Gaia-X SUMMIT 2025

DIGITAL ECOSYSTEMS IN ACTION

Porto, Portugal | 20 & 21 November

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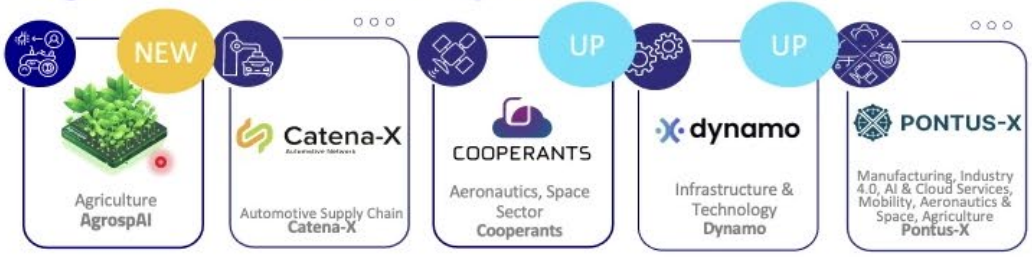
Way to Success – How to scale a Data Space and onboard a heterogeneous ecosystem in aerospace

Arno Scheidereiter

CEO

neusta aerospace

Lighthouse Data Spaces



Qualified Projects

gaia-x

3 new Projects

4 upgraded Projects

Lighthouse Projects

Gaia-X is rapidly growing

Downside: The Economical Challenge

Is your Data Space operation independent and economically sustainable ?

Narrative: *“The market is always right..”*

Most Common Answers & Roadmaps

Unsatisfying answers:

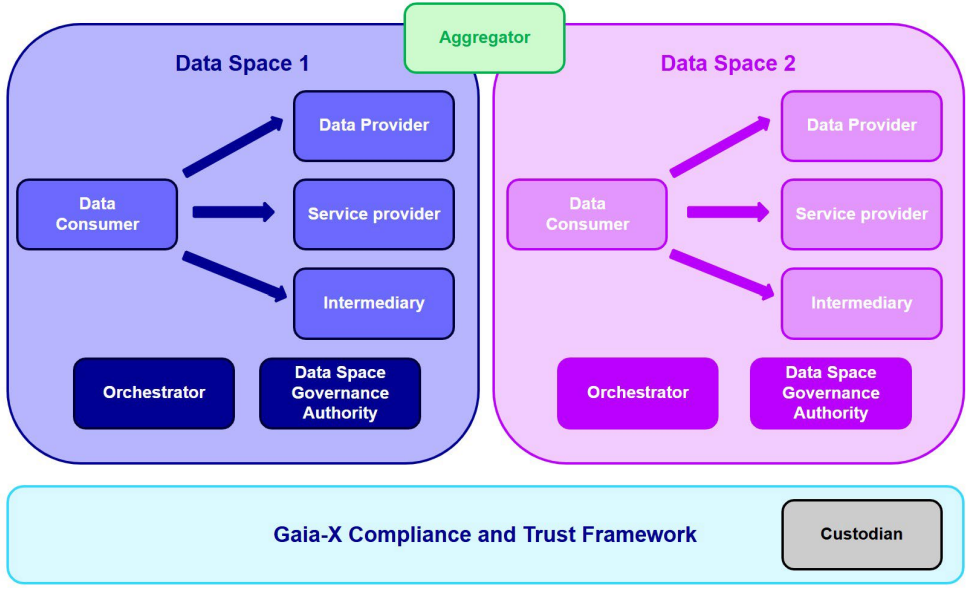
- Continue with R&D funding
- Developing new business models

Best answer so far:

- Scale the Data Space and onboard more ecosystem participants

Onboarding more Ecosystem Participants

From a Data Space perspective all ***"actors* involved in the economy of data sharing"*** are users of the Data Space and also represent potential "***customers***" through the value chain..



*Picture from "***Introduction to the Economic Value of Data Sharing***" - by Gaia-X Academy / DSSC*

“User/Customer” Feedback → Questions

- Not clear enough, or not well understood
- What do I need it for?
- Not important for our core business
- Is it legally mandatory, what exactly are EU regulations enforcing, and when (in my country)?
- It’s just “Legal Overhead” and not an opportunity

“User/Customer” Feedback → Answers

- A Data Space is a place to present your data and/or your service offering → **Opportunity!**
- Gaia-X is not legally mandatory, but the DA, DMA, DGA, AI Act, GDPR, eIDAS, … → **YES!**
- When: Wet Signature → QES since **2016**
  → eIDAS V2 for Digital Identities in **2026**
  → EUDI Wallet in **2027**

“User/Customers” Feedback → Answers

Gaia-X provides the Trust Framework for automated compliance and enables “*Compliance by Design*”:

- Compliance Engine
- Verifiable Credentials
- Digital Clearing Houses

→ It all starts with the Digital Identity (eIDAS) and **Onboarding** the Gaia-X Ecosystem (VC)

The Problem: How to Translate Gaia-X

- Gaia-X must be understandable!
- The Language is very cryptic and needs to be demystified. Trust shall not be “Rocket Science”.
- The AISBL’s BoD is aware of this..

BoD Focus Groups and Goals 2026

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User Focus Group

Goals 2026:

1. Have a Compliance kit that enables any ICT company to register a compliant service (reference installation)

2. Have a map and guide with the respective roles of DataSpaces and Gaia-X responsibilities.

3. Architecture Blueprint document for the users on identity points

Provider Focus Group

Goals 2026:

1. Technical Compatibility Kit – see Orchestrator Group

2. Catalogue of Catalogues (First presented at Summit25 (CISPE based))

3. Wizard (Onboarding Wizard (deltaDAO) and CDE) – see Orchestrator Group

Orchestrator Focus Group

Goals 2026*:

1. Basic Technical Compatibility Test Kit (TCK) – see Provider group

2. Develop and maintain the Loire and Danube Release

Credential Wizard – see Provider group

The Focus Groups will work with the established Gaia-X Committee Groups, the requirement process and the sprints.

User Group: Mapping dataspace responsibilities versus Gaia-X responsibilities

Challenges:

- We have a number of dataspaces in development but the respective roles of Gaia-X and of different entities is not operationally clear enough
- Vocabulary is different between Gaia-X institute and Gaia-X
- Added value to be Gaia-X compliant for a data space (technical tools, marketing tools , operational tools)

Actionabel Items:

- Create a taxonomy and any functional maps in order to be aligned across Lighthouse projects
- Illustrate the role and value of Gaia-X services of the trust framework in the maps previously designed
- Create a Gaia-X "how to"/Get started guide for data space developer

Benefit for Members:

Members of the dataspaces will better understand what to do on an operational way

Deliverables:

- maps with the respective roles of dataspaces and Gaia-X, representative for all dataspaces regulated or non regulated– in a vocabulary which is understandable from the users side
- A tested guide for all data Space developers
- A communication related to Gaia-X compliance (operational and in line with the operational dataspaces) explaining the benefits

Decrypting… .. The “new” Narrative 2026

The smallest denominator and the purpose of these goals is:

Onboarding facilitation

Onboarding the Growing Gaia-X Ecosystem for Aviation, Space & Defense

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DECADE-X
Digital ECosystem for Aerospace and DEfence

COOPERANTS

ACCURATE

AEROSPACE-X

Space Cooperative Europe SCE²
The Co-Innovation Space Hub

AEROSEC

The Ecosystem's Position Paper (2024)

- Trends & Challenges
- Strategic Alliances
- Community
- Technologies

The Ecosystem's Mission Document (2025)

- **Community Building** – Unite stakeholders across sectors and maintain strong engagement with Gaia-X AISBL
- **Collaboration & Interoperability** – Foster partnerships, align interoperability needs, and explore domain-specific extensions
- **Evangelization & Education** – Promote Gaia-X compliance, value, and trust in secure data sharing
- **Knowledge Sharing** – Disseminate best practices, lessons learned, and support alignment with EU data space initiatives

Ready for Take Off: Key Takeaways

How to Onboard a Heterogeneous Ecosystem

Education is Key:

- European Digital Strategy & Transformation
- Benefits and Improvements (ROI)
- Security Risks and Future Mitigation Standards

How to Onboard a Heterogeneous Ecosystem

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Onboarding Support & UX:

- COOPERANTS Example Study: **ca. 800 heterogeneous SMEs** in Germany need individual IT consultancy & support. (+ LSIs, Gov., R&D)
- Challenge: Big “Gap” in IT expertise & UX.

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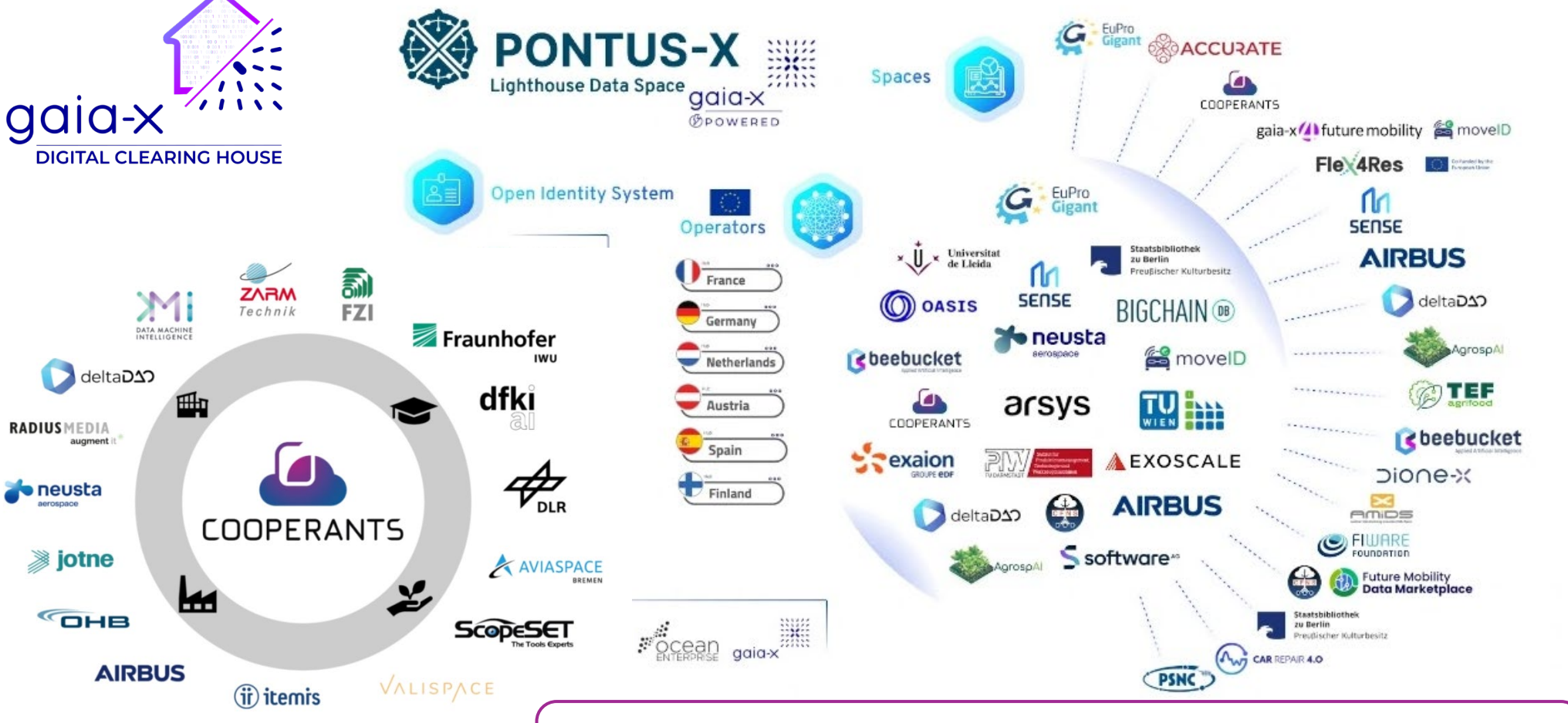
DIGITAL CLEARING HOUSE



Gaia-X Data Space for Aeronautics & Space

COOPERANTS – Status & Roadmap

STATUS

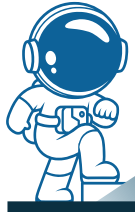
COOPERANTS

2022
Cooperants KickOff

2023
Implemented Ecosystem with Sample Services

2024
Dataspace validated in representative Pilots

2025



2026++
Project finished, now heading towards ***commercialization and scaling***

- Regular COOPERANTS Roundtables
- Follow-On projects for technology development and use cases

May 2025
gaia-x LIGHTHOUSE

2024: Gaia-X Lighthouse Project

The First GXDCH and Gaia-X Services Provider from the Aerospace Industry

The Gaia-X Digital Clearing House is a key component within the Gaia-X project, a European initiative to create a secure, transparent, and federated data infrastructure. Gaia-X aims to foster data sovereignty and ensure that data and services within the European cloud ecosystem adhere to certain standards of interoperability, security, and trust.

gaia-x ACCREDITED

www.aerospace-digital-exchange.eu

Read More

ASD-X: Our Mission

- To provide secure GXDCH services
- From a trusted Gaia-X member and Service Provider
- For the Ecosystem Aviation, Space & Defense
- Deliver excellence: Certified Business and Functional Advisor
- Providing an Educational Blog and Onboarding Services

ASD-X: COOPERANTS Onboarding Campaign

- Contribute to COOPERANTS Community call
- Publish educational content for the Ecosystem
- Low barrier onboarding (FCFS + value-based)
- Address novel Projects – Example: STARLAB
- Participate and contribute to Data Spaces Events
- Deliver “best-in-class” UX

Thank you!

Arno Scheidereiter, neusta aerospace GmbH

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Standardization in Data Spaces - Agenda

- Data standardization initiatives at the EU and international levels
- Creating awareness and sharing insights about the ongoing standard on Maturity Assessment of data spaces
- Co-creation discussion to collect inputs, feedback and adoption paths from the audience
- Closing remarks and next steps

DATA STANDARDISATION INITIATIVES AT THE EU AND INTERNATIONAL LEVELS

JAROSLAW (JAREK) KOWALSKI
PKN EXPERT AT CEN-CENELEC JTC 25
ISO/IEC JTC1/SC 38/AG 6 Convenor
JKOWALSKI@INMADO.PL

CONTENT

1. De- facto vs. De-jure standards
2. EU Rolling Plan and Standardisation Request
3. CEN-CENELEC JTC 25 introduction
4. ETSI TC DATA
5. ISO/IEC JTC 1/SC 38
6. IDSA paper „Data Spaces Standardisation International Landscape”

GAIA-X STANDARD

Gaia-X Mission

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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

INDUSTRY STANDARDS: DE FACTO VS. DE JURE

A ***de facto* standard** is a custom or convention that is commonly used even though its use is not required. *De facto* standard meaning "in practice but not necessarily ordained by law" or "in practice or actuality, but not officially established".

A *de facto* standard contrasts an international standard which is defined by an organization such as International Standards Organization, or a standard required by law (also known as *de jure* standards).

Examples:

- **PDF** was first created in 1993 by Adobe (free Reader app). PDF eventually became the de facto standard for printable documents. In 2005, PDF/A became a de jure standard as ISO 19005-1:2005. In 2008 Adobe's PDF 1.7 became ISO 32000-1:2008 Portable document format.

- The **MP3** audio format has been developed by Fraunhofer as an alternative to WAV in 1991 for internet music coding and distribution, then replaced it. MP3 was first published as ISO/IEC 11172-3:1993. Last release ISO/IEC 13818-3:1998 Audio was published in April 1998.

- Microsoft DOC, PPT and XLS formats were considered to be de facto standards for office productivity applications. When Open Document Format for Office Applications (**ODF**), was standardized as ISO 26300, Microsoft has created Office Open XML format (**OOXML**) and submitted XML based formats to Ecma International, where it was standardized to become ECMA-376 and approved in December 2006. This standard was then fast-tracked in the Joint Technical Committee 1 as ISO/IEC 29500.

- USB is an open industry standard, developed by USB Implementers Forum (USB-IF), for digital data transmission and power delivery between many types of electronics. In the latest standard, the **USB-C** connector replaces many types of connectors for power (up to 240 W), displays (e.g. DisplayPort, HDMI), and many other uses, as well as all previous USB connectors. USB-C has become a de jure standard in the European Union through the Common Charger Directive (Directive (EU) 2022/2380), which mandates the USB-C port for various portable electronic devices by December 2024 and for laptops by April 2026.

HIGH LEVEL FORUM ON EUROPEAN STANDARDISATION FINAL REPORT ON DATA INTEROPERABILITY

The report was prepared by Workstream on Data Interoperability of the High-Level Forum on European Standardisation and published in April 2024. It investigates the role of standards to support implementation of the European Data Strategy (2020) by:

- underpinning relevant regulation, notably the Data Act
- fostering quality and interoperability of data and data spaces.

Based on this analysis, 17 recommendations has been derived which is addressed to the European Data Innovation Board (EDIB), the European Commission, the ESOs as well as to other parties, including the common European data spaces ecosystem.

The recommendations refer to:

- Standardisation.
- Data interoperability.
- Data space interoperability.
- Supporting actions.

On the 24th September 2025 EC has initiated public consultation and seeks views on future of European Standardisation. The goal is to revise **EU Standardisation Regulation 1025/2012**. See EC's announcement

High-Level Forum on European Standardisation

Final report of work-stream 14
Data interoperability

Contents

EU VISION: A EUROPEAN SINGLE MARKET FOR DATA

European Commission

Horizontal Data Legislation

Data Act | Data Governance Act | Open Data Directive | Free Flow of Data Regulation | GDPR | ...

Common European Data Spaces


Health


Manufact.


Agriculture


Finance


Mobility


Green Deal


Energy


Public Admin.


Skills


Research (EOSC)


Tourism


Cultural heritage


Media


Language

High Value Datasets from public sector

data.europa.eu

European Data Innovation Board (EDIB)

- Prioritisation of cross-sectorial interoperability standards
- Guidelines for Common European Data Spaces

Data Spaces Support Centre (dssc.eu)

- Development of Blueprint, Glossary, etc.
- Support for Data Spaces projects

Technical Infrastructure

Standards / Interoperability

Smart Middleware Platform (Simpl)

Digital Identity (eIDAS)

High-Performance Computing

Testing and Experimentation Facilities

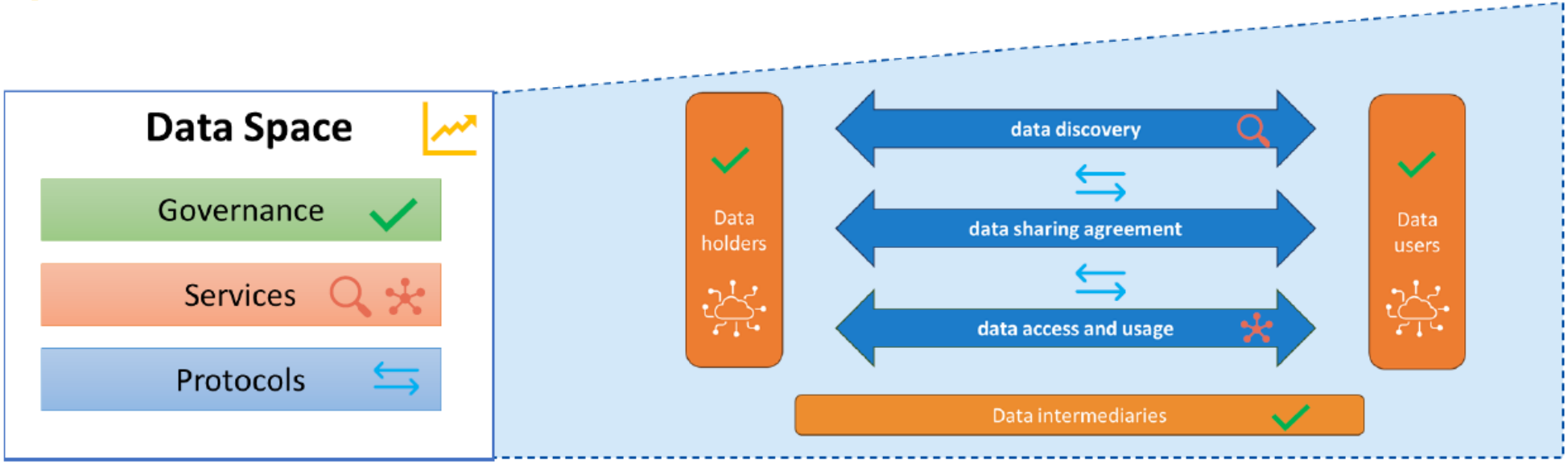
EU TRUSTED DATA FRAMEWORK STANDARDIZATION REQUEST (2025-07-01)

EU Data Act | Article 33, Essential requirements regarding interoperability of data, of data sharing mechanisms and services, as well as of common European data spaces

Participants in data spaces that offer data or data services to other participants shall comply with the following essential requirements to facilitate the interoperability of data, of data sharing mechanisms and services, as well as of common European data spaces which are purpose- or sector-specific or cross-sectoral ***interoperable frameworks for common standards and practices*** *to share or jointly process data for, inter alia, the development of new products and services, scientific research or civil society initiatives(...)*
The Commission shall, pursuant to Article 10 of Regulation (EU) No 1025/2012, ***request one or more European standardisation organisations to draft harmonised standards*** *that satisfy the essential requirements laid down in paragraph 1 of this Article*

Ref.	Deliverable Title	Deadline
1	Harmonised standards on Trusted Data Transactions — Part 1: Terminology, concepts and mechanisms	2026-06-01
2	Harmonised standards on Trusted Data Transactions — Part 2: Trustworthiness requirements	2026-11-01
3	Harmonised standards on Trusted Data Transactions — Part 3: Interoperability requirements	2027-05-01
4	Technical specification(s) on a data catalogue implementation framework	2026-03-01
5	Technical specification(s) on an implementation framework for semantic assets	2026-09-01
6	European standard on a quality framework for internal data governance	2027-03-01
7	Technical specification(s) on a maturity model for Common European Data Spaces	2026-09-01

Standardisation request
European Trusted Data Framework



Trusted Data Transaction standard

Data governance standard for data space participants

Maturity model for Common European Data Spaces

Data catalogue implementation framework

Semantic assets implementation framework

European Commission

ANOTHER EC STANDARDISATION REQUEST EXPECTED

- With the provisions on cloud switching (Chapter VI – Articles 23-31 of the Data Act), the EU plans to promote competition and innovation and prevent so-called 'lock-in effects' by facilitating the switch between 'data processing services' and reducing costs. To this end, mandatory requirements for removing barriers to switching data processing services are being introduced. Draft Standards Request to support cloud provider switching and portability is expected early 2026.
  - According to the article 30 of the EU Data Act PaaS/SaaS providers have 12 months to ensure compatibility with common specifications and harmonized European norms (hENs) after they have been published in the central standards repository.
  - It is not clear what compatibility means and could imply mandating the support of one or more of the common specifications in the repository.

- Article 35 of the EU Data Act
  - Allows the EU Commission to adopt **common specifications** based on open interoperability specifications and to publish them in a **central Union standards repository for the interoperability of data processing services**.
  - After considering the output of the WIK Study the Commission plans two implementing acts. One to adopt the common specifications and one to publish those into the repository.
  - Drafts of the implementing acts are due to be publish by early Q1 2026. It is not yet decided if the consultations on these will run sequential or parallel.
  - The following specifications are candidates for adoption as common specifications:
    - OCI, OASIS-TOSCA, Open API, XML, JSON, CSV, Apache Iceberg, CDMI, SAML, OIDC, SECA, SQL, OAuth, Async API, Odata, GraphQ.
    - This list has been reduced after considering 100+ specifications.
  - The repository can expand over time through more implementing acts.

CEN-CENELEC JTC 25
DATA MANAGEMENT, DATASPACES, CLOUD AND EDGE

On the 20th September 2024 the first JTC 25 plenary meeting was hosted by CEN-CENELEC in Brussels, with representatives and experts from Italy, Spain, Germany, Belgium, Denmark, Netherlands, Ireland, France, Poland, and attendees from Cyprus, Finland, UK, Sweden, Switzerland, plus European Comission's DG-CNECT representative, and CEN-CLC programme officers.

Key appointments:

- **Chairperson - Sebastian Steinbuss** (Germany)
- **Secretariat - UNINFO (Italy)** Helen Carnevale and Veronica Salsano
- Four working groups
- Liaisons (growing)
- Past plenaries in 2025: February in Italy, May in the Netherlands, and October in Germany. Planned plenaries in 2026: Poland (January), Spain (May), Norway (October).
- Gaia-X is liaison organization since April 2025.

Scope: standardisation in the area of data management, dataspaces, cloud and edge, including:

- data governance, data quality and data lifecycle management;
- interoperability, portability and switchability;
- organizational frameworks and methodologies, including IT management systems;
- processes and products evaluation schemes;
- smart technology, objects, distributed computing devices, data services.

JTC 25 - STRUCTURE

ISO/IEC JTC1 SC38 AG 6
convenor: Jaroslaw Kowalski (PL)

Advisory Group on Collaboration with CEN-CENELEC/JTC 25

JTC 25
Sebastian Steinbuss
(chairperson)

WG 1 Advisory Group

JTC25 Business Plan, WGs coherence, liaisons, communication with the European Commission

WG 2 Dataspaces

Standardisation in the area of dataspaces and trusted data transaction

WG3 Data management and governance

Standardisation in the area of data management and governance

WG4 Cloud & Edge

Standardisation in the area of cloud and edge

Secretariat
UNI (UNINFO) ITALY

JTC 25 WORK PROGRAMME

- Focus is on five EU Trusted Data Framework (TDF) SReq M/614 [C(2025)4135)] items as per the table below.

Project	Deliverable	Title	Deadline
JT025009	prEN 18235-1	Trusted Data Transactions - Part 1: Terminology, concepts and mechanisms	2026-06-01
JT025008	prEN 18235-2	Trusted Data Transactions - Part 2: Trustworthiness requirements	2026-11-01
JT025007	prEN [18235-3]	Trusted Data Transactions - Part 3: Interoperability requirements	2027-05-01
JT025003	TS XXX	Maturity assessment of Common European Data Spaces	2026-09-01
JT025004	prEN XXX	Quality assessment of internal data governance processes	2027-03-01

- Adoption of ISO/IEC 22123 series as European Standards, and future standards for cloud services switching and portability.

Project	Deliverable	Title
JT025006	prCEN/TS XXX	Cloud Computing - Switching and Interoperability in a European context
JT025012	prEN ISO/IEC 22123-1	Information technology – Cloud computing – Part 1: Vocabulary
JT025013	prEN ISO/IEC 22123-2	Information technology – Cloud computing – Part 2: Concepts
JT025014	prEN ISO/IEC 22123-3	Information technology – Cloud computing – Part 3: Reference architecture

Source

EUROPEAN TELECOMMUNICATIONS STANDARDS INSTITUTE TC DATA

- In April 2025 ETSI has kicked-off the new committee TC DATA Data Solutions that develops deliverables to support the deployment and operation of distributed solutions for data collection, integration, sharing and management, including security and testing aspects.

- Ongoing work at TC DATA to support the Standardisation Request for European Trusted Data Framework under Article 33 of the Data Act, in close collaboration with CEN/CLC JTC 25. The committee addresses interoperability, semantics, data catalogues and and data models, such as SAREF and NGSI-LD, and facilitate the transposition of oneM2M outputs into ETSI standards, governance, and quality metrics across distributed data solutions:

  TR 104 409 Data Act requirements and references analysis (Published, June 2025): Analise the requirement contained in the EU Data Act with particular reference to art. 33, including their references (e.g. the DSSC blueprint architecture), with reference to the existing ETSI applicable specifications and standards (e.g. OneM2M, Saref, NGSI-LD, etc).

  TR 104 410 Standardisation gaps and suggestions (under STF 696, final draft with reference to the SR D1) provides analysis and suggestion about the potential reuse, adaptation and evolution of applicable existing ETSI applicable specifications and standards (e.g. OneM2M, Saref, NGSI-LD, etc).

  TR 104 177 Landscape of Relevant Standards and Technologies for Data. Ongoing work on mapping existing initiatives (early draft). This WI will review current activities in both standardisation and research that are particularly relevant to techniques for distributed data processing. This WI aims to review and summarize the prior art techniques for data interoperation (in semantics, modeling, etc.), data governance, data security, privacy and trustworthiness, with gap and linkage analysis. WI will identify new requirements of data-driven use cases/application scenarios.

  TR 104 180 Development and identification of Data Quality Metrics (early draft). This WI aims to develop and identify quality metrics for data for future standardisation. It focuses on identifying key properties of data quality, incl. trustworthiness (e.g., completeness, accuracy, bias, reliability, redundancy, source reliability, and integrity) and formulating standardised methods to assess these properties.

  EN 303 760 Implementation framework for semantic assets and guidelines for Semantic Interoperability (new WI). Develop, apply and evolve Smart Applications ontologies to address Deliverable 5 of the EU TDF SReq.

  EN 304 199 Data catalogue implementation framework guidelines (new WI) to address Deliverable 4 of the EU TDF SReq.

- Liaison to JTC 25: Enrico Scarrone (HoD), Antoine Burckard, Christophe Gossard, Riina Luoma, Antoine Mouquet, Francois Ortolan, Hao Xu.

ISO/IEC JTC 1/SC 38 'CLOUD COMPUTING AND DISTRIBUTED PLATFORMS'

- Gaia-X is not engaged in SC 38. ☹ Organizations in liaison with SC 38
- WG 5 "Stakeholder considerations„
  - PWI 38011 Cloud computing and distributed platforms — Observability
- WG 6 "Data, interoperability and portability"
  - DIS 19941-1 Interoperability and portability
  - PWI 19941-2 Guidelines for designing solutions to reduce switching costs of applications
  - DIS 20151 Dataspace concepts and characteristics – ballot concluded 13th October 2025
    Target date to published as International Standard – 12th May 2026
  - New items approved for the WG 6 Program of Work at the plenary in Ireland (2025-09-05):
    - **AWI TR 25850 Use cases for dataspaces**
    - **PWI 26189 Dataspace Trust Frameworks**
    - **PWI Guidelines for designing solutions to reduce switching costs of applications**
- AG 5 "Long-term strategy"
- AG 6 "Collaboration with CEN-CENELEC/replaced JTC 25"
  - **On 5th September SC 38 Plenary appointed Jarek Kowalski AG 6 convenor and Mark Jeffrey Convenor Support** for **Collaboration with CEN-CENELEC JTC 25**. Focus on joint development under the Vienna Agreement. ToR:
    1. Review JTC 25 documents on existing and planned projects, including PWIs, to identify opportunities for collaborative work with JTC 25;
    2. Proactively provide feedback to JTC 25 on existing or planned projects;
    3. Submit CIBs for SC 38 consideration to determine SC 38's comments on, among other things, NWIP ballots, Enquiries, and Formal Votes;
    4. Submit a report and recommendations, if needed, for consideration for every SC 38 Plenary meeting.
- Eclipse Foundation Publicly Available Specification
  - Final candidate of **Dataspace Protocol rel. 2025-1** (2025-08-12) and **Decentralized Claims Protocol 2025-1** (2025-07-18) for PAS submission and is expected to start in Q1 2026.

Acronym ↑	Title	Category
Cloud security alliance	Cloud security alliance	A
DMTF	Distributed Management Task Force	A
EC European Commission	European Commission	A
Eclipse Foundation AISBL	Eclipse Foundation AISBL	A
Ecma International	Ecma International	A
IEEE	Institute of Electrical and Electronics Engineers, Inc	A
INLAC	Latinoamerican Institute for Quality Assurance	A
ITU	International Telecommunication Union	A
OASIS	Organization for the Advancement of Structured Information Standards (OASIS)	A
OGF	Open Grid Forum	A
SNIA	Storage Networking Industry	A
StandICT.eu	Supporting European Experts Presence in International Standardisation Activities in ICT	C
TM Forum	TM Forum	C

STANDARDS ARE INTERCONNECTED

ISO/IEC standards referenced in CD 20151 Dataspace concepts and characteristics:

- **22123** Information technology — Cloud computing (all parts: Vocabulary, Concepts, Reference architecture)
- **23751** Information technology — Cloud computing and distributed platforms — Data sharing agreement (DSA) framework
- **5140** Information technology — Cloud computing — Concepts for multi-cloud and the use of multiple cloud services
- **19941** Information technology — Cloud computing — Interoperability and portability
- **10866** Information technology — Cloud computing — Framework and concepts for organizational autonomy and digital sovereignty
- **27701** Security techniques — Extension to ISO/IEC 27001 and ISO/IEC 27002 for privacy information management — Requirements and guidelines
- **29100** Information technology — Security techniques — Privacy framework
- **22989** Information technology — Artificial intelligence — Artificial Intelligence concepts and terminology
- **11034** Information technology — Cloud computing — Trustworthiness in cloud computing

New ISO/IEC Dataspace standard is part of the horizontal technical standards

DATASPACE STANDARDISATION LANDSCAPE

ISO IEC

- **JTC 1 SC 38 WG 6 Data, Interoperability & Portability (Sep. 2024)**
  - 20151 Dataspace concepts and characteristics (30.60)
  - 25850 Dataspaces use cases (new)
  - 19941 Interoperability and portability (rev. 2017)
- **JTC 1 SC 38 AG 6 Collaboration with CEN–CENELEC JTC 25**

- **JTC 1 Eclipse Dataspace Protocol PAS**
  - Specification Document (from IDSA) Release 1 planned for July 2025
  - **PAS submission to ISO/IEC JTC 1 in August 2025,** including:
    - Technology Compatibility Kit (TCK)
    - Reference implementations

European Commission

ECLIPSE FOUNDATION

StandICT.eu
Supporting European Experts Presence in International Standardisation Activities in ICT

CEN CENELEC

- **JTC 25 Data management, Dataspaces, Cloud & Edge (Sep. 2024, secretariat UNINFO)**
  - WG1 Advisory Group
  - WG2 Dataspaces
    - Trusted Data Transactions, incl. alignment with ISO/IEC 20151
  - WG3 Data management and governance
  - WG4 Cloud & Edge
    - Provider switching and services interoperability

Vienna Agreement

- EC Standardization Request for EU Trusted Data Framework:
  - **hENs Trusted data transactions Part 1-3 [WG2]**
  - Data catalogue (DCAT) profiles and extensions [ETSI+WG3]
  - Implementation framework for semantic assets [ETSI+WG3]
  - **Internal data governance processes quality assessment [WG3]**
  - **Common European Data Spaces maturity assessment [WG2]**

European Commission | DATA SPACES SUPPORT CENTRE | W3C WORLD WIDE WEB CONSORTIUM | ECLIPSE DATASPACE | INTERNATIONAL DATA SPACES ASSOCIATION | BDV BIG DATA VALUE | FIWARE FOUNDATION | Catena-X Automotive Network | gaia-x | StandICT.eu Supporting European Experts Presence in International Standardisation Activities in ICT | CISPE.cloud

ETSI

- **TC DATA (Apr. 2025)**
  - Support EU policy/regulations in the area of data and semantic interop., ontologies, and data solutions.
  - TC SmartM2M approved transfer activities to TC DATA
  - Terms of Reference development in progress
  - 15 April 2025 kick off meeting

Cooperation Mode 4

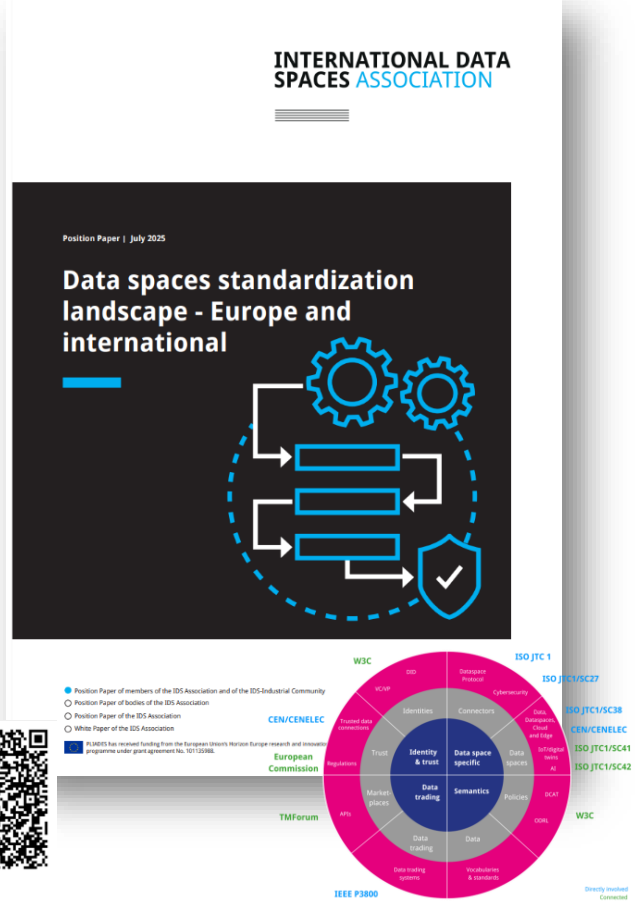
- EC Standardization Request for EU Trusted Data Framework:
  - hENs Trusted data transactions.
  - **Data catalogue (DCAT) profiles and extensions (LEAD)**
  - **Implementation framework for semantic assets (LEAD)**
  - Internal data governance processes quality assessment
  - Common European Data Spaces maturity assessment

DATA SPACES STANDARDISATION INTERNATIONAL LANDSCAPE IDSA PAPER

Paper highlights the critical role of standardization in enabling operational data spaces that align with EU and international data strategies. Standardization is essential to scale data spaces, trusted data-sharing, and interoperability. Paper key takeaways:

- The paper highlights operationalizing regulatory objectives through following assets:
  - IDS Reference Architecture
  - IDS Rulebook
  - Dataspace Protocol
- Alignement with European (e.g. CEN-CENELEC JTC 25 deliverables) and international standards (e.g. ISO/IEC 20151).
- Next part will focus on individual country frameworks

https://internationaldataspaces.org/wp-content/uploads/dlm_uploads/IDSA-Position-Paper-Data-Spaces-Standardization-Landscape-Europe-and-international-2.pdf



“ALIGNED TO UNIFY STANDARDS FOR GLOBAL DIGITAL ECONOMY”

THANK YOU!

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Creating awareness and sharing insights about the ongoing standard on Maturity Assessment of data spaces – JTC25 WG2 Data Spaces

Clara Pezuela
Strategic Alliances Director in ITI
Expert in JTC25 – Project Lead for TS on Maturity Assessment

Measure the maturity of a data space is not an easy task and required certain guidance

Which is the context of the Technical Specification (TS)?

- Data Spaces are key enablers for data sharing according to EU regulation (Data Act, Data Governance Act)
- European Trusted Data Framework standardization request to support the Article 33 of Data Act
- Includes a deliverable on Technical Specification(s) on a maturity model for Common European Data Spaces
- The Data Spaces Support Centre (DSSC) has produced a Maturity Model which has taken as baseline for the TS

Work in progress…

Which is the scope of the TS?

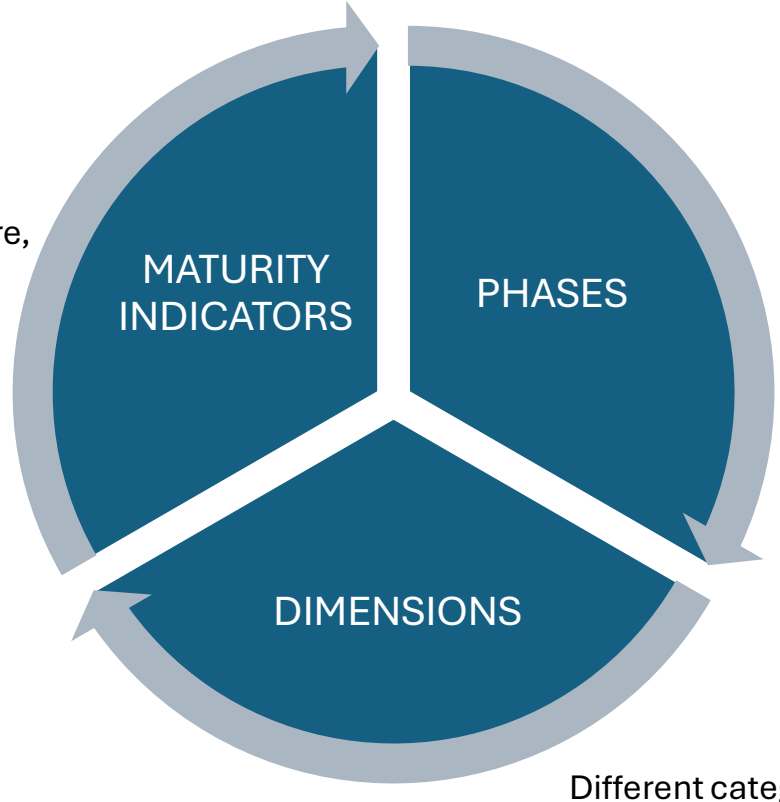
- Define a maturity model concept, structure, methodology and measurable criteria
- And related requirements and guidance for the assessment of data space maturity

Which are the intended use of the TS?

- As a Data Space (or any other data sharing initiative), you can:
  - self-assess the evolution of your data space at any time
  - compare your data space with the others (if self-assessments are public)
  - identify your data space strengths and areas for improvement to evolve
- As candidate to join a Data Space, you can decide your engagement based on the published self-assessment
- As Policy Maker, you can get an overview of all data spaces maturity and take actions based on analysis
- As a Certification Provider, you can use the model for creating your certification offering

Elements in the maturity model

Quantitative or qualitative metrics to monitor, measure, and evaluate the maturity level of a data space



Each of the steps in the evolution of a data space, representing a specific level of development and capability

Reporting structure with additional information

Different categories of indicators to group them

Template for self-assessment

Data Space Maturity Indicators (DSMI)

Indicator description

- Which aspect of the data space do we want to assess?

Metrics (driven by capabilities)

- What do we want to measure? Which are the included capabilities? How do we ask it?

Measurable values

- Which are the posible values to measure?

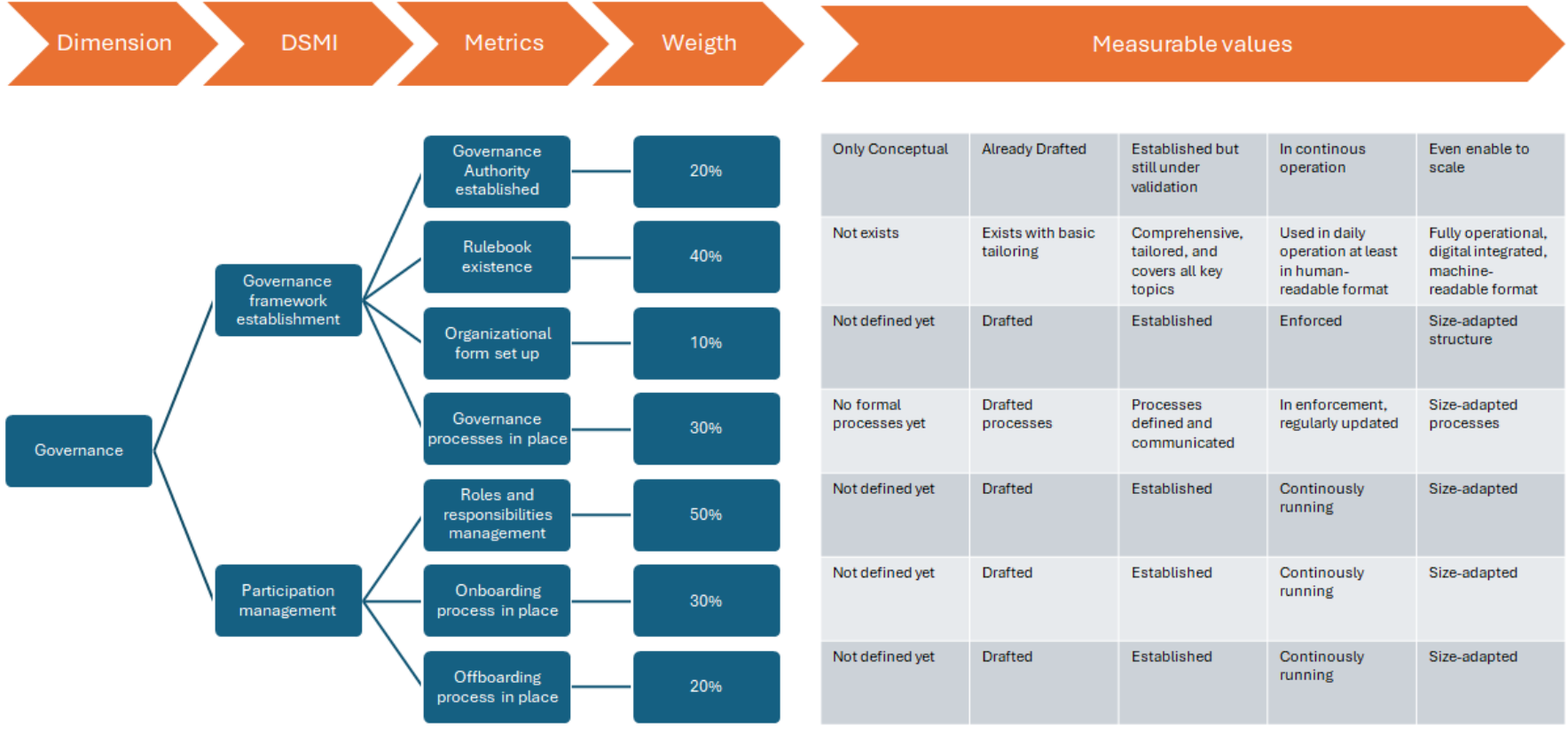
Scoring per phase

- How do we want to measure it?

Weigth of relevance

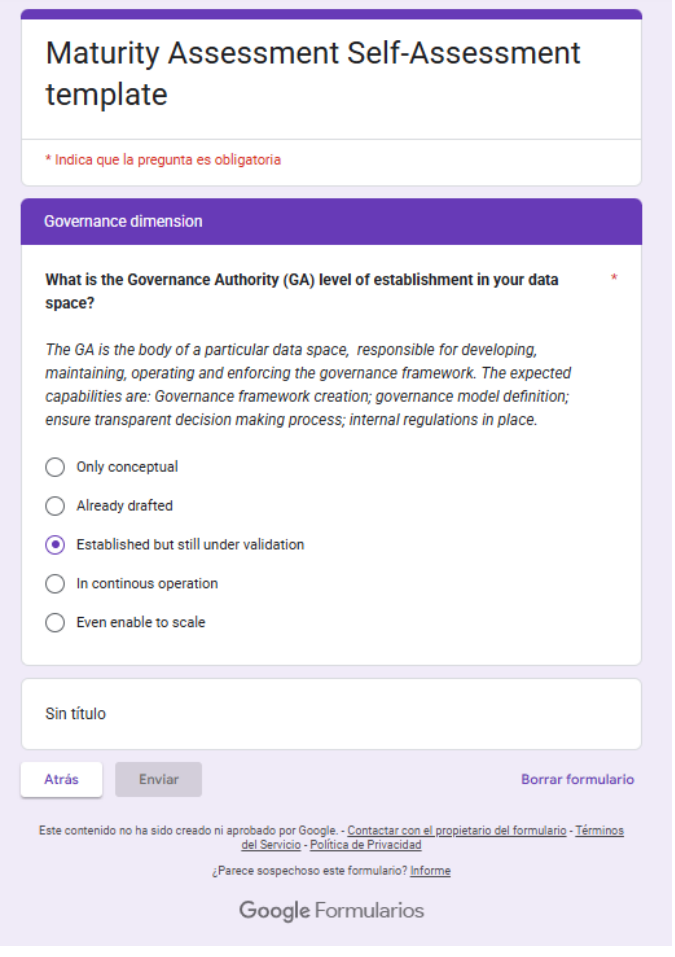
- How relevant is every maturity indicator within the overall dimension? (the total must be 100%)

Example of Governance maturity assessment



Only Conceptual	Already Drafted	Established but still under validation	In continous operation	Even enable to scale
Not exists	Exists with basic tailoring	Comprehensive, tailored, and covers all key topics	Used in daily operation at least in human-readable format	Fully operational, digital integrated, machine-readable format
Not defined yet	Drafted	Established	Enforced	Size-adapted structure
No formal processes yet	Drafted processes	Processes defined and communicated	In enforcement, regularly updated	Size-adapted processes
Not defined yet	Drafted	Established	Continously running	Size-adapted
Not defined yet	Drafted	Established	Continously running	Size-adapted
Not defined yet	Drafted	Established	Continously running	Size-adapted

Template for self-assessment (example)



Maturity Assessment Self-Assessment template

* Indica que la pregunta es obligatoria

Governance dimension

What is the Governance Authority (GA) level of establishment in your data space? *

The GA is the body of a particular data space, responsible for developing, maintaining, operating and enforcing the governance framework. The expected capabilities are: Governance framework creation; governance model definition; ensure transparent decision making process; internal regulations in place.

- ○ Only conceptual
- ○ Already drafted
- ◉ Established but still under validation
- ○ In continous operation
- ○ Even enable to scale

Sin título

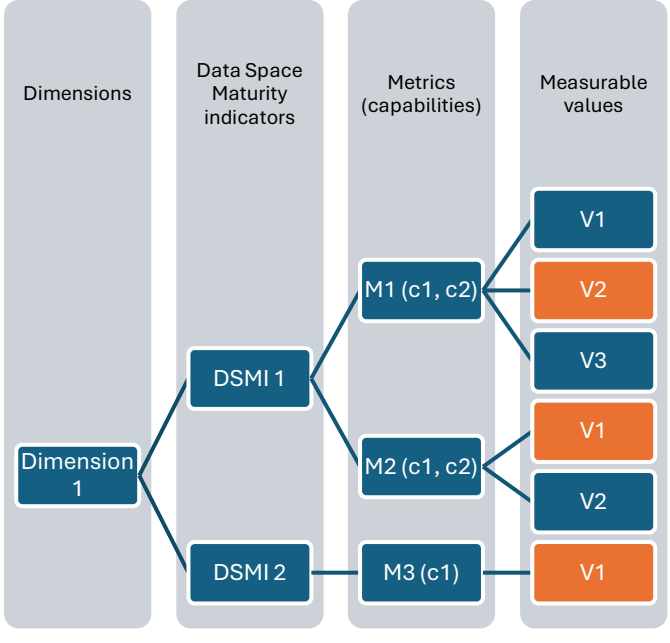
Atrás Enviar Borrar formulario

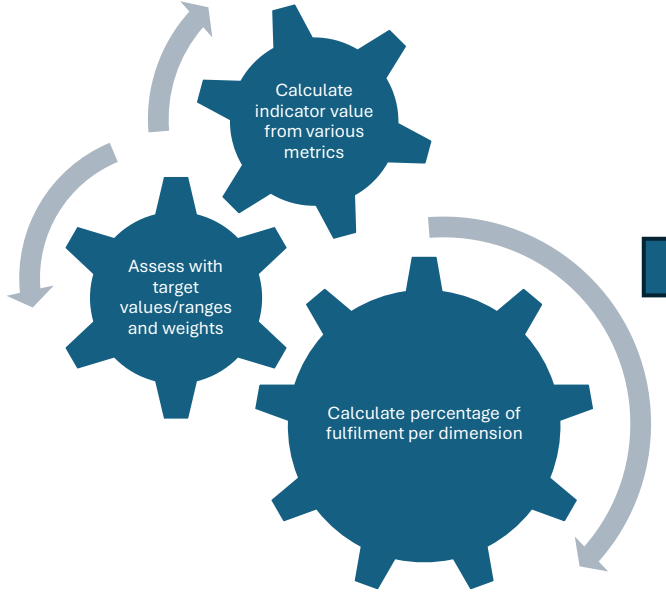
Este contenido no ha sido creado ni aprobado por Google. - Contactar con el propietario del formulario - Términos del Servicio - Política de Privacidad

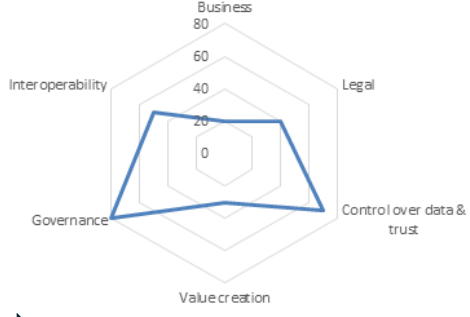
¿Parece sospechoso este formulario? Informe

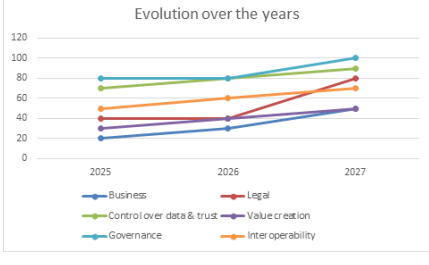
Google Formularios

Maturity assessment method (in progress)



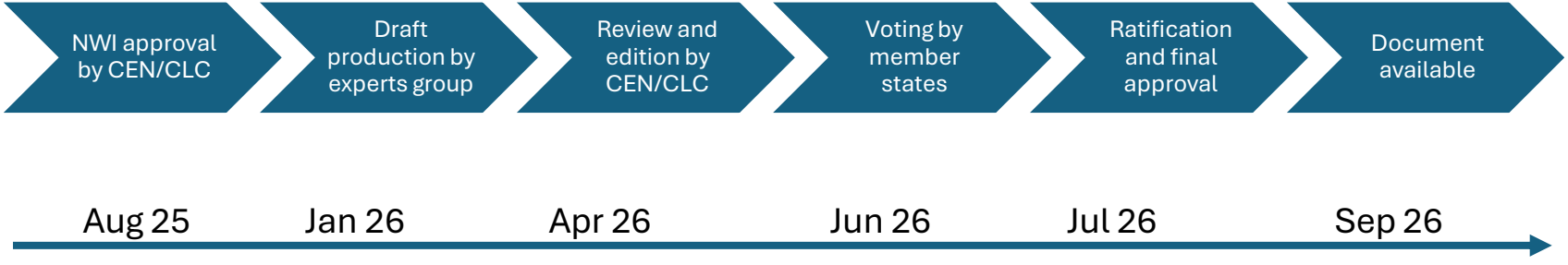






No matter your phase,
matter your continous evolution

Timeline for TS production



STAY TUNED FOR NEXT STEPS!!

Thank you!

Clara Pezuela, cpezuela@iti.es

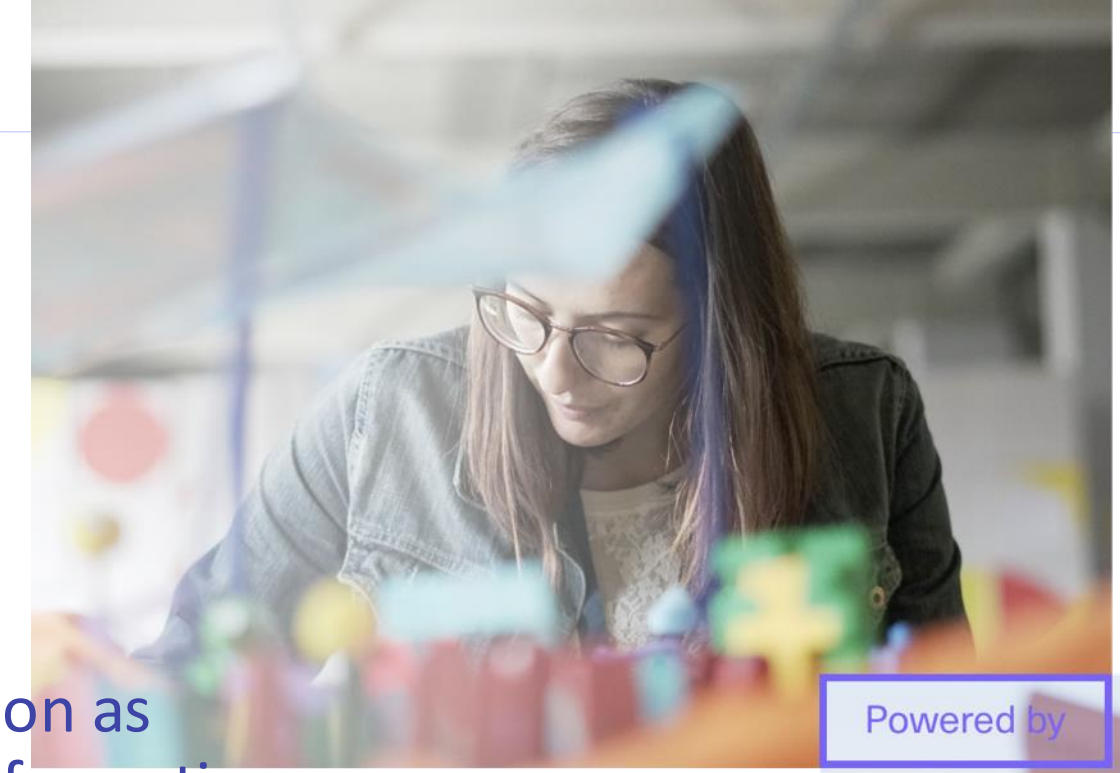
Traffic Flow Data Space

Revolutionising Mobility Through Collaboration

Porto Digital – What is it?

Porto Digital (PD) is a private non-profit association, created in 2004, which currently has the Municipality of Porto, the University of Porto (UP) and the company Metro do Porto as its associates.

Its main goal is to promote projects related to the digital technologies in the context of the city of Porto and its metropolitan area, as well as the development of projects in the areas of innovation and experimentation.



Mission

Innovation and Digital Transition as accelerators of the city's transformation, contributing to better and more efficient public services with the guarantee of a significant impact on citizens' quality of life and sustainable development.

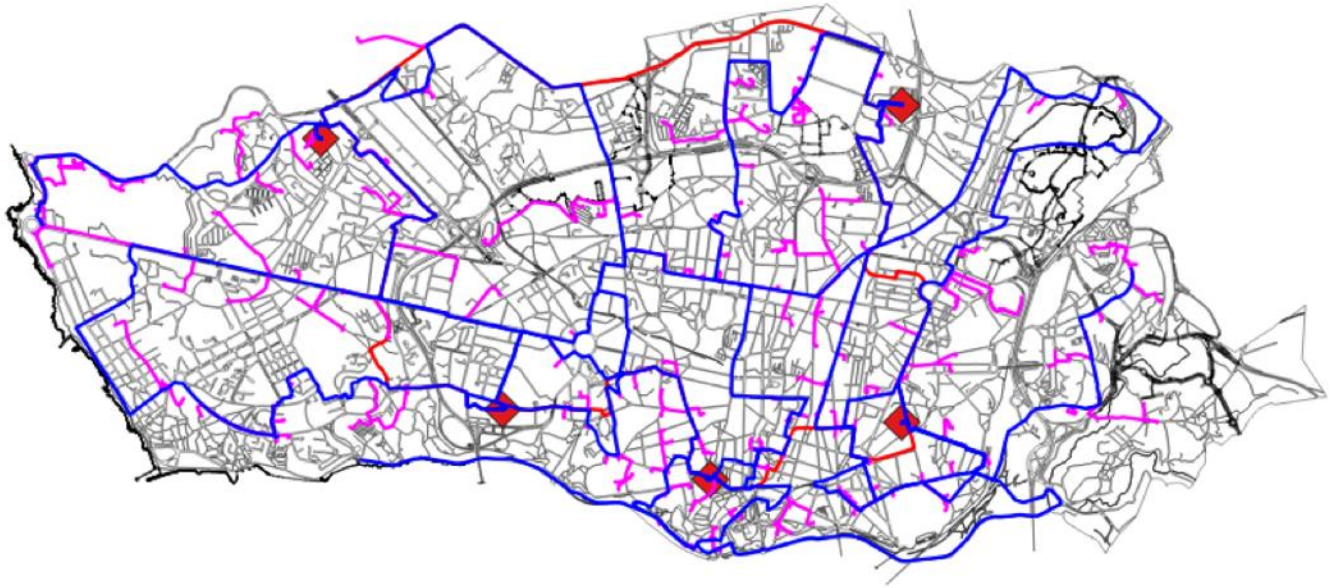
Strategy

Connect → Technology

Co-create → Experimentation & Innovation

Collaborate → Partnerships

Consolidation and expansion of infrastructure



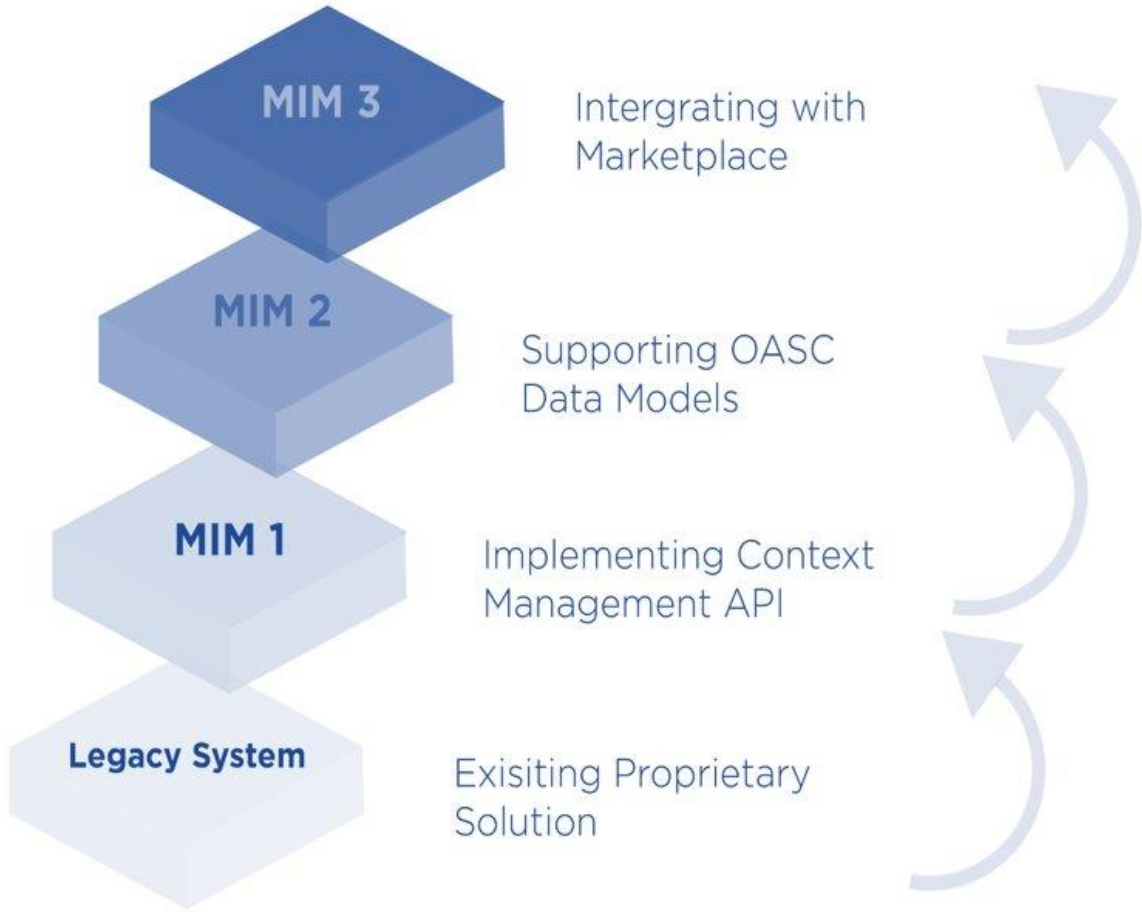
Communication's infrastructure

Characteristics	
Optical Fiber	**+4.000km**
Backbone Fiber	195 km
Fiber access for social services	53 km
Points of presence	5
Connected Buildings	**+220**
Municipal Buildings and Schools	120
University of Porto Buildings	59
Health Care Centers	14
Other Institutions	30
Connected Housing Buildings	**+6.000**
Social Housing Districts	15

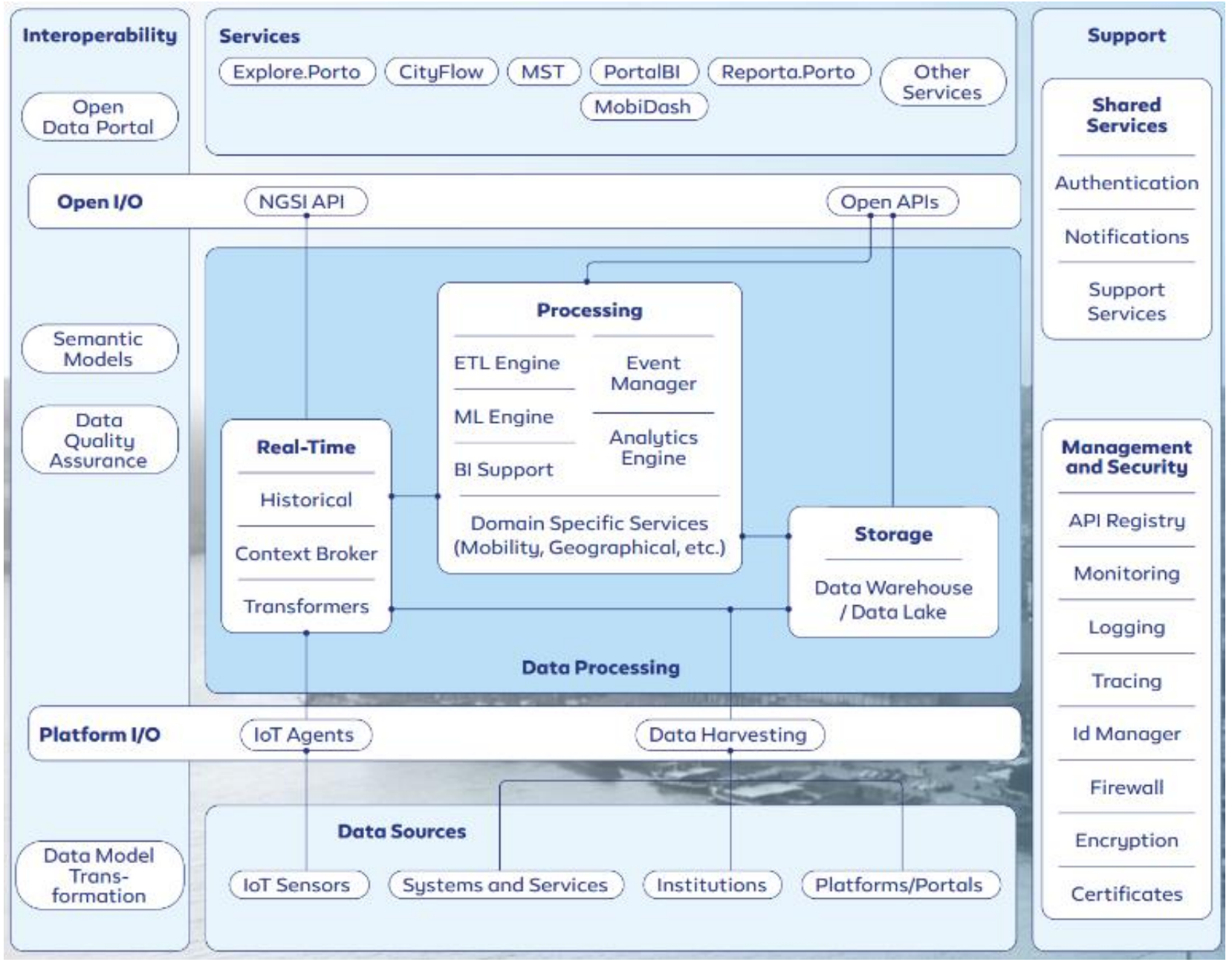
MIMs

Minimal Interoperability Mechanisms

Development of services according to OASC micro-services (Open Agile Smart Cities)



Porto's Urban Platform

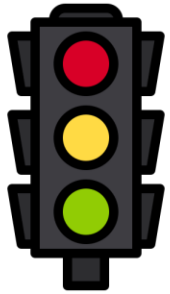


Why Data Spaces?

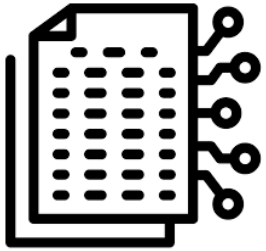
Sensors

Cameras

Modern Cities



Traffic Lights



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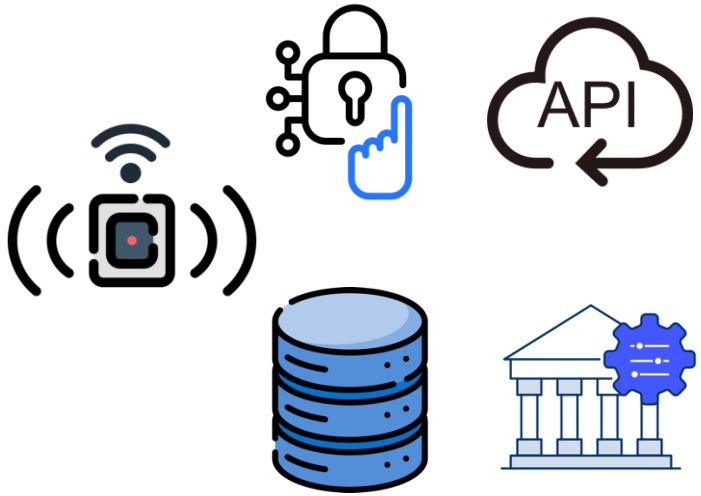
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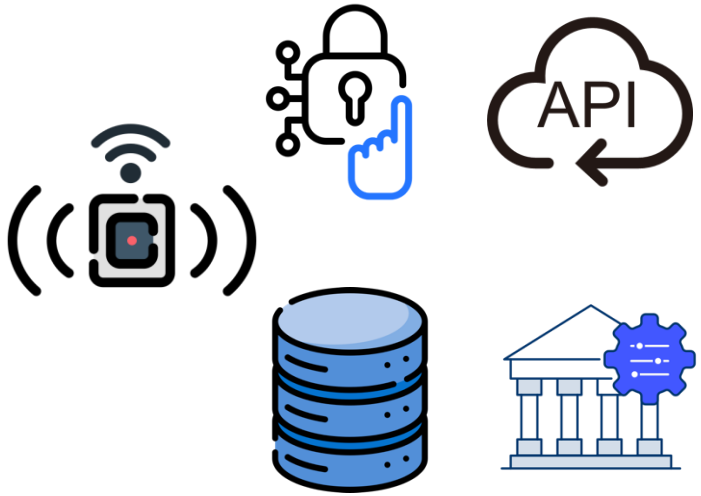
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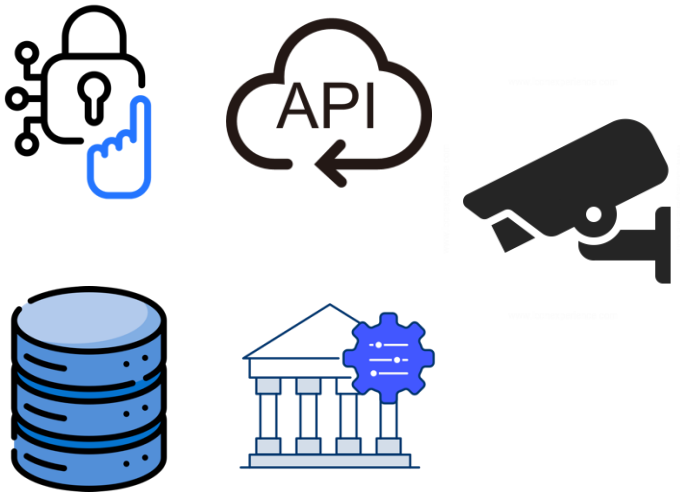
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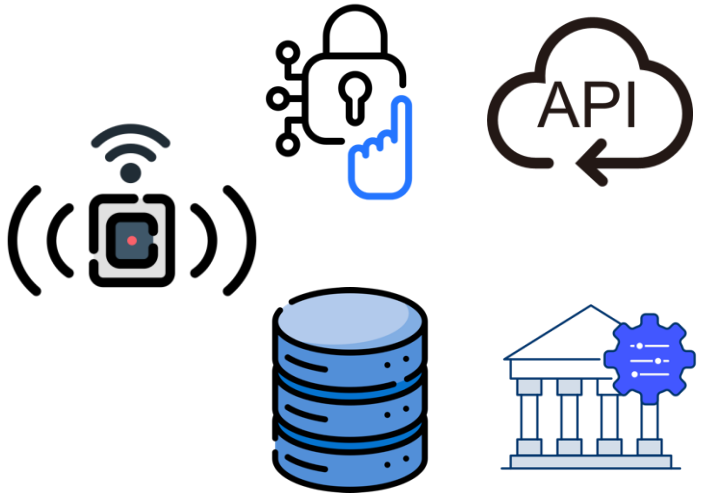
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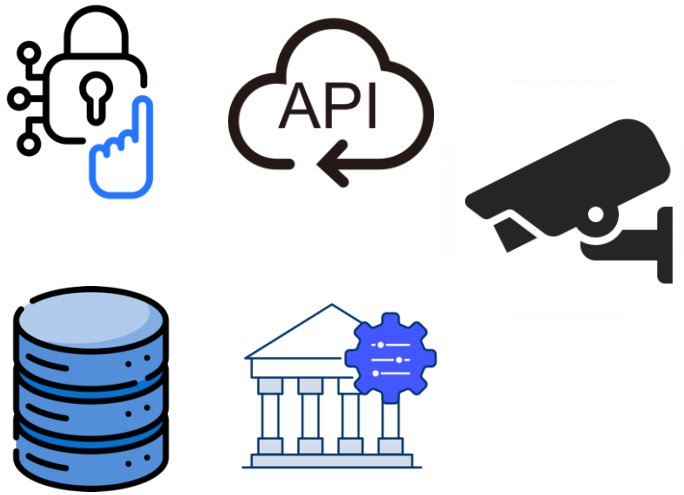
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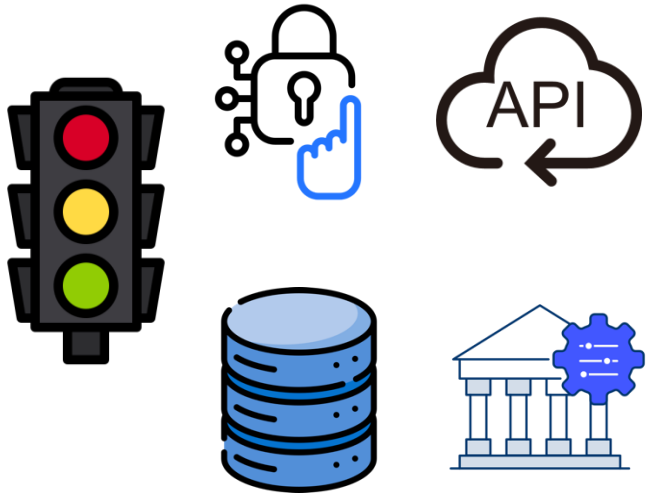
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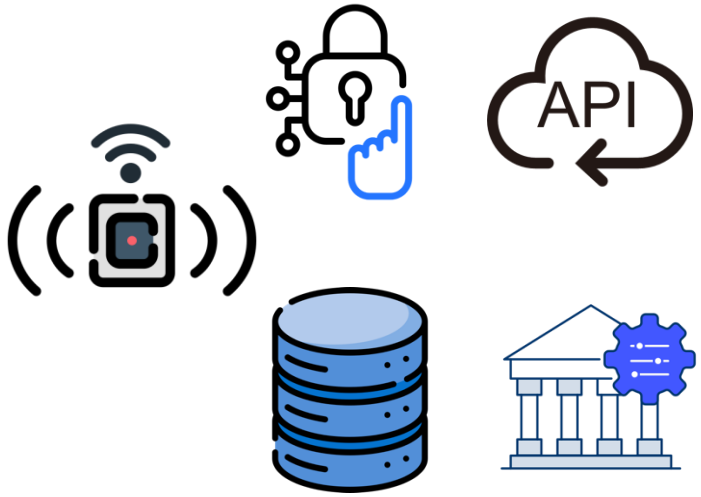
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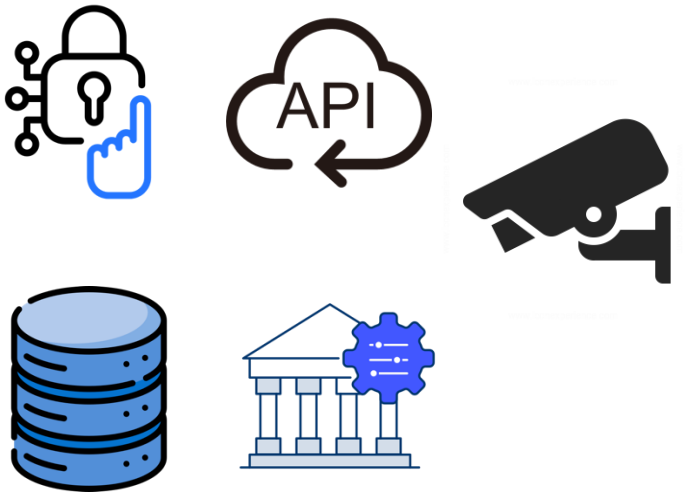
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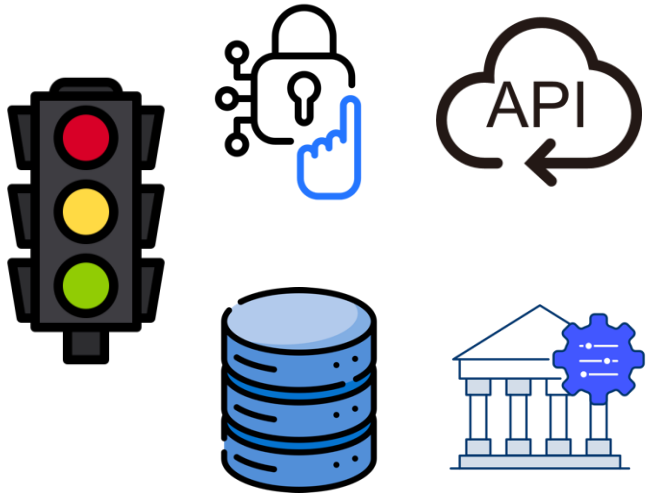
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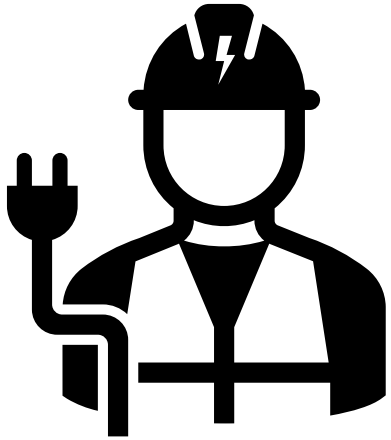
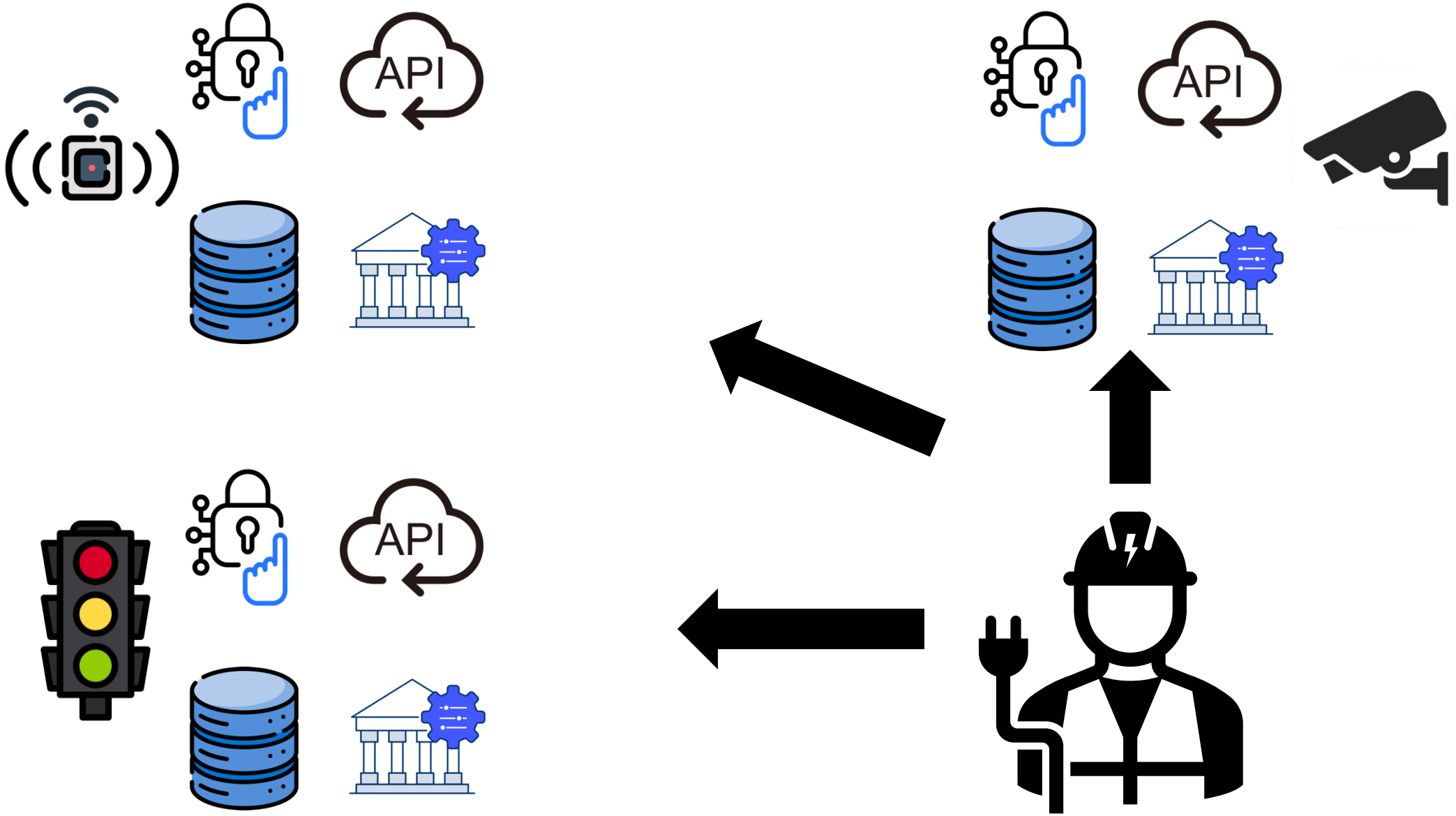


… but what if?

- We want to have an hollistic approach to traffic management?
- We want to start traffic prediction initiatives?
- We want to validate data quality from different sources?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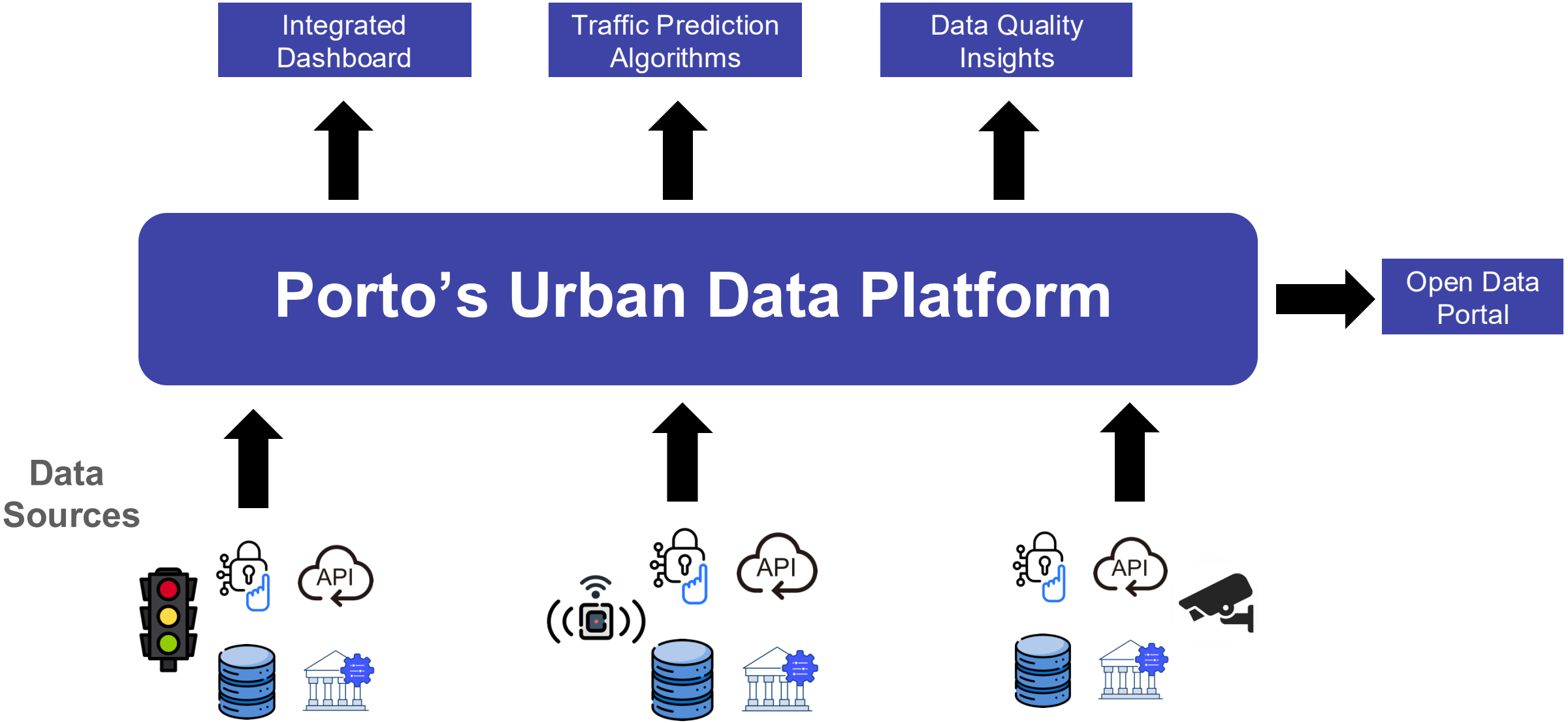
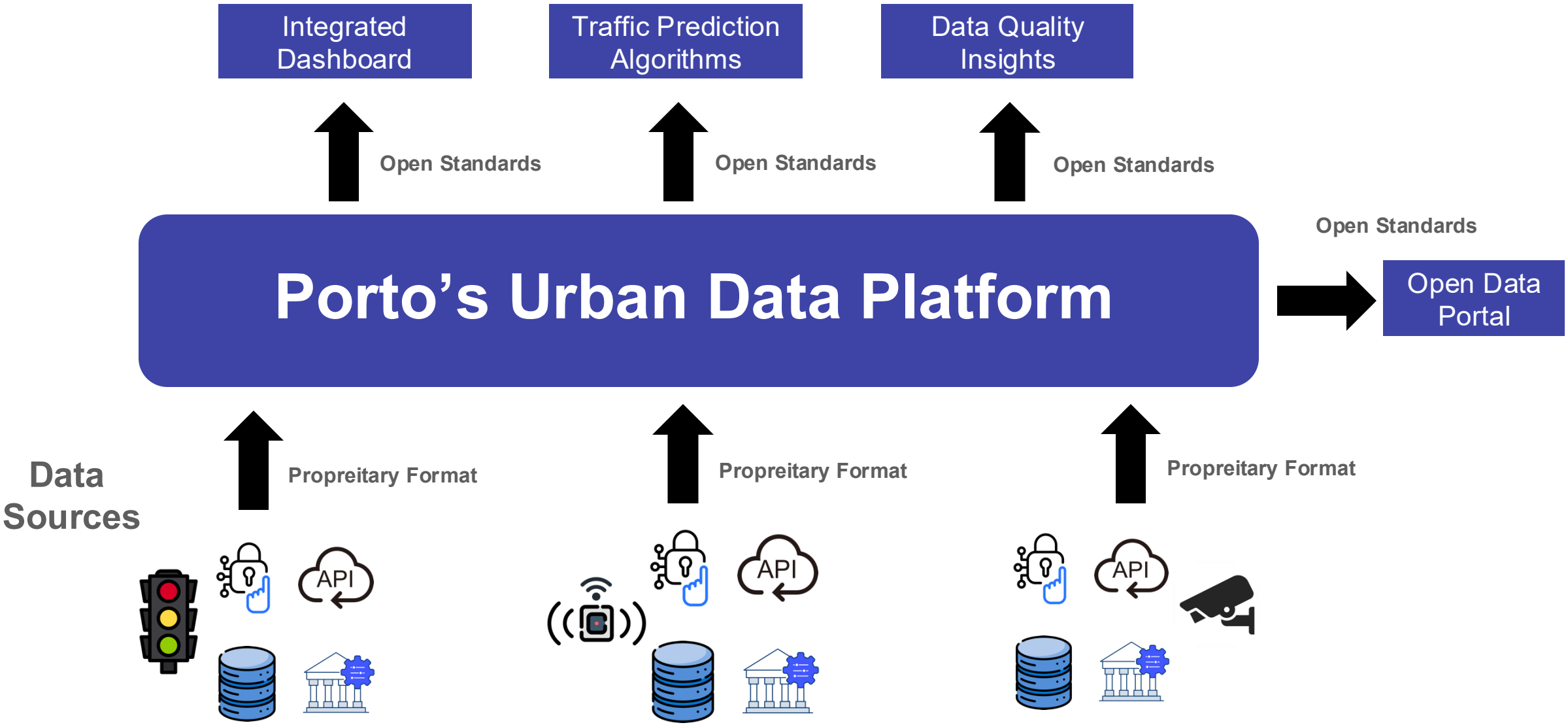
… but what if?

- We want to have an hollistic approach to traffic management?
- We want to start traffic prediction initiatives?
- We want to validate data quality from different sources?

… so…

- We get a team of specialists (DE, DS, SWD)
- We enforce interoperability and data sovereignty
- We create a Porto Urban Data Platform


Integrated Dashboard
Traffic Prediction Algorithms
Data Quality Insights
Porto's Urban Data Platform
Open Data Portal
Data Sources
API
API
API


Integrated Dashboard
Traffic Prediction Algorithms
Data Quality Insights
Open Standards
Open Standards
Open Standards
Open Standards
Porto's Urban Data Platform
Open Data Portal
Data Sources
Propreitary Format
Propreitary Format
Propreitary Format
API
API
API

… ok, but now…

- We want to share the responsibility of interoperability with providers.
- We want to reduce the maintenance needed from downstream data.
- We don’t want to be responsible for the intrepetation of domain-specific data..

So, let’s build a Dataspace

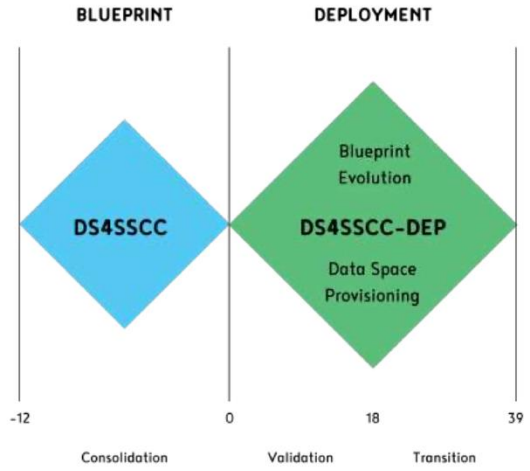
- We define clear rules for joining and sharing data.
- We define the exchange standards and the data models.
- We remove the burocratic and long process of establishing data sharing contracts
- Make it attractive and convinent for the private sector to join and share data with us…

PORTO DIGITAL

Traffic Flow Data Space

PORTO DIGITAL

DS4SSCC



- Validate and advance the development of an EU-wide cross sectoral data spaces
- Build on and evolve the governance and technical blueprint established by the data space preparatory action **(DS4SSCC)**

Co-funded by the European Union

European data space for smart communities

Project Info

Pilot sites: Porto, Helsinki and Amsterdam

Start Date: November 2024
End Date: April 2026

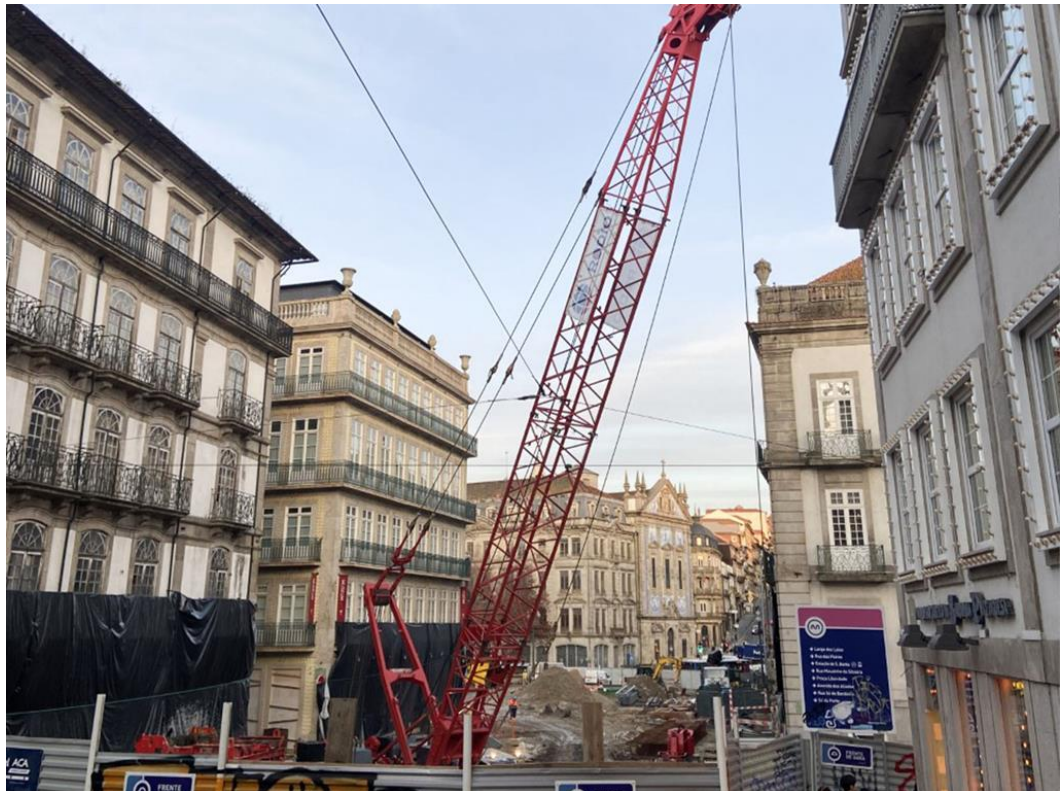
Co-funded by the European Union

European data space for smart communities

Use-Case

Road construction and maintenance

- often causing congestion and pollution,
- require better data on planned roadworks, as current information is often inaccurate



Use-Case: Motivation

- Market and government had been at an impasse for years.
- Service providers did not use government data because it was not reliable.
- Governments provided faulty data because service providers didn't use the data anyway.
- Data quality was difficult, despite several attempts with currently reported mediocre results.

Service Provider **Government**

IDEA – A Data-Driven Solution for Road Works

Planned roadworks & closures

+

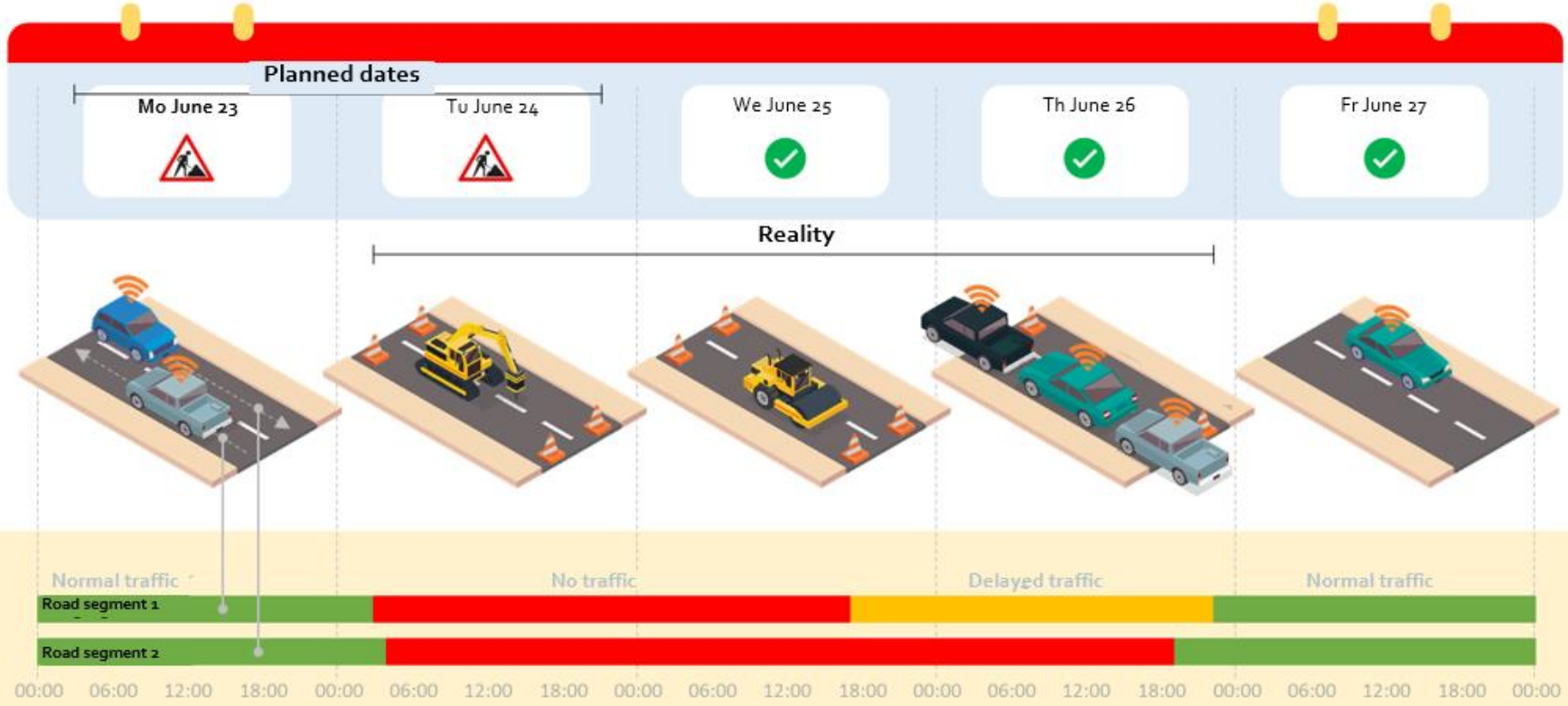
Floating car data

Incident data, canbus data, connected drivers data

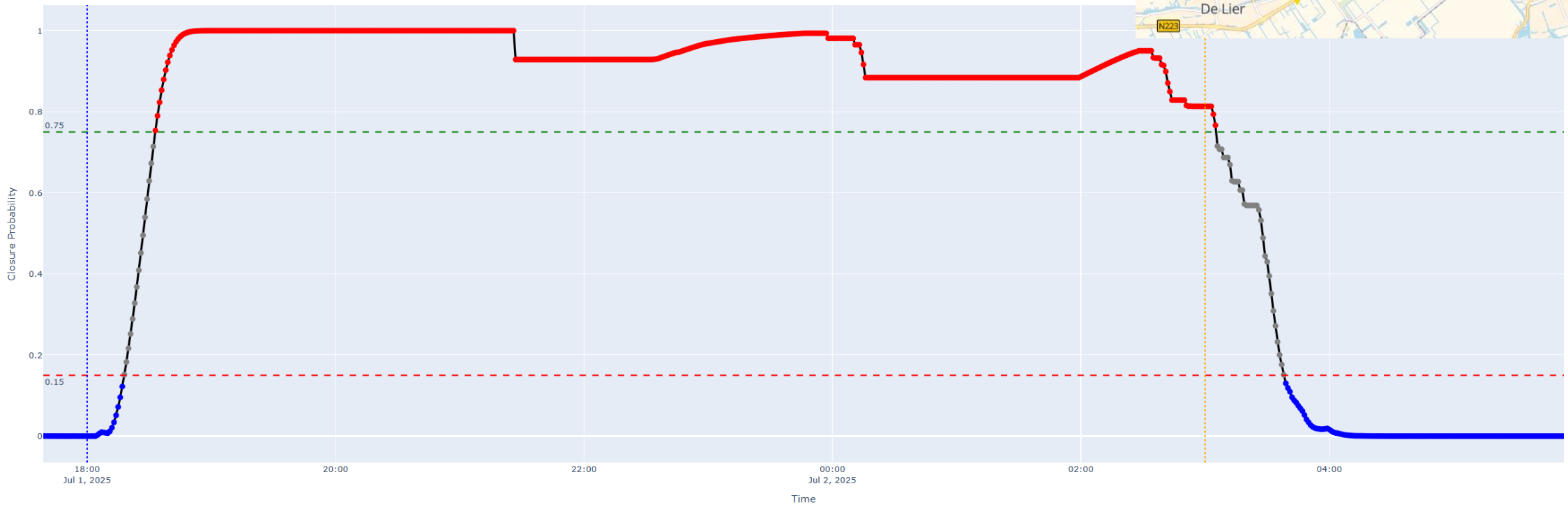
=

IDEA

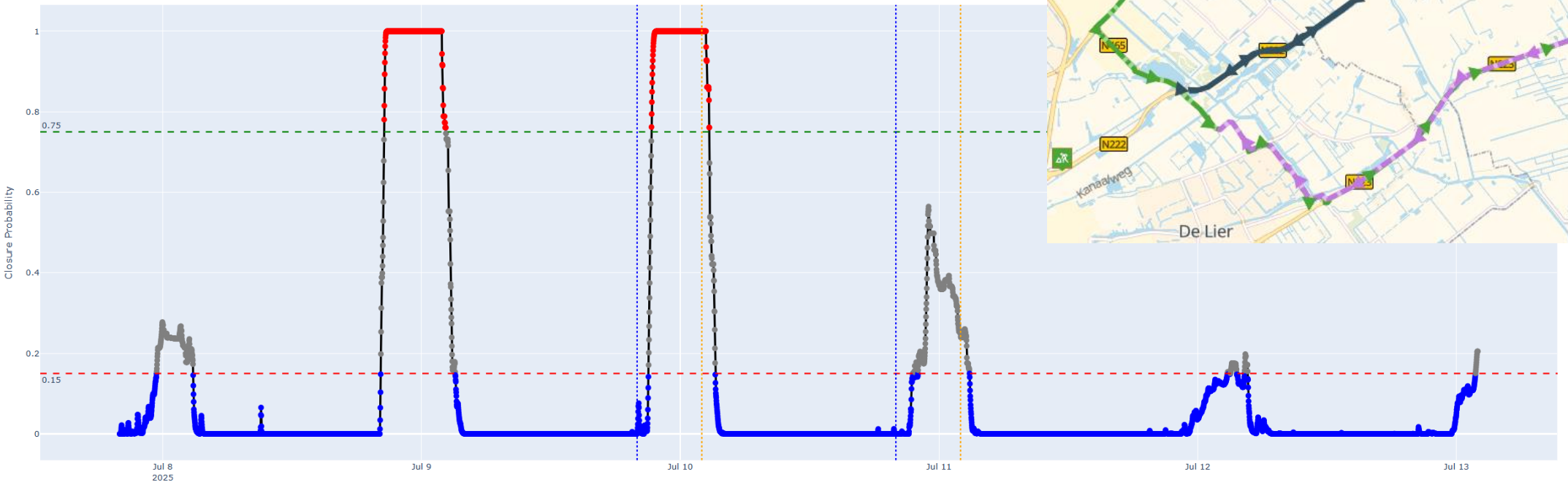
Realtime validated roadworks data for road authorities and service providers



Example: One Closure



Example: Wrong Planned Period



Results

- Insight if roadworks are carried out as planned
- Improvements in road work data quality
- Realtime road closure information for road users (in apps)
- Standardized building blocks
- New validation insights (incident detection, road blockage, …)

Traffic Flow Data Space

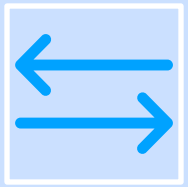
Traffic Flow Data Space (TFDS), a space that facilitates the sharing of mobility data. Testing and validating current Data-Spaces Framework

Promotes data exchange between sectors such as mobility, road works, events, traffic, and the environment.

Expand on IDEA's success by adding new features and implementing new data-driven solutions.

Goals

The development of the Traffic Flow Data Space (TFDS), which aims to integrate mobility and environmental data from both the public and private sectors.



The data space will help define better approaches to data and application interoperability by testing in three different contexts: Porto, Amsterdam, and Helsinki.

Implementation of IDEA in Porto and Helsinki, and development of IDEA 2.0.

TFDS Current Status and Next Steps

Governance and Rules

- Data Providers Joining implies a exchange of data.
- No fees, no money exchange.
- Cataloged data needs to have quality metadata that shows coverage and confidence levels
- Services and Academic/Non-Profit can join freely
- Only basic rules for data sharing contracts

Technology

- Data-Space Framework: **SIMPL**
- Data-Space Connector: **Eclipse Dataspace Connector (EDS)**
- Exchange Protocols: **Dataspace Protocol (DSP)**
- Data Models: **DATEXII** for Mobility Data, **SmartDataModels** for others.

What will we deliver…

- A working Data-Space deployed in 3 pilot cities
- A Data-Space ready IDEA version, tested in 3 pilot cities
- Open-source components that translate Private Provider data into DATEXII mobility standard and DataSpace Connector ready.
- Several documents that explain the architecture, governance and technical solutions and lessons learned.

Talking about the biggest lessons…

- **Technical Maturity is good, but** … we still lack interoperability between different connector solutions.
- Issues with convincing private sector to continue in the data-space.
- Lack of interest because our **business model**
- More interest because of **European Regulation**
- We need to prove that the data the public sector provides is valuable to be traded.

Shape Europe's Green and Digital Future

- Co-funding cross-sectorial data spaces through 11 pilots
- Validating the European data space for smart communities blueprint
- Towards a federated European data space for smart communities
- Supporting policy priorities of cities and communities

Discover more

ds4sscc.eu

European data space for smart communities

OPEN & AGILE SMART CITIES & COMMUNITIES

TAL TECH

FinEst Centre for Smart Cities

IDC

FIWARE FOUNDATION

serendipity

Gospodarska zbornica Slovenije Chamber of Commerce and Industry of Slovenia

zit ICT Association of Slovenia

imec embracing a better life

Co-funded by the European Union

Get involved in Shaping Europe's Green and Digital Future

Website

Stakeholder Forum

LinkedIn

European Data Space for Smart Communities

European data space for smart communities

OPEN & AGILE SMART CITIES & COMMUNITIES

TAL TECH

FinEst Centre for Smart Cities

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serendipity

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Thank you!

Cyber Resilient Industries

Leveraging Dataspaces to build Cyber resilient European Industries

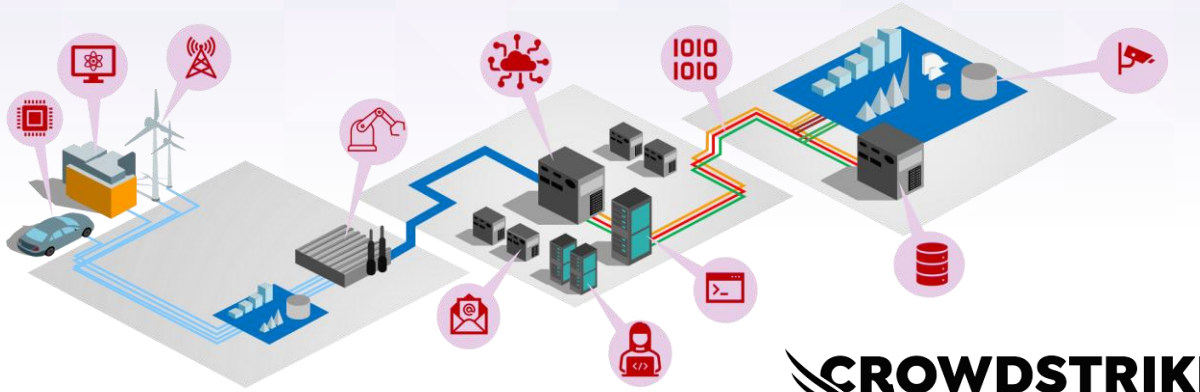
November 21st, 2025 – Porto

Reda YAICH
Head of Cybersecurity & Networks

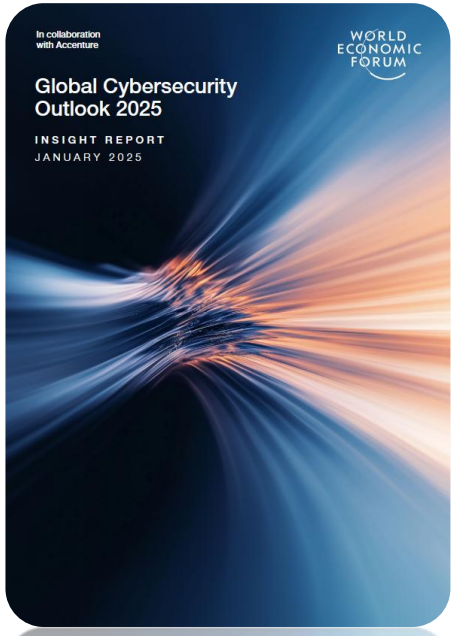
Supply-chain cyber risks

insights, outsights and oversights!

- **What's really happening now**
  - Supply chain is risk #1
  - Opaque dependencies
  - Concentration risk is real
- **Ecosystem & systemic view**
  - Systemic points of failure
  - Geopolitics in the supply chain
  - Inequity amplifies risk
- **What we're still missing**
  - No shared "risk radar"
  - Data locked in silos
  - Downstream fragility ignored



CROWDSTRIKE
2024



2025
CLOUDFLARE

How Cyber resilient are European Industries?

1. Growing awareness of supply-chin risk
2. Established Cyber Threat Intelligence practices (CVE, STIX, VEX)
3. Mature SBOM tooling ecosystem (SPDX, CyDX)
4. Existing EU & Gaia-X building blocks (e.g. Trust Framework)

1. Limited visibility on portfolio and supplier risk due to scattered, low-quality evidence
2. Manual, ad-hoc reporting for regulators and customers
3. Misalignment between business, legal and technical views
4. Short-term cost focus killing long-term resilience

1. From noise to prioritised, contextual risk
2. Early warning on supplier and product risk
3. More resilient supply-chain strategy
4. Automated, reusable CRA evidence
5. Faster, safer go-to-market
6. Competitive demonstrable trust
7. New services and innovation

1. Supply-chain shocks will hit harder
2. Regulation is clear on the “what”, not the “how”
3. Exposure of sensitive technical details
4. SMEs and smaller actors will be left behind
5. Becoming collateral damage of suppliers’ CRA failure

Value proposition of Cyber Resilient Industries

VEX

STIX

CVE

CWE

Vulnerabilities

DPP

SPDX

CyDX

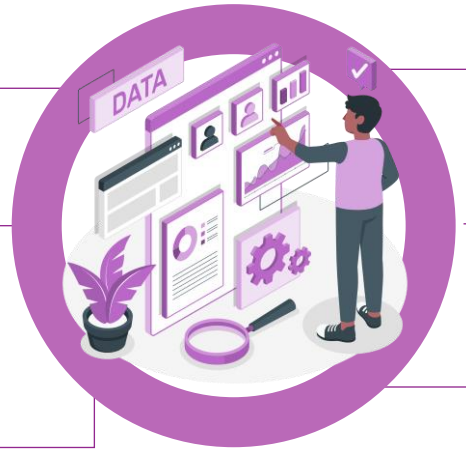
Bill of Material

Software BoM

Crypto BoM

AI BoM

Quantum BoM



Automated and Dynamic Risk Management

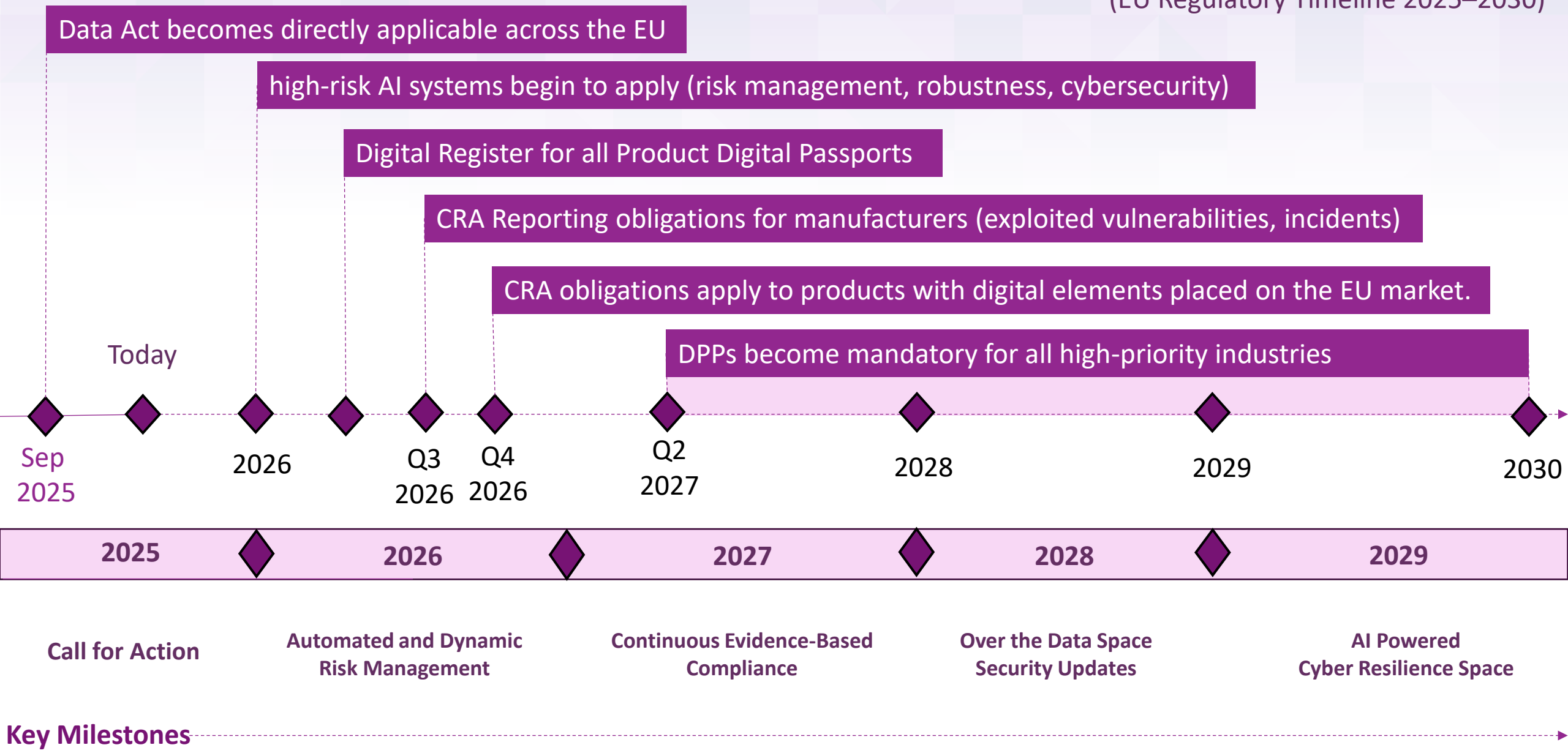
Over the Data Space Security Updates

Continuous Evidence-Based Compliance

Systemx
INSTITUTE OF RESEARCH AND TECHNOLOGY

Why Our Dataspace Cannot Wait

(EU Regulatory Timeline 2025–2030)



Reda YAICH

Call for Action

Ndeye-Awa DIACK

Supporting partners