



Vanguard ESM Pilot

Digital Transformation demo-case

ESM Meeting
13 April 2023

Sergio Gusmeroli, Minna Lanz, Coen de Graf

State of play of the Manufacturing Twin Transition

The DIGITAL Thread

1. The EU Data Strategy and Spaces



2. The EU AI Strategy, AIoD and ADRA



3. The AI REDGIO 5.0 & C Twain project

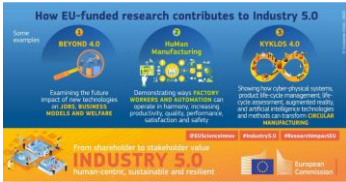


The INDUSTRY Thread

1. The EU Circular (de-re) Manufacturing



2. The EU Human centric Manufacturing



3. The EU Resilient Circular Value Chains



The DIGITAL Thread

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2.2.2 Digital Product Passport

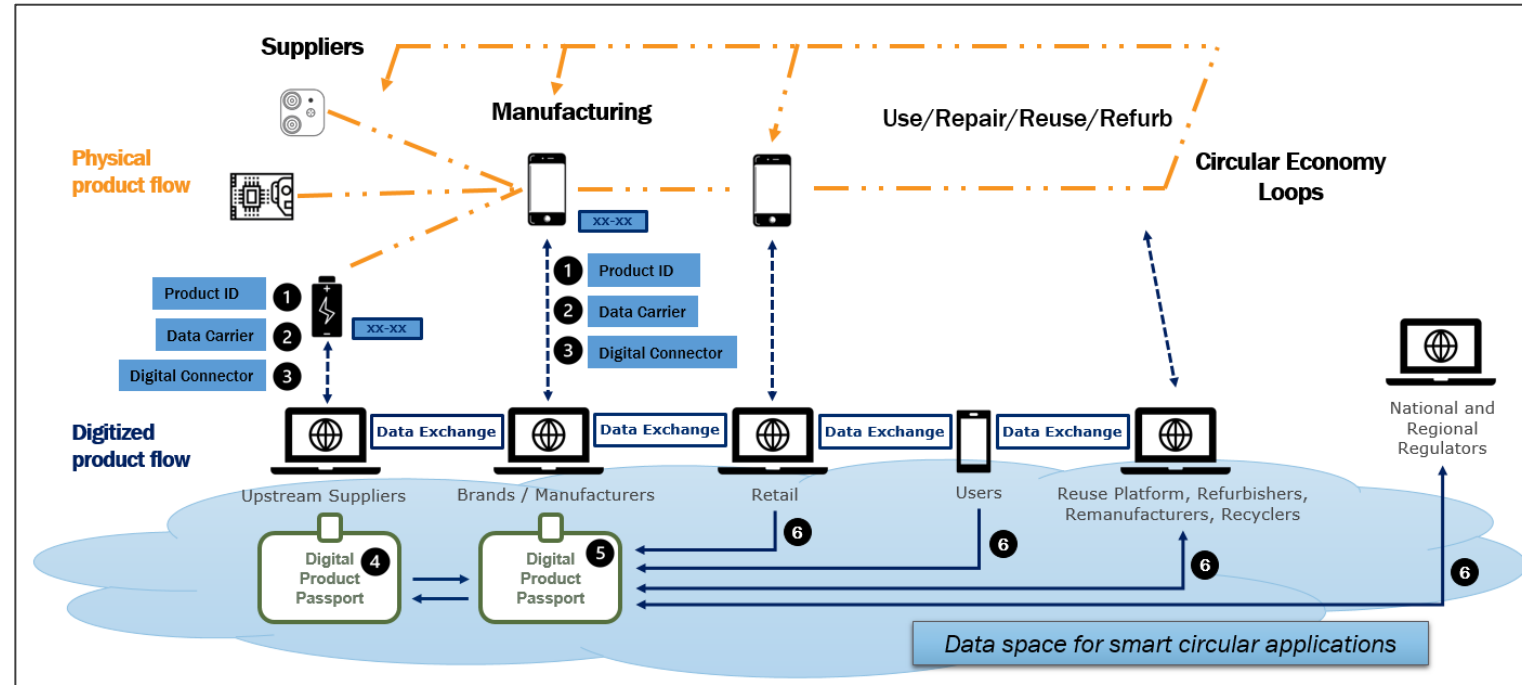
The Digital Product Passport (DPP) is an information system that makes accessible on a need-to-know basis data relevant to product sustainability along their value chains.⁵² The DPP is expected to

Data	Federated European Infrastructure for Intensive Care Units' data	31
	Genome of Europe	
	Digital Product Passport	

Type of action	Simple grants
Indicative budget	EUR 6 million
Indicative call planning	First set of calls
Indicative duration of the action	30 months
Implementation	Executive agency HaDEA
Type of beneficiaries	(Consortia of) public entities, private entities including economic actors / SME, relevant associations and NGO, academia/universities/research organisations...

Milestones	First set of calls of WP 2023-2024 with common deadline
Call Opening ¹⁰⁷	Q2-2023
Deadline for submission ¹⁰⁸	Q3- 2023
Evaluation	Q4-2023
Information to applicants on the outcome of the call	Q4-2023
Signature of contracts	Q1/Q2-2024

- ▶ A unique persistent ID for the product (including batch and/or serialization as necessary) **(1)**
- ▶ A persistent data carrier (RFID, QR Code, digital watermark, Bluetooth tag, etc.) **(2)**
- ▶ A Digital connector between physical product and the digital place of information on the product (e.g., URI address) **(3)**
- ▶ **An IT architecture for facilitating the data exchange (6) composed of:**
 - Standardized vocabulary
 - Standardized data exchange protocols and formats
 - Standardized stakeholder-dependent access mechanisms (read/edit rights)
 - Distributed storage of information (in connection with EU dataspace)
 - A stakeholder-dependent interaction layer





EUROPEAN STRATEGY FOR DATA

European Data Space

9 *Data spaces in key sectors*

Manufacturing	Green	Mobility
Health	Finance	Energy
Agriculture	Public Administration	Skills

- FAIR, High Value pools of Data
- Infrastructure to use and exchange data
- Appropriate governance models / mechanisms

*How to
realize?*



An IT architecture for facilitating data exchange **(6)** composed of:

- i. Standardized vocabulary
- ii. Standardized data exchange protocols and formats
- iii. Standardized stakeholder-dependent access mechanisms (read/edit rights)
- iv. Distributed storage of information (in connection with EU dataspace)
- v. A stakeholder-dependant interaction layer

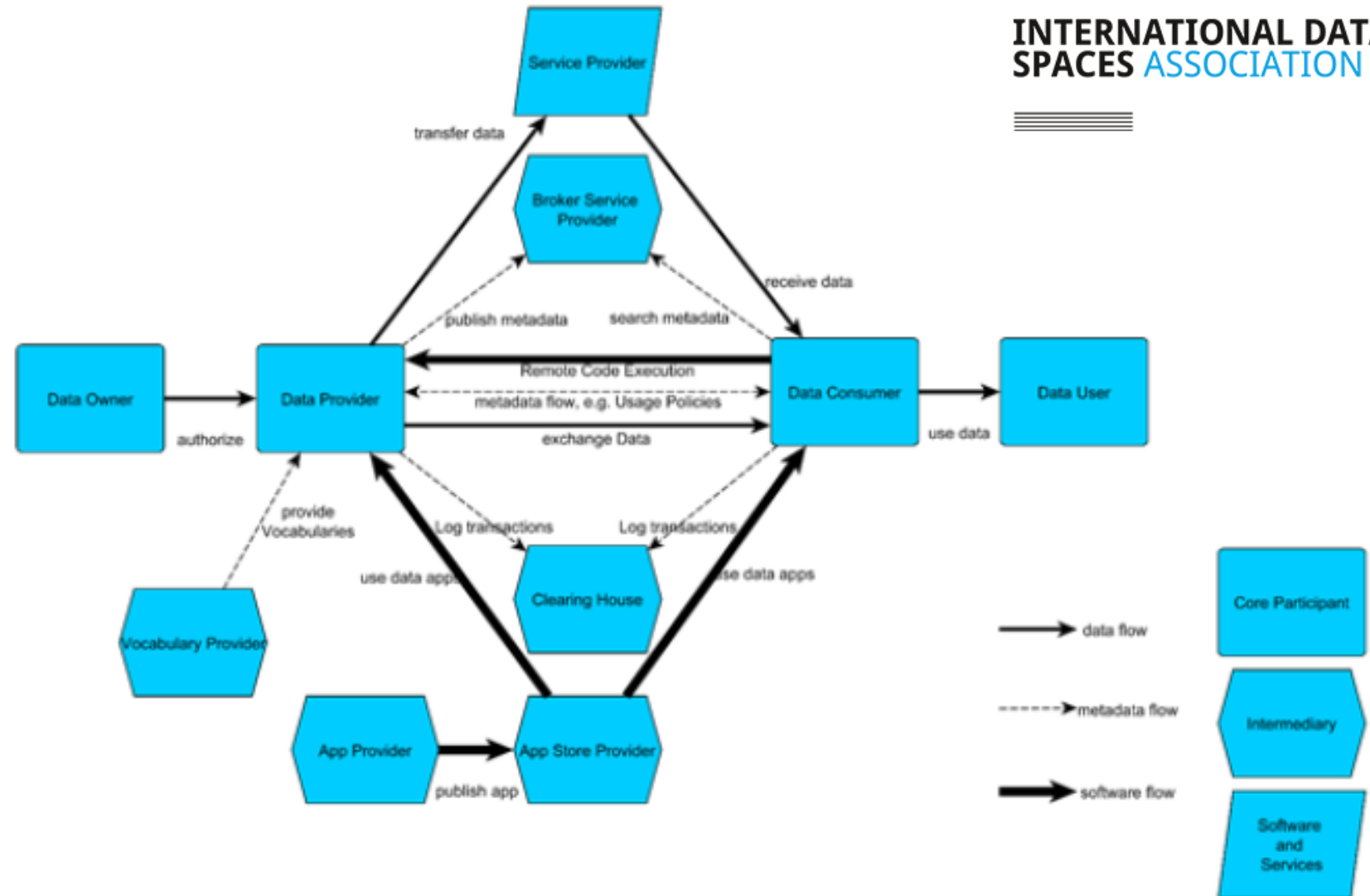
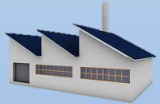


Figure 3 Role model as described in IDS-RAM

THE EUROPEAN
DATA STRATEGY

CONNECTED
FACTORIES



Smart
Autonomous
Factories



Product
Service
Factories



Hyper
Connected
Factories



Open Data
Repositories



Data & Model
Marketplaces



Trusted Data
Networks



AI REGIO



RE4DY
MANUFACTURING DATA NETWORKS



DIMOFAC



VIMMP
VIRTUAL MATERIALS
MARKETPLACE



CIRPASS



eit Manufacturing



MARKET4.0
CONNECT & PRODUCE



SC SN
smart
connected
supplier
network

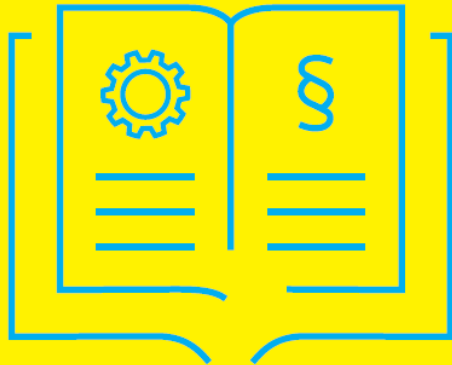


REFERENCE ARCHITECTURE MODEL

Version 3.0 | April 2019

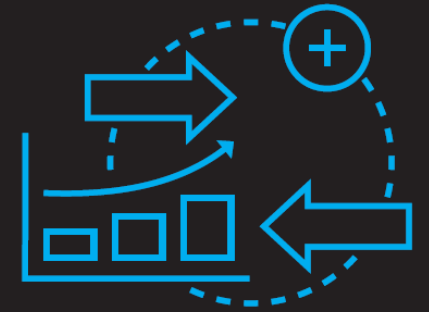
White Paper | Version 1.0 | December 2020

IDSA Rule Book



Position Paper | Sneak preview version | April 2021

New Business Models for Data Spaces Grounded in Data Sovereignty



Position Paper | Version 3.0 | March 2021

Usage Control in the International Data Spaces



BB catalogue

Creation of a building blocks catalogue on GitHub

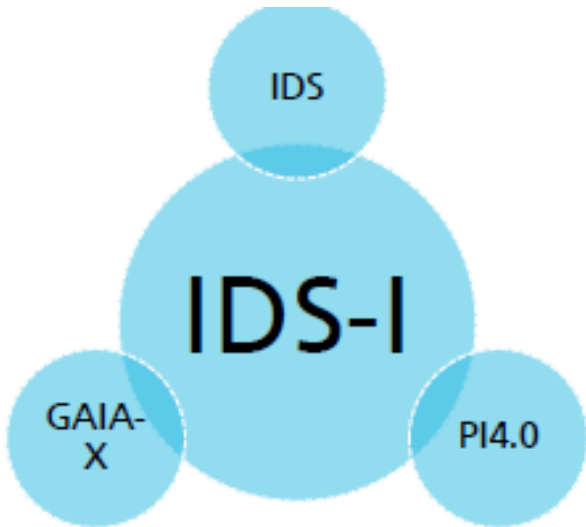
Building Blocks catalogue:

- Data Models & Formats
- Data Exchange APIs
- Provenance and traceability
- Identity Management
- Access & usage control
- Trusted Exchange
- Metadata & discovery
- Data usage accounting
- Publications & Marketplace
- Overarching cooperation agreements
- Operational
- Continuity Model

...



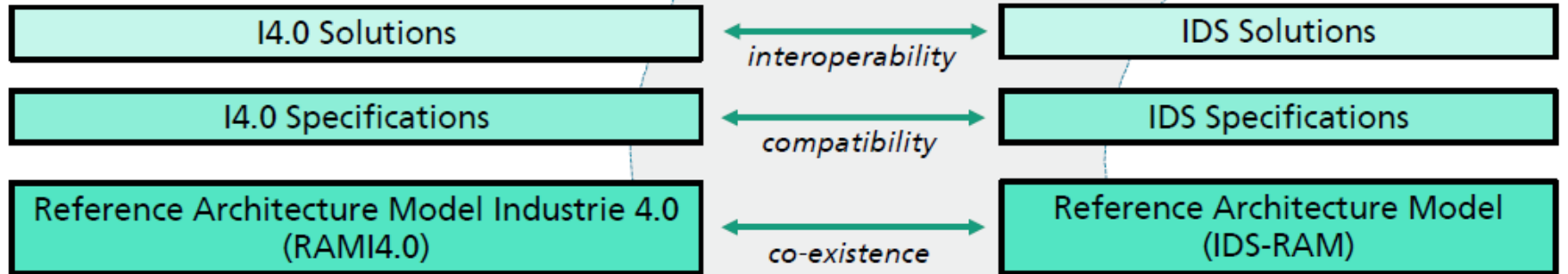
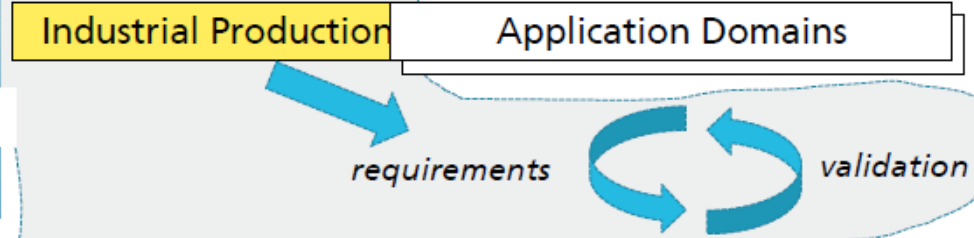
Data Interoperability	Data Sovereignty and Trust	Data Value Creation	Data Governance
Data Models & Formats JSON-LD (others too → RDF), Smart Data Models, Vocabulary Provider	Identity Management Level 1: eIDAS, X509, VC/VP, OAuth2, XACML, Paris, ISHARE Satellites, Verifiable Registry Level 2: X.509, DAPS/DAT, VC/V, ODRL, IDS Connector LevelB: User/password, VC/VP, OpenID, OAuth2, XACML	Metadata & Discovery IDS Info model, Gala-X Ontology, NGSI-LD, DCAT	Cooperation agreements SITRA rulebook IDSA rulebook
Data Exchange API ETSI NGSI-LD, Context Broker, IDS-Handshake, OpenAPI, EDC, Ocean Protocol	Trusted Exchange IDS Certification, Remote Attestation, VC/VP, ISHARE Satellite, EDC, TRUE Connector, Keyrock	Publication & Marketplace TMForum APIs, FIWARE Business API Ecosystem, IDS Meta Data Broker, IDS Clearing House, Federated Catalog, Data Sovereignty Services, CKAN, Portal	Operational agreements SITRA rulebook IDSA rulebook
Provenance & Traceability DLT, Data Provenance Tracking	Access & Usage Control XACML Scheme, ODRL Policies, distributed PIP	Data Usage Accounting TMForum APIs, FIWARE Business API Ecosystem, IDS Clearing House, Data Contracting Service, Contract negotiation sequence	Continuity model IDSA rulebook

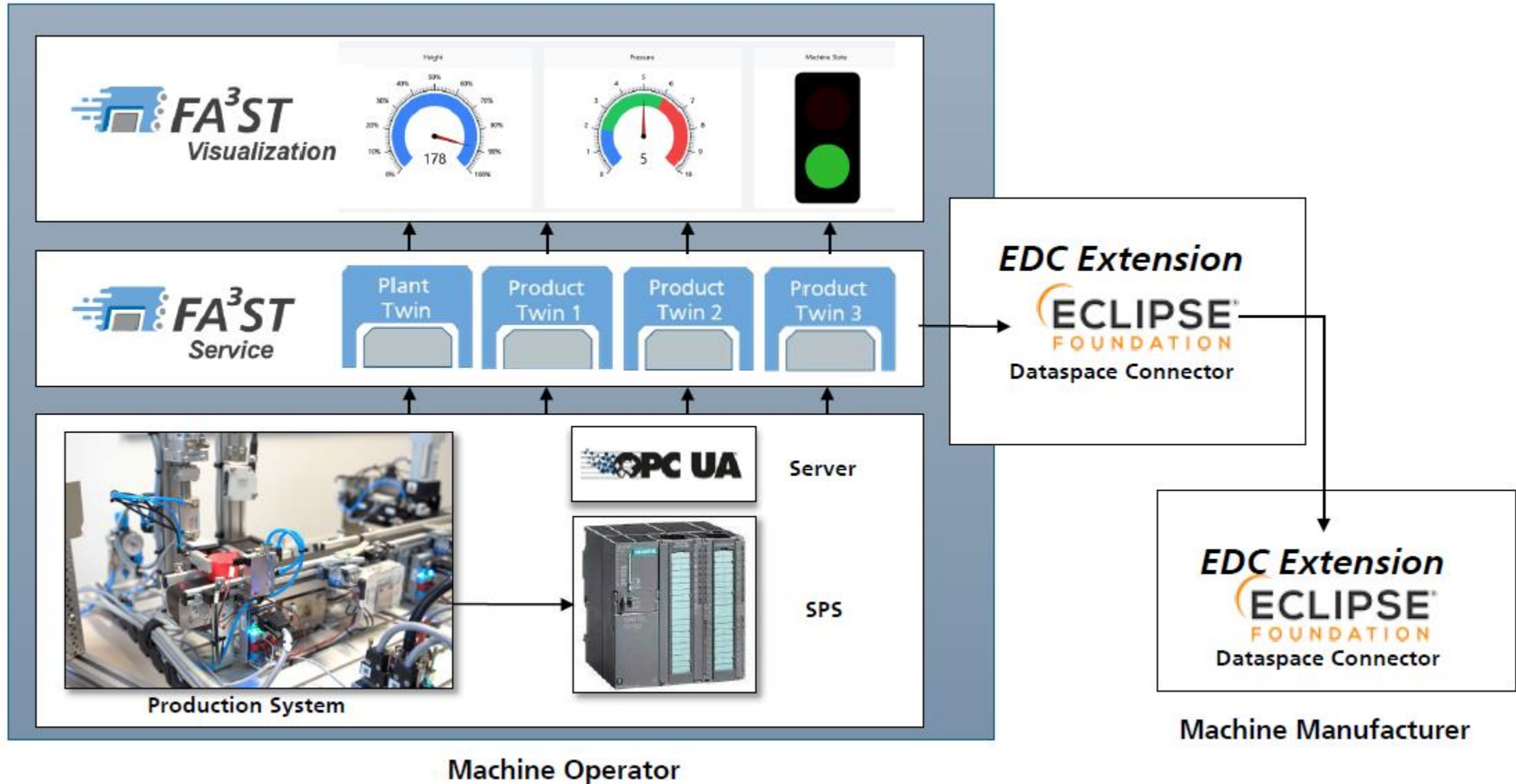


IDS Industrial Community (IDS-I)



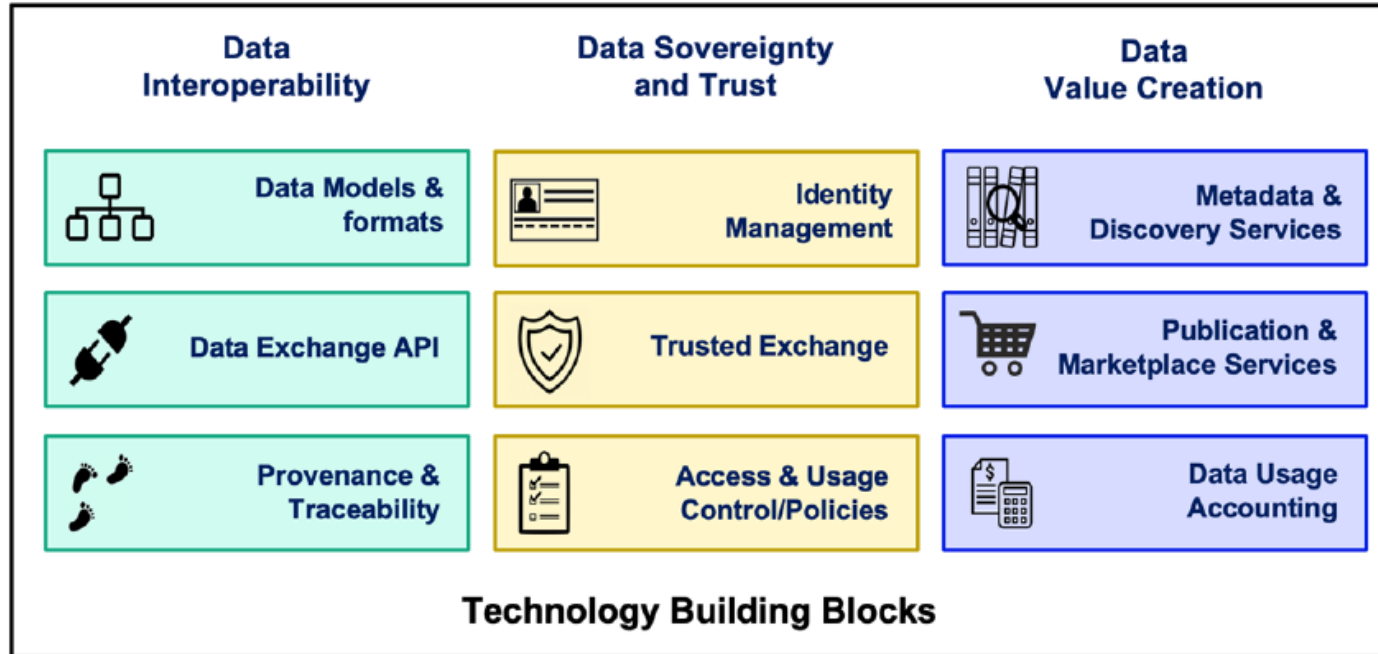
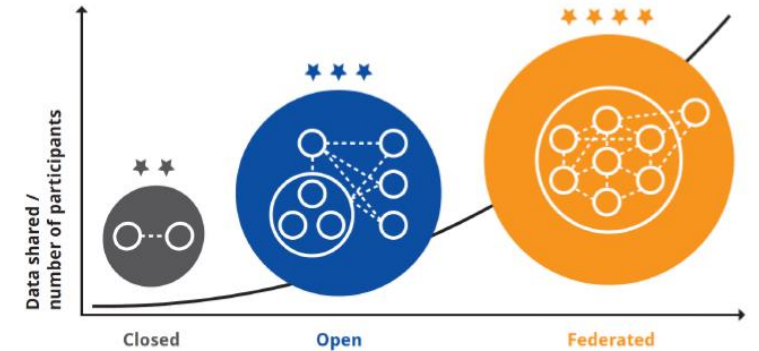
INTERNATIONAL DATA SPACES ASSOCIATION



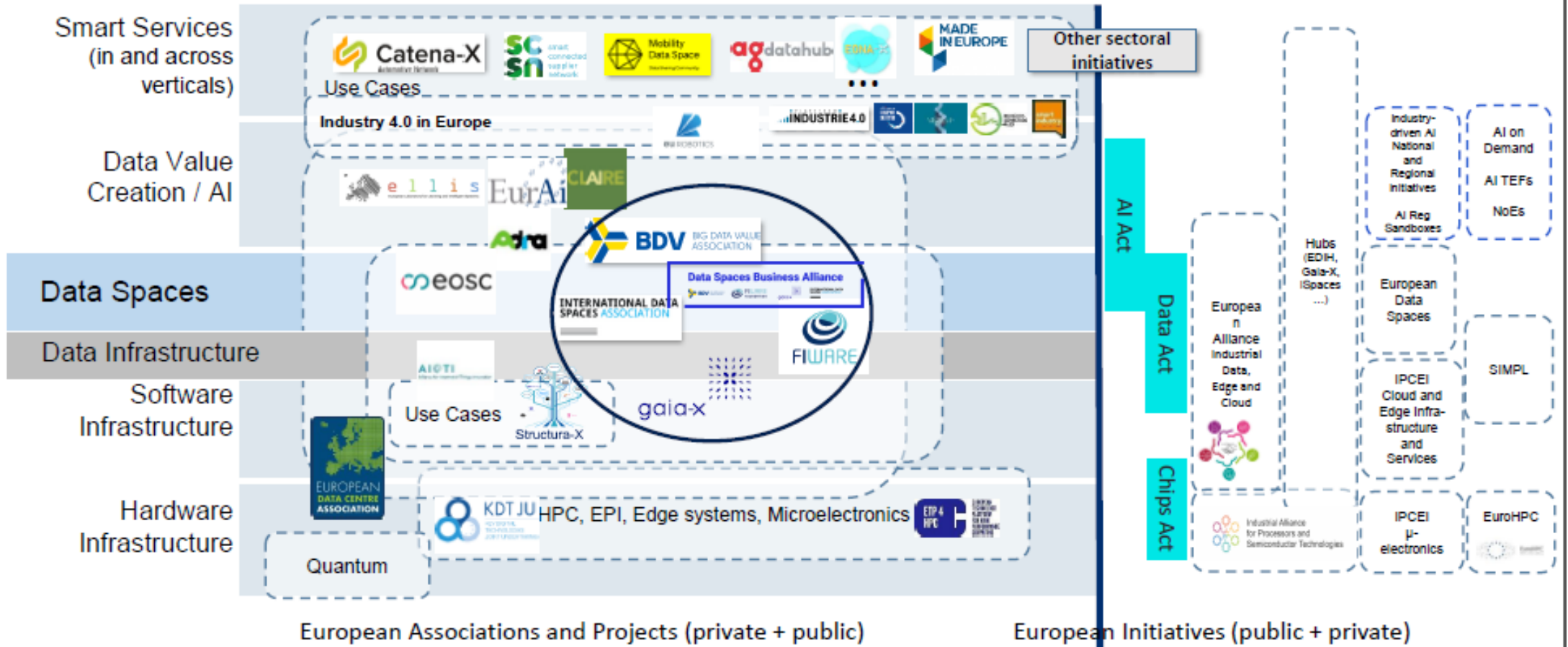


Data Spaces Business Alliance

Unleashing the Data Economy



Strategic Digital/Data/AI related initiatives for Europe (showing technology coverage)



DSBA HUBS LANDSCAPE





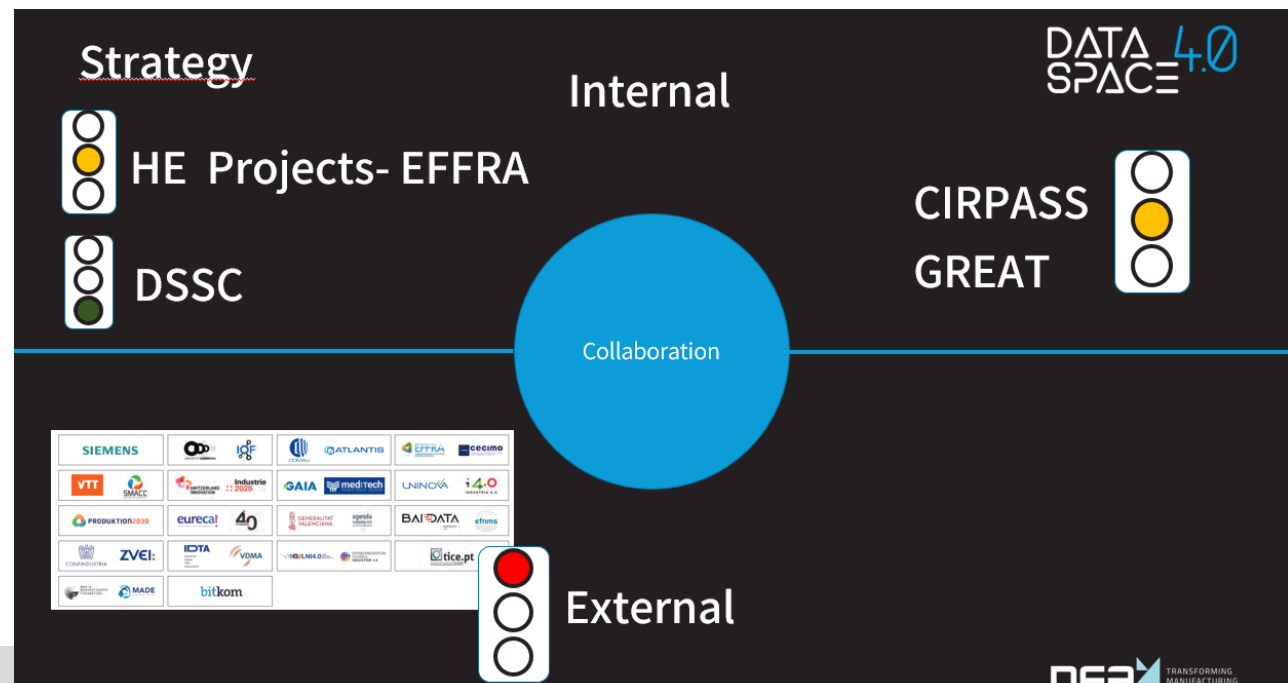
Data Spaces Symposium & Deep-Dive Day

Building the future – benefit together

Postillion | The Hague
March 21 to 23, 2023

30-DAY VERSION | NOVEMBER 2022 | DRAFT

Starter Kit for the Data Space Designers





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