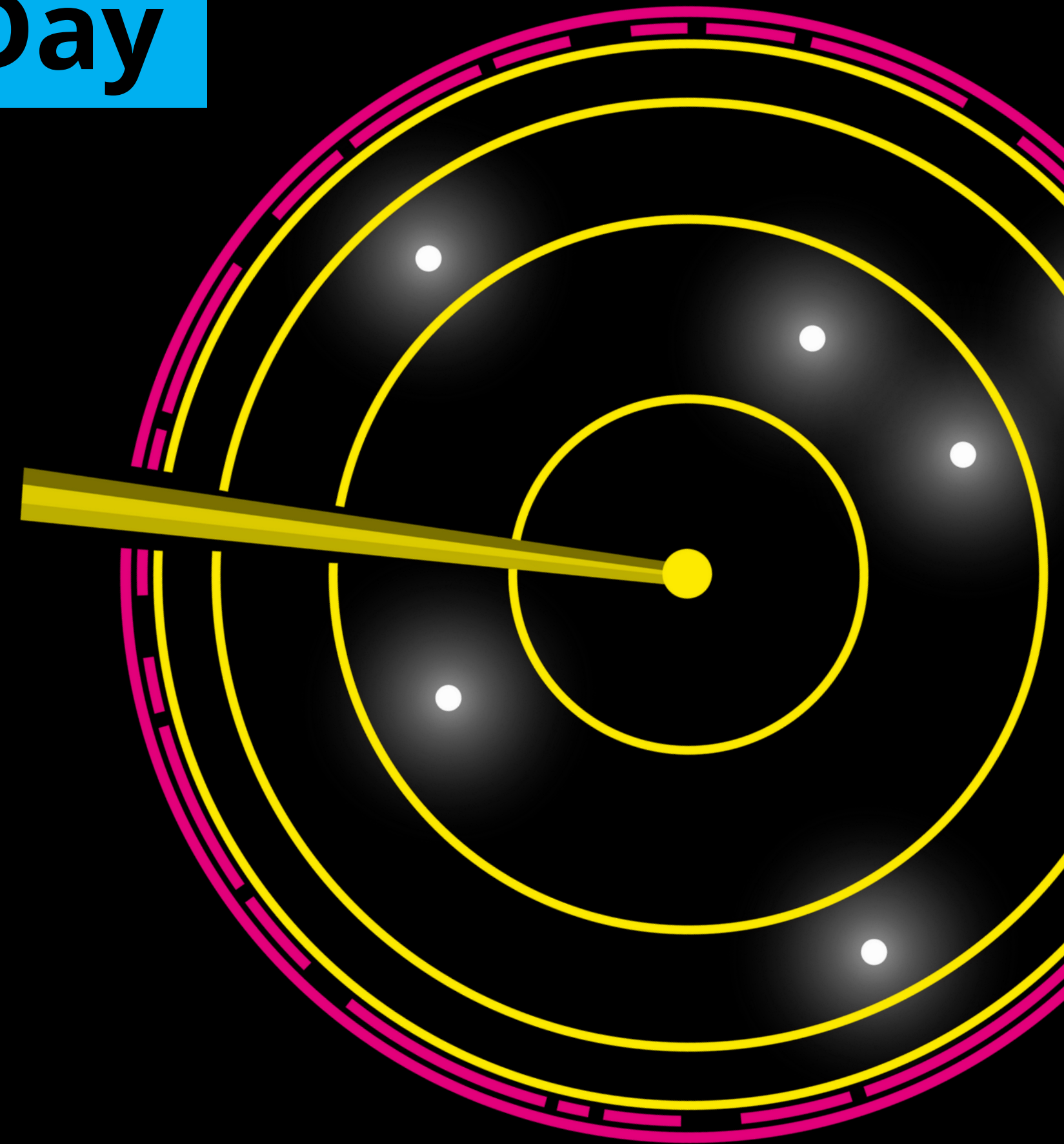# Data Spaces Discovery Day

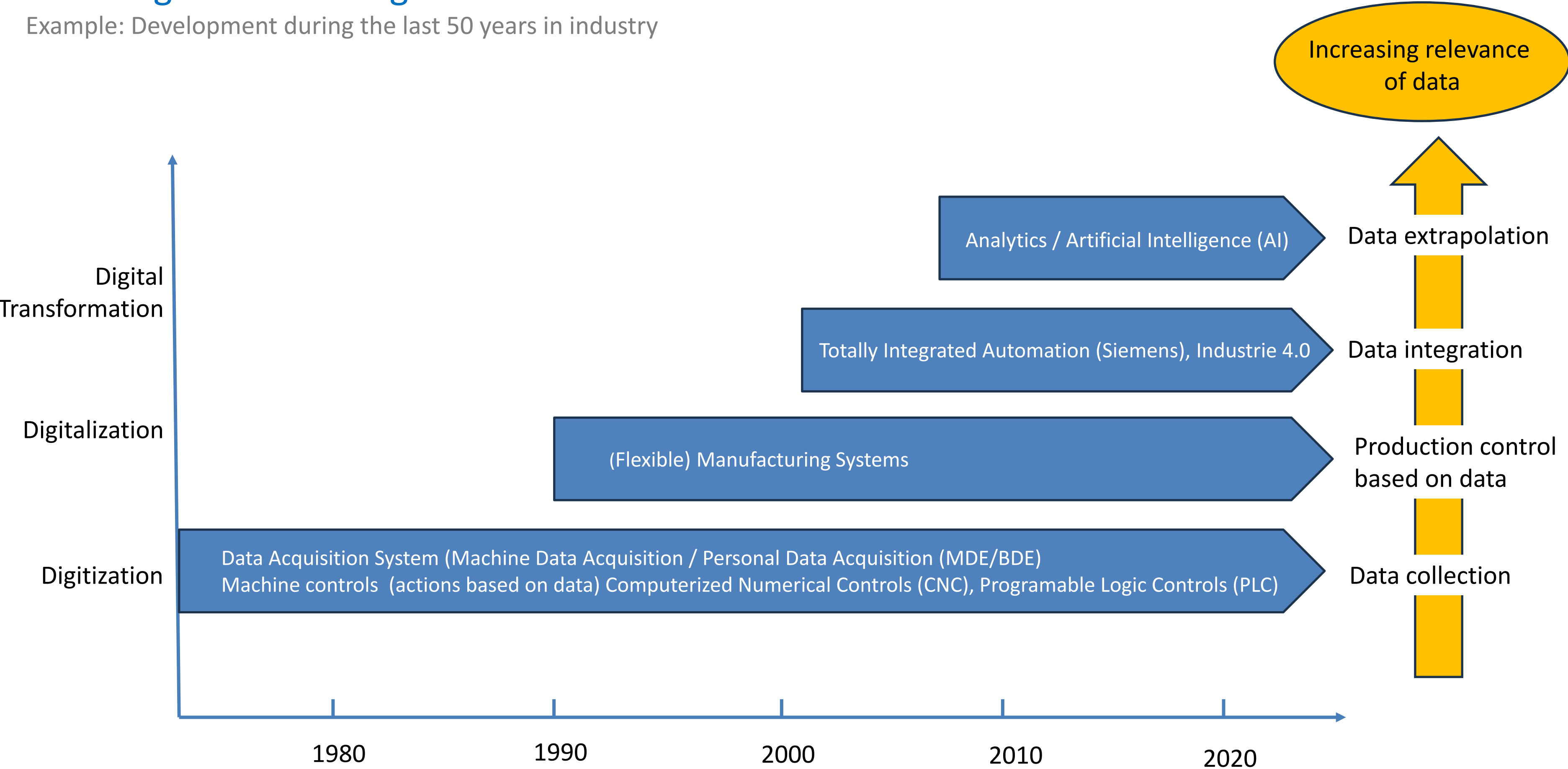## October 19, 2023 | Vienna

How data spaces boost
digital transformation

Reinhold Achatz
Chairman of the Board IDSA

# From Digitization to Digital Transformation

Example: Development during the last 50 years in industry



Increasing relevance of data

| | | |
|---|---|---|
| **Digital Transformation** | Analytics / Artificial Intelligence (AI) | Data extrapolation |
| | Totally Integrated Automation (Siemens), Industrie 4.0 | Data integration |
| **Digitalization** | (Flexible) Manufacturing Systems | Production control based on data |
| **Digitization** | Data Acquisition System (Machine Data Acquisition / Personal Data Acquisition (MDE/BDE) Machine controls (actions based on data) Computerized Numerical Controls (CNC), Programable Logic Controls (PLC) | Data collection |

1980   1990   2000   2010   2020

2023, October 19th | International Data Spaces Association | Reinhold Achatz

# What are data often used for?



AI Fake

Source: Internet

# What data should be used for:

→ Data need to be used to create value!

✓ Optimizing Mobility      → Mobility Data Space

✓ Optimizing Logistics     → Catena-X

✓ Climate protection       → Green Deal Data Space

✓ Many more

Data Spaces are the tool to create value!

# What are data spaces offering to their users?

✓ Data Spaces support **data ownership**.

✓ Data Spaces create **trust by design**. Trust is a precondition for most companies to share data!

✓ Data Spaces offer **interoperability**. Data Spaces are based on standardization of interfaces and the syntax and semantics to support interoperability.

✓ Data offerings can be published in a catalogue (Meta Data Broker) → **equal opportunity.**

✓ Data spaces **create new business opportunities** and support the generation of **new business models.**
Value is created through:
- Cost sharing
- Joint innovation
- Shared marketplace
- Process optimization (data exchange process and use-case-based processes)
- Service opportunities (data sharing oriented services and application-based services)

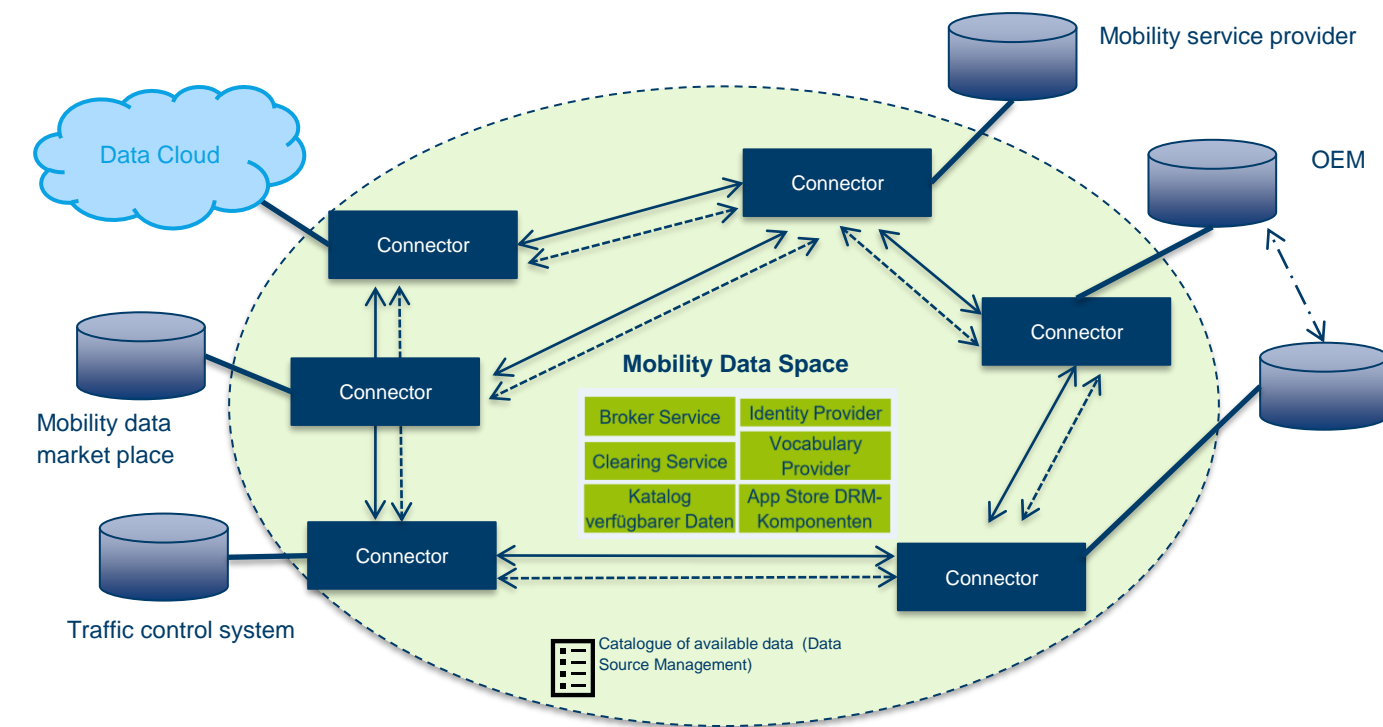# Data Spaces implement a new paradigm
Federated data storage
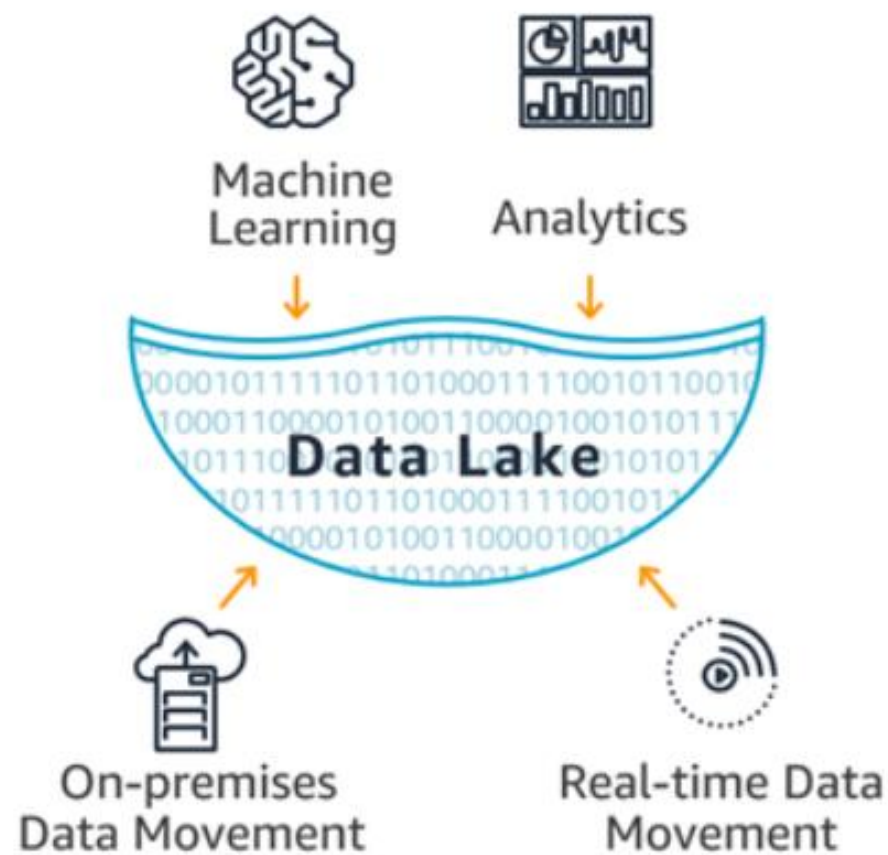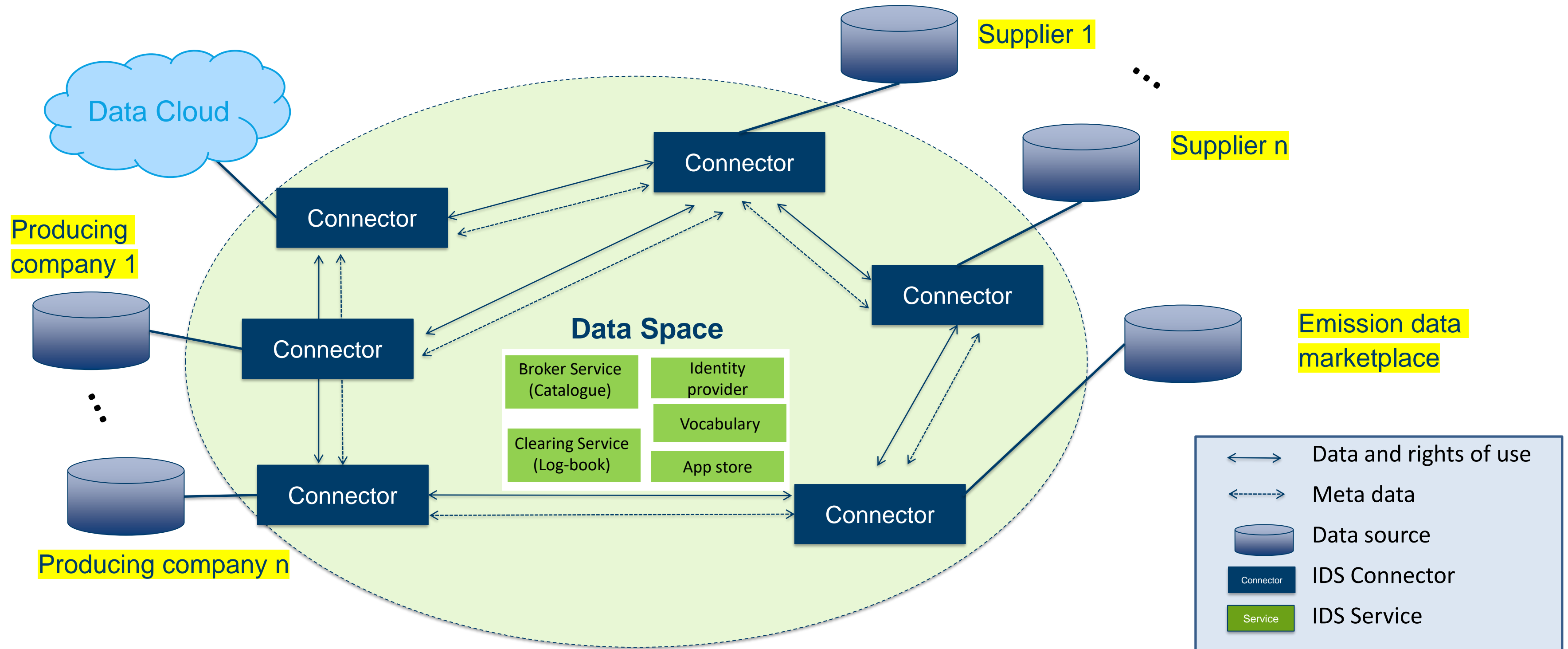
Source: Amazon

## Central storage of data

A new paradigm for the use Data:
Secure Data Space
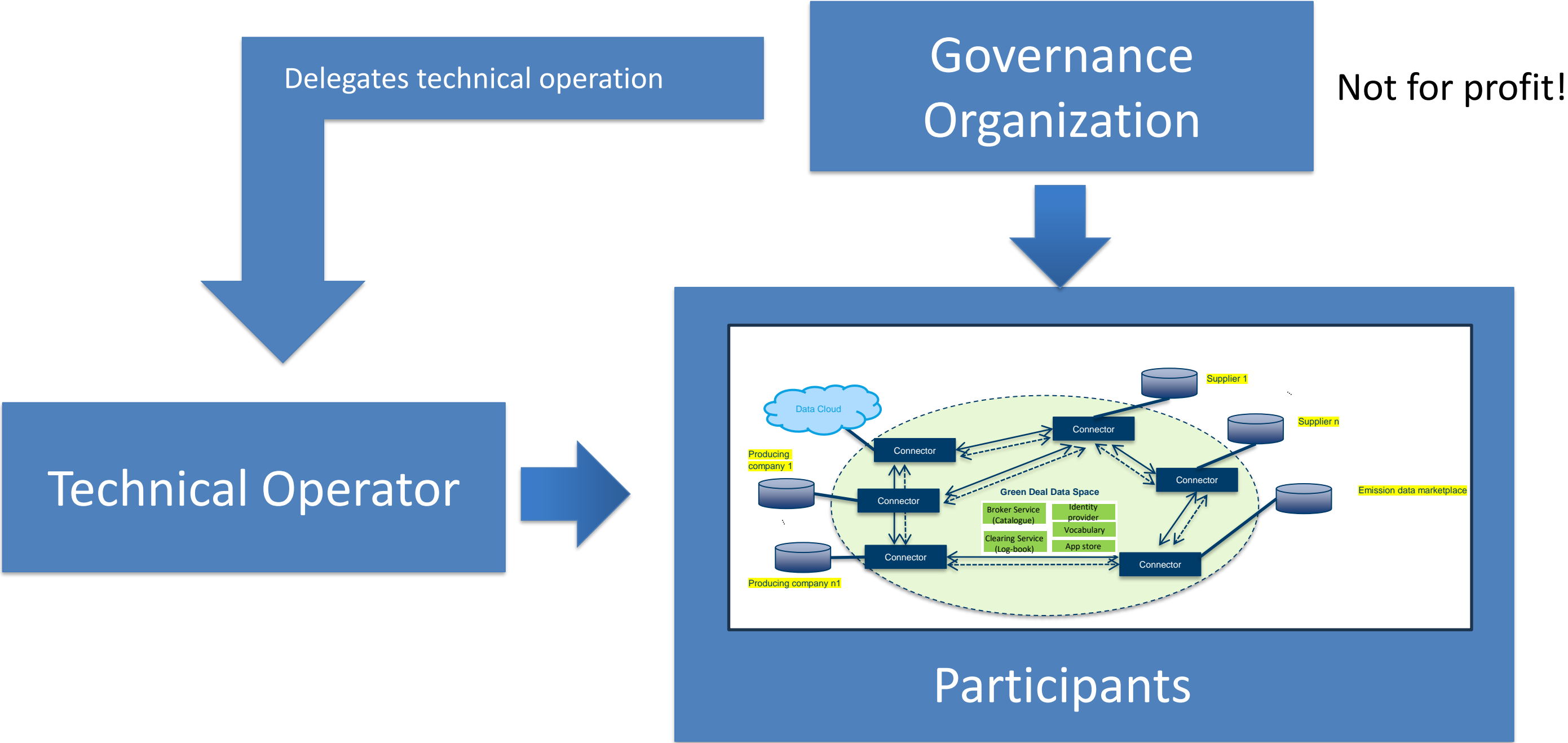


## Federated storage of data

# Data Spaces – a new paradigm to share data
Structure of a distributed Data Eco System



INTERNATIONAL DATA
SPACES ASSOCIATION

Data Cloud

Supplier 1

Supplier n

Connector

Connector

Producing company 1

Connector

Connector

**Data Space**

| Broker Service (Catalogue) | Identity provider |
| Clearing Service (Log-book) | Vocabulary |
| | App store |

Connector

Emission data marketplace

Producing company n

Connector

Connector

**Legend:**
- Data and rights of use
- Meta data
- Data source
- Connector — IDS Connector
- Service — IDS Service

# How data spaces can be organized
The organizational structure guaranties neutrality

Delegates technical operation

Governance
Organization

Not for profit!

Technical Operator

Participants

# Making data available
Example: Mobility Data Space
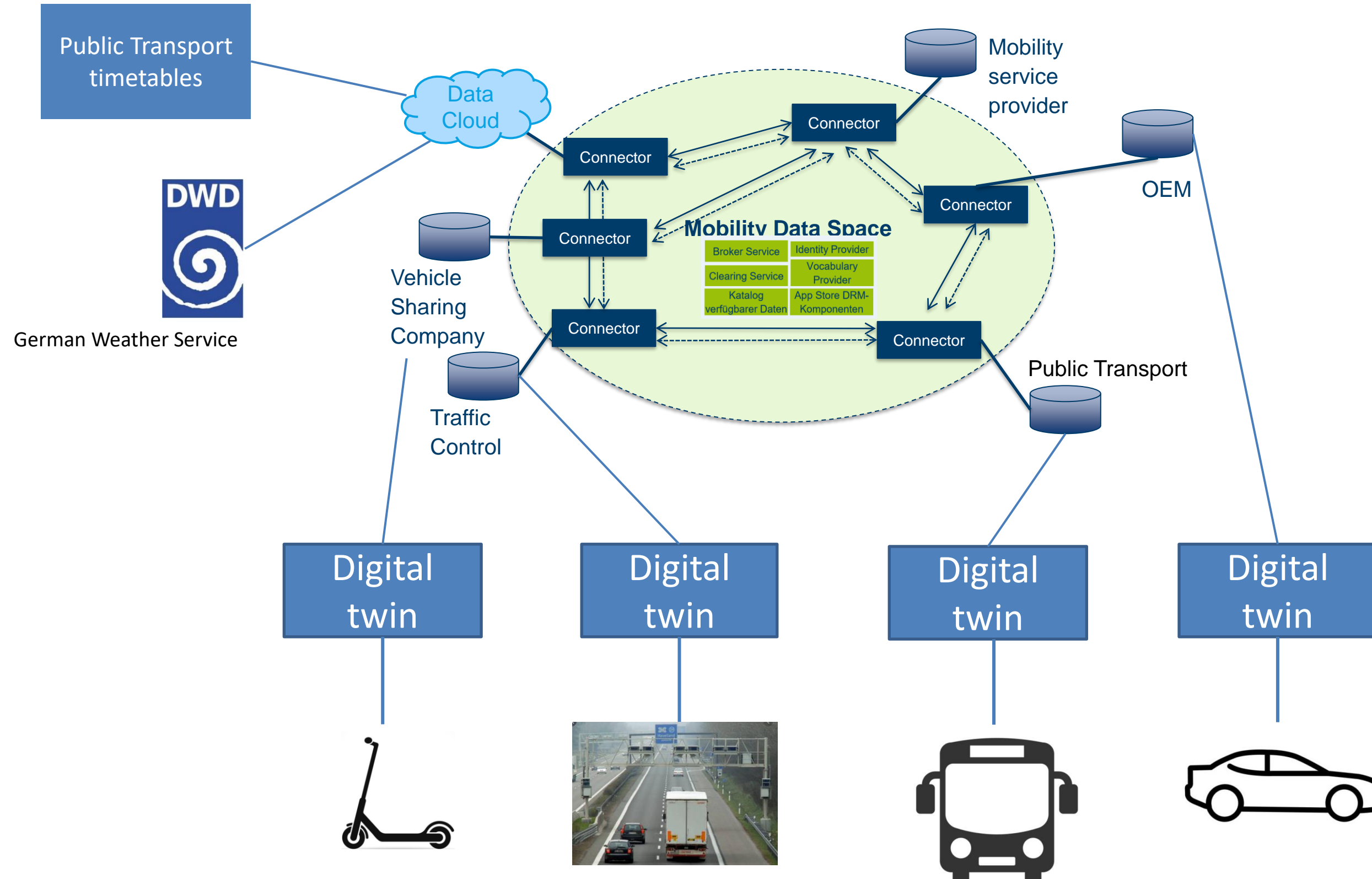
Defining Industry-neutral standards for services & semantics
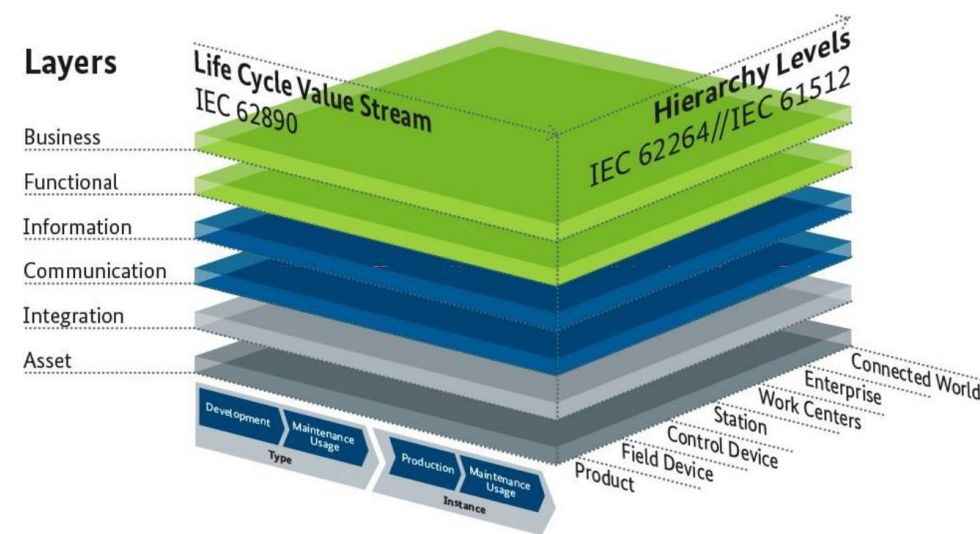
## Industrial Data Space based on IDS

- Connector communication
- Broker
- Logging
- Vocabulary
- Identity
- AppStore
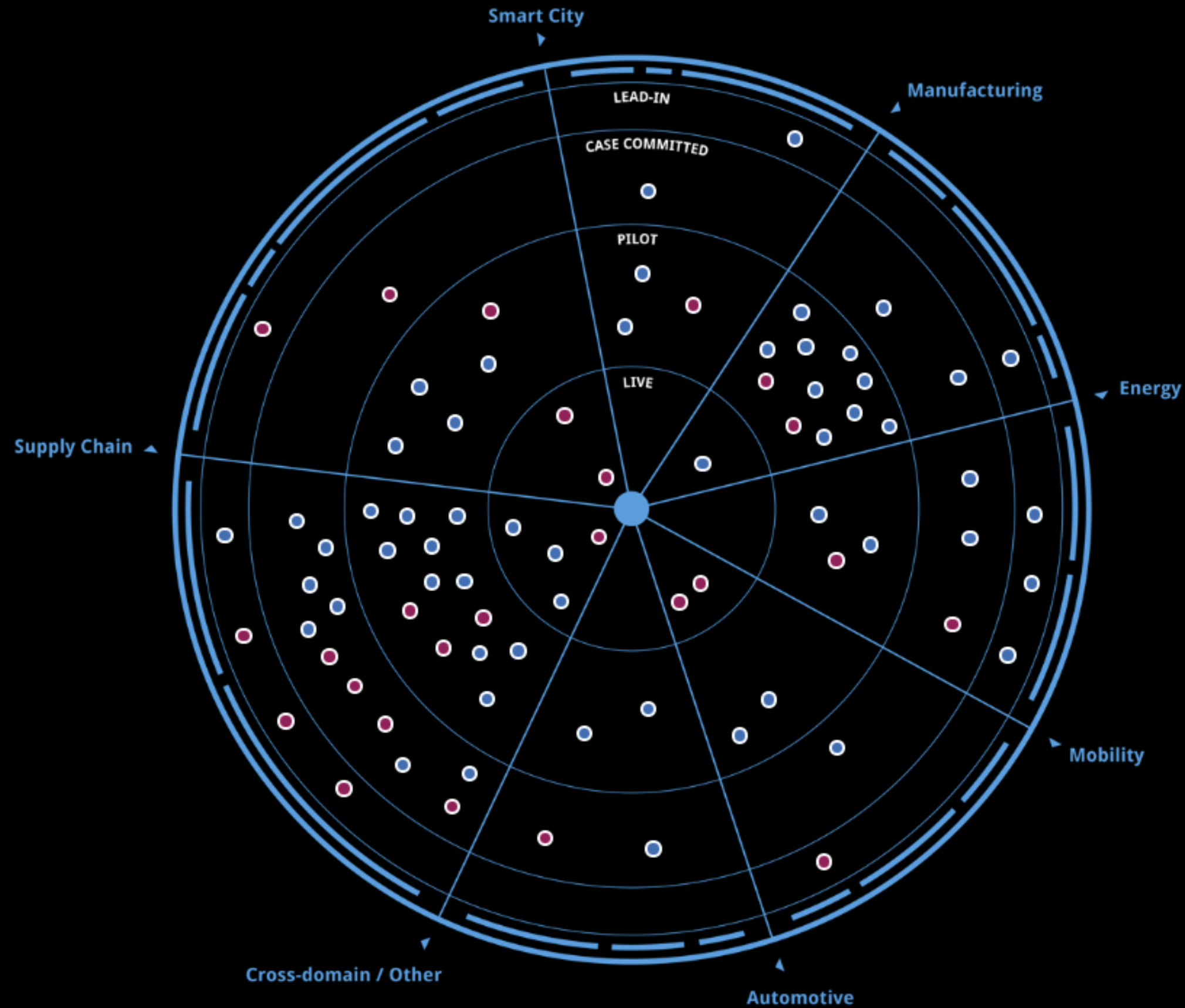
### DIN 27070

(ISO work in progress)
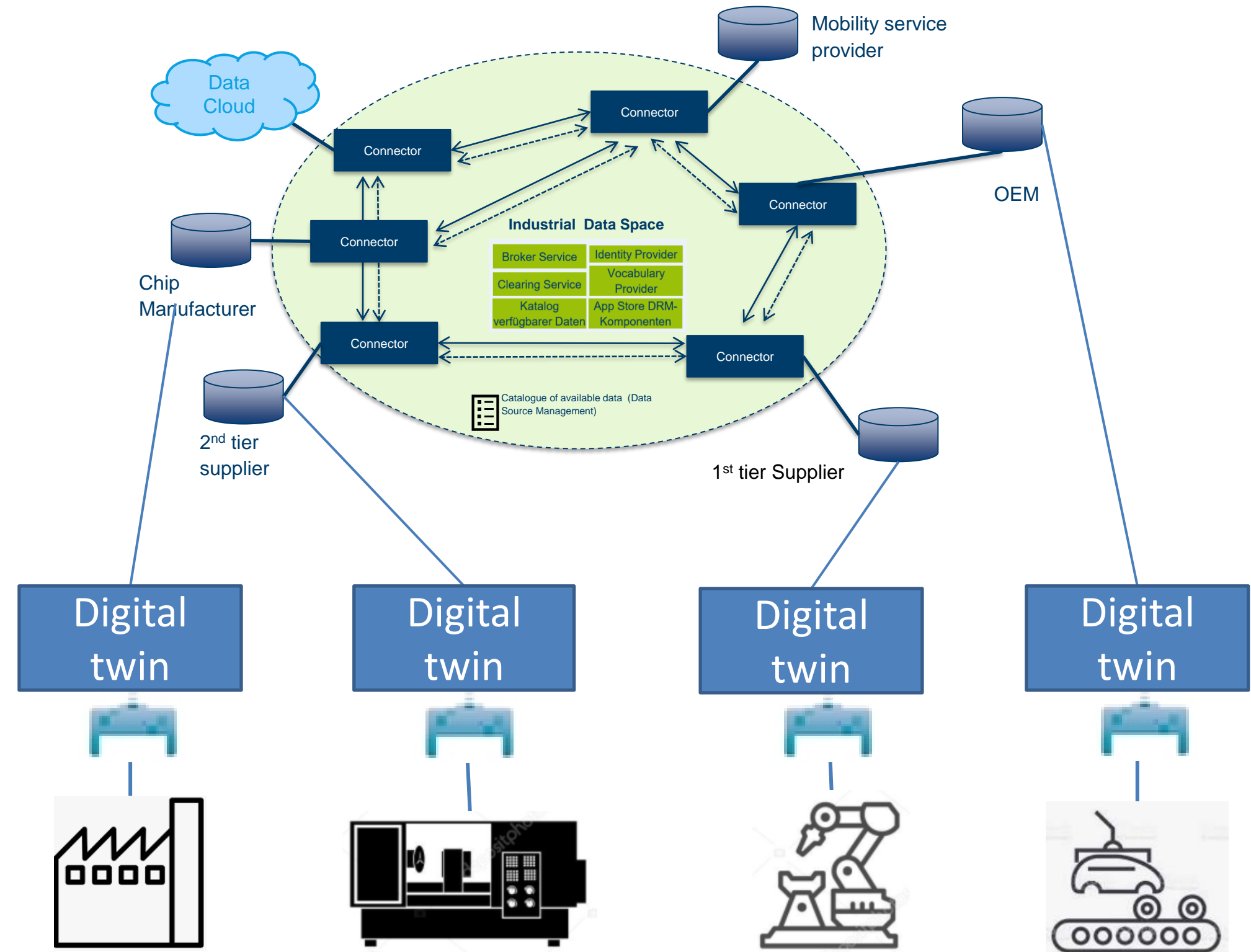
## Industrie 4.0

- RAMI 4.0
- OPC UA
- Real time communication
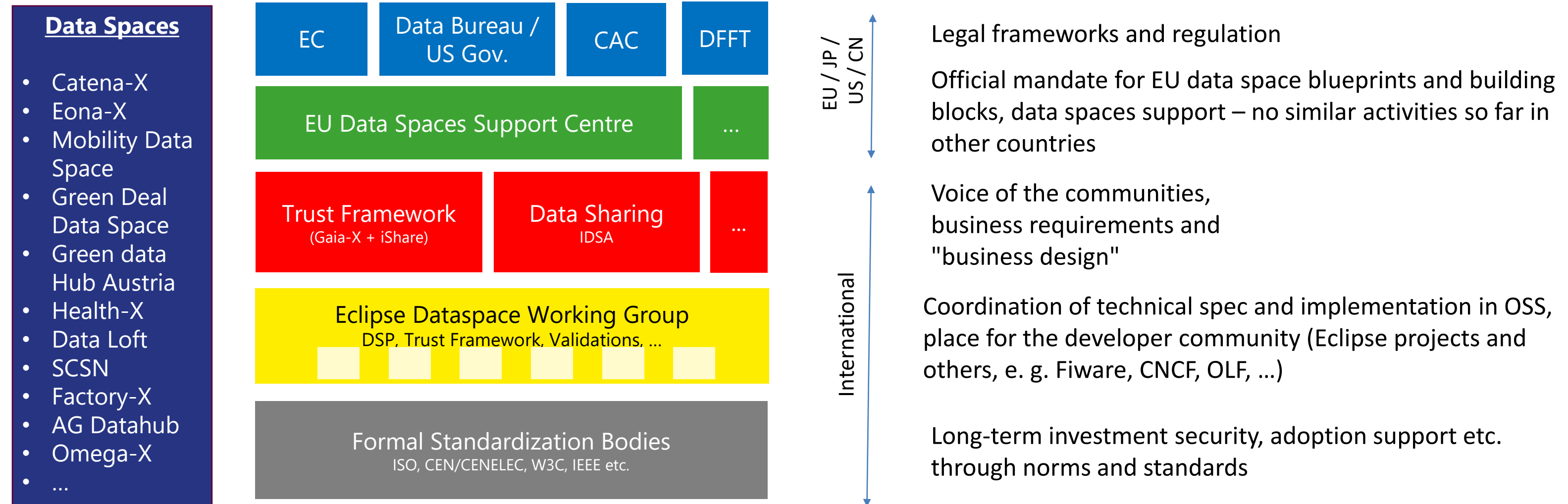
# Data Spaces are reality - IDSA Data Space Radar

100+ data spaces and use cases

# Data Spaces need a joint effort

## All partners need to focus on their core objective

**Data Spaces**

- Catena-X
- Eona-X
- Mobility Data Space
- Green Deal Data Space
- Green data Hub Austria
- Health-X
- Data Loft
- SCSN
- Factory-X
- AG Datahub
- Omega-X
- …

| EC | Data Bureau / US Gov. | CAC | DFFT |

| EU Data Spaces Support Centre | … |

| Trust Framework (Gaia-X + iShare) | Data Sharing IDSA | … |

**Eclipse Dataspace Working Group**
DSP, Trust Framework, Validations, …

**Formal Standardization Bodies**
ISO, CEN/CENELEC, W3C, IEEE etc.

EU / JP / US / CN

International

Legal frameworks and regulation

Official mandate for EU data space blueprints and building blocks, data spaces support – no similar activities so far in other countries

Voice of the communities, business requirements and "business design"

Coordination of technical spec and implementation in OSS, place for the developer community (Eclipse projects and others, e. g. Fiware, CNCF, OLF, …)

Long-term investment security, adoption support etc. through norms and standards

To be successful, everyone must stay in their lane …
… with green, red, yellow and grey being always aligned and committed to the same standards and protocols.
(clarification: no exclusivity, actions outside are allowed)

# Value proposition of Data Spaces

✓ Data Sovereignty

✓ Enable Value Creation through Sharing Data

✓ Interoperability

✓ Open and Vendor Neutral

✓ Equal Opportunity for all Participants

✓ Trust

✓ Low Transaction Cost

✓ Economy of Scale

# Thank you!

Reinhold Achatz
Chairman of the Board IDSA