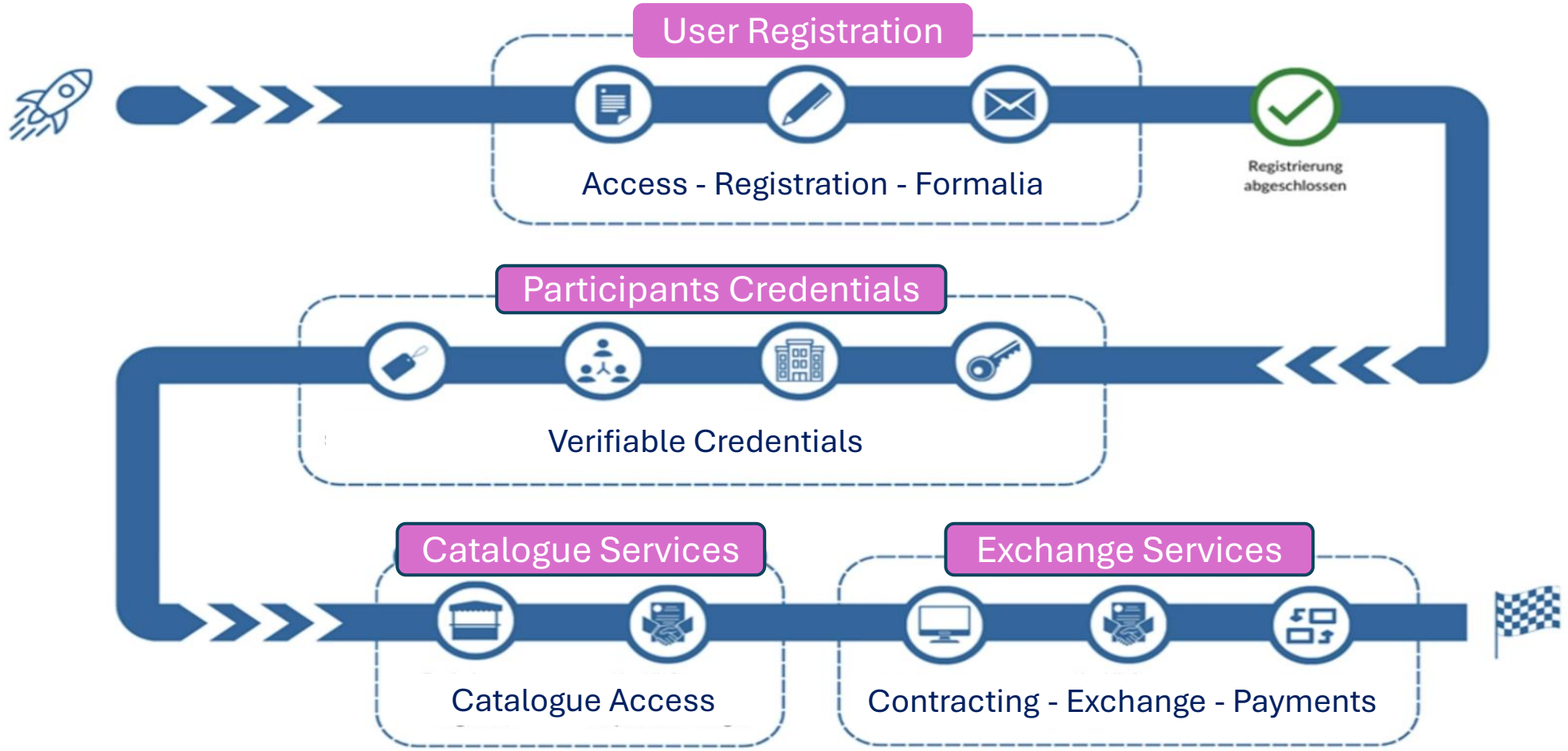
Business Concept Development



The Data Sharing Process



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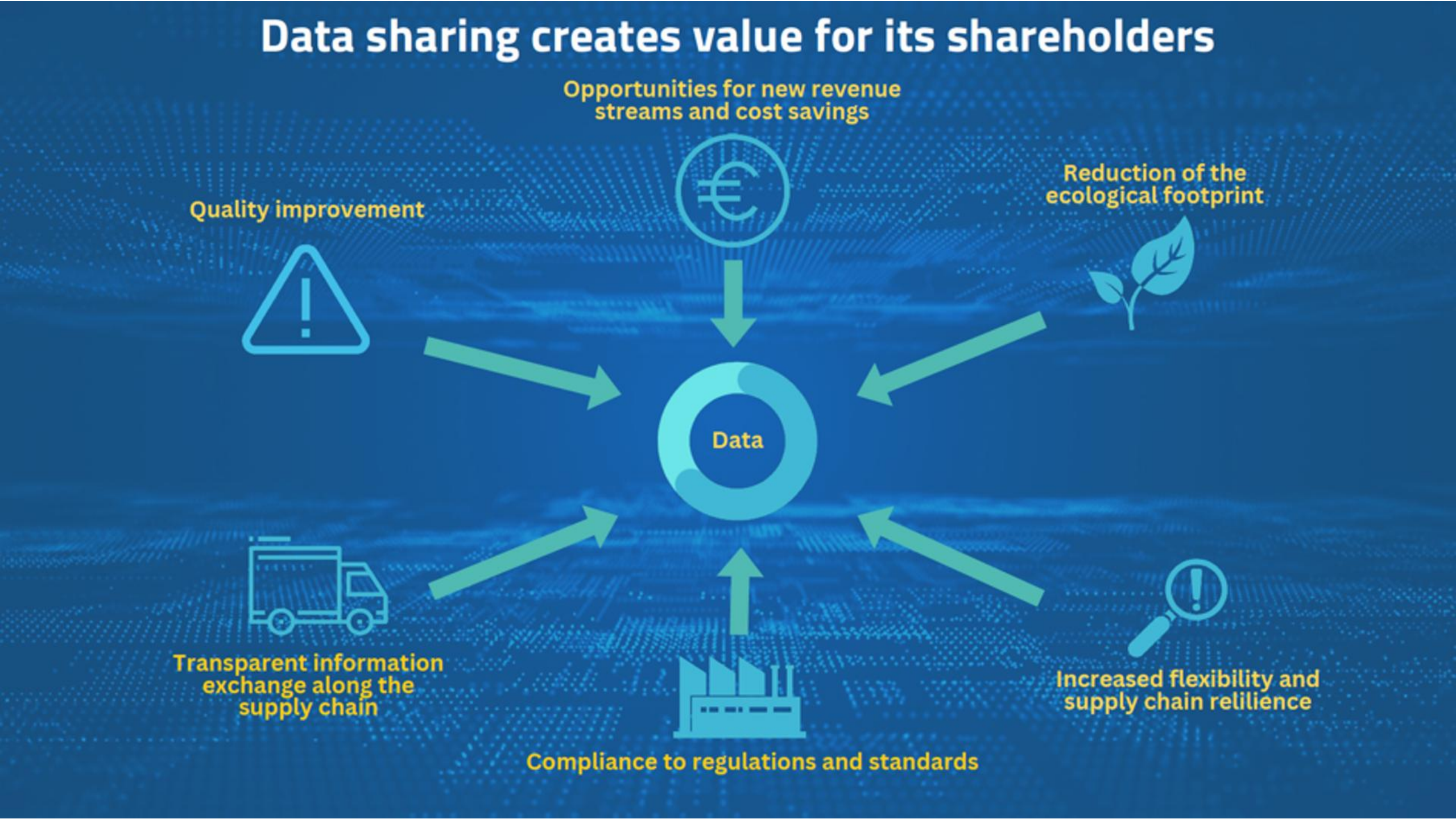
Data sharing creates value for its shareholders



You need additional information?

Read the full whitepaper here:
https://okt.to/kVKQ6M

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Thank you!

Wolfgang Kniejski|
wolfgang.kniejski@eitmanufacturing.eu

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ICT TECHNOLOGY CENTER

Hub Catena-X Spain

- **Pep Bujosa**, Automotive Account Executive,T-Systems Iberia

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ICT TECHNOLOGY CENTER

Hub Catena-X España

- Local Embassy of Catena-X
- Voice of the local ecosystem
- Pont of contact for all stakeholders

- Build a strong network within the national ecosystem.
- Facilitate access and encourage active participation.
- Leverage use cases and develop new solutions.

- Understand and communicate Catena-X
- Create and foster local exchange
- Enrich the Catena-X ecosystem

OPEN TO THE ENTIRE AUTOMOTIVE SECTOR ECOSYSTEM

Transparency in the Supply Chain

Efficiency and Resilience

Sustainability

Data Sovereignty

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Governance Hub Catena-X España

Rotating annual presidency

Members of Catena-X España who are also part of Catena-X Europe

Members of ANFAC, SERNAUTO, and Direct members of Catena-X España *(under membership fee)*

Expert representatives of entities that are members of Catena-X España

sernauto

Gestamp

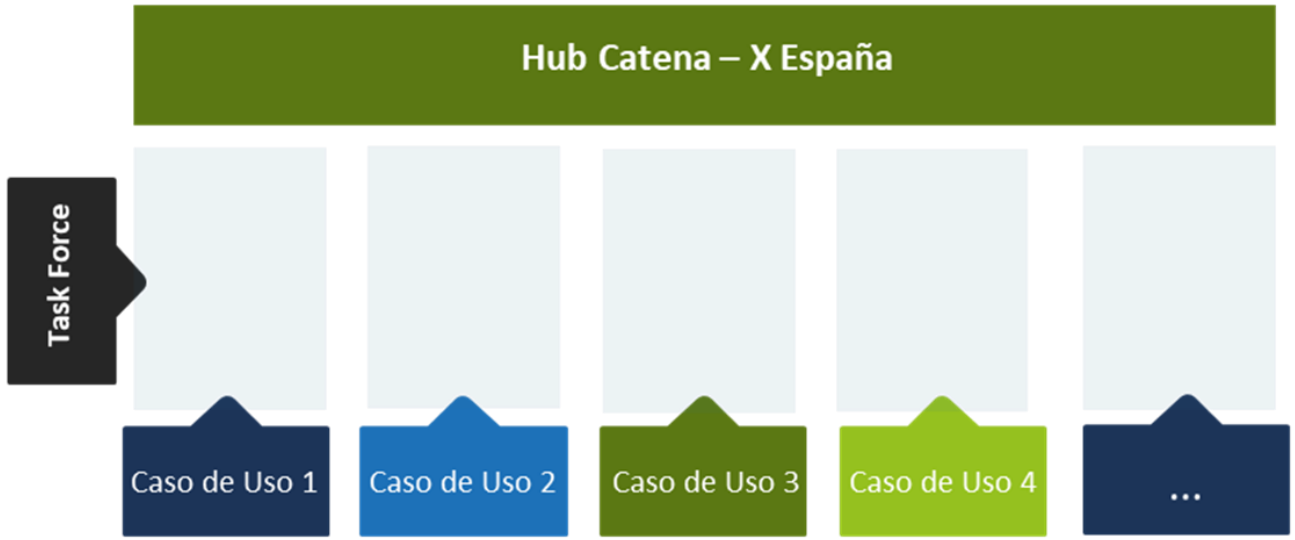
T Systems

Coordinadores Hub

Core Team

ANFAC

MONDRAGON



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Progress

- **Nov 23 – Feb 24**: Initiative Study and Contact Outreach
- **Mar – Oct 24:** Development of the Catena-X Spain Hub Approach and Signing of the MoU with Catena-X
- **Nov 24:** Public Presentation of the Catena-X Spain Hub at the Global Mobility Call and Press Release
- **Dec 24 – Mar 25: Start of the Onboarding Phase:**
  - Coordination of the Core Team
  - Development and Approval of the Internal Regulations
  - Coordination with the Competence Center
  - Meetings with the Ministry for Digital Transformation and Public Administration to analyze potential investment support under the Sectoral Data Spaces Boost Plan *(€500M)*
  - *Catena –X Roadshow Week Spain*

Next steps:

- Informative Webinar to promote the initiative and attract companies interested in use cases
- Potential collaboration with the Ministry for Digital Transformation and Public Administration

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Promotion of Sectoral Data Spaces

AXIS	ID	INITIATIVE	BUSGET M€	TOTAL M€	%
1	#01	Demonstrators and use cases	110	160	32%
	#02	Use cases for the tourism sector	50		
2	#03	Data Space Kit	127	127	25%
3	#04	Technological products and services for Data Spaces	44	44	9%
4	#05	Public data demand management	20	20	4%
5	#01	Demonstrators and use cases	40	139	28%
	#06	Tourism Data Space Platform	35		
	#07	New Language Economy Data Space	12		
	#08	Smart Urban Infrastructures Data Space	13		
	#09	Regional Development Data Spaces	39		
6	#10	Communication and Awareness	5	5	1%
-	#11	Reference Centre for Sectorial Data Spaces	5	5	1%
TOTAL			500	500	100%

PROJECTS:
- ESAUTO – X *(LKS)*
- GES-X *(Gestamp)*

Summary table with the initiatives included in the Plan for the Promotion of Sectorial Data Spaces.

Thank you!

Pep Bujosa | jose.bujosa@t-systems.com

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ICT TECHNOLOGY CENTER

Manufacturing-X

Thomas Hahn, Fellow,
Siemens AG

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ICT TECHNOLOGY CENTER

International Manufacturing-X (IMX): Make Data Work

IMX will implement a federated, decentralized and collaborative data ecosystem for smart manufacturing. Open, global and cross-industry, following FAIR Data Principles.

Reorganize and increase flexibility and autonomy of industrial value chains and networks.

Resilience

Increase efficiency and enable data-driven solutions for GHG/CO2 balancing and circular economy.

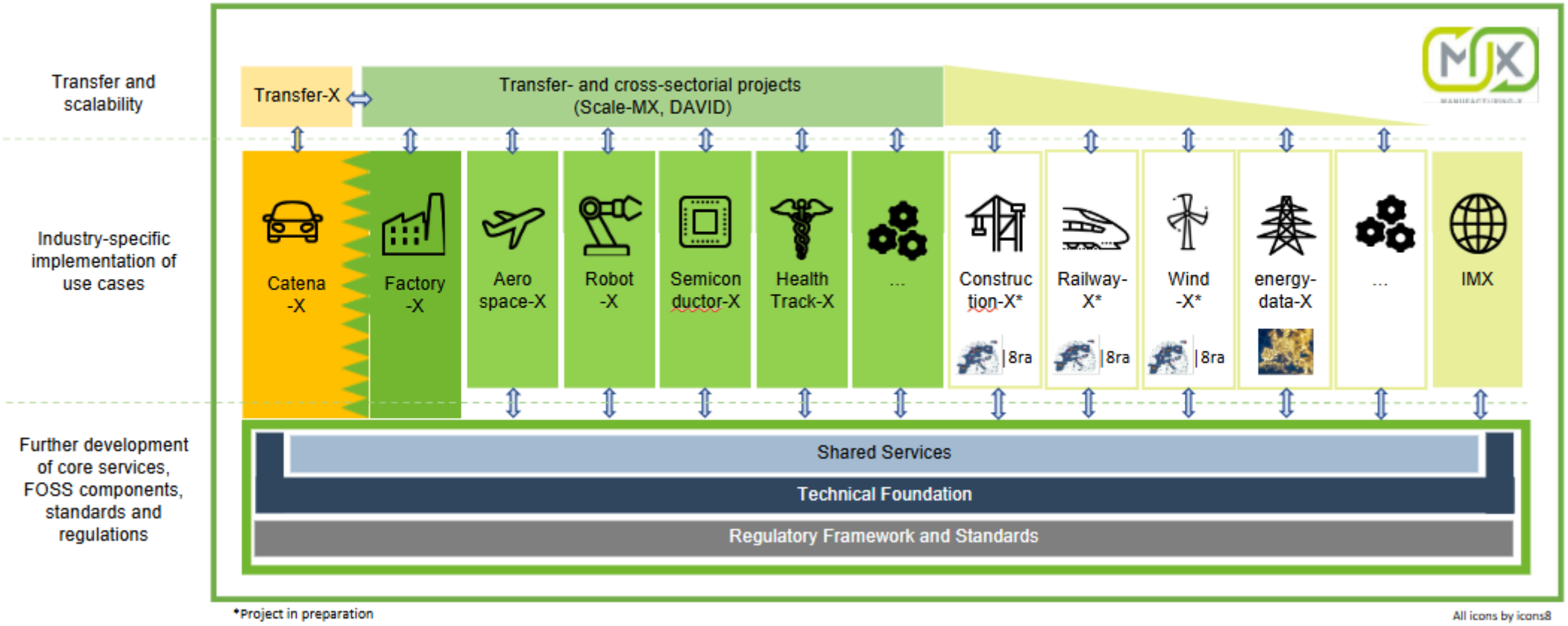
Sustainability

Accelerate digital innovations and enable new data-driven business models to create new value for manufacturing

Competitiveness

Projects

We serve diverse manufacturing verticals!



Technology

Foundational Framework for IMX

A common guideline for IMX activities and international stakeholders.

Strategic Goals

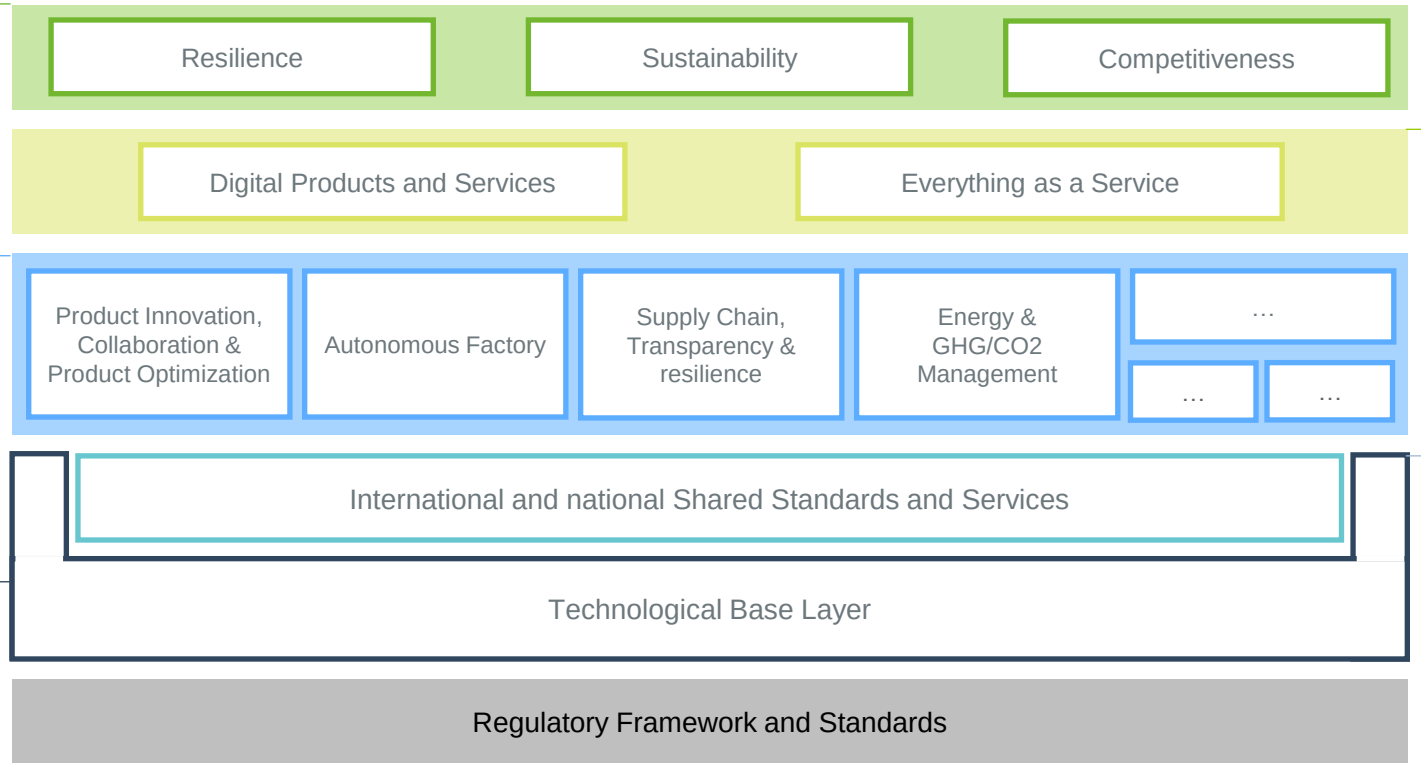
International Manufacturing-X develops the foundations for a resilient and competitive industry in a sustainable society.

Exemplary Cross-Industry Use Cases

International Manufacturing-X addresses cross-industry use cases based on a collaborative use of data with high economic and ecological impact.

Foundation

International Manufacturing-X defines global standards and runs a basic technical infrastructure to guarantee interoperability and sovereignty.



Business Models

International Manufacturing-X enables innovative business models based on a interoperable data-ecosystems

Capabilities

International Manufacturing-X enables development and deployment of fundamental services driving the federated data ecosystem.

Requirements

International Manufacturing-X builds on a common technical, organizational and legal framework and contributes to the future development in cooperation with international law.

The MX-Port to solve the communication challenges!

Challenges

- **To cover different domain needs**
  - Regulated/non-regulated industries
  - Automotive/machinery/aerospace// semiconductor/robotics/ etc.
- **To cover different deployment scenarios**
  - Edge to cloud to edge
  - Supply-chain to shopfloor and vice versa
- **To include well established technologies**
  - Communication across data spaces (e.g., EDC, AAS, IDSA)
  - Communication from data spaces to shop-floor and vice versa (e.g., AAS, OPC UA)
- **To include brownfield scenarios**
  - Different digitalization concepts are existing (e.g., CESMII Smart Manufacturing Profiles)
- **Future-oriented & interoperable**
  - Covering regional and domain needs
  - Open for future concepts (e.g., WoT, 6G)

Concept

1. **Enable business-oriented Factory-X north star qualities** (Interoperability, Trust & Security, Scalability, (Data) Sovereignty)
2. **Deliver an architecture that enables all Manufacturing-X applications to be to realized**
3. **Interoperable across scenarios w/ MX-Port architecture & standardized interfaces**

Layer	Components for configurations
MX Discovery	A1 A2
MX Access & Usage Ctrl.	B1 B2
MX Gate	C1 C2
MX Converter	D1 D2 D3
MX Adapter	application specific

options

Implementation

Individual configurations …

Layer	MX-Port "Leo"
MX Discovery	ID-Link
MX Access & Usage Ctrl.	AAS security
MX Gate	AAS-REST
MX Converter	AAS sub model
MX Adapter	application specific

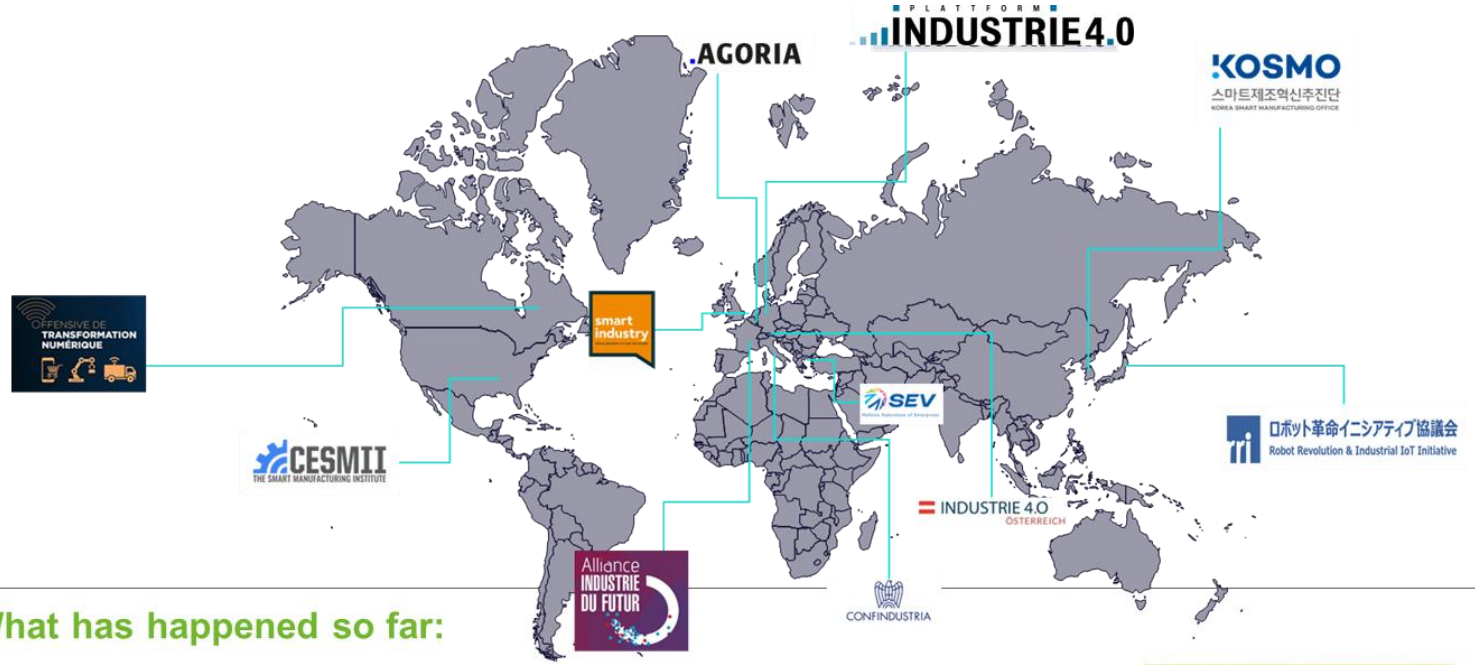
Layer	MX-Port "Hercules"
MX Discovery	Data Space Protocol / Decentral Claims Protocol
MX Access & Usage Ctrl.	
MX Gate	AAS-REST
MX Converter	AAS sub model
MX Adapter	application specific

Layer	MX-Port "Orion"
MX Discovery	Data Space Protocol / Decentral Claims Protocol
MX Access & Usage Ctrl.	
MX Gate	UADP OPC UA TCP HTTP(S) NetConf
MX Converter	OPC UA Companion Spec OPC UA Meta Model
MX Adapter	application specific

…

Who?

Initiatives Involved in Establishing the IMX Council – Growing!



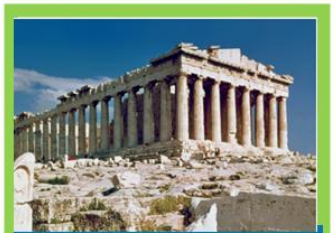
What has happened so far:

2023 July Initiation Brussels, Belgium

2023 October Inauguration Tokio, Japan

2024 February Kick-off Paris, France

2024 Novem. USA/ CESMII



2025 May Athens/ Greece

Thank you!

Thomas Hahn | hahn.th@siemens.com

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Manufacturing Ecosystem Panel

- **Laurent Lafaye**
  Co-CEO, Dawex

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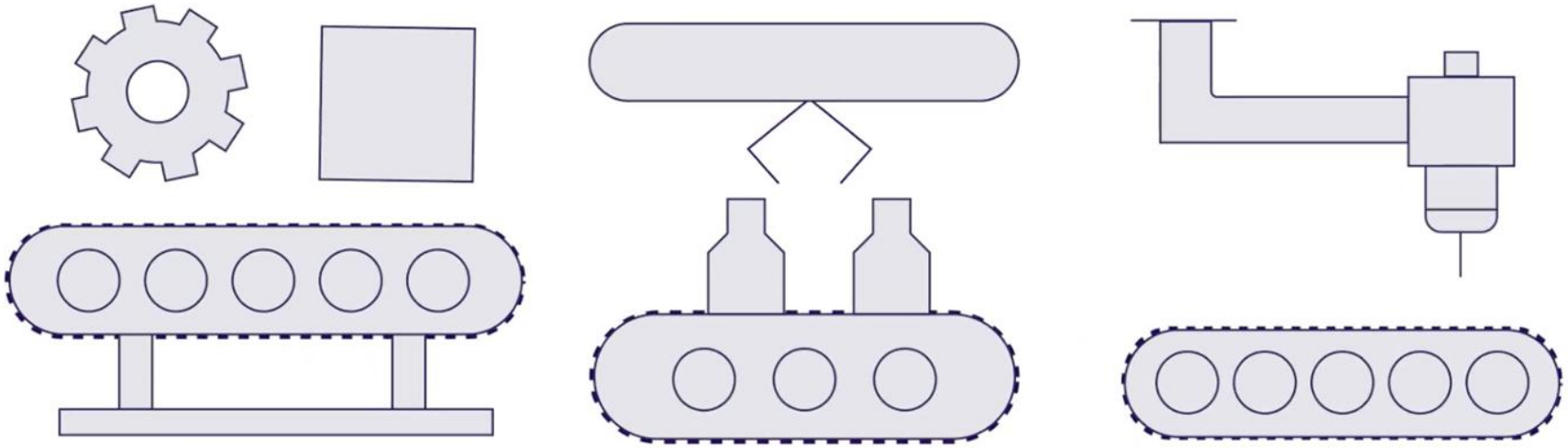
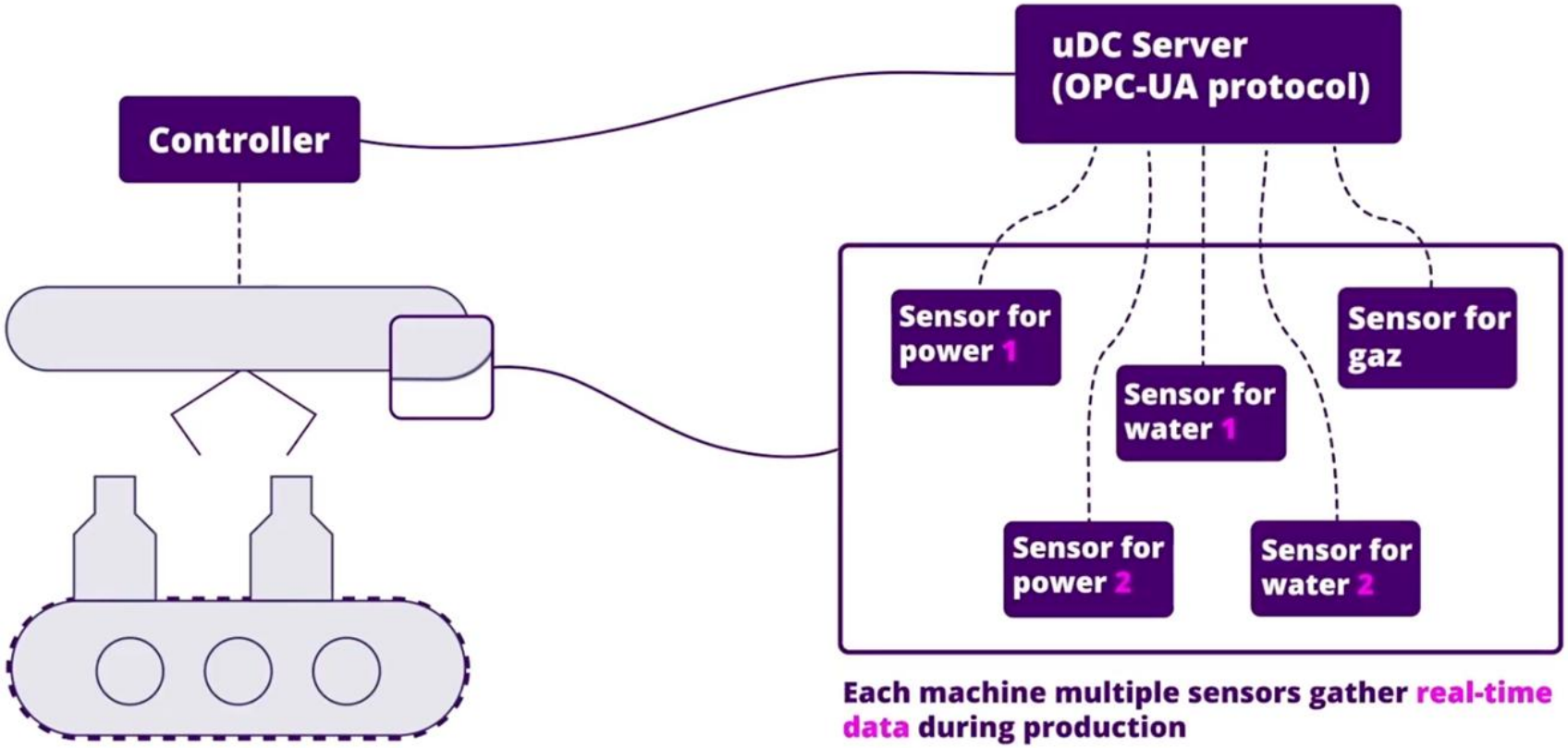
A deep dive into the assembly line

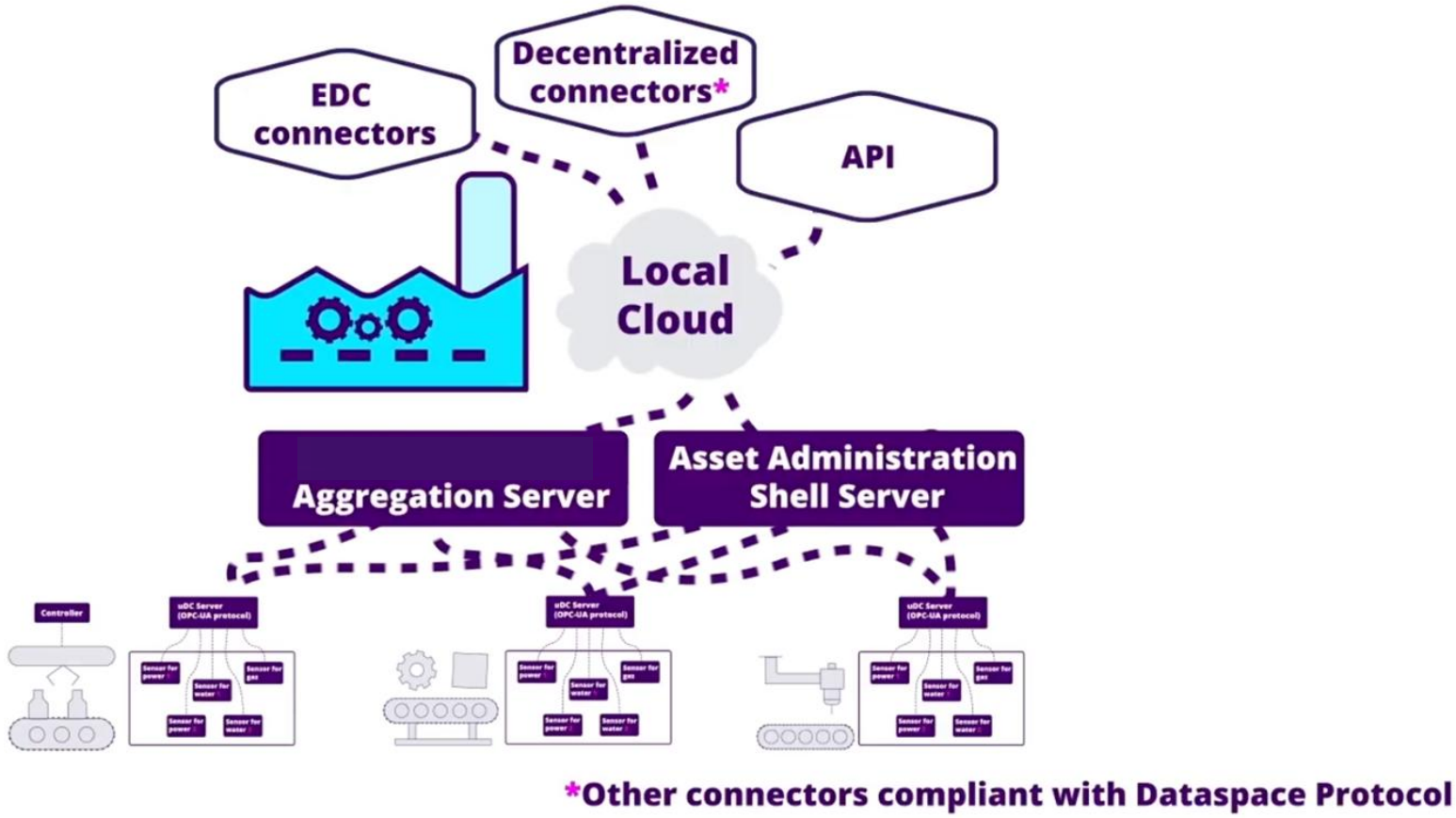


Data4 Industry-X

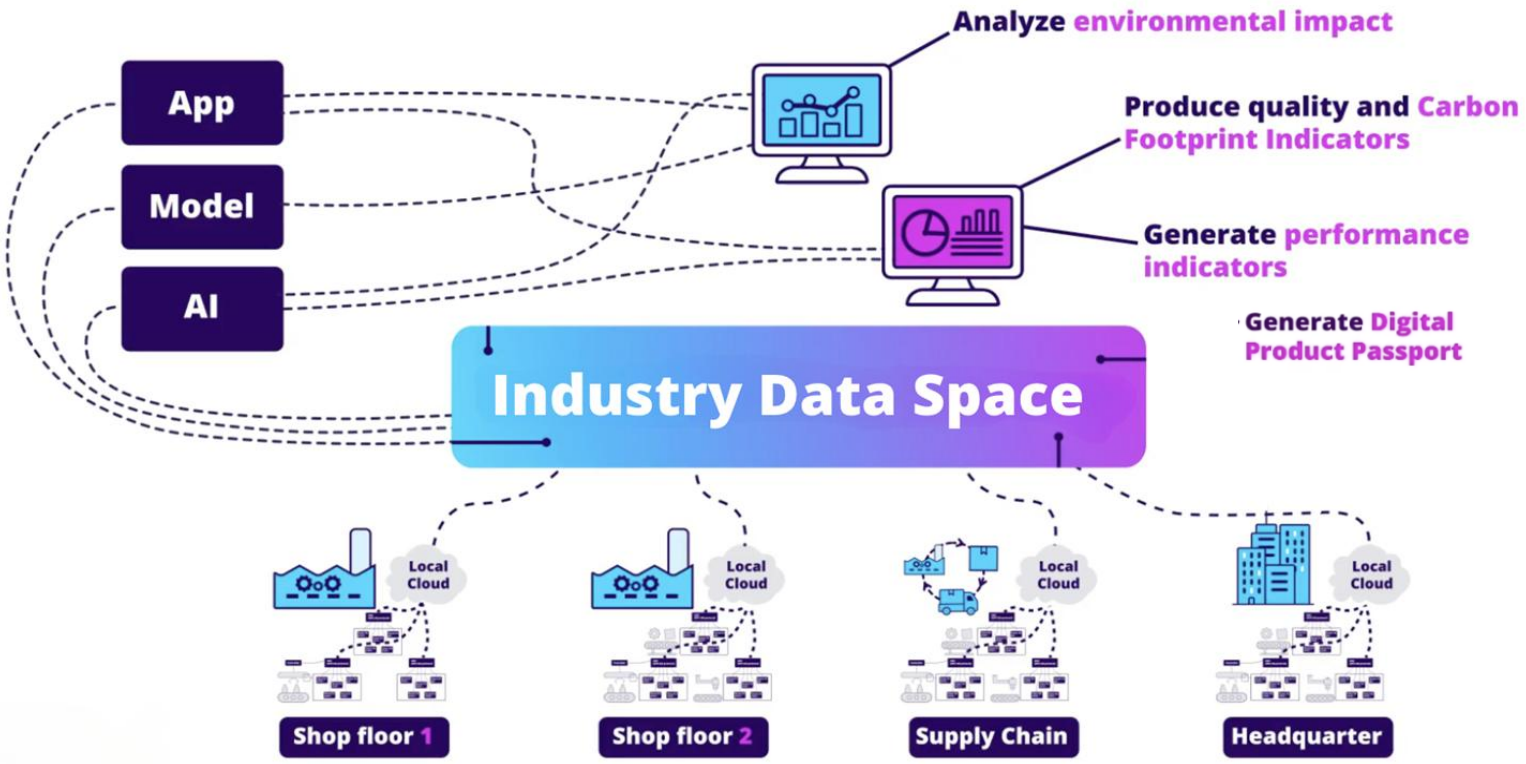
Connecting the Shop Floor and Collect Data with Industrial, Interoperable Protocols like OPC-UA



Enabling Secure and Interoperable Data Sharing Across Industrial Ecosystems



From Shop Floor to Supply Chain: Enabling Smart Manufacturing with Industry Data Spaces



Standards & Protocols

- Trusted Data Transaction
- Dataspace Protocol
- OPC-UA
- Decentralized Connectors
- Asset Administration Shell
- Open API

Data Governance Act & Data Act Ready

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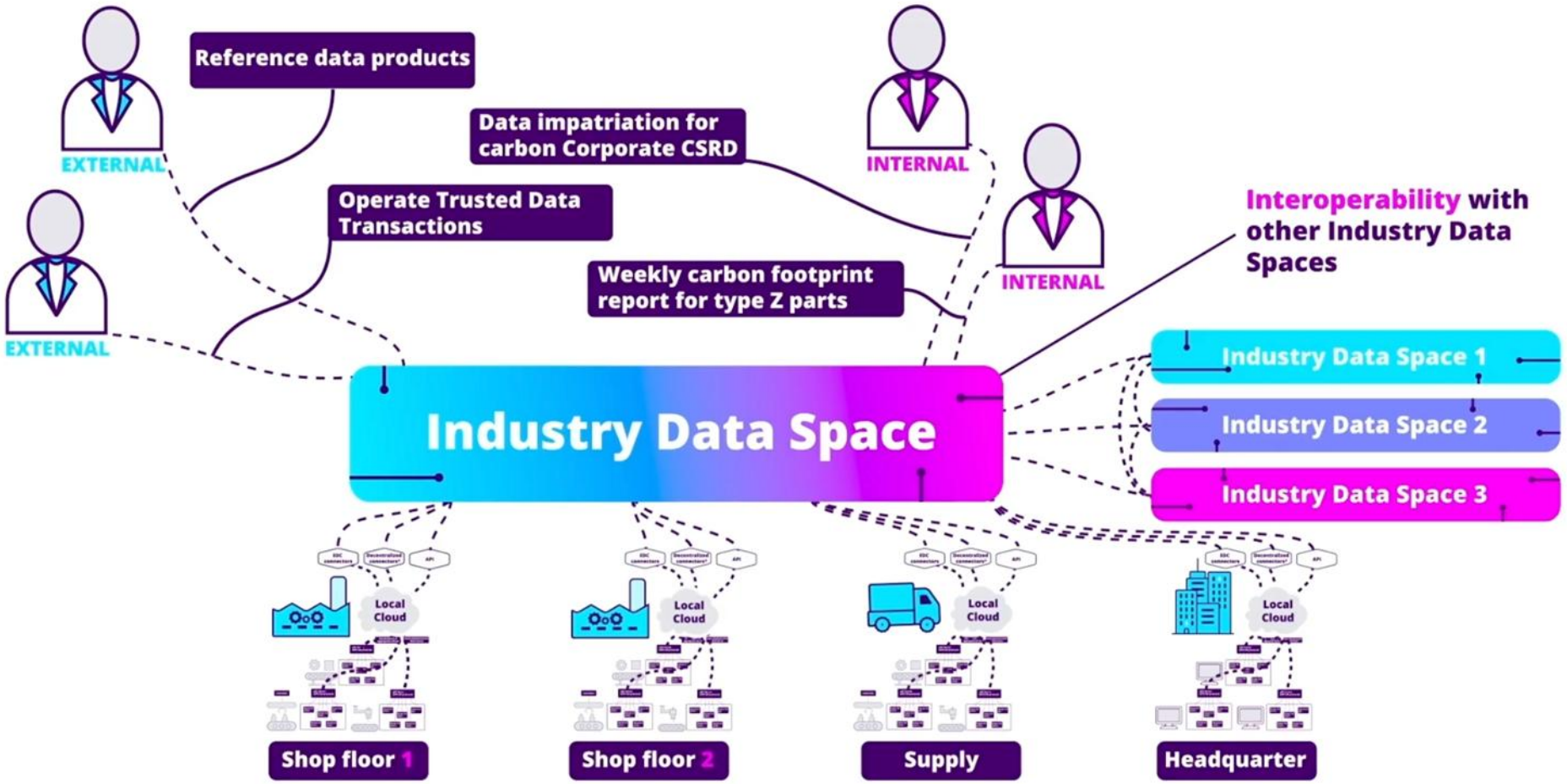
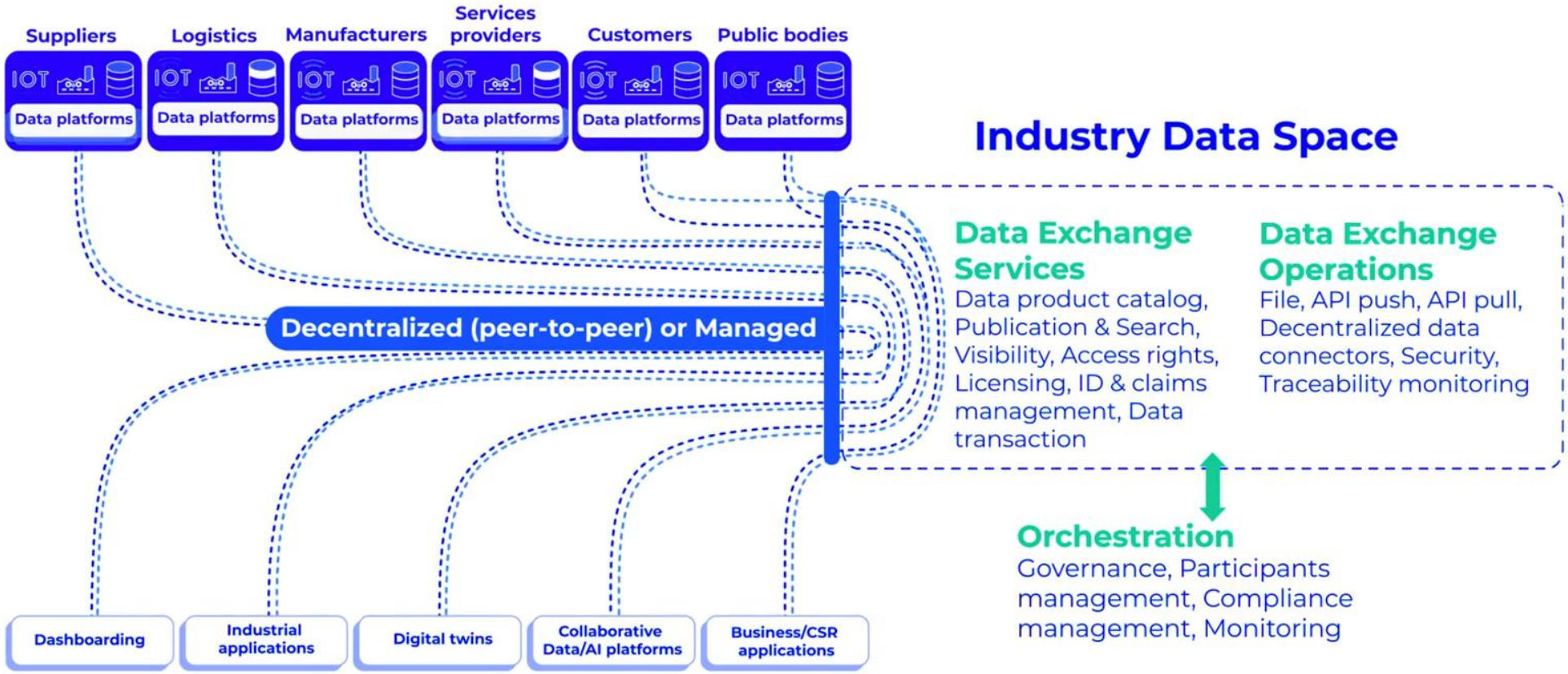
Scaling Industrial Collaboration with Interoperable and Federated Data Spaces



In 2025
Industry Data Spaces' Technologies Are Operational



DAWEX 10 YEARS From Pioneer to Leader

Trusted - Industrialized - Scalable

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But Reducing Onboarding Costs Significantly: A Business Imperative to Engage SMEs at Scale

- Seamless connectors & agents enabling decentralized data exchange
- Fully compliant with Gaia-X *de facto* standards and the Data Space Protocol
- Delivered as production-ready, open-source components
- Easy to deploy, secure, and operate

All that, for a total cost < 1–5k€ / year for a typical industrial SME

Thank you!

Laurent Lafaye | Dawex

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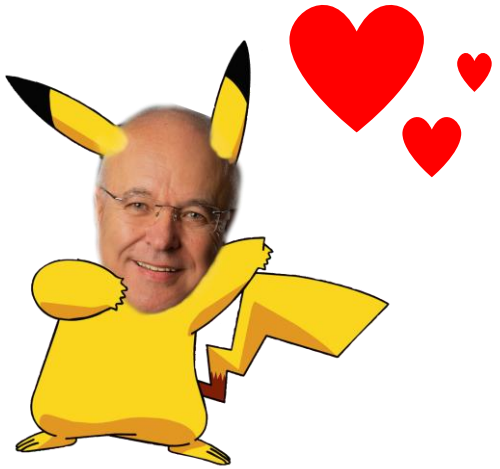
GaIaMon

Gotta catch 'em all!

First day **best Gaiamon trainers**:

- Julien Vanwambeke
- Julien Vanwambeke
- Julien Vanwambeke
- Julien Vanwambeke
- Julien Vanwambeke



The winners will be contacted by the Gaia-X Academy team

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Networking Cocktail & Dinner

18:00 – 21:00

In partnership with

gaia-x Hub Spain

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