

# Catena-X

THE FIRST OPEN AND COLLABORATIVE DATA ECOSYSTEM

**Enabling circular economy and sustainability  
through digital product passports**



**Carolin Tröster**

*Semantic Data Layer*

*Data integration, connection, and  
semantic mapping to dataspace*

*T · Systems ·*



**Tekin Cagdas**

*Digital Vehicle file*

*Partner data integration into Digital  
Twins*

**BMW  
GROUP**



# Why we need to rethink our entire ecosystem

## SUPPLY RESILIENCY



Ensure material flow...

## SUSTAINABILITY



Provide real material and PCF data...

## SYSTEMATIC COVERAGE



Create interoperability...

## COST OF INNOVATION



Boost efficient innovation...

*and "close the loops for circularity"*

**No market player can solve these challenges on its own!**



# Catena-X offers the solutions to tackle our challenges

## Key facts



1st Data space for automotive industry



1st Data-driven value Chain via interoperability



ID SA

1st Gaia-X / IDSA compliant operating system

Catena-X enables compliant collaboration through one shared global Data Space

## 10 initial use cases with direct value contribution



Traceability



Circular Economy



Sustainability



Business Partner Data Management



Quality Management



Demand and Capacity Management



Digital Behaviour Twin



Modular Production



Manufacturing as a Service (MaaS)



Online Control and Simulation

## Catena-X Timeline



2020

Initial concepts



2021

Start of Catena-X



Oct 2023

Cofinity-X Release



Aug 2024

Post consortia phase



# Why we need Digital Product Passports

## Fulfill Regulatory Compliance

### CHAPTER III - DIGITAL PRODUCT PASSPORT

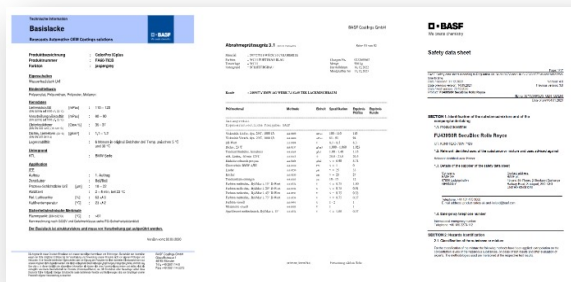
#### Article 8 Product passport

The information requirements referred to in Article 7(1) shall provide that products can only be placed on the market or put into service if a product passport is available in accordance with the applicable delegated act adopted pursuant to Article 4 and Articles 9 and 10.

The requirements related to the product passport laid down in the delegated acts adopted pursuant to Article 4 shall, as appropriate for the product groups covered, specify the following:

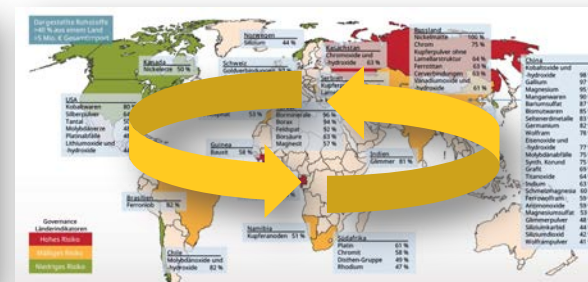
**Mandatory sustainability requirements** to put a product on the EU market

## Maximize Product Transparency



**“Digital” data sharing with customers:** Aggregate all relevant data in a digital product passport

## Enable Circular Economy



**Leverage Digital Product Passports:** Make decisions based on data available now



# Digital Product Passports enable Circular Economy

## FAST FACTS



**100 BILLION**  
tons of material resources  
consumed annually.



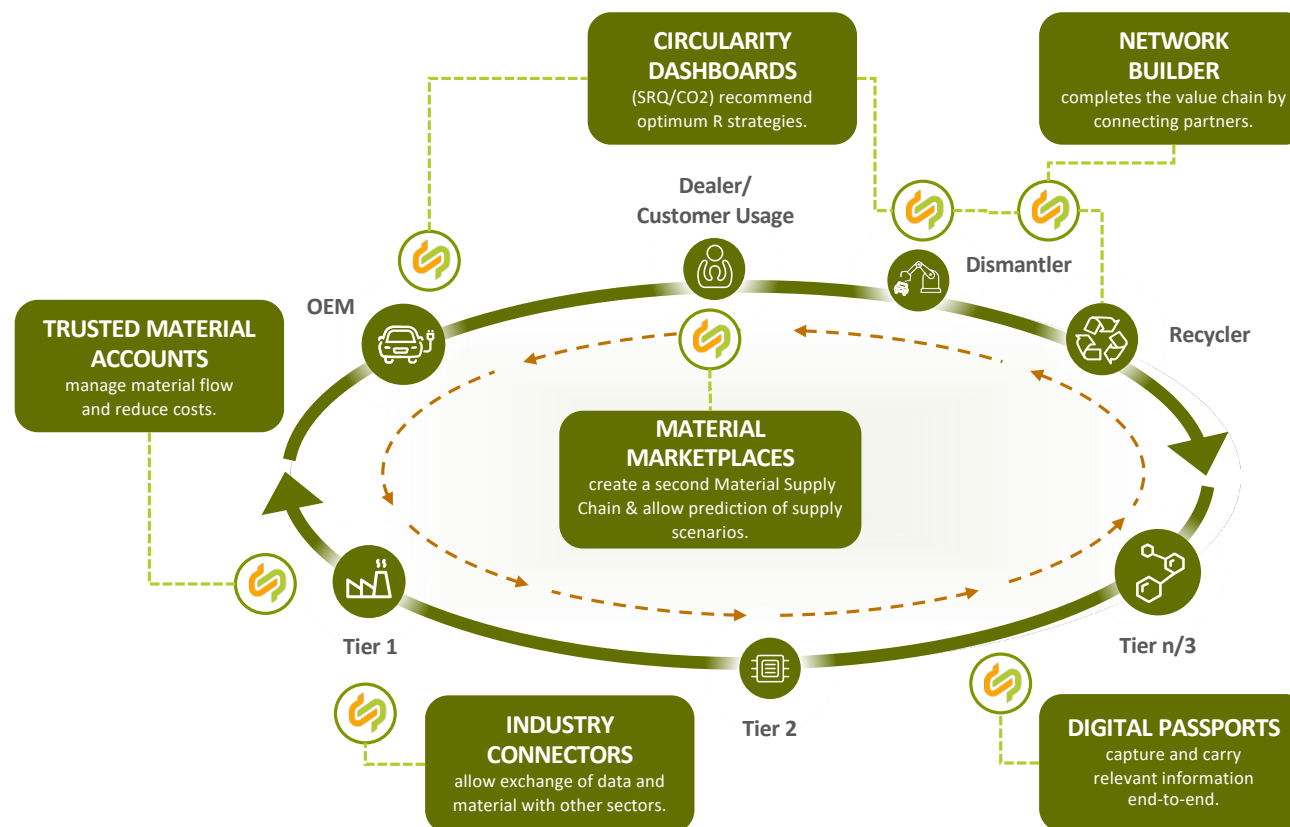
**< 9%**  
of resources are  
recycled or reused.



**~ 30%**  
secondary material  
ratio per vehicle.



**DISCONNECTED**  
industry partners.





# The Battery Passport. The first tangible “DPP 4.0”

**Catena-X** Battery Passport

← Back Battery ID: H436595670581C11592587939283343

GENERAL	PERFORMANCE	HEALTH	SUSTAINABILITY
Type <b>NCA</b>  Li-Ion-S-Model Model	Rated Capacity <b>120 kW</b>  305 Ah Original Power	State of Health (SoH) <b>93%</b>  Charging Cycles 675 / 1500	Ni 4% Co 15% Li 5% Pb 0% <b>1,3 t</b> CO <sub>2</sub> Total

General Information | Product Condition | Composition | Cell Chemistry | Electrochemical Properties | Additional Information

Battery ID H436595670581C11592587939283343	Warranty 60 months	Date of Manufacturing 2022-01-24	Manufacturer Information Company A, 81345 Munich, Germany +49 89 1234567893 www.oem-a.com info@companyA.com
Battery Type NCA	Battery Model Li-Ion-S-Model	Place of Manufacturing Munich, Germany	
Dimension L: 1800 mm, H: 200 mm, W: 1000 mm	Weight 550 kg	Date of Market Placing 2022-03-27	CO <sub>2</sub> Footprint 1,3 t CO <sub>2</sub> Total

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- Cell Chemistry**  
cathode active material,  
anode material, ...
- Manufacturing**  
Date of manufacturing,  
Manufacturing location
- State of battery**  
State of health, state of  
charge, charge cycles ...
- Electrochemical Properties**  
Battery energy, voltage ...
- Other attributes**  
Physical dimensions,  
CO<sub>2</sub> footprint, materials, ...



# Our Circular Economy ready-to-use solutions

EcoPass KIT | one package to kick-start your use case implementation

Data Models: defining the structure



Digital Product Passport 4.0.0



Battery Passport 5.0.0



Transmission Passport 2.0.0



Material Passport




E-Drive Passport

Applications: open-source software




Passport Viewer Application

Guides: user friendly documentation

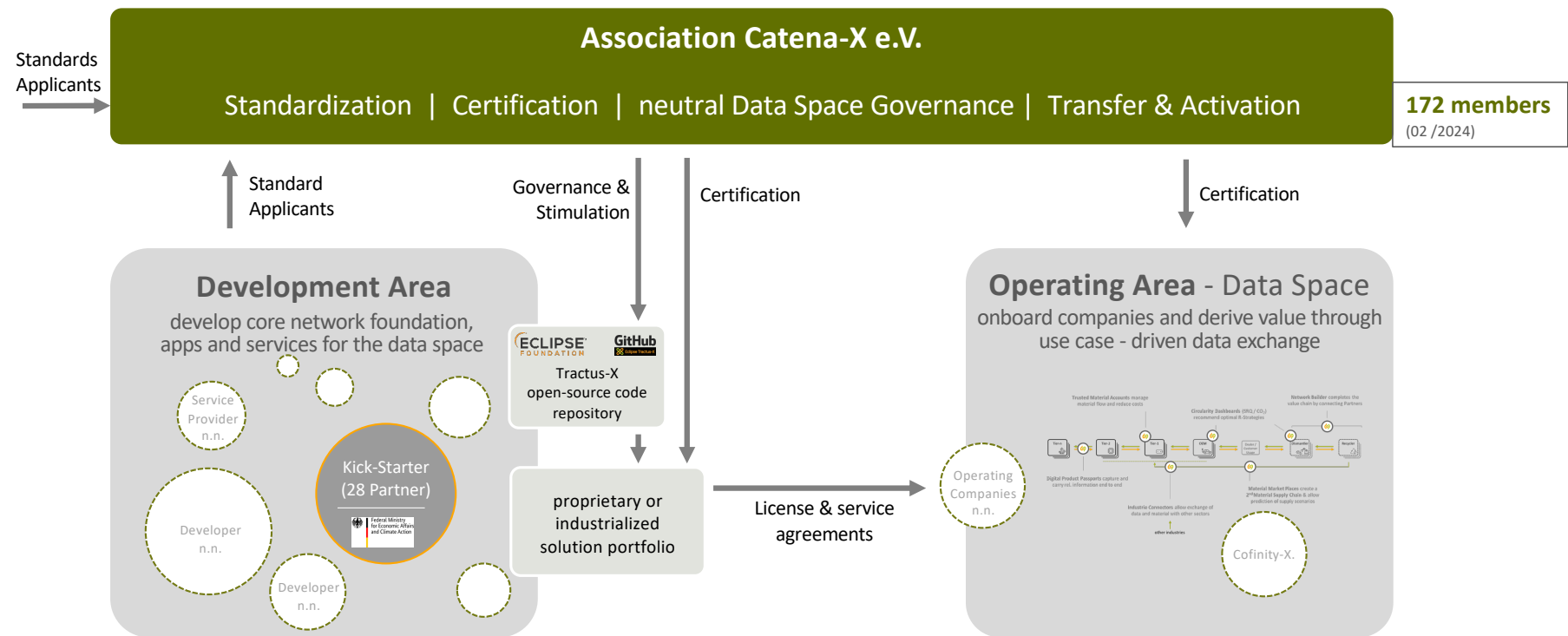


Process Descriptions

 Part of DPP use case standard



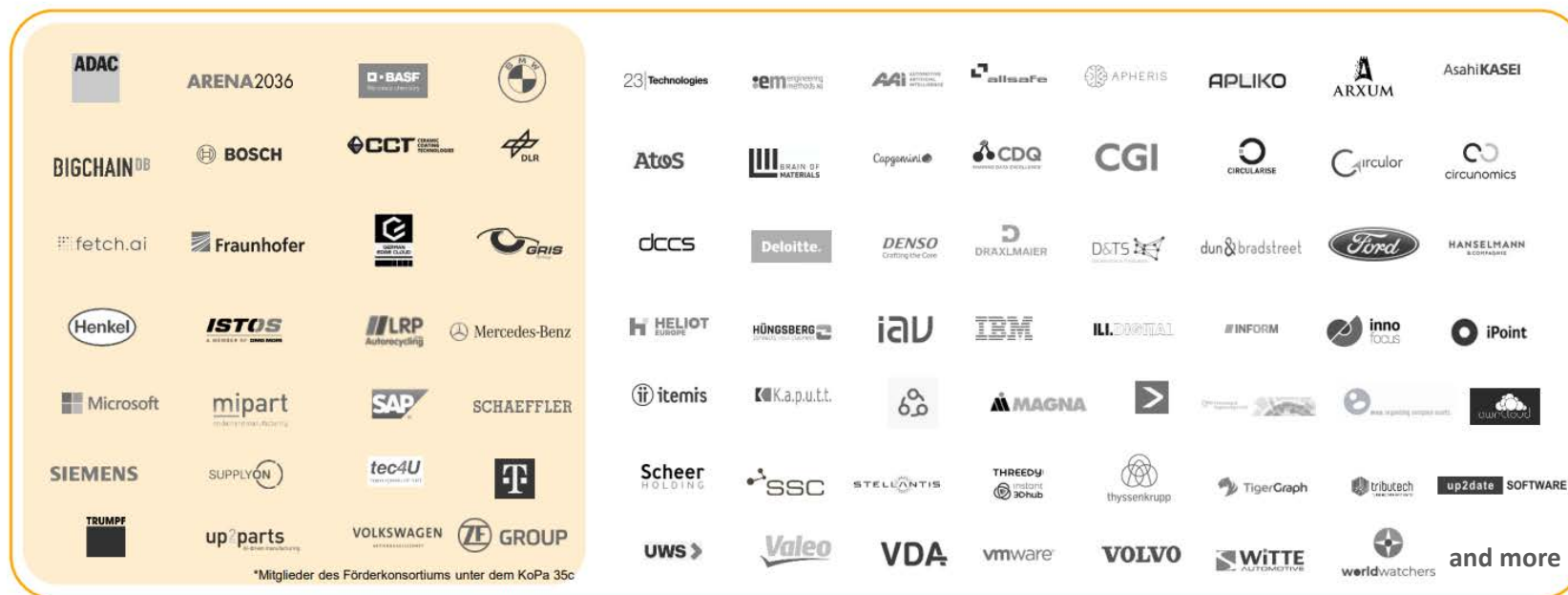
# An organization to enable cooperation and trust







# Join us because together we thrive



Full and up-to-date member list: [https://catena-x.net/fileadmin/online\\_media/231012\\_1\\_CAT\\_007\\_Mitgliederliste\\_DE.pdf](https://catena-x.net/fileadmin/online_media/231012_1_CAT_007_Mitgliederliste_DE.pdf)