



DATA SPACES
SUPPORT CENTRE

DSSC Insight Series

Building synergies: lessons from Manufacturing & Green Deal data spaces

22 May 2025 | 16:00 CEST | online



Gianfranco Cecconi
DSSC



Joel Sepúlveda
Innovalia



Ann Runnel
Reverse Resources



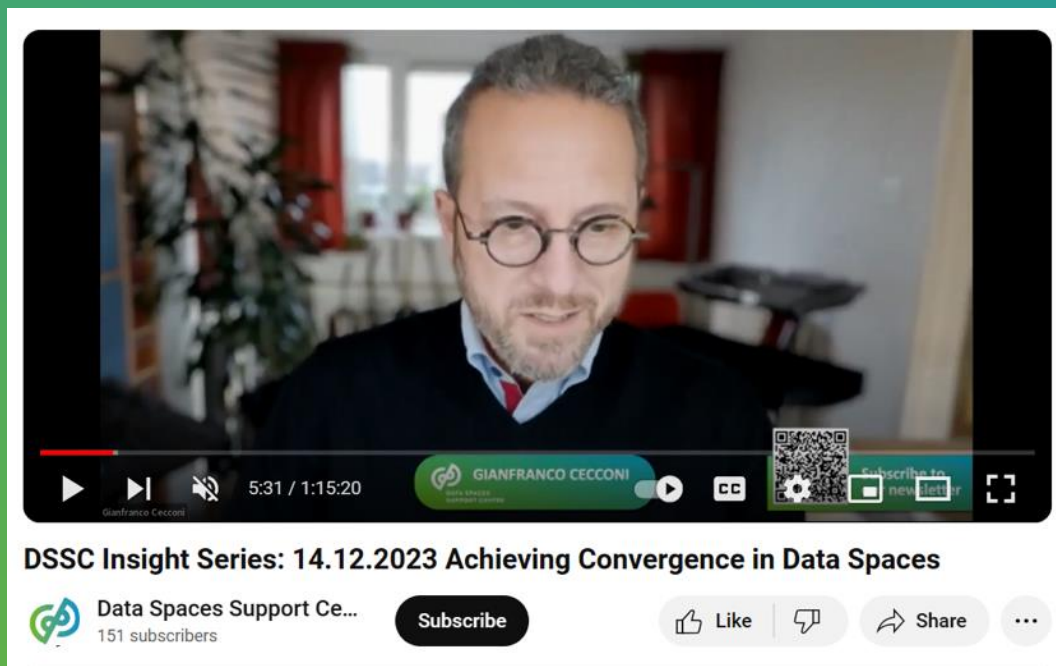
Carmen Polcaro
Innovalia



Funded by
the European Union

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

- Intro: Gianfranco Cecconi, Data Spaces Support Centre
- SMARTENANCE: Carmen Polcaro, Innovalia
- SAGE (Introduction): Mark Dietrich, EGI Foundation
- SAGE (NetZero Manufacturing use case): Joel Sepulveda, Innovalia
- SAGE (Circular Textile use case): Ann Runnel, Reverse Resources
- Q&A (You can ask questions in the chat!)



This webinar is recorded. Did you know? Previous DSSC insight series recordings are available on our Youtube channel. Videos from our annual event are also available!

Check out our YouTube channel here



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Centre and the European Union's programme
for common European data spaces.**

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SM⁴RTENANCE

DSSC Insight Series - May 22nd, 2025

Building synergies: lessons from manufacturing
and Green Deal data spaces

Carmen Polcaro (INNOVALIA)

EU ECONOMIC SPACES

1993



EUROPEAN SINGLE MARKET

European Economic &
industrial transformation

2023



EUROPEAN COMMON DATA SPACES

Industrial & public administration
digital transformation. European
data economy pillar

2030

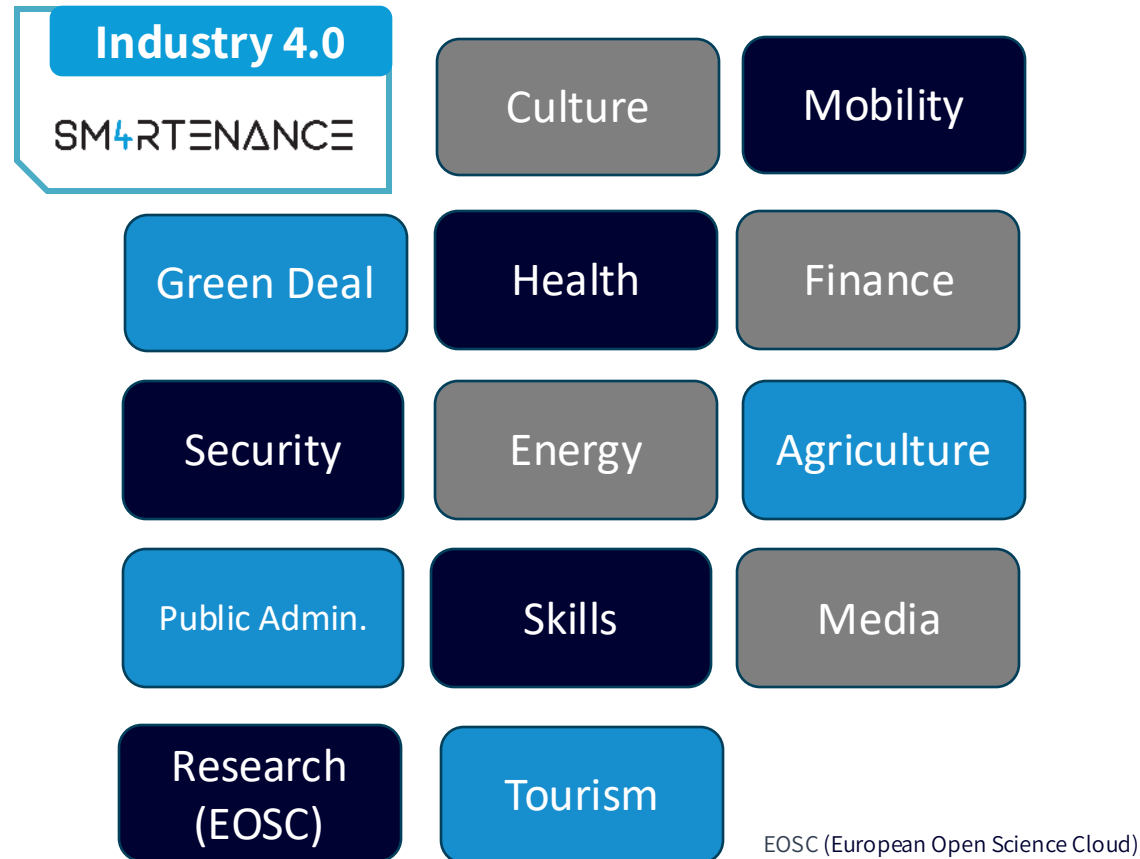


European Net-Zero Spaces

Industrial green
transformation

EU DATA STRATEGY

14 EUROPEAN COMMON DATA SPACES



SM4RTENANCE

European Deployment of Smart
Manufacturing Asset 4.0 Multilateral Data
Sharing Spaces for an Autonomous
Operation of Collaborative Maintenance
and Circular Services

Project No: 101123490



Duration: 36 Months

Start Date: 1st October 2023

Consortium: 42 full partners, 5 associated partners,
distributed across 11 EU countries.

Strategic Objective: DIGITAL-2022-CLOUD-AI-03-DS-
MANUFACT

Total Budget: 14 M €

EC Contribution: 8M€

Project Website: sm4rtenance.eu

SM4RTENANCE



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ASSOCIATION

DAWEX
connected edge technology

top~ix
WE DO CONNECTIONS

NTT DATA

OTE
GROUP OF COMPANIES

SCSN
smart connected
supplier network

domina
data management

FIWARE
FOUNDATION

SOVITY

DGS
BUILDING THE FUTURE

SQS
SOLUTIONS AND SUPPORT

TRIMEK
METROLOGICAL ENGINEERING

Cefriel
POLITECNICO DI MILANO



PRIMA INDUSTRIE

FIDIA



Schneider Electric

FIL YOUR FUTURE

DATAPIXEL
QUALITY CONTROL ENGINEERING

TNO

TXT

core

IJSSEL

UNIMETRIK
METROLOGY AND CALIBRATION

ATLANTIS
ENGINEERING

SYXIS
innovate together

Fraunhofer
IOSB

INDUSTRIE 4.0
AUSTRIA

UiO

CERTH
CENTRE FOR
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HELLAS



AVL

BEMAS

cea

BAI DATA
| INNOVATION

MADE
Competence Center 4.0

AFNeT Services

INTELLIMECH
CONSORZIO PER LA INNOVATION DESIGN

VDMA

carsa

eit Manufacturing
CLUSTER SOUTH

**ASSOCIATED
PARTNERS**

efnms

**INTERNATIONAL DATA
SPACES ASSOCIATION**

VDI

AI MANUFACTURING

2025

AI in Manufacturing

Supply Chain Management



Predictive Maintenance



New Product Development



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Quality Assurance



Streamlined Paperwork



Order Management



Cobots



SM₄RTENANCE

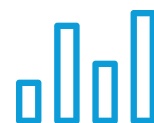


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DATA-DRIVEN TRANSFORMATION



BOOST DATA SHARING



80%

Industrial Data is Never Used

<https://www.europarl.europa.eu/news/en/headlines/society/20220331STO26411/boosting-data-sharing-in-the-eu-what-are-the-benefits>

ONE DATA,
ONE USE

A background image showing two hands shaking in a firm grip, symbolizing partnership or agreement. The image is overlaid with a semi-transparent blue filter.

ONE PARTNER,
ONE PROJECT

EU DATA SPACE 4.0 – WHAT IS IT?



*“A **DISTRIBUTED** SYSTEM DEFINED BY A **GOVERNANCE** FRAMEWORK THAT ENABLES **SECURE** AND **TRUSTWORTHY** DATA TRANSACTIONS BETWEEN PARTICIPANTS WHILE SUPPORTING **TRUST** AND **DATA SOVEREIGNTY**. A DATA SPACE IS IMPLEMENTED BY **ONE OR MORE** INFRASTRUCTURES AND ENABLES **ONE OR MORE** USE CASES.”*

*“**INTEROPERABLE** **FRAMEWORK**, BASED ON COMMON **GOVERNANCE** PRINCIPLES, STANDARDS, PRACTICES AND ENABLING **SERVICES**, THAT ENABLES **TRUSTED** DATA **TRANSACTIONS** BETWEEN PARTICIPANTS.”*

V2.0

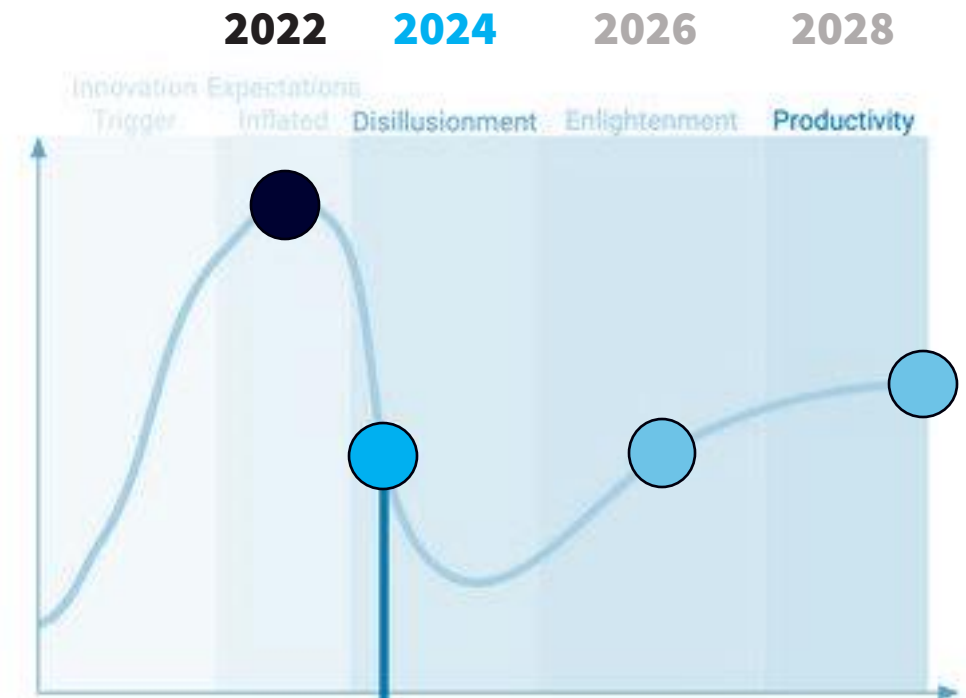


EU DATA SPACE 4.0 – WHERE WE ARE?



Valley of Death

SM4RTENANCE

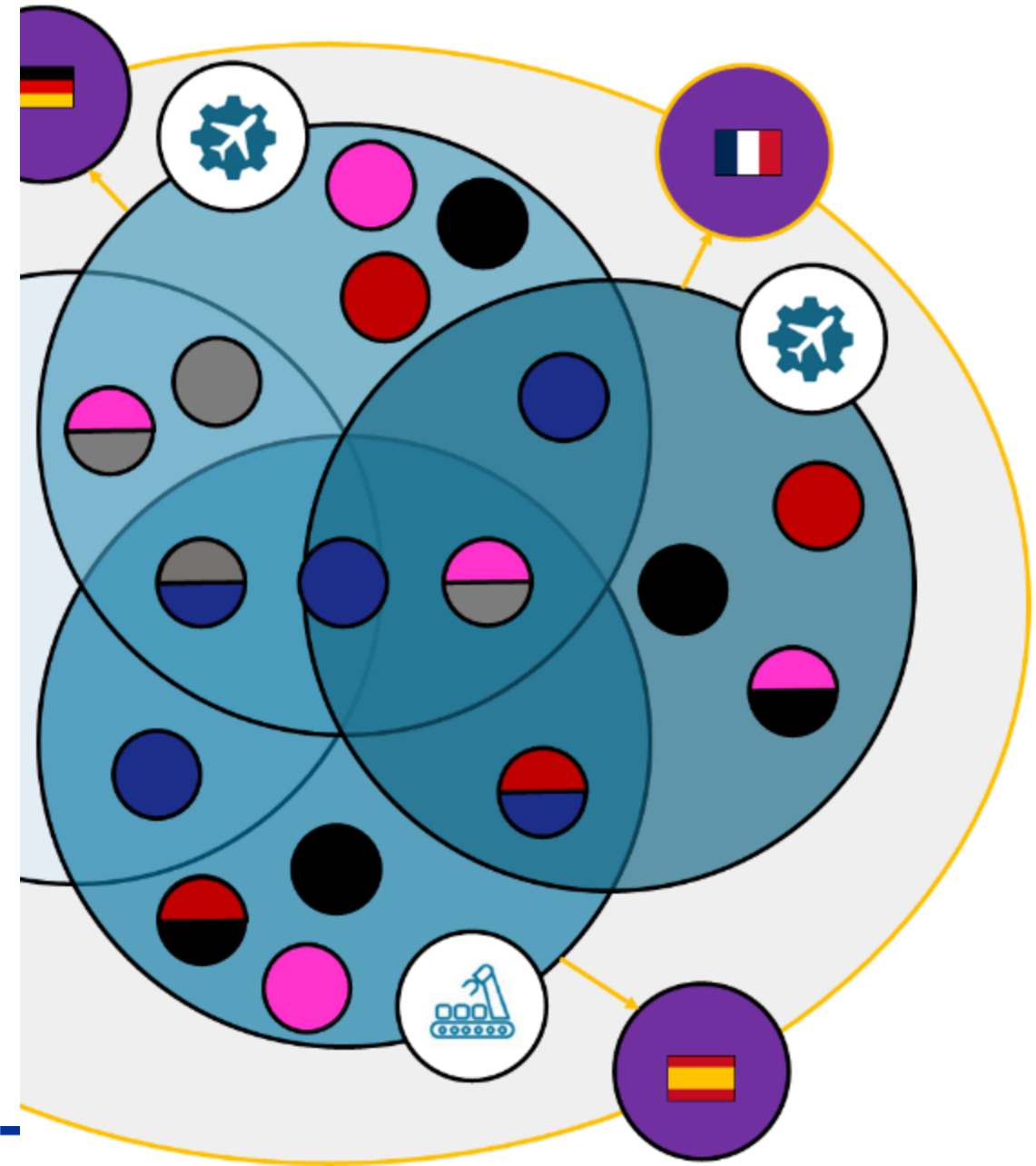


Trough of Disillusionment

SM4RTENANCE

SM4RTENANCE MISSION

- The DATA SPACE mission is to support the effective organisation of data and industrial ecosystem value chains to address specific manufacturing challenges.
- Organisation of Asset Management services will differ from manufacturing supply chain management services.
- However, services will coexist in factory day to day operations.



SM4RTENANCE ASSET 4.0

MISSION

Factory Challenges

RESILIENCE IN SUPPLY CHAINS



“Today’s peer to peer networks don’t do the job”

EXECUTIVE AWARENESS

SUSTAINABILITY AND REGULATORY REQUIREMENTS



“Collaboration models needed to capture the entire value chain”

DATA ECOSYSTEM

GEO POLITICS AND INNOVATION



“Sharing data is a matter of trust and sovereignty”

EUROPEAN VALUES

ECONOMIC EFFICIENCY



“Network adoption and interoperability takes more than ONE”

INDUSTRY APPROACH

Asset 4.0 Capabilities

SUSTAINABILITY

MODULARITY

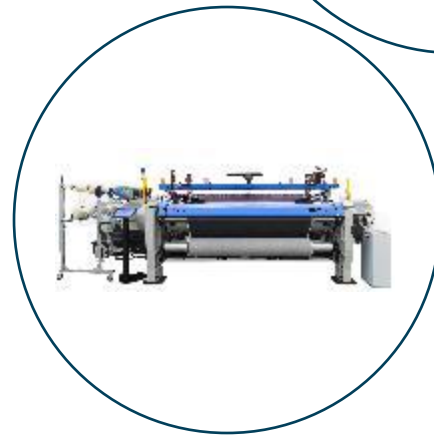
FLEXIBILITY &
RESILIENCE

INTEROPERABILITY

SM4RTENANCE ASSET 4.0 MISSION



SM4RTENANCE



SM4RTENANCE



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SM4RTENANCE MISSION

- “TO FACILITATE A NEUTRAL *CROSS-SECTORIAL* DATA SPACE WHERE DATA CAN BE PROVIDED ALONG THE *COMPLETE* ASSET *LIFECYCLE* FROM THE DIFFERENT STAKEHOLDERS *INTERACTING* WITH THE *ASSET 4.0*”.

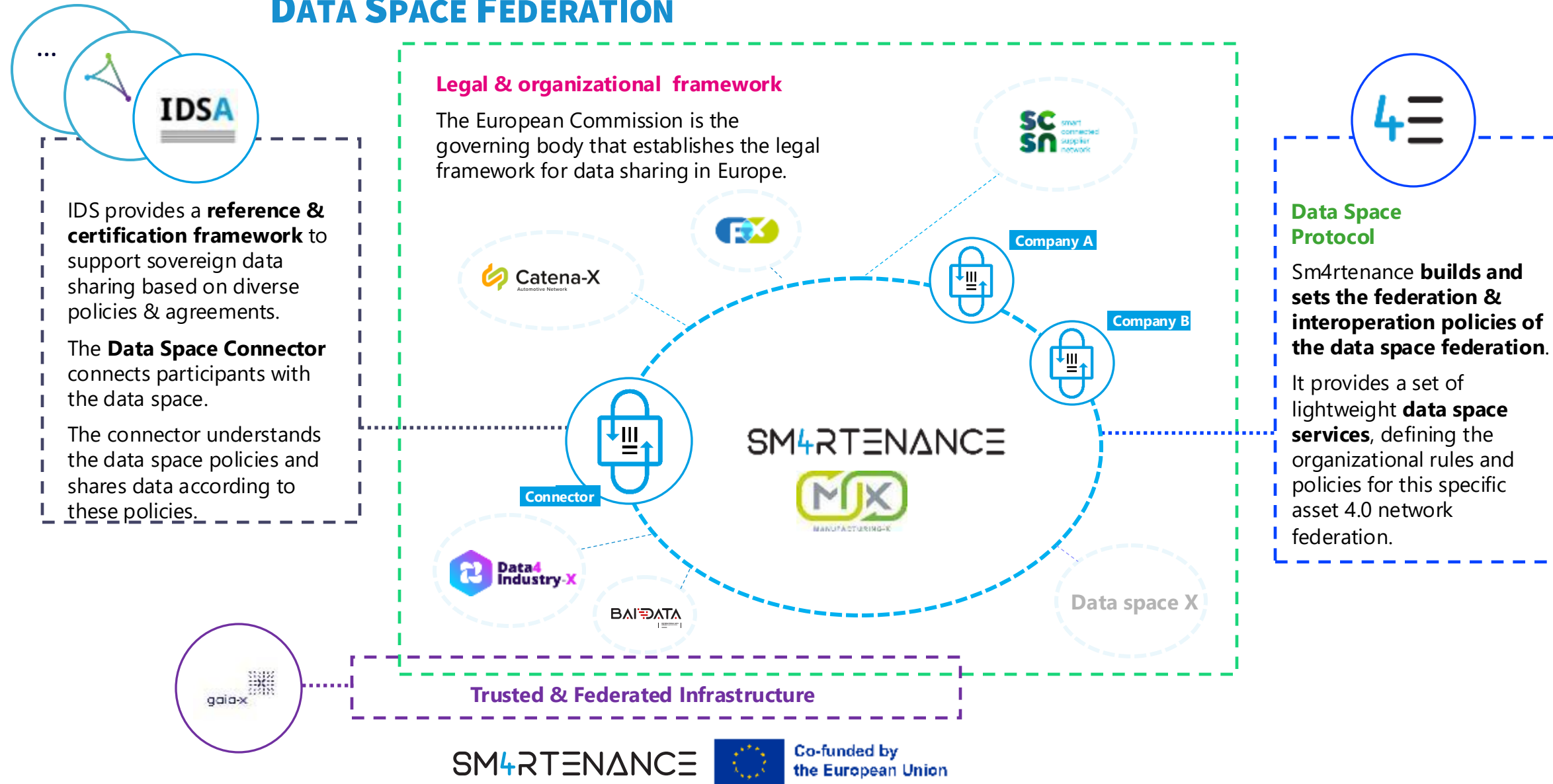




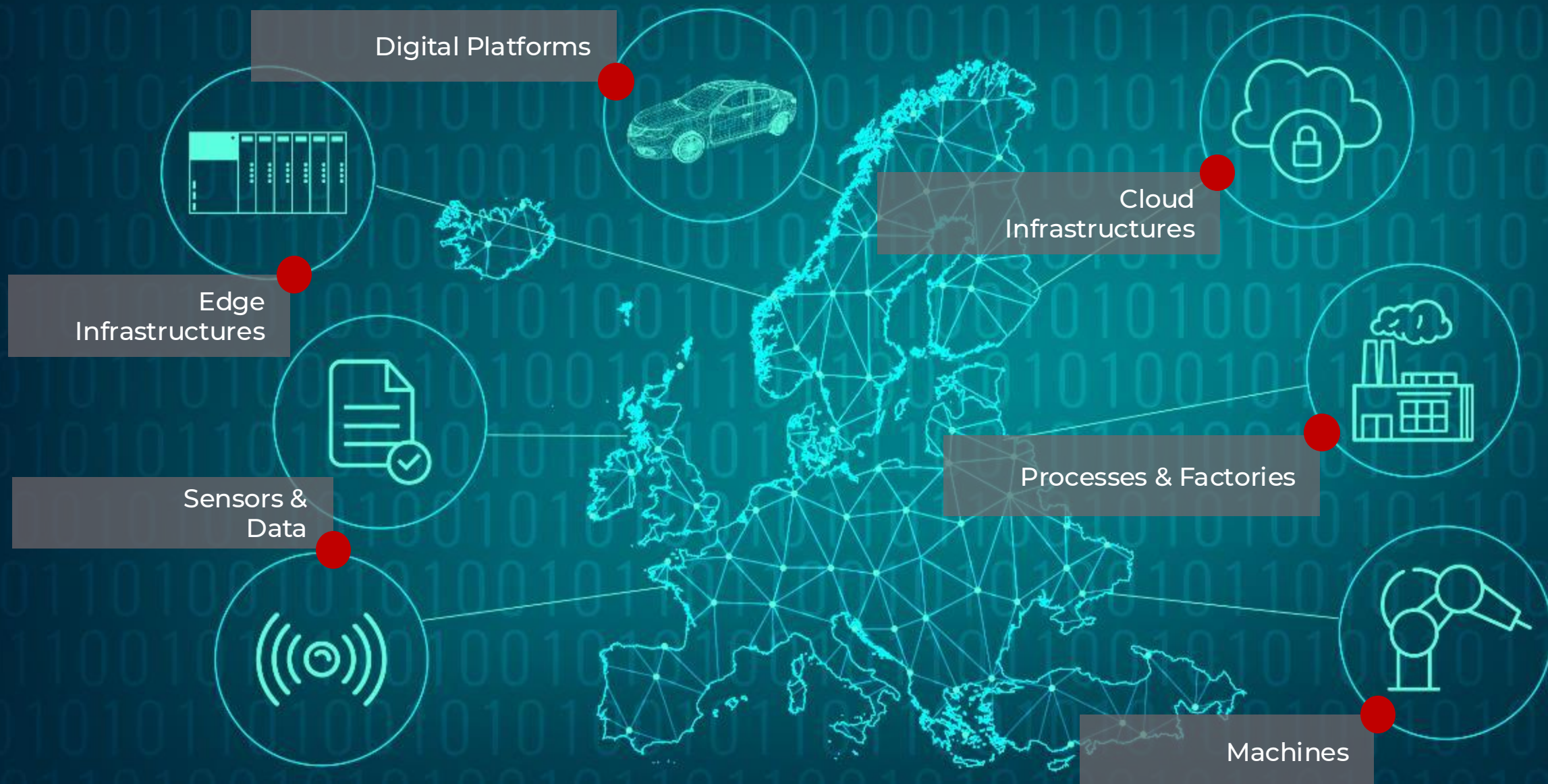
**360° Data
Integration**

360° DATA INTEGRATION

DATA SPACE FEDERATION

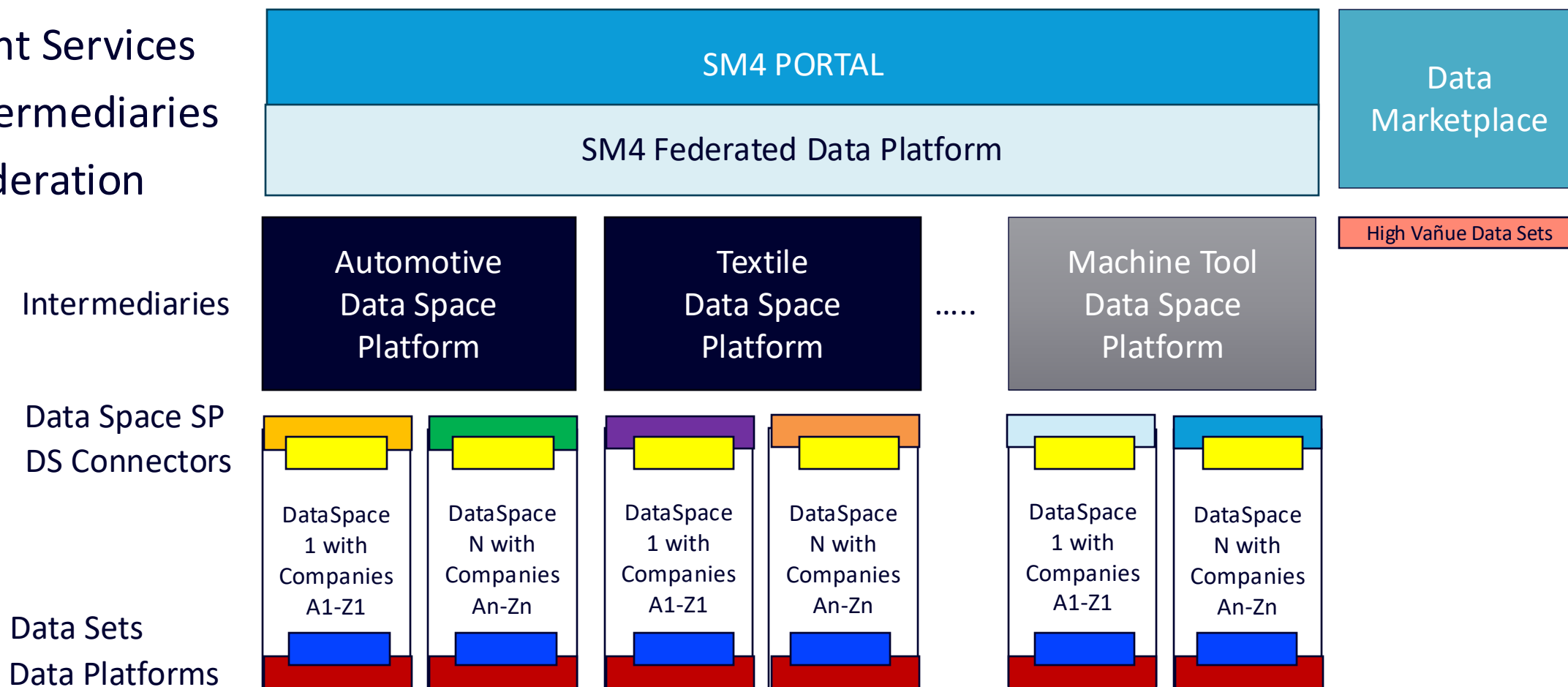


European Industrial Data Space

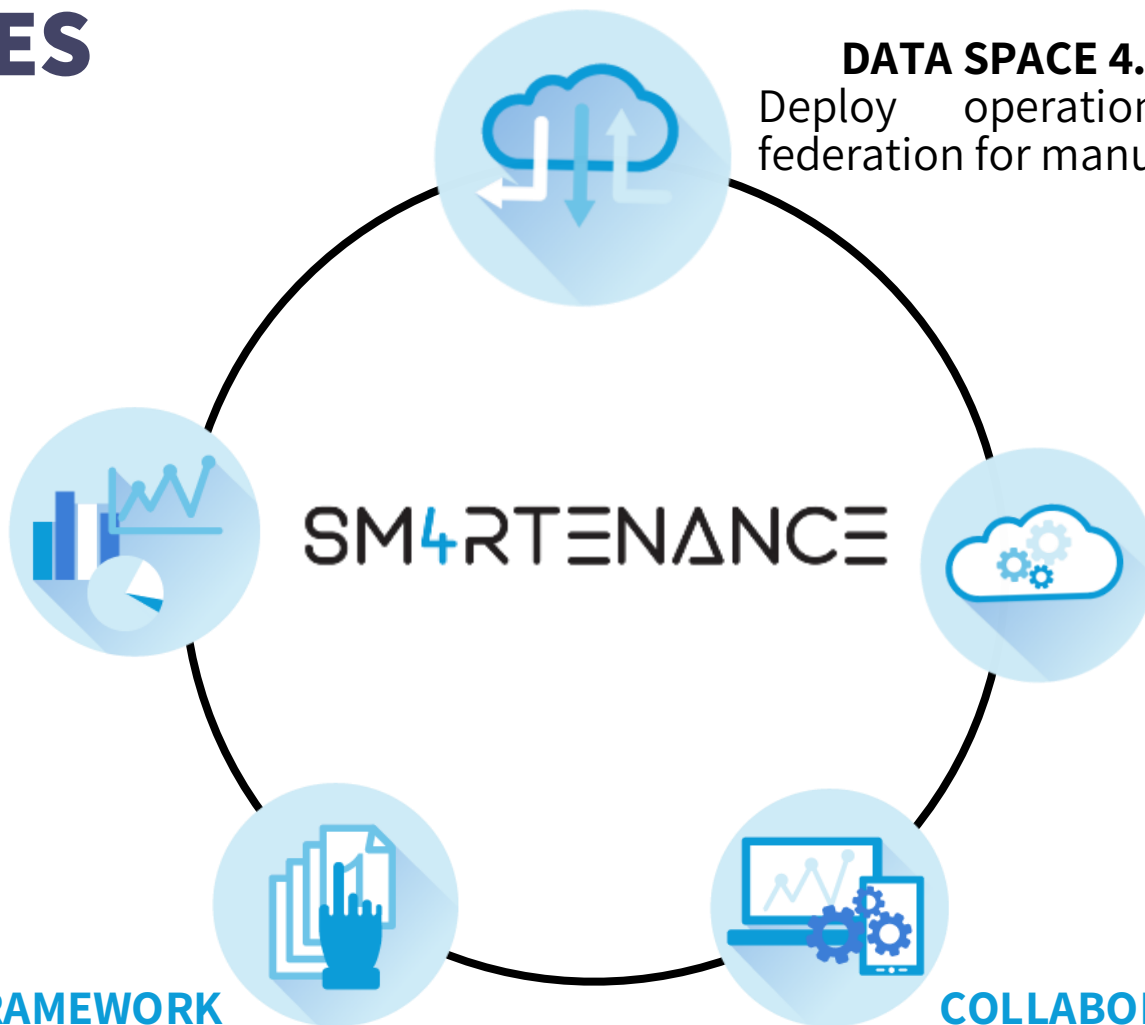


SM4 PORTAL – COLLABORATION MODEL

- Joint Services
- Intermediaries
- Federation



OBJECTIVES



DATA SPACE 4.0 **FEDERATION**

Deploy operational data space federation for manufacturing assets.

DATA SPACE INFRASTRUCTURE **SERVICES PORTAL**

Implement services portal for manufacturing asset data sharing interoperability.

COLLABORATIVE OPERATIONS

Facilitate the development of autonomous services for manufacturing assets.

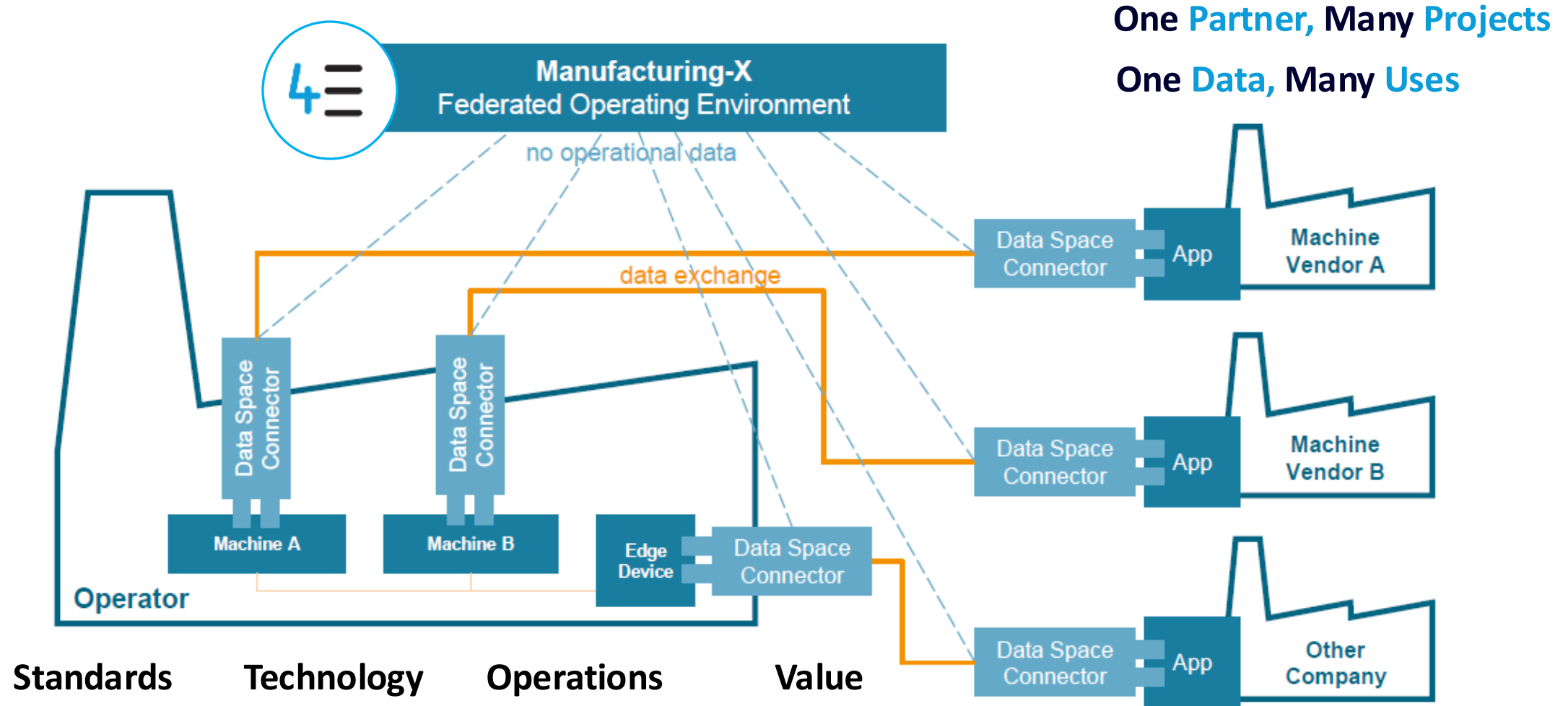
DATA SPACE **ECOSYSTEM**

Increase data sharing across manufacturing companies and service providers.

DATA CHAIN **TRUST FRAMEWORK**

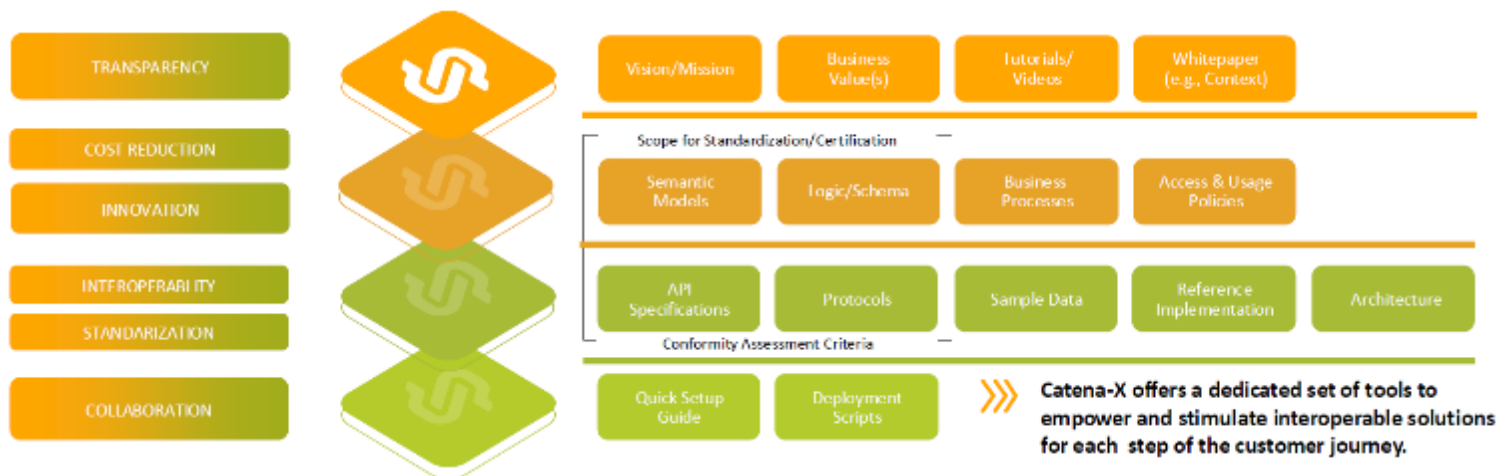
Establish industrial agreements and governance for global data sharing.

GLOBAL MANUFACTURING DATA ECOSYSTEMS

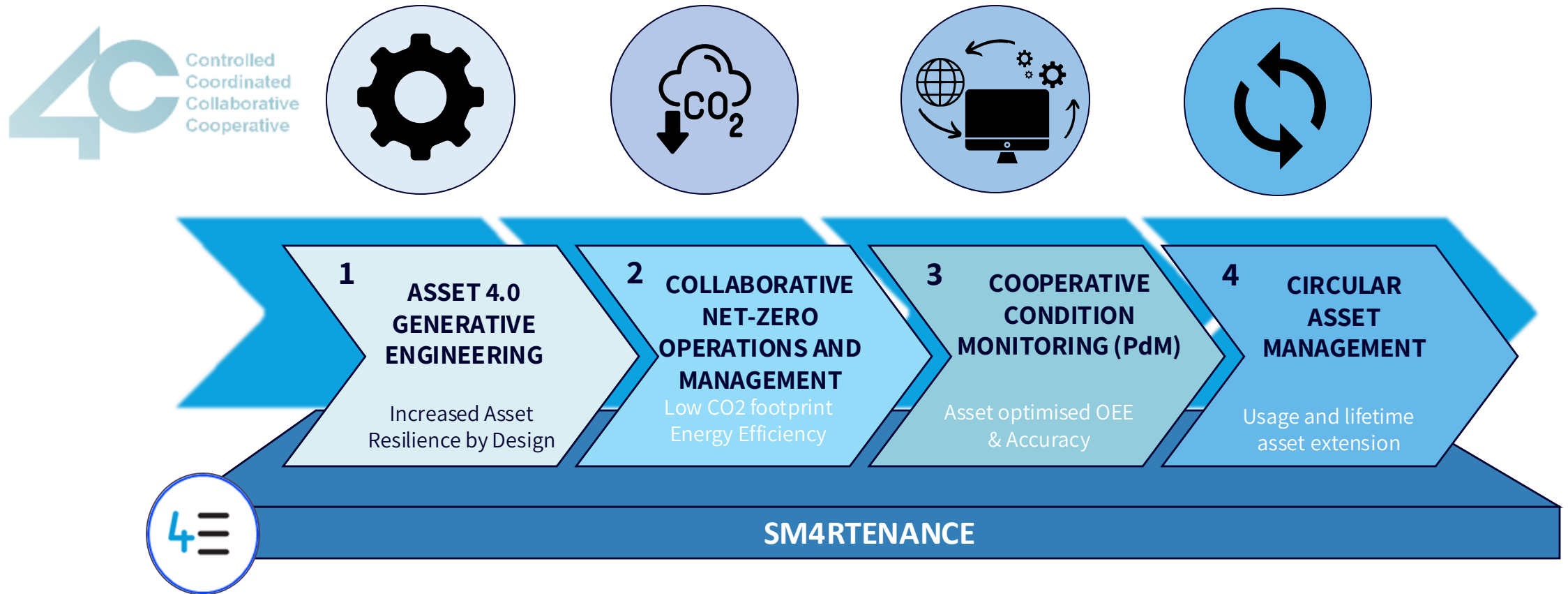


SM4 PILOTS: ROADMAP TOWARDS REPLICATION

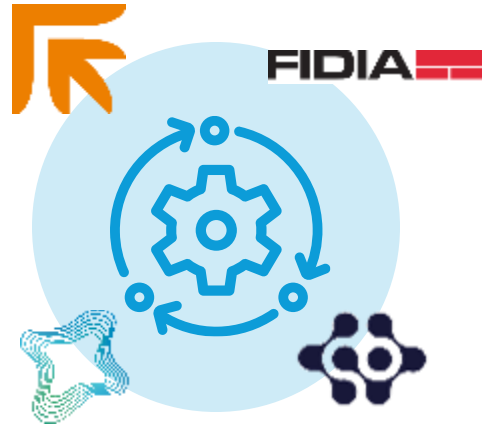
- SM4 Pilots should evolve into operational Data ecosystems.
- SM4 Pilots should be generalized into SM4 KITs (Keep It Together) for replication



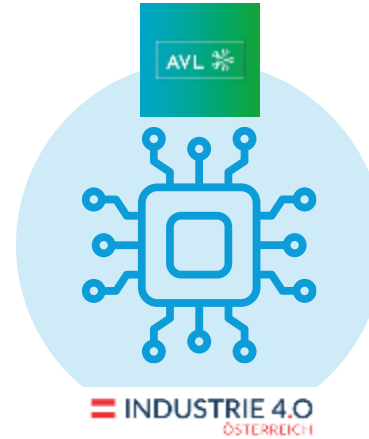
BUSINESS APPLICATIONS



PILOT BUSINESS APPLICATIONS IN DIVERSE INDUSTRIES



Machine tool & automation



Electronics /e-battery



Automotive



Process



Textile

PILOT BUSINESS APPLICATIONS



ASSET 4.0 GENERATIVE ENGINEERING.

Collaborative connected product/production ecosystem to support engineering and virtual commissioning (digital twin) aiming for resilience and autonomous production.

Zero defect, zero accident, zero errors, zero time to market.



COLLABORATIVE NET-ZERO OPERATIONS AND MANAGEMENT.

Collaborative services focused on improving machine tool operations, reducing scrap, energy consumption, manufacturing errors and optimal use of manufacturing asset consumables.

Zero defect manufacturing, zero raw material use, zero net energy.



COOPERATIVE CONDITION MONITORING (PdM).

Collect data, predict health status, and plan maintenance operations and consequently reduce operations costs, improve safety, and avoid environmental harm and human casualties.

Zero stocks, zero break downs, zero supply network breaks, zero reconfiguration time.



CIRCULAR ASSET MANAGEMENT.

Development of regenerative asset systems aiming to increase resilience, reduce global supply chain reliance, and foster strategic, local, and regional capabilities while meeting sustainability targets and 9R processes.

Zero waste.

SMARTENANCE



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DATA SPACE **FEDERATION**: SERVICE PROVIDERS



Federated data sharing space striving for interoperability for manufacturing equipment industry.

BAI DATA
INTERNATIONAL DATA
|

SC SN smart
connected
supplier
network

SYXIS
innovate together

SOVITY

DAWEX
data exchange technology

NTT DATA

TXT

- Data Exchange Platforms
- Data Space as a Service
- Managed Data Space Services
-



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PURPOSE AND VALUES

Measure and document the value that can be generated, as well as the concerns, to promote widespread use of Manufacturing Data Space

SOCIETAL VALUE

- Decarbonization
- Circular economy
- Safety, Security and Resilience
- International Collaboration and Coop
- Corporate Social Responsibility

BUSINESS VALUE

- Increasing corporate value
- Improve productivity / reduce costs
- Improve product competitiveness
- Increased market capitalization
- New market creation

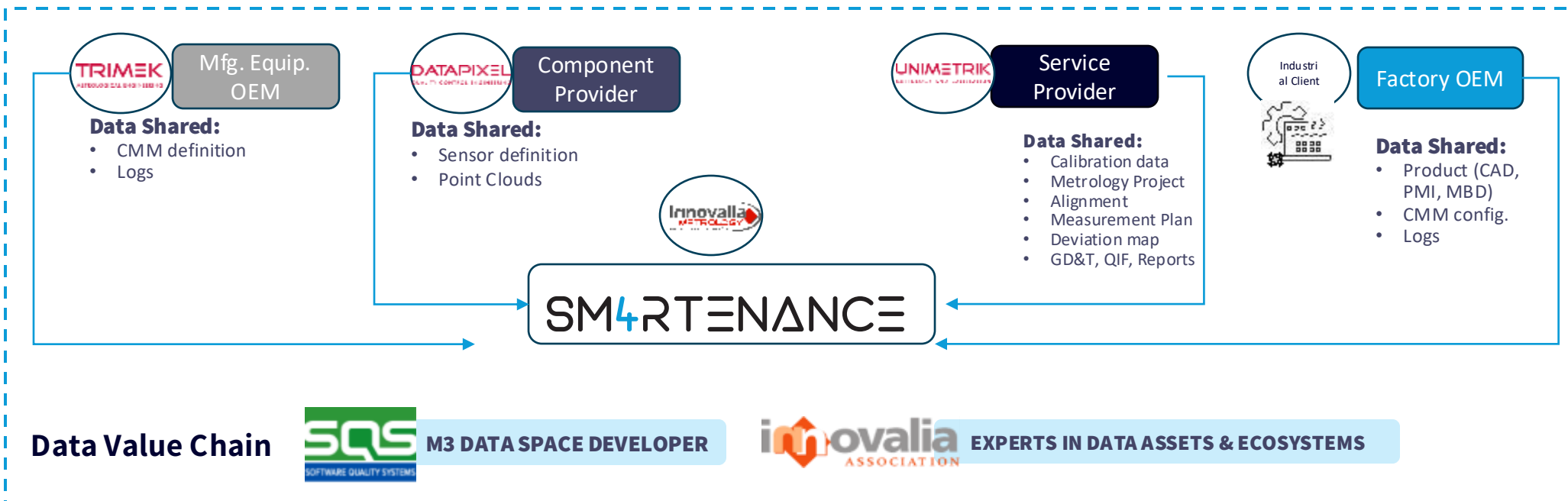
DRIVERS:
END USERS, SHAREHOLDERS, INDUSTRY, COUNTRY, EUROPE

Building a Certified Digital Twin with Data Spaces for Dimensional Quality Control Equipment (TRIMEK, DATAPIXEL, UNIMETRIK, SQS)

FOCUS: A connected data space with enhanced efficiency through the integration of **digital twins** and secure **data exchange**, enabling **proactive maintenance**, **zero-defect metrology production** and effective data management.

Sector

Automated Manufacturing, Machinery & Equipment, Automotive, Aerospace & Defense, Environmental & Green Manufacturing



- Automated Data Gathering and Management Processes to reduce errors
- Performance Optimisation
- Secure Data Transactions
- Streamlined data exchange and interoperability

Machine Tool Fleet management with Data Spaces (PRIMA, TXT)

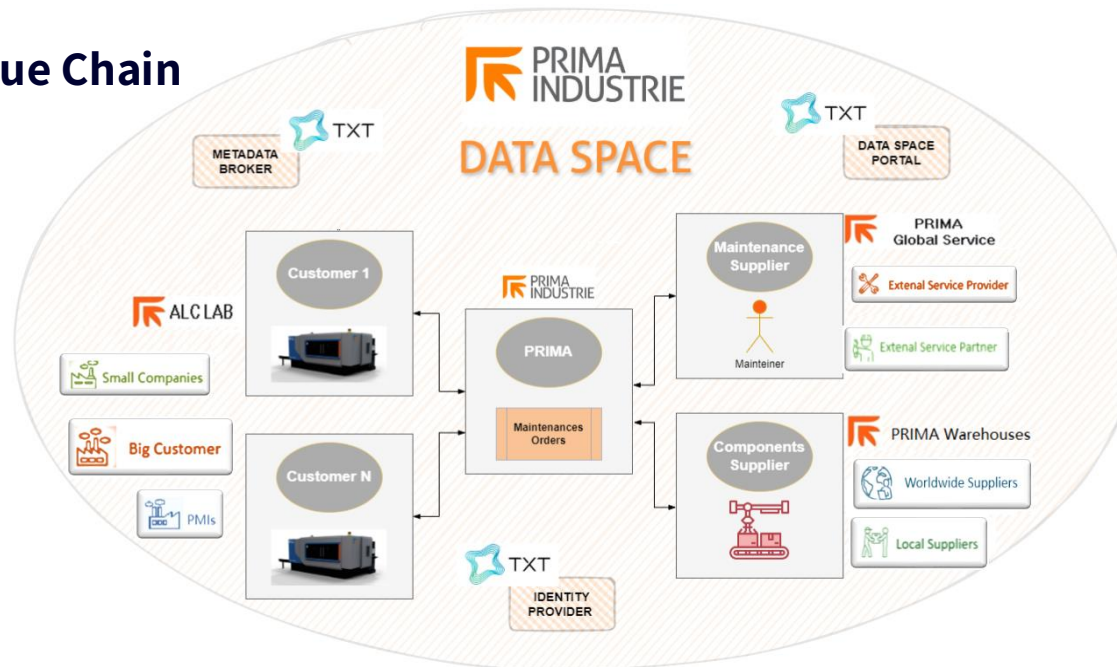
FOCUS: Implement **Predictive Maintenance** functionalities for **2D laser cutting machines** supported by **Artificial Intelligence** algorithms through the analysis of laser process states and behaviours combined with internal CNC information.

Sector:

Machinery & equipment: metal sheet machinery, laser cutting & welding, bending, punching and automation systems



Data Value Chain



**Reduction of
spare parts
inventories**

**Increase the
average life of
the systems**

**Reduction of
Average
Intervention
Time**

**Reduce the cost
maintenance for customers
leading to closer
relationships with the end
customer and suppliers**

**Reduction in the number
and duration of machine
downtime**

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Optimization of the Production Performance through DPP (PIACENZA, DOMINA, SYXYS)

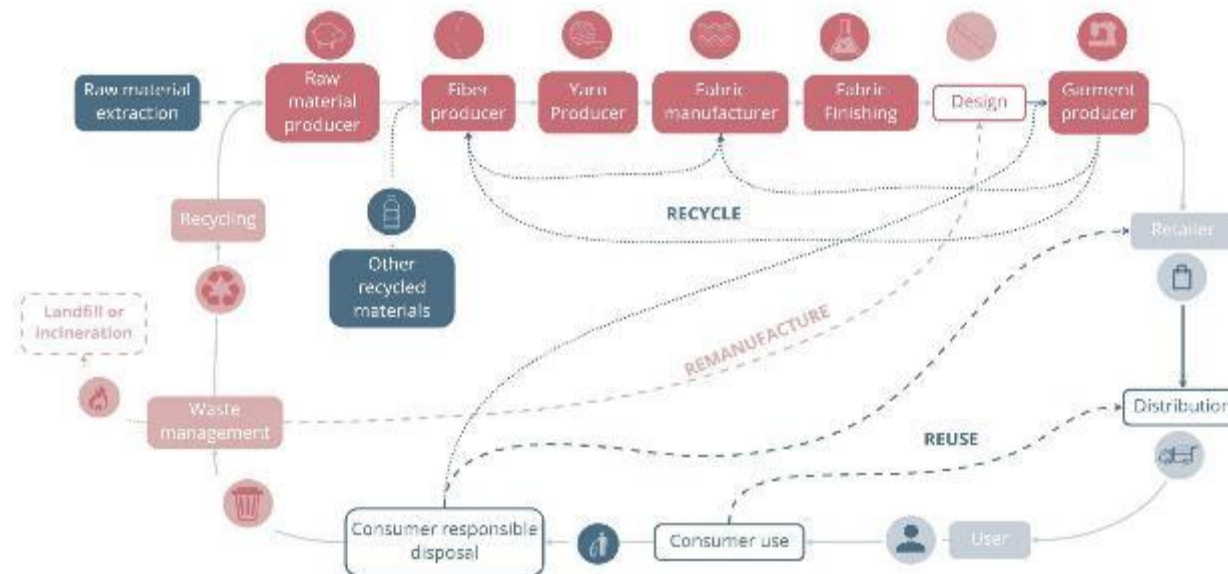
FOCUS: With the 2027 incoming EU **Digital Product Passport** regulations in mind, the objective of this pilot is to enable the **data sharing** between the **different fabric manufacturing facilities** via a Data Space, fulfilling their part of the **traceability** requirements and supporting **circular textile product management**.

Sector:

Textile and Clothing



Data Value Chain



Automated data management

Cost and time reduction

Environmental performance management and optimisation

Easier regulation compliance for SMES & Suppliers Support

SM4RTENANCE

Trusted Data Sharing for Manufacturing Equipment Industry

Thank you!



sm4rtenance.eu



twitter.com/SM4RTENANCE



linkedin.com/company/sm4rtenance/about



info@sm4rtenance.eu



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innovalia
ASSOCIATION

DAWEX
connected edge technology

top~ix
WE DO CONNECTIONS

NTT DATA

OTE
GROUP OF COMPANIES

SCSN
smart connected
supplier network

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SOLUTIONS AND SUPPORT

TRIMEK
METROLOGICAL ENGINEERING

Cefriel
POLITECNICO DI MILANO

∞

PRIMA
INDUSTRIE

FIDIA

COMAU

Schneider
Electric

FIL
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AVL

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VDMA

carsa

eit Manufacturing
CLUSTER SOUTH

**ASSOCIATED
PARTNERS**

efnms

**INTERNATIONAL DATA
SPACES ASSOCIATION**

VDI



Intro to SAGE: Green Deal Data Space

Overview, Challenges, Opportunities





Project Overview

36 months, 40+ partners, €16 million (only 50% funded by EC), March 1 start

Project lead: International Data Corporation (IDC)

- Mark Dietrich: Technical Coordinator =~ CTO

Use Cases:

1. Forest Transformation/Forest Inventories and Remote Sensing
2. Pollinator Monitoring
3. Soil Circularity
4. Built Environment CO2 Monitoring
5. Circular Textiles
6. Net Zero Defect Manufacturing
7. Climate Investment Plan
8. Environmental Hazards
9. Nature and ecosystem services trade-offs
10. Air Quality and Health



10 use cases - we'll hear from 2

UC1 Forest
Dataspace (FDS)
Cluster -WE

UC2 Pollinator
Monitoring
Dataspace (PMDS) –
PSNC

UC3 Soil Circularity
Dataspace (SCDS) -
SOGELINK (SOG)

UC4 Construction
Environment CO2
Hub & Building
Twins (BECO2) -
IShare (IS)

UC5 Circular
Textiles Dataspace
(CTDS) -Reverse
Resources

UC6 Net-Zero Zero
Defect
Manufacturing -
INNO-TRI-SAT

UC7 Climate
Investment Plan
Dataspace (CIPD) -
RISE

UC8 Environmental
Hazards Data Space
(EHazDS) - Utrecht
University

UC9 Nature and
ecosystem services
trade-offs (NECST)
assessment tool -
NTTDES

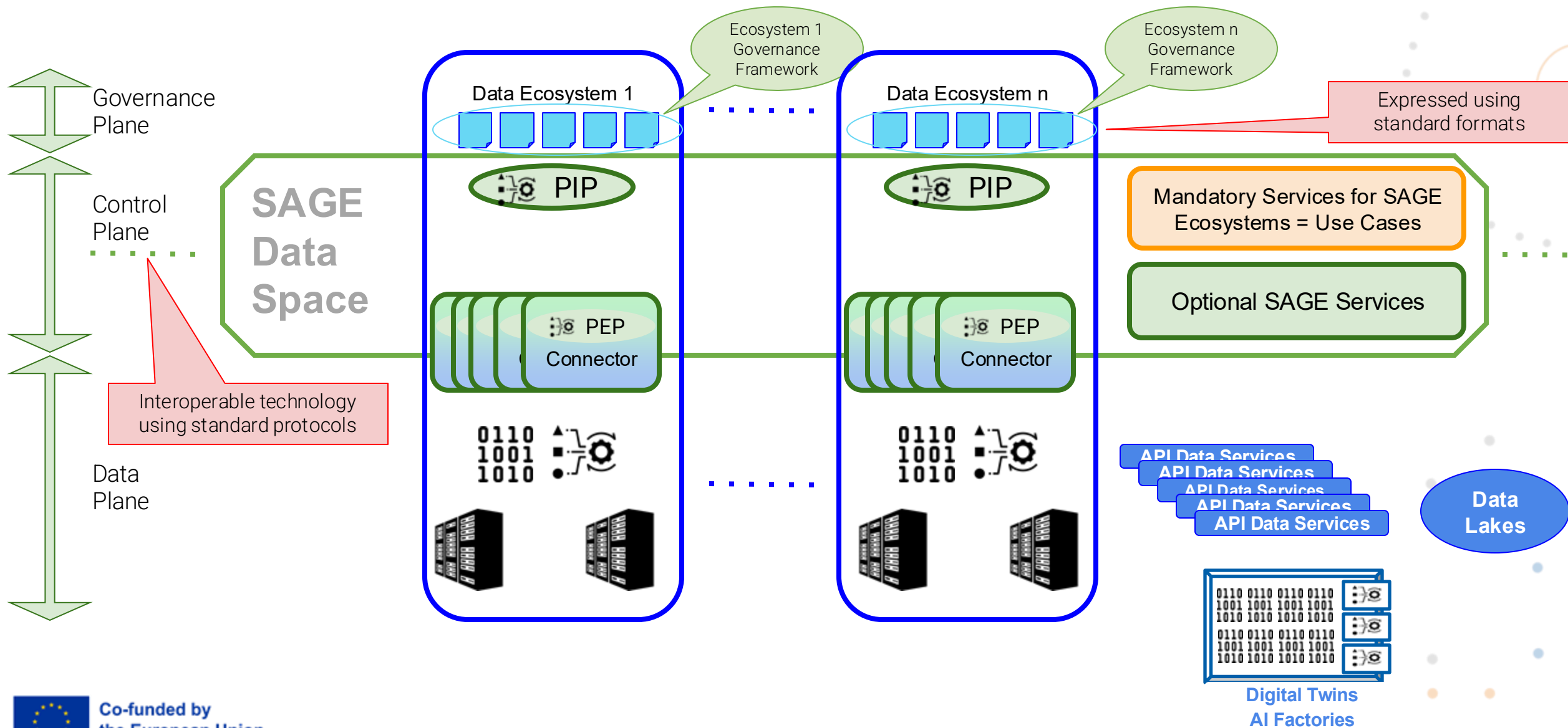
UC10 Air Quality
and Health
Dataspace (EIRENE)
- CNR-IIA



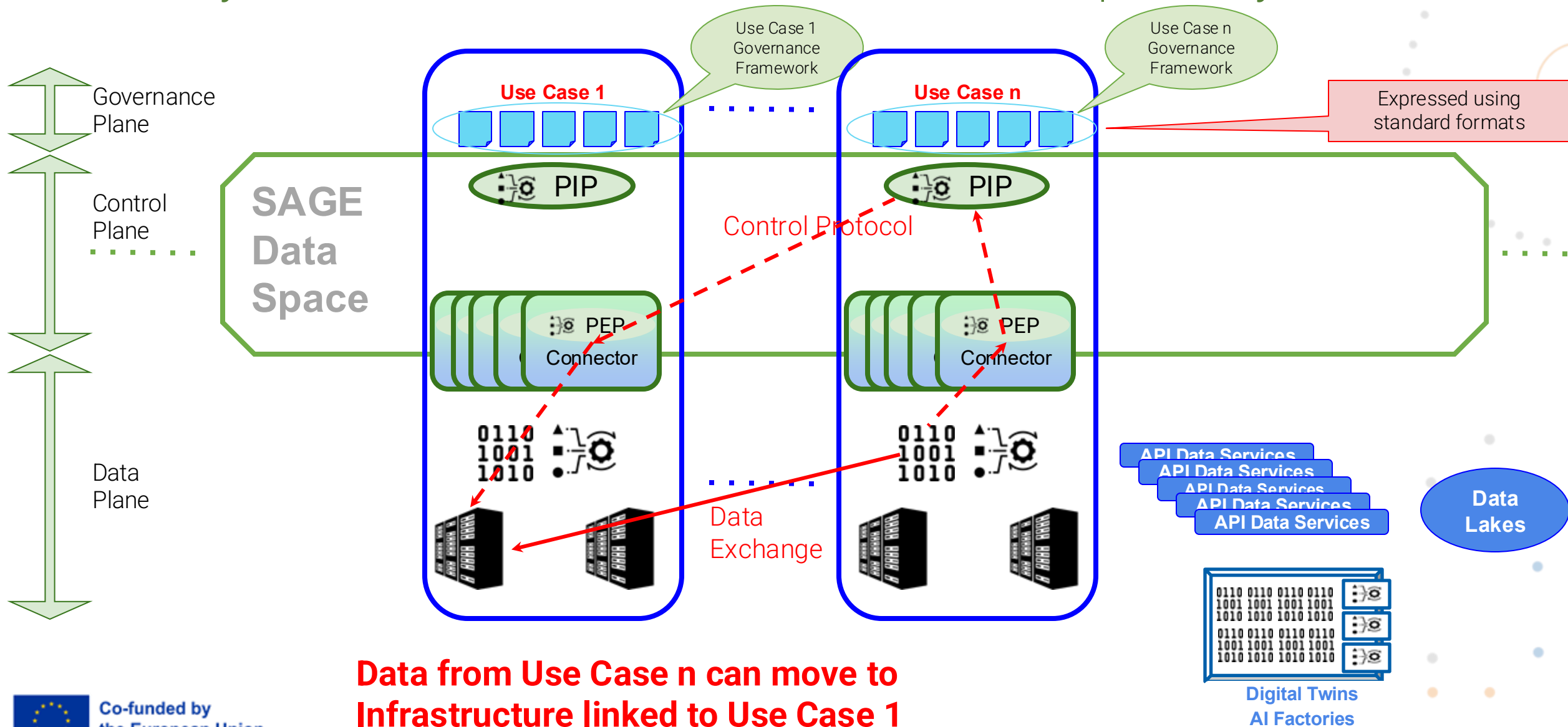


SAGE | The Data Space for a Sustainable Green Europe

Architecture Overview



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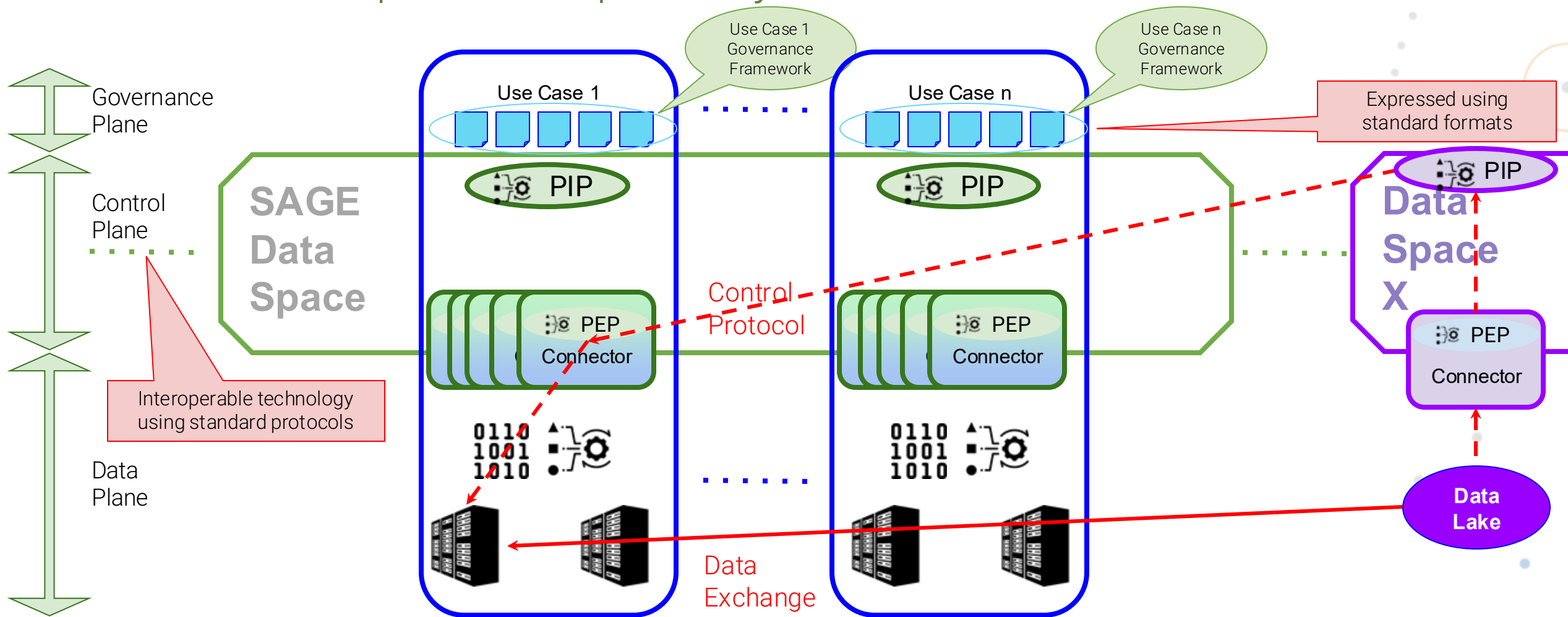


Data from Use Case n can move to Infrastructure linked to Use Case 1



SAGE | The Data Space for a Sustainable Green Europe

Cross Data Space Interoperability



Data from Data Space X can move to Infrastructure linked to SAGE



Co-funded by
the European Union



SAGE Priorities

- **Bring 10 Use Cases into production**
- **Expand Available Data**
 - Data required for Use Cases
 - Priority datasets/data services identified in GREAT
 - Onboarding to SAGE supports accessibility to many data ecosystems (e.g. 1 connector should connect to multiple data spaces, and support corresponding governance frameworks)*
 - “Non-connected” data sources (e.g. API data services) supported through Catalogue
- **Expand Usage**
 - Expanded/new users
 - Expanded/new use cases



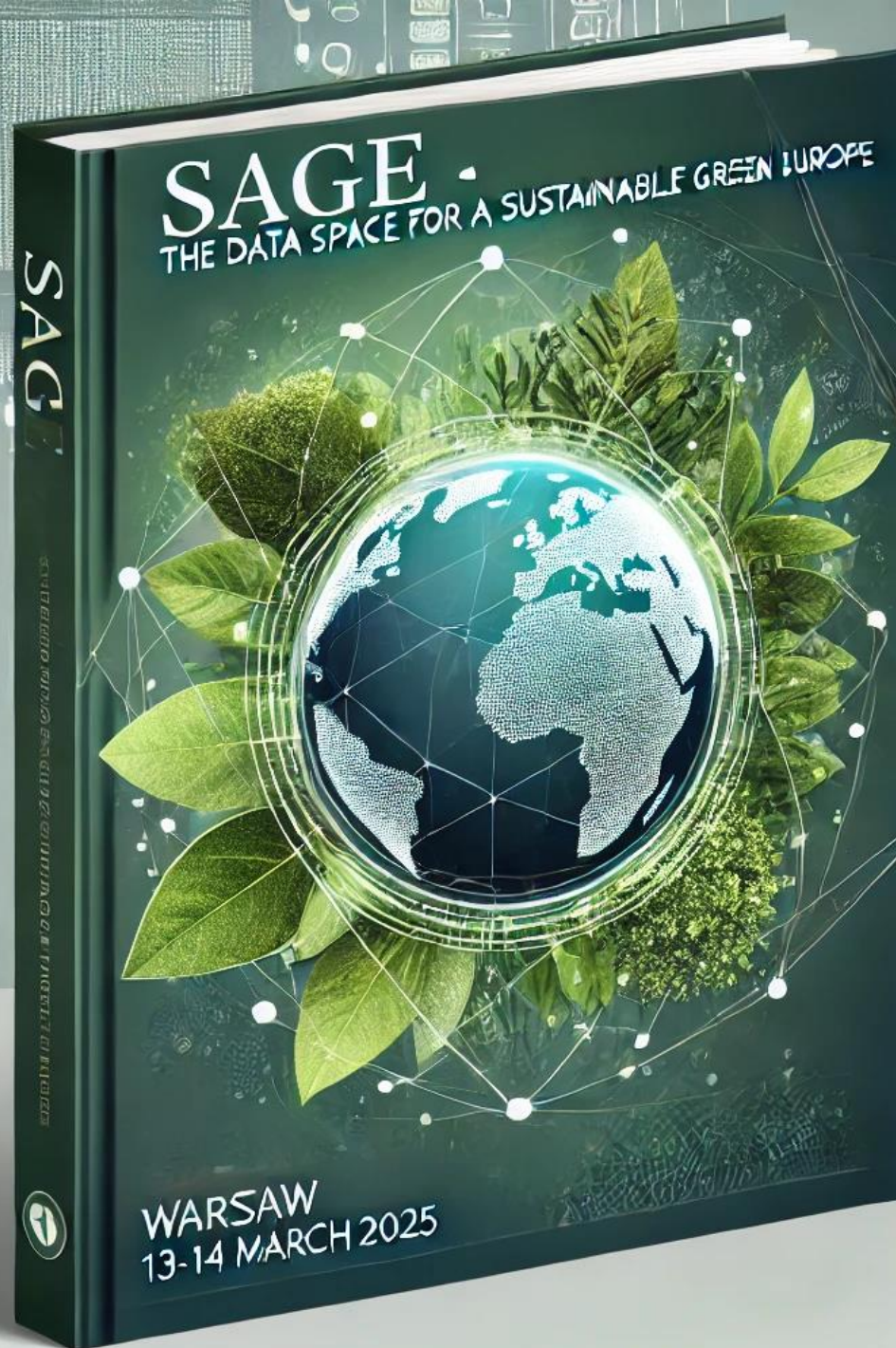
SAGE | The Data Space for a Sustainable Green Europe

Thank you!

email: mjdietrich@bloodstone-consulting.com



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the European Union



SAGE

Use Case Demonstration

JOEI SEPULVEDA
Innovalia Association

olazaro@innovalia.org



Objectives

- ▶ Drive innovation through real-world applications.
- ▶ Demonstrate the application of data interoperability and standardization.
- ▶ Integrate data stakeholders.
- ▶ Generate opportunities for added value from the core services provided by the GDDS.
- ▶ Provide impactful insight for policy and regulatory compliance.
- ▶ Attract new GDDS users and data providers,
- ▶ Drive income generation and ensure the continuous improvement and expansion of the GDDS ecosystem.



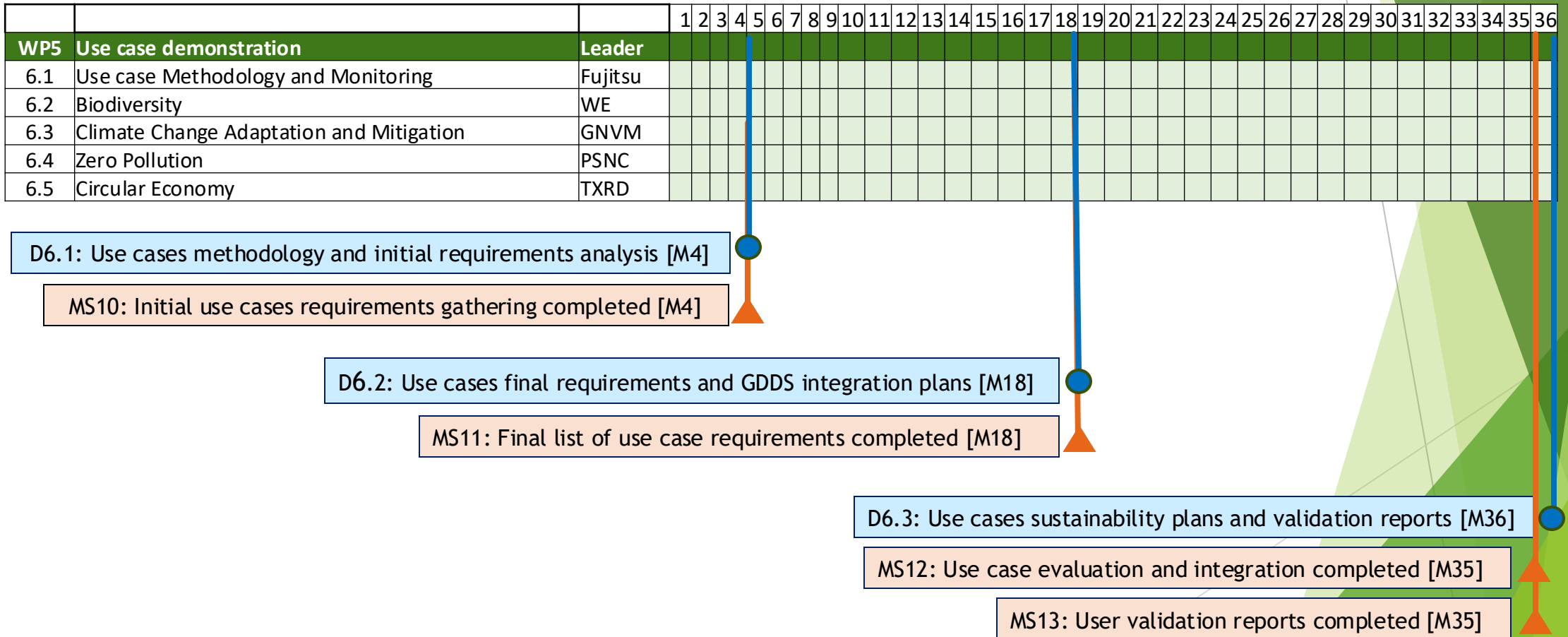
Use cases topics and goals

1. Climate protection through the reduction of greenhouse gases.
2. Climate impact adaptation.
3. Sustainable use and protection of water and marine resources.
4. Transition to a circular economy, recycling, and waste prevention.
5. Pollution prevention and control.
6. Protection and restoration of biodiversity and ecosystems.

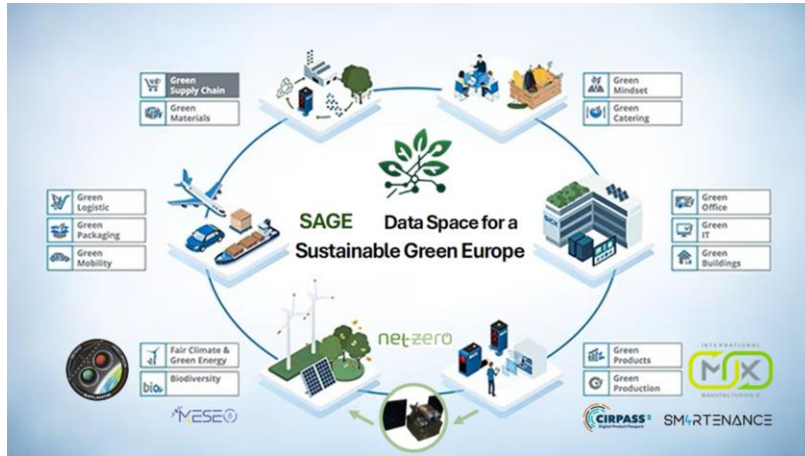
| Use Case | Name | Sectors | Leader | Country | Zero Pollution Action Plan | Biodiversity Strategy | Climate Change Adaptation & Mitigation | Circular Economy Action Plan | Data Space Synergies |
|---|------|---------|--------|---------|-----------------------------|-----------------------|--|------------------------------|---------------------------|
| UC1 Forest Dataspace (FDS) Cluster UC1.1 "Forest Transformation" UC1.2 "Convergence of National Forest Inventory with remote sensing and local inventories" | | | WE | DE | | FOREST | FOREST | | |
| UC2 Pollinator Monitoring Dataspace (PMDS) | | | PSNC | PL | | AGRICULTURE | AGRICULTURE | | Agriculture |
| UC3 Soil Circularity Dataspace (SCDS) | | | GE | DE | CONSTRUCTION AGRICULTURE | | | CONSTRUCTION AGRICULTURE | Agriculture, Construction |
| UC4 Construction Environment CO2 Hub & Building Twins (BECO2) | | | IS | FI | CONSTRUCTION | | CONSTRUCTION | CONSTRUCTION | Construction |
| UC5 Circular Textiles Dataspace (CTDS) | | | TR | NL | | | | INDUSTRY -TEXTILE | Manufacturing |
| UC6 Net-Zero Defect Manufacturing (ZDM) | | | INNO | ES | INDUSTRY-OIL & GAS | | INDUSTRY-MANUFACTURING | INDUSTRY -MANUFACTURING | Manufacturing, Energy |
| UC7 Local City Twins Climate Investment Plan Dataspace (CIPD) | | | RISE | SE | CITIES | | CITIES | | Smart Communities |
| UC8 DestinE Environmental Hazards Data Space (EHDS) | | | UU | NL | DESTIN E | | DESTIN E | | |
| UC9 Nature and Ecosystem Services Trade-Offs (NECST) Assessment Tool | | | NTT | ES | | DESTIN E | | | |
| UC10 Air Quality and Health Dataspace (EIRENE) | | | CNR | IT | HEALTH | | | | Health, Mobility |



Timeline



UC6 Net-Zero Zero Defect Manufacturing -INNOVALIA



Green Products & Production – Mfg DS

- ESPR/DPP, ESG Reporting.
- Low PCF & energy efficient circular manufacturing equipment.

SMARTENANCE, CIRPASS-2

Green Energy Industry & Climate – (E2E) EO DS

- GEISAT Precursor Copernicus Contribution Mission (CCM).
- Detection and monitoring of methane emissions from the Oil & Gas industry.

MESEO, GEISAT.

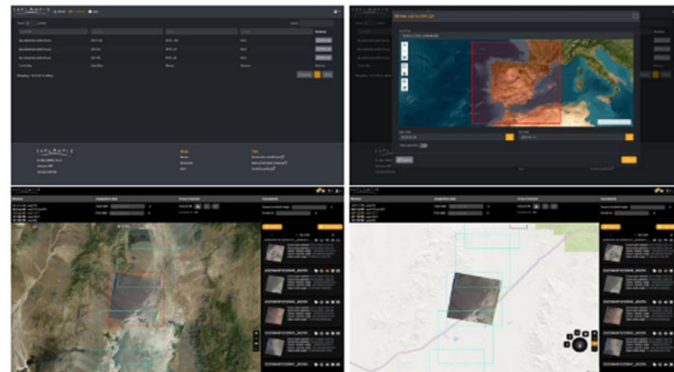


Image 1. Satlantis Data Hub



Image 2. GEISAT Precursor satellite



Image 3. Satlantis Mission Control Centre



Circular Textiles Cluster in the European Green Deal Data Space

22nd of May 2025



VISION

WHY

The **textile industry** has the opportunity to lead a new era of prosperity—where economic growth is powered by the intelligent **circulation of resources**, enabling abundance, resilience, and value for people and the planet.

HOW

By making **data** across the value chain **visible, connected, and trusted**, we enable shared understanding, smarter decisions, and systemic progress toward circularity.

WHAT

The Textile Cluster under Green Deal Data Space brings together public and private actors—PROs, DPP providers, brands, recyclers, policymakers, and digital platforms—into a secure **ecosystem where textile data becomes interoperable**, reusable, and a driver of effective circular action.



USE CASE SCOPE

- Design and test an **EU level** Producer Responsibility Organization Information System (PRO-IS)
- Co-develop open access **EPR reporting methodology** in collaboration with PROs
- Connect digital tools and services for the textile value chain within the Green Deal Data Space and enable **secure data exchange**
- **Connect** with developing **Digital Product Passport data** flows
- Create a roadmap for **statistics generation** based on near **real-time data flows**



Project coordination

IDC – Coordinator, WP leads –
CREAF, EGI, ECMWF, EODC,
Innovalia, iShare

Textile Use Case

TEXroad
Atma.io
Centraal Bureau voor de
Statistiek
Consiglio Nazionale delle
Ricerche
Erion
GSI Europe
MangoStone
Reverse.fashion
Reverse Resources



THE TEAM

Platforms, software, digital tools



DPPs



Logistics + sorting software



Marketplace + traceability platform



Textile sorting tech



Align + report data

Standards



Identifiers + product codes

PROs



Textiles, WEEE, packaging + more

Public institutions + research partners



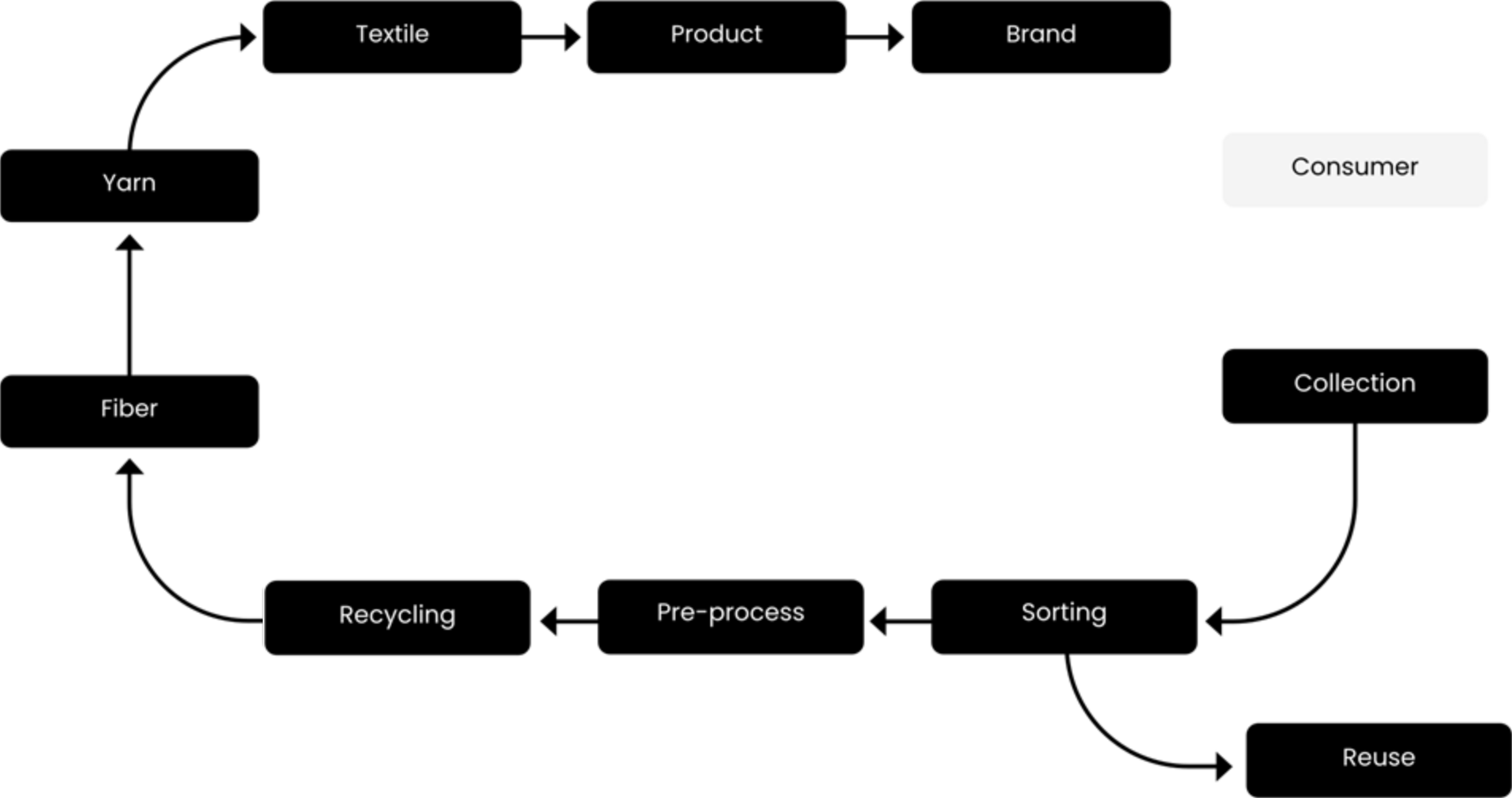
Digital expertise + local support in IT



Statistics + reporting methodologies



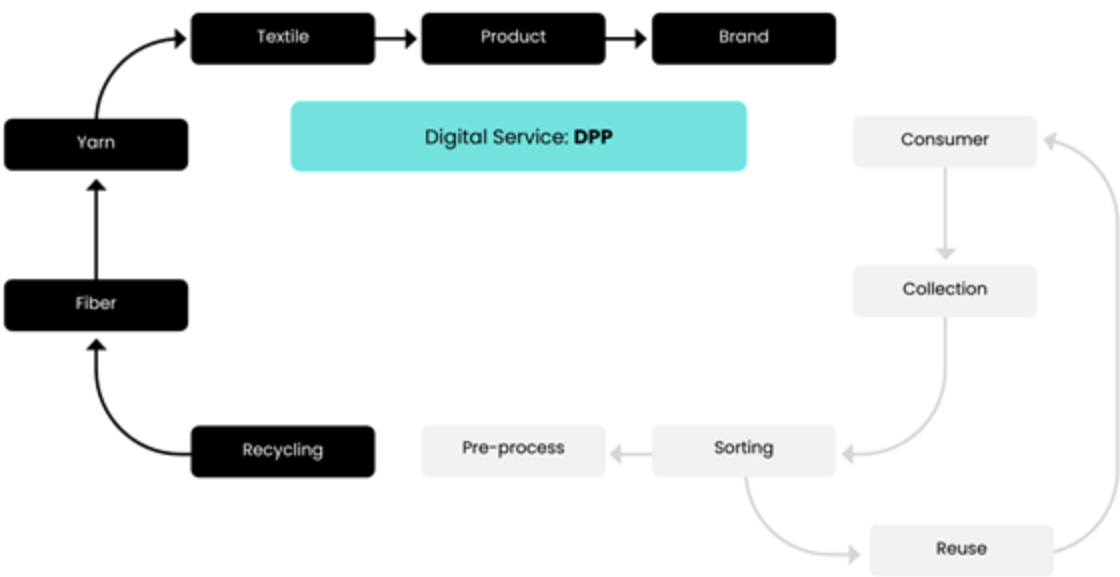
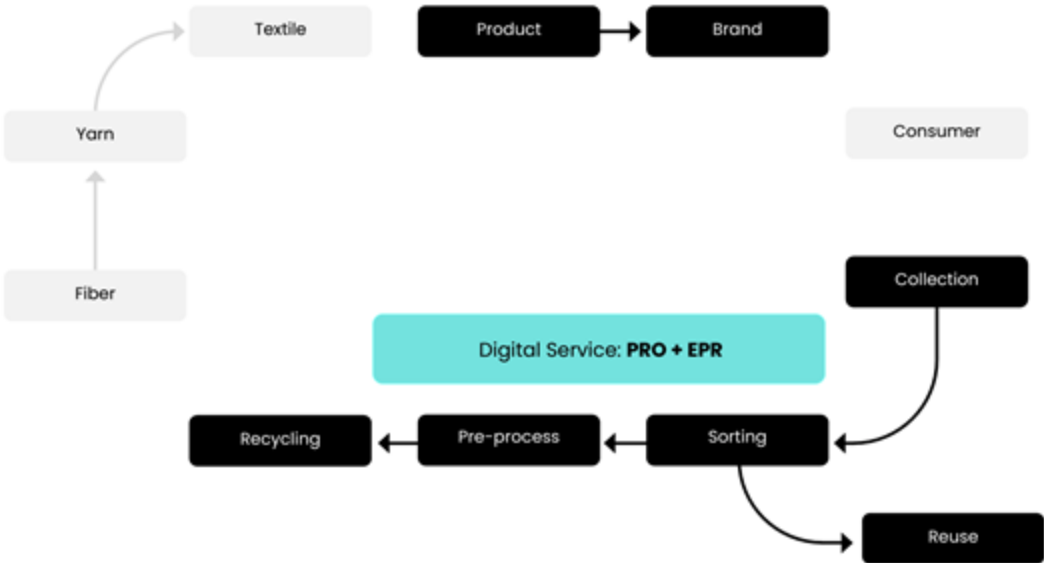
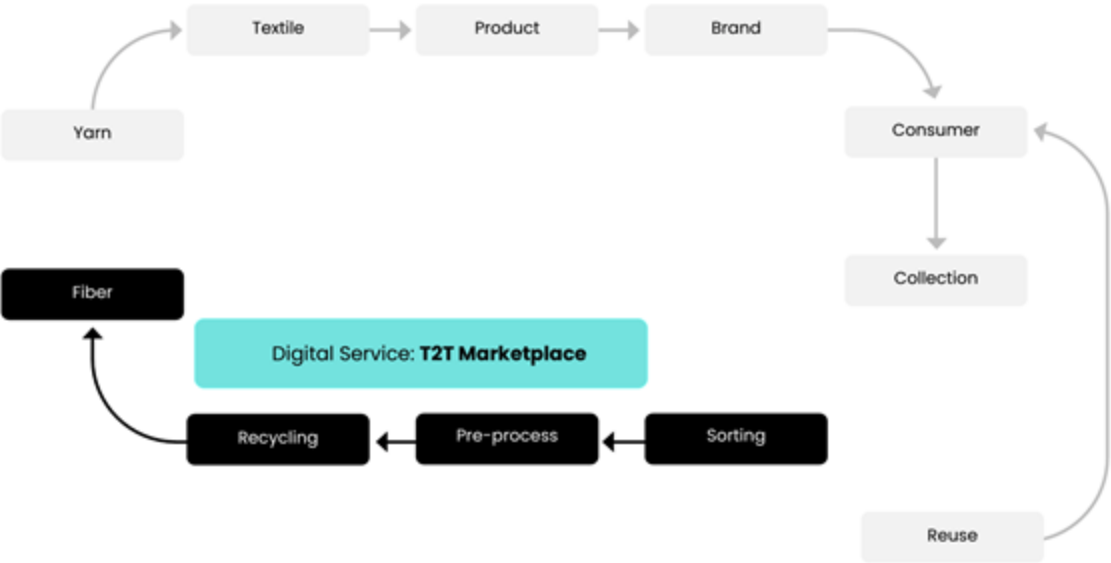
Connected data flows



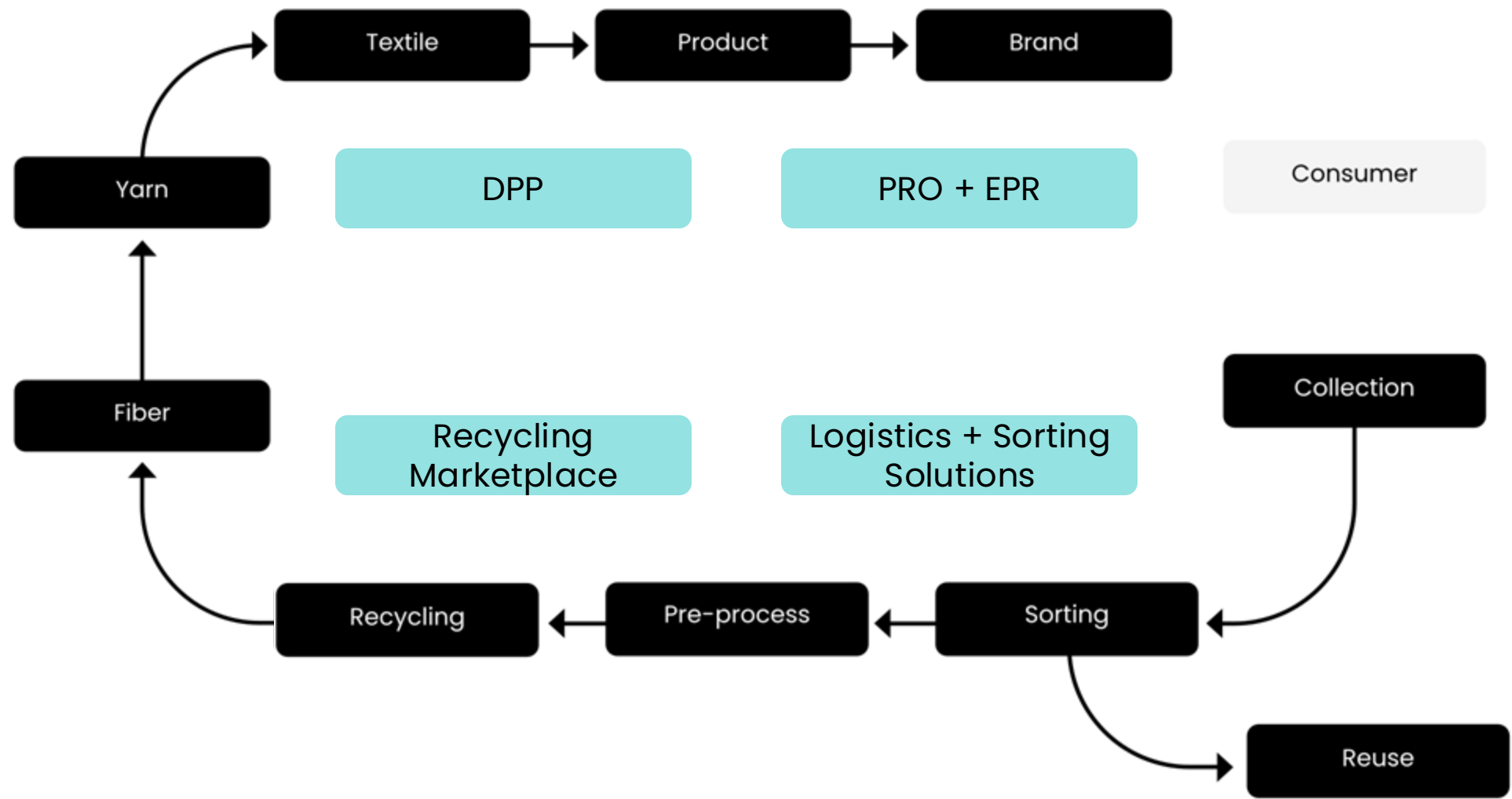
CURRENT SYSTEM

Platforms, softwares, digital tools

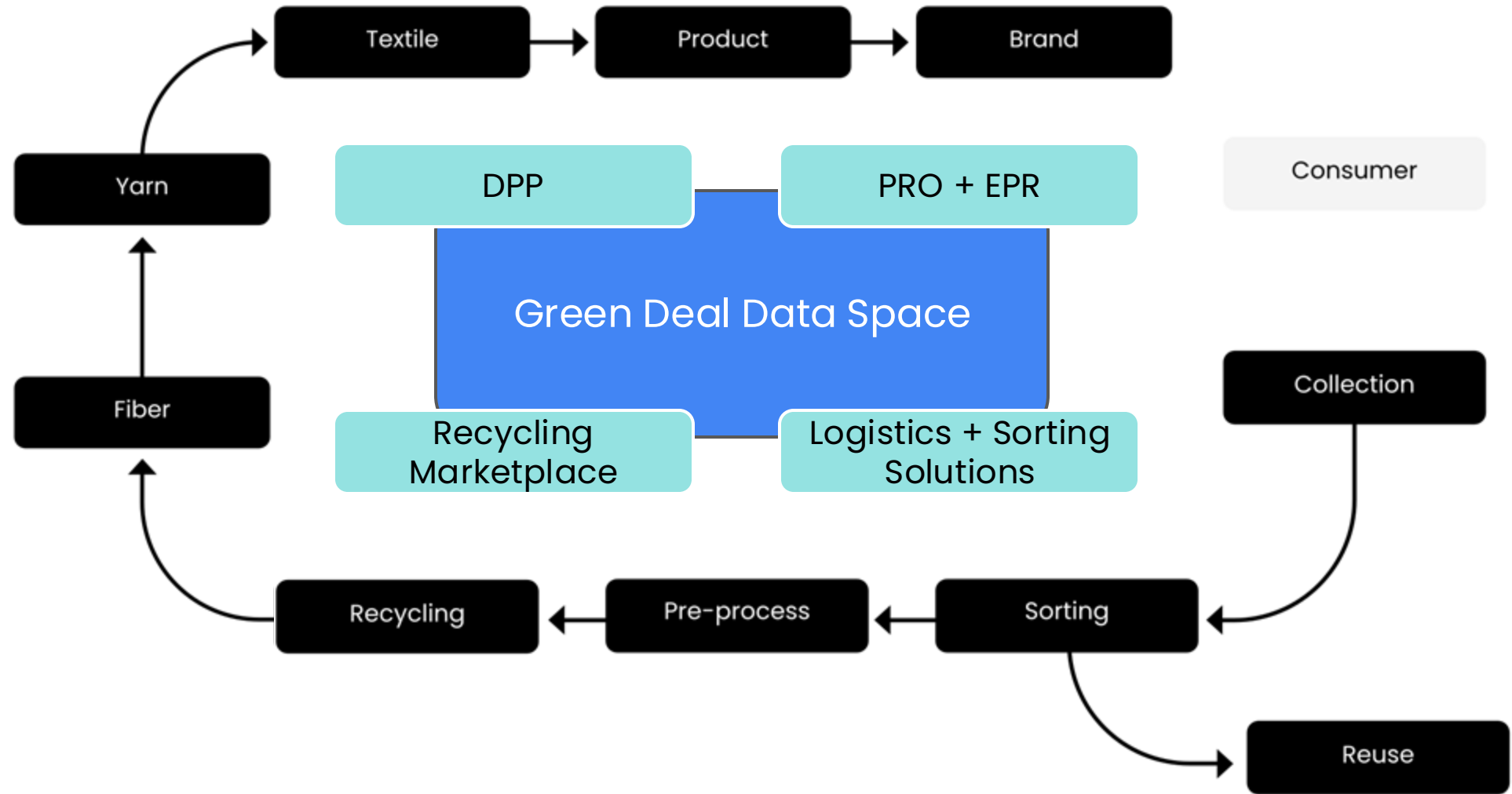
Supply chain



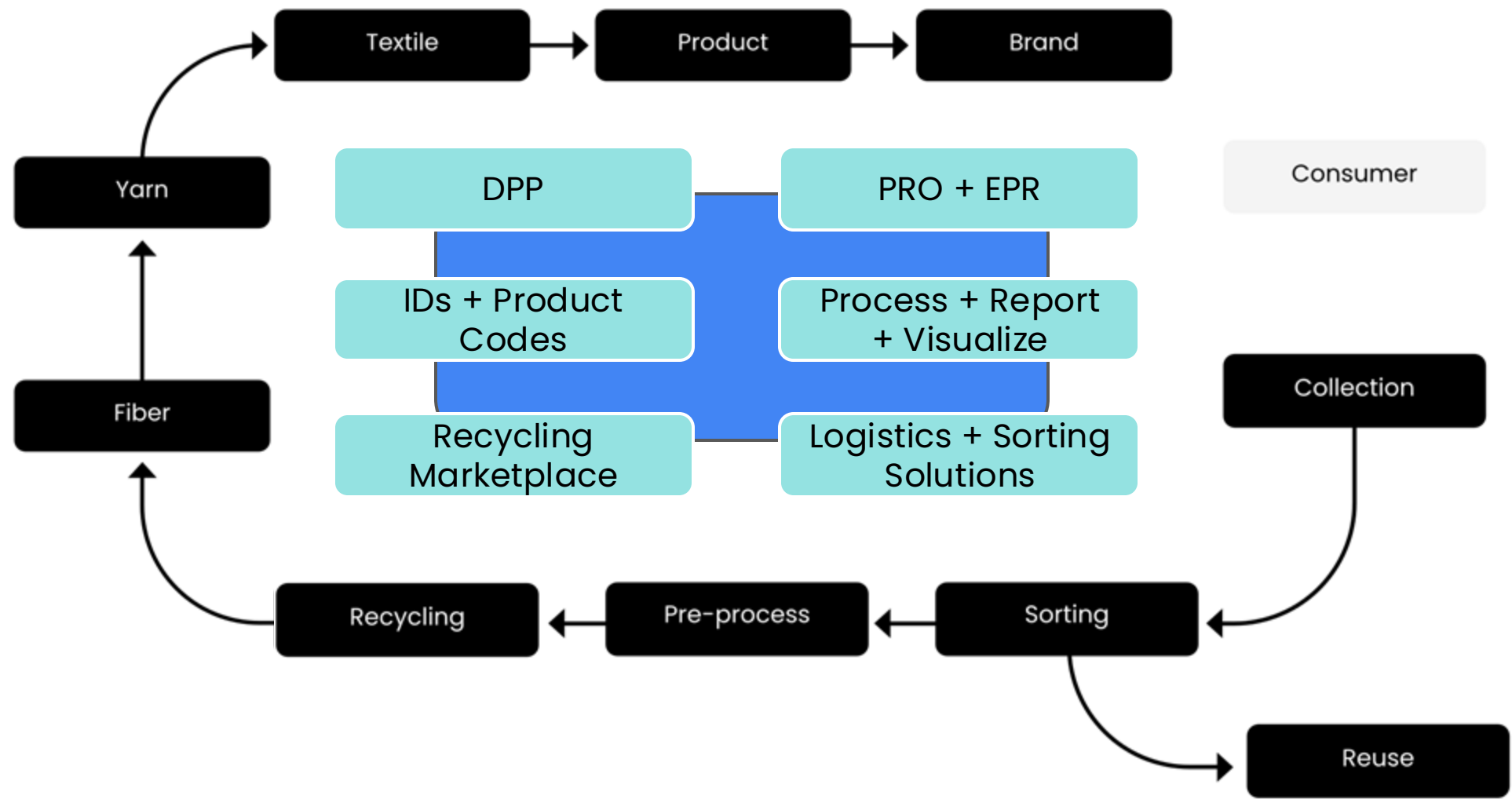
Connected data flows



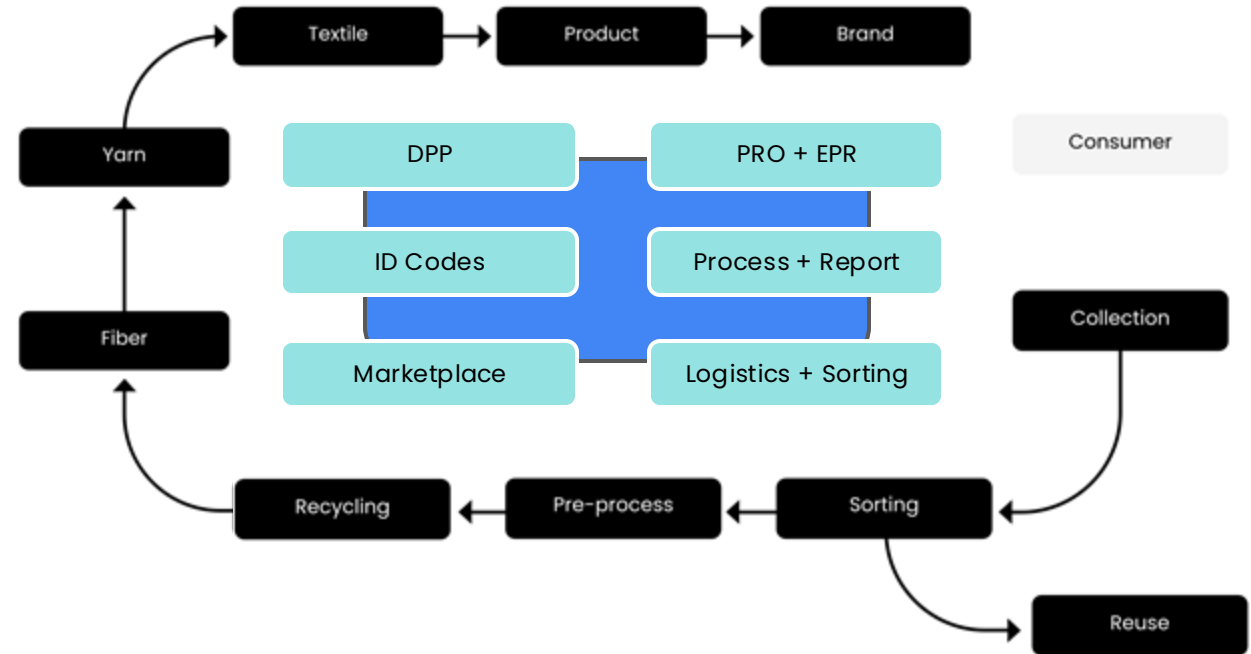
Connected data flows



Connected data flows



Benefits + value



- **Efficiency**

- EU level system for EPR reporting (PRO-IS)
- Reusable credentials and data (once-only data entry)

- **Transformation**

- Resources are visible and measurable

- **Economically viable**

- Profitable circular business models
- Financially sustainable digital infrastructure



The GDDS Circular Textile Cluster is taking the lead in connecting the platforms and the data.

But we need case studies to show how it adds value in practice!

Get in touch!
carla.fite@reverseresources.net





Launching the first and only commodity marketplace for textile waste to scale textile-to-textile recycling globally



Global network:
waste & recycling data
from 38 countries
connecting textile waste
with recycling



18 largest fashion corporates
on board



lululemon

M&S

PRIMARK



Today trading with **1,500 tonnes/month**, ~2% of the market

Redefining textile waste as resource.

Digitise. Connect. Trade. Trace. Measure.



Q&A

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