



SAP Community Call: **CATENA-X: Industry Network & Technology** **for a data driven value chain**

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Agenda

- 1 Overview on Catena-X
- 2 Technical Foundation
- 3 Roadmap and further information

Catena-X Automotive Network

- Building the First Operating System for a Data Driven Value Chain -

Gefördert durch:



Bundesministerium
für Wirtschaft
und Klimaschutz

aufgrund eines Beschlusses
des Deutschen Bundestages

„Never let a good Crisis go to Waste“

- Winston Churchill



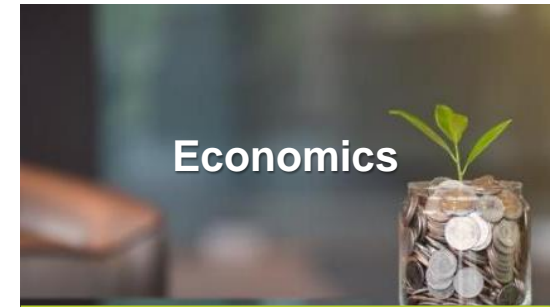
Executive Awareness



Network – Task



Stronger Together



Shared Burden

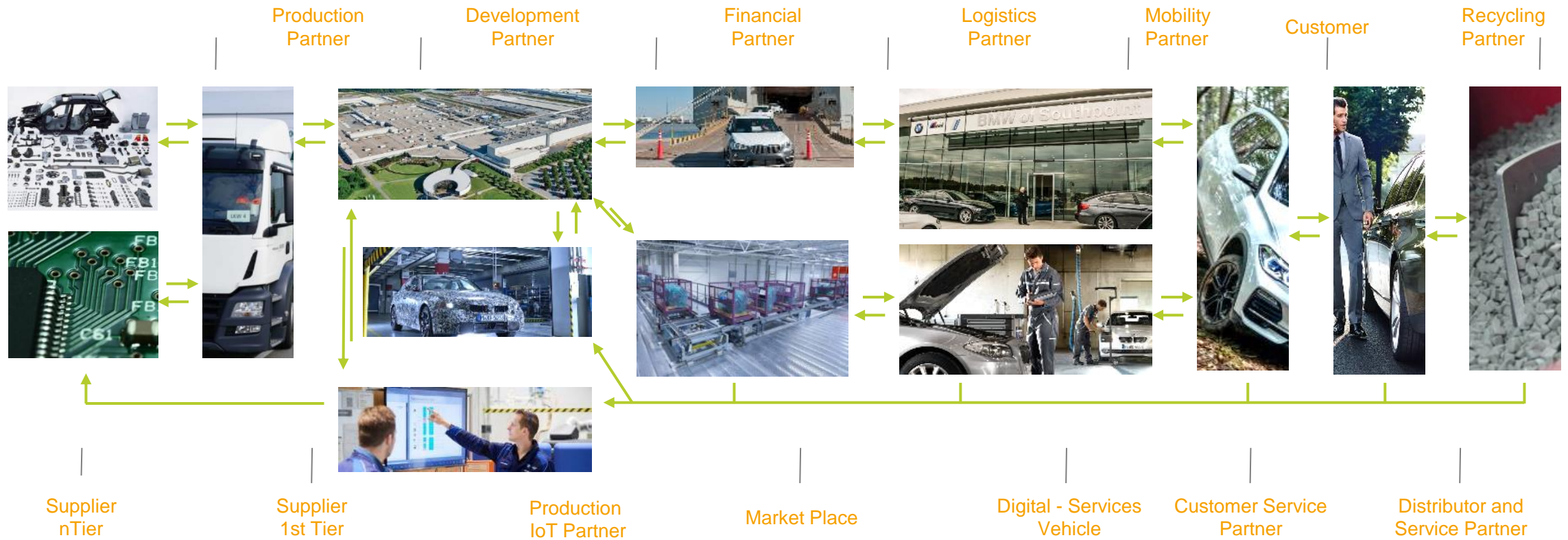
Network Mission

"We offer the **most user-friendly environment** for building, operating and collaboratively **using end-to-end data chains**, along the entire automotive value chain.

The resulting **data ecosystem** sustainably **differentiates us** as a location, industry and ultimately as an individual company. **It rewards all participants** with superior resilience, innovation and revenue opportunity."



Scope of „Data Driven Value Chain“



Industry Platform

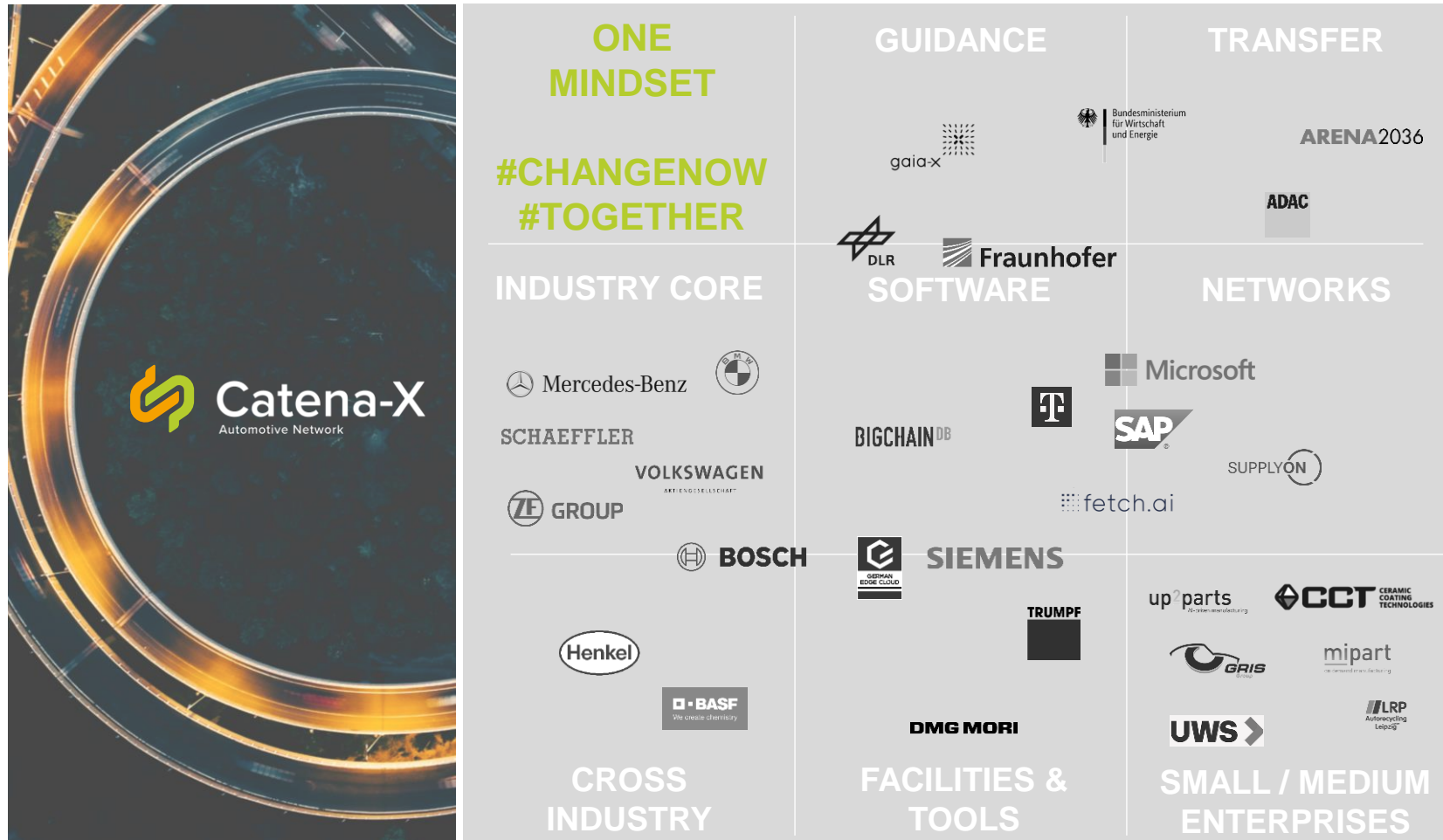
Providing the most user-friendly environment for **building, operating and collaboratively using end-to-end data chains** along the entire (automotive) value chain



Catena-X
Automotive Network



28 strong Partners cooperate with the BMWi (KoPa35c) for the initial Setup of this Data Ecosystem → Catena-X.



Vision & Guiding Principles



Consensus of the pioneers: Significant need for action to meet the challenges of the automotive industry. Creation of a German / European investment in interoperable and secure information exchange and network-based services.



Alliance Vision: Provisioning of a user-friendly environment for building, operating and collaborating on end-to-end data chains along the entire (automotive) value chain.



Guiding principle: Collaborative approach to selecting and implementing scalable, system-relevant use cases. Covering the entire value chain of the automotive industry, regardless of company size.



Security & Openness: Openness and non-discriminatory access to the network as the overriding principle for all market participants. Implementation of data sovereignty, security & interoperability principles based on Gaia-X & concepts of IDSA.



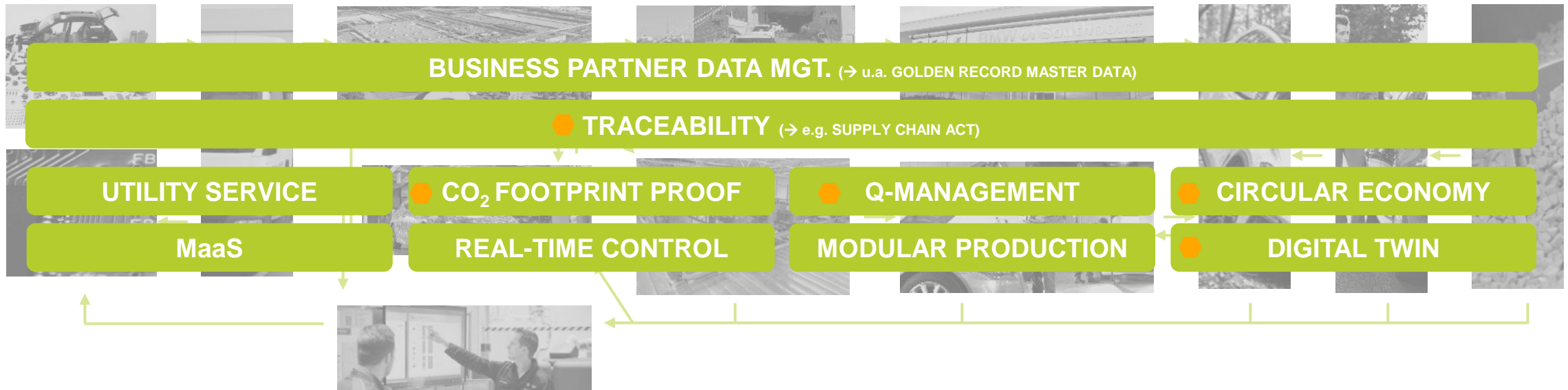
Openness to technology: Openness and interoperability of the technology landscape (multi-tech approach). Based on standards, a solution portfolio of certified, network-based applications and solutions is created.



Industry standards: Validation of the Gaia-X principles and management of industry-specific requirements by the association. Open exchange for the Catena-X standards and certifications with industry-relevant standardization bodies where appropriate.



Catena-X starts with Ten Use Cases (Apps) and focuses on eliminating Barriers for Partners, especially SMEs.



● SAP's Involvement



Catena-X is organized into five streams following the joint vision of continuous data exchange for all contributors along the automotive value chain.

Catena-X



Portfolio & Program Management



Alignment of all parties to constructively work in a collaborative manner on shared objectives across all engagements ensuring an end-to-end project success.



Data Space Technology ART



Deployment of the agnostic infrastructure, data spaces and enabling services providing the core assets to Catena-X based on Gaia-X principles.



Catena-X Core ART



Provision of specifications, shared services and business applications to ensure interoperability and achieve a consistent user experience.



Production Use Cases ART



Improvement of supply security and transparency within the supply chain as well as the flexibilization of production and optimization of decision-making.



Vehicle LiVe Chain ART



Foundation for the implementation of sustainable value chains and cycles by enabling a coherent data base as decision engine.

Gaia-X Conformity – Open, transparent and secure digital ecosystem for sovereign data exchange across corporations, industries, government and citizens.



Catena-X Operating System / Architecture

One
Operating System

Data Sovereignty & Interoperability (europ. architecture)



Decentralized data rooms



Competition at application level

One Operating System (decentralized, federated, FOSS)



Operating System on GitHub



Plug and Play - Standardized APIs



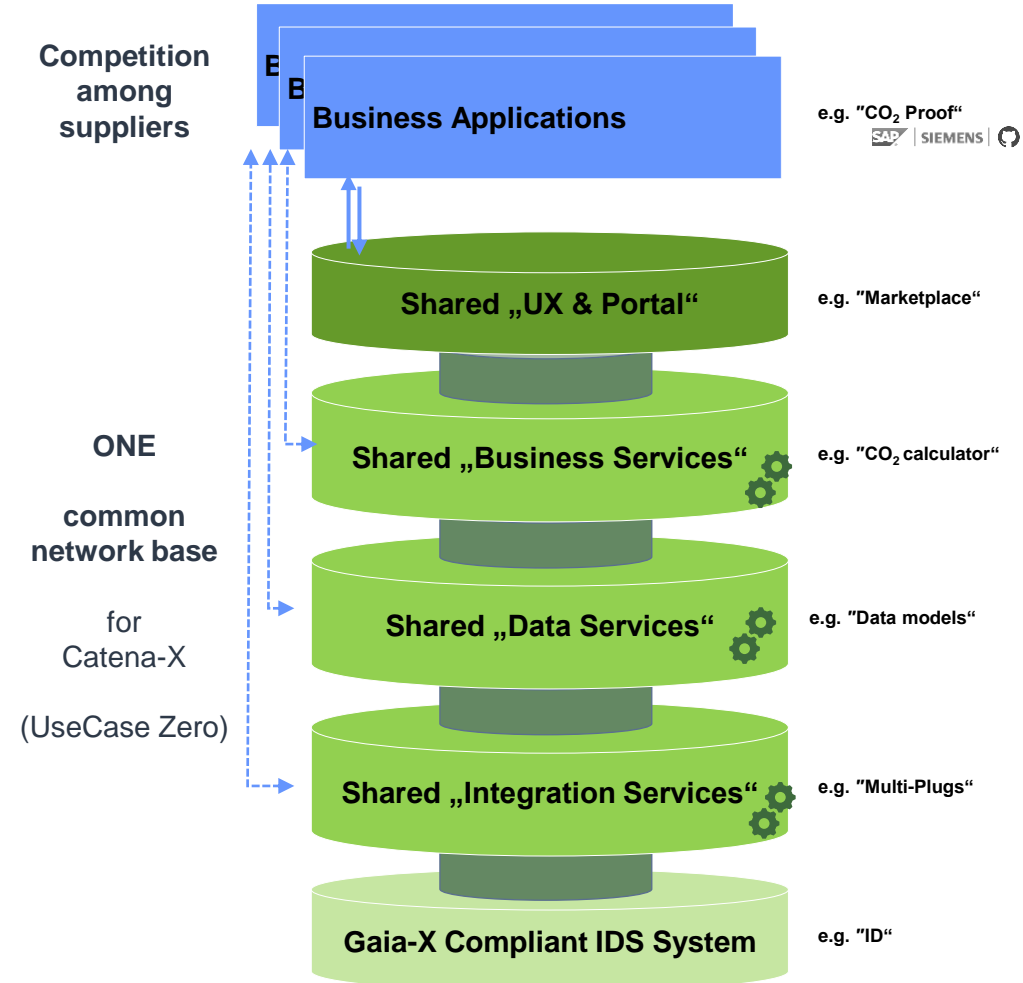
Collaborative and agile product development



Eclipse Open Source Community



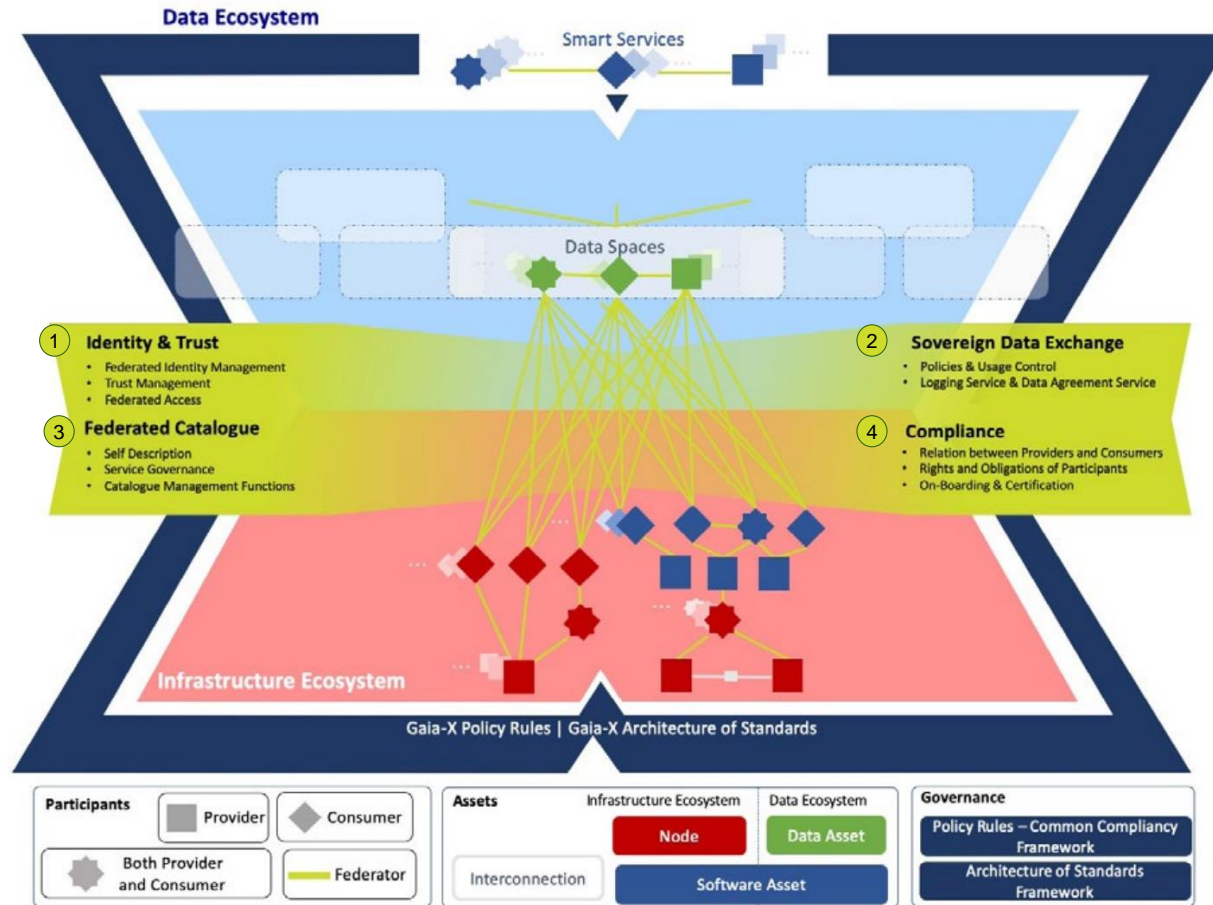
100% Agile working model



How | 4 technical concepts are foundational

- 1 Decentralized Data Spaces
- 2 Decentralized, Self-Sovereign Identity
- 3 Self-Sovereign Data Exchange
- 4 Interoperability and Semantic Data Description

Decentralized Data Spaces | Catena-X aims to follow GAIA-X Ecosystem Vision



Architecture Requirements

- Interoperability
- Portability
- Sovereignty
- Security and trust

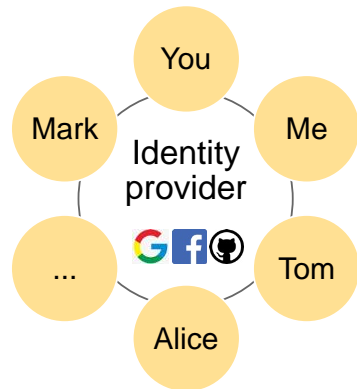
Architecture Principles

- Decentralization
- Distribution
- Federation
- Sharing

Decentralized Identities | Self-Sovereign Identities cater for European Values in IT

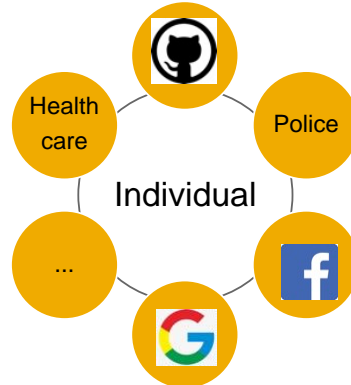
What is different about SSI

Organizational identity management



Vs.

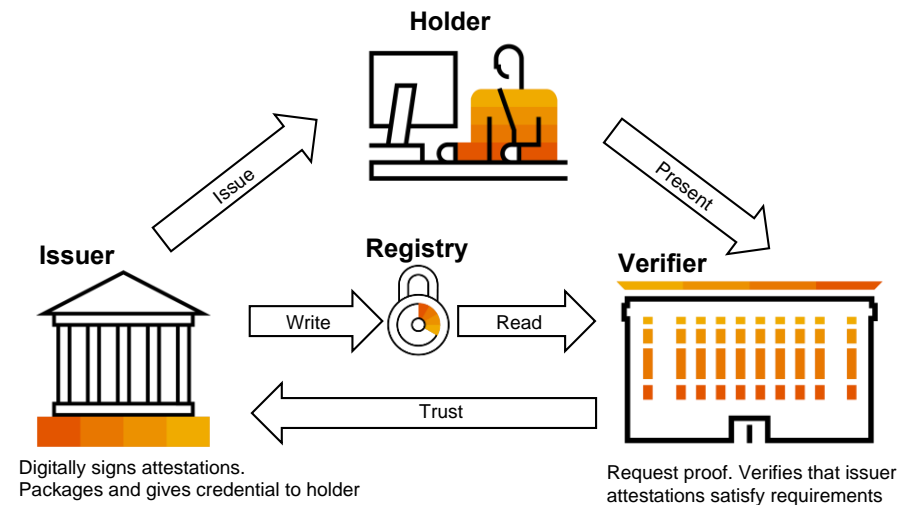
Self-sovereign identity



SSI is being referred to by many initiatives such as:

- Gaia-X
- IDUnion
- Sovrin Foundation

How does SSI work

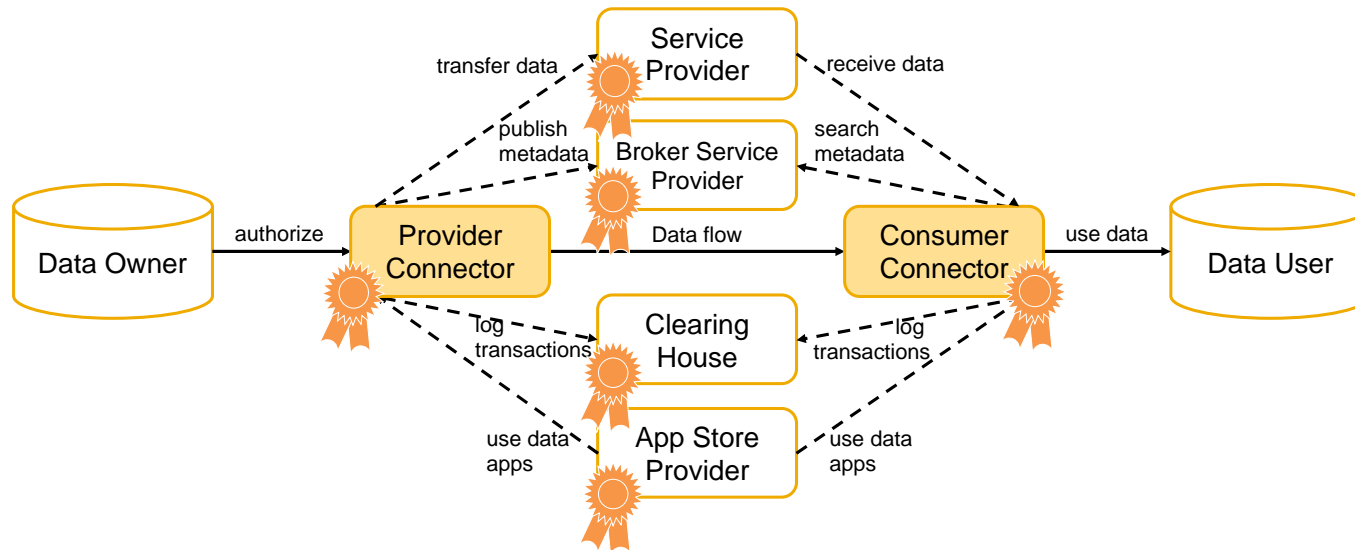


Based on open W3C standards

- DID Decentralized Identifiers V1.0
- VC Verifiable Credentials V1.0

Self-Sovereign Data Exchange | Sharing Data While Keeping Ownership

Federated data exchange based on International Data Spaces⁽¹⁾ Concepts



Leading Principles of Data Sovereignty

- **Universal interoperability** defined a standard between different data end-points
- **Trust** between different security domains: Comprehensive security function providing a maximum level of trust
- **Usage control** and enforcement for data flows provides governance for the data economy

Open Source:
Eclipse Data Space Connector⁽²⁾

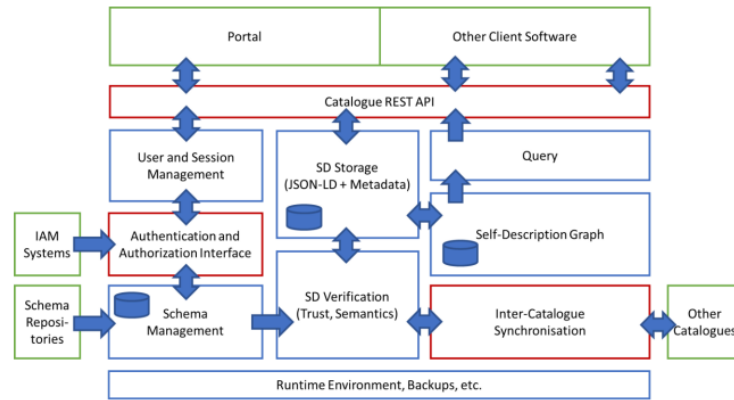
NEW

⁽²⁾ <https://projects.eclipse.org/projects/technology.dataspaceconnector>

⁽¹⁾ <https://internationaldataspaces.org/>

Interoperability | Semantics & Self Description

Catalog and Discoverability Management (Gaia-X)



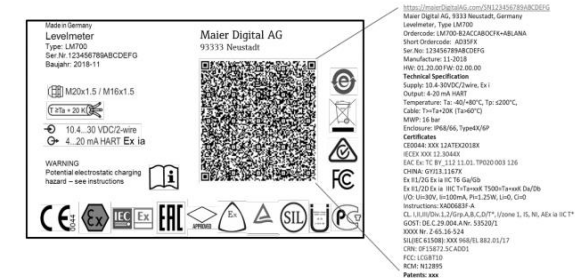
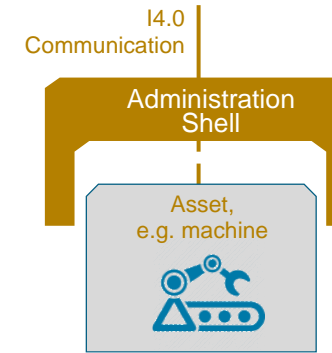
Tech Standards

- RDF
- JSON-LD
- Graph Database
- Schema Definition

Data Semantics

- Ontology defining the terms
- Shapes to validate against (SHACL)

Modelling and Understanding Real Life „Things“



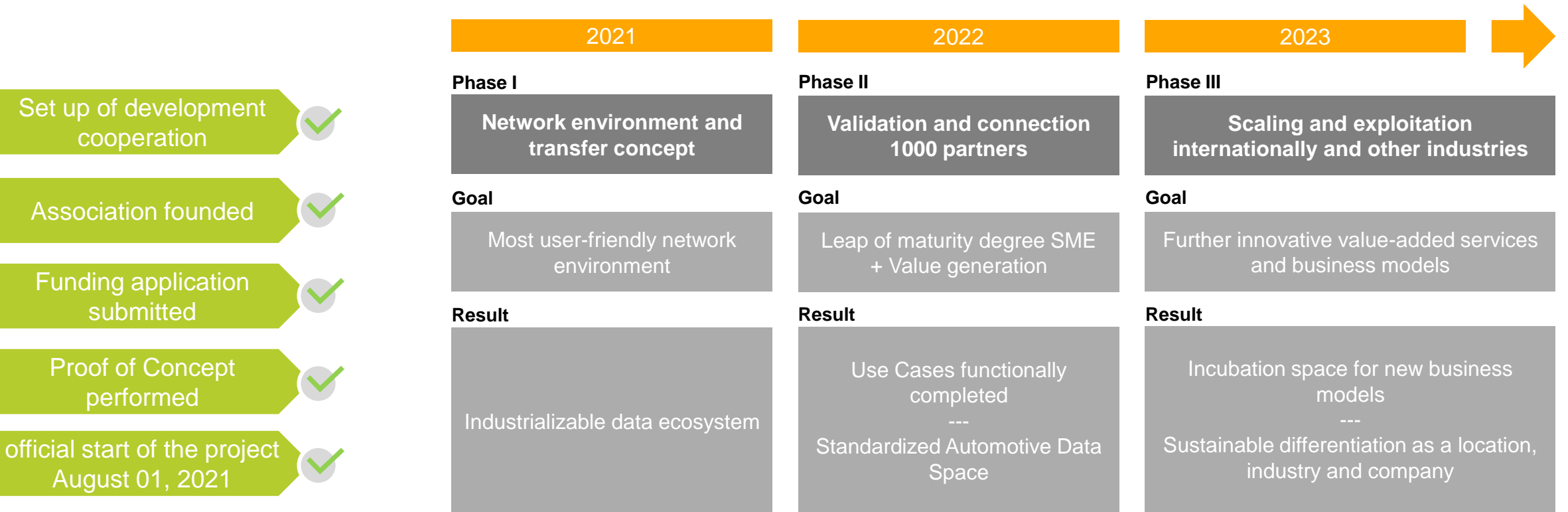
Humans as well as machines talk and understand a domain-specific vocabulary



Roadmap & further Information

Catena-X Roadmap – Development Cooperation

08/2021 - 07/2024



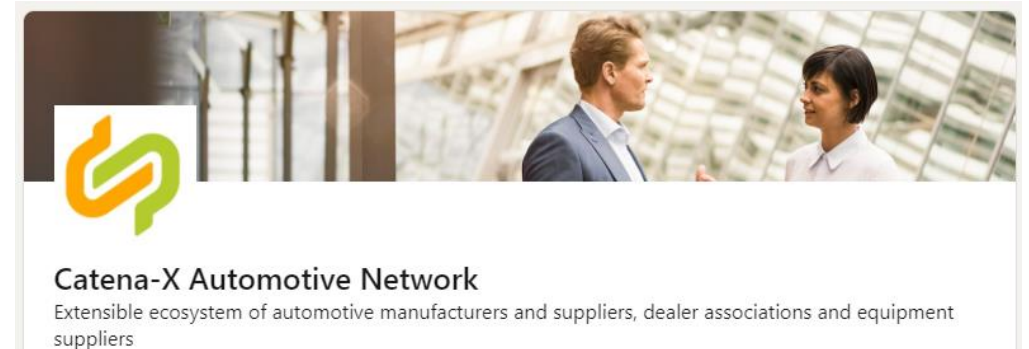
Systemic copy protection
„Cooperative and collaborative innovation system“



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