

Supply chain resilience and carbon reporting with industrial data spaces

Labs Network Industrie 4.0 e.V.

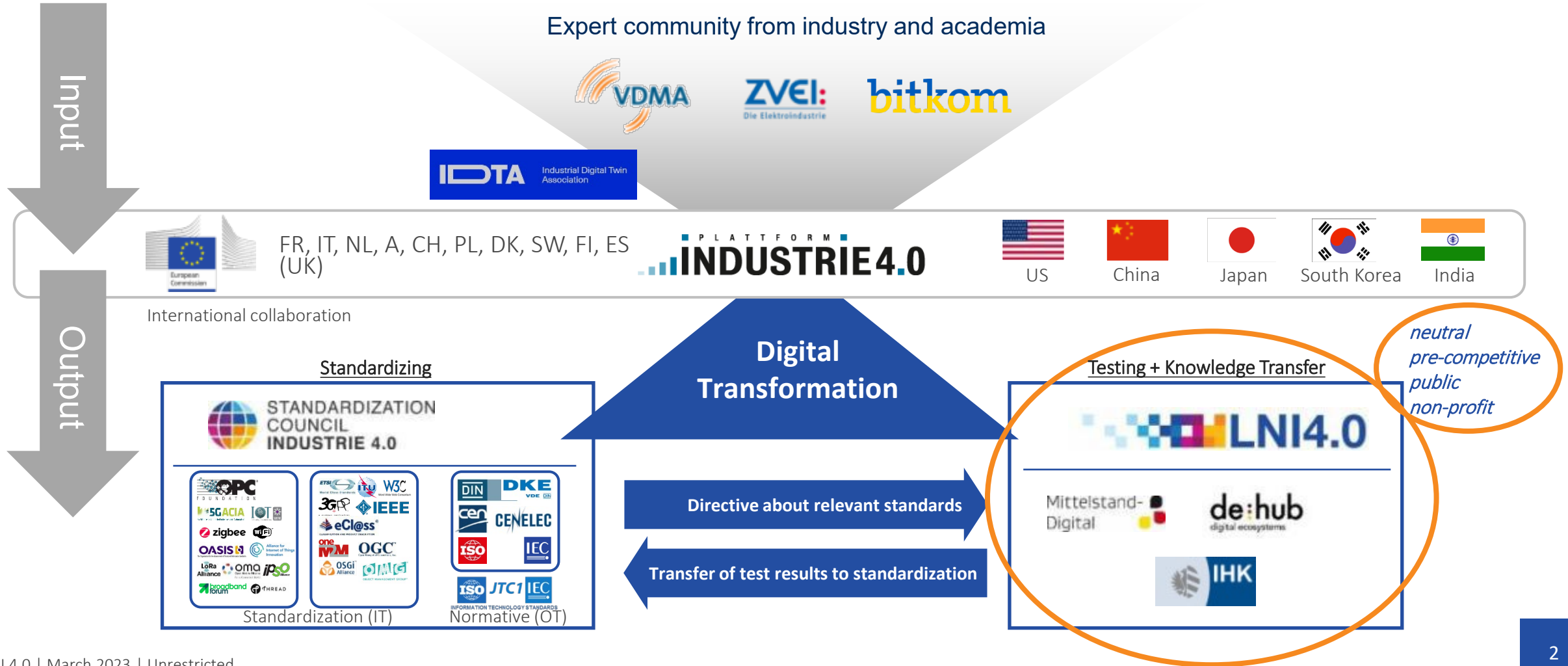
SME use cases and testbeds for Industrie 4.0 innovations – pre-competitive and non-profit (neutral) association since 2015



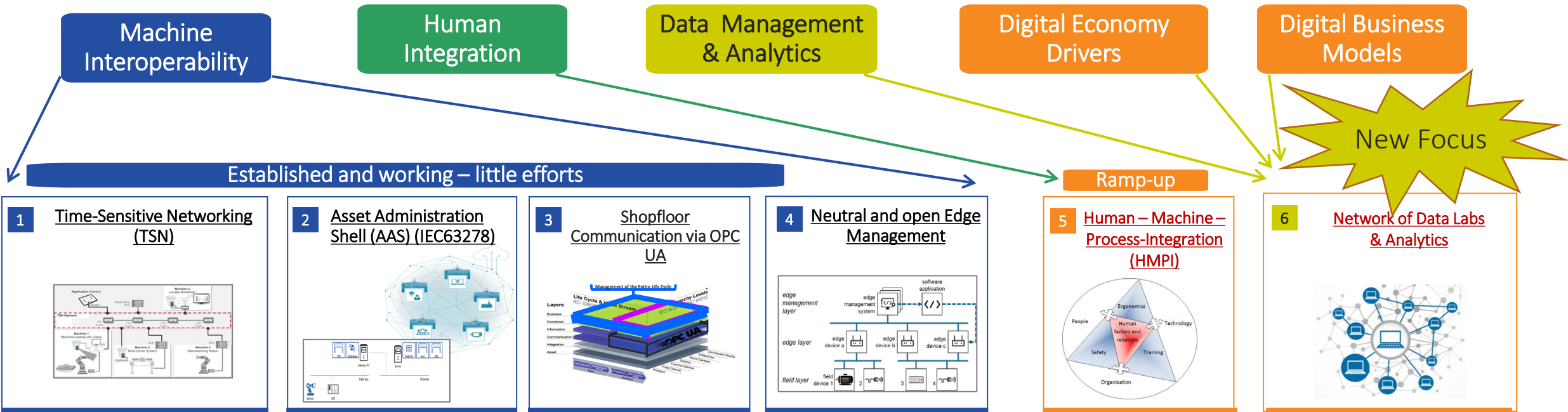
March 2023

Industrie 4.0 Stakeholders

Setup in Germany



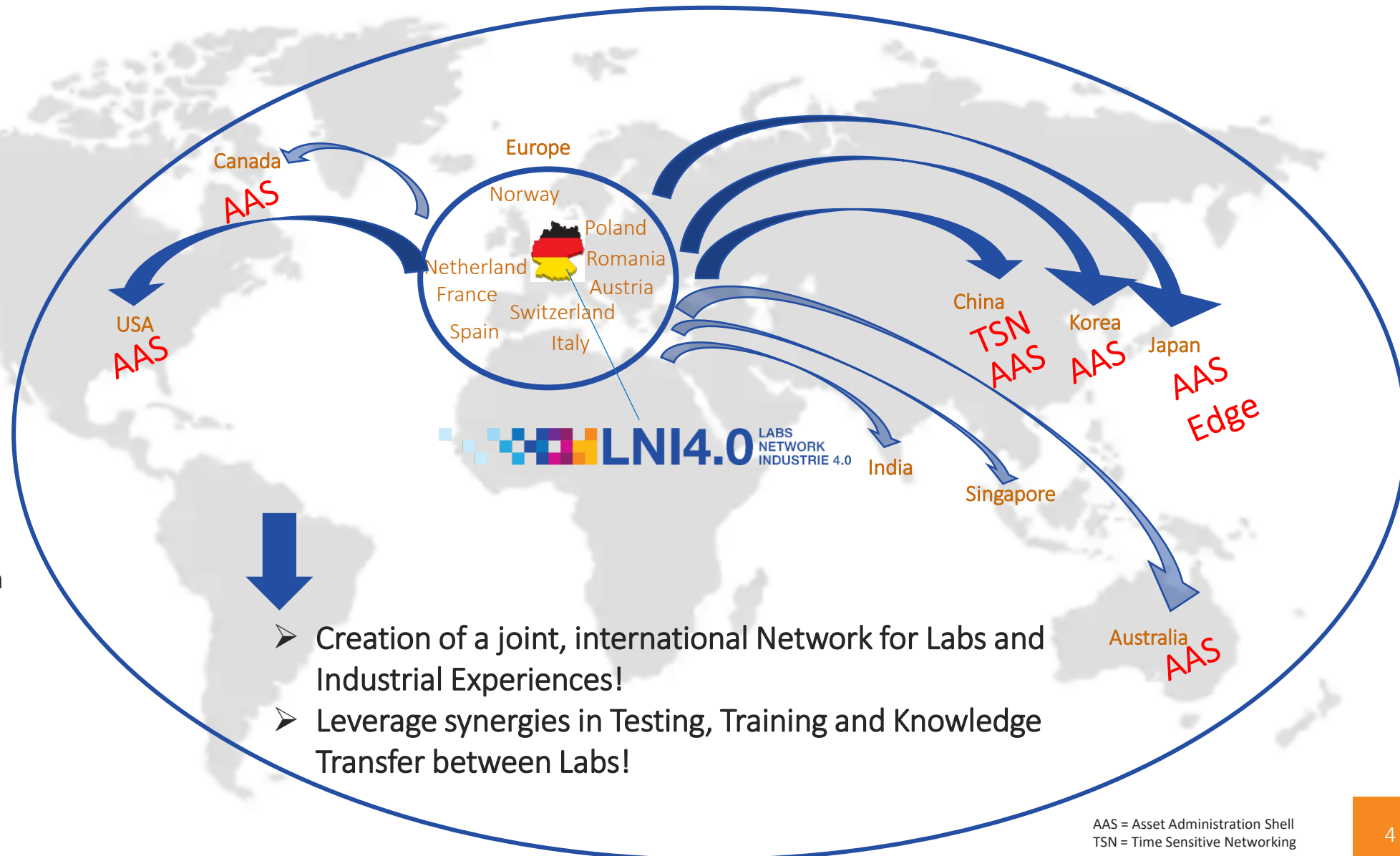
LNI 4.0 – Roadmap Industrie 4.0 and its application development



The international network of LNI 4.0 – together towards Industrie 4.0

Network for international cooperation:

- Create international use cases & test scenarios
- Facilitate knowledge exchange
- Coordinate standardization effort



Europäische Landkarte

European Associations and Projects (public + private)

European Initiatives (public + private)

Smart Services
(in and across
verticals)

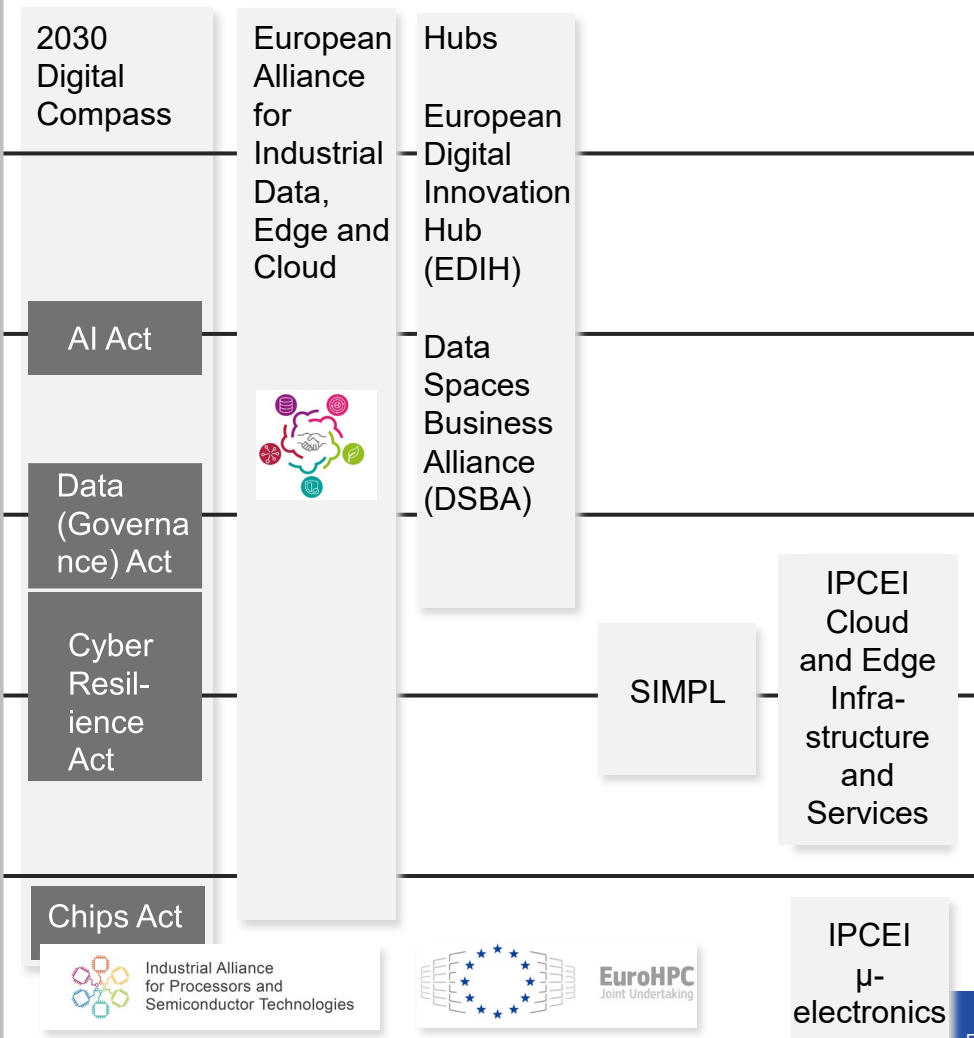
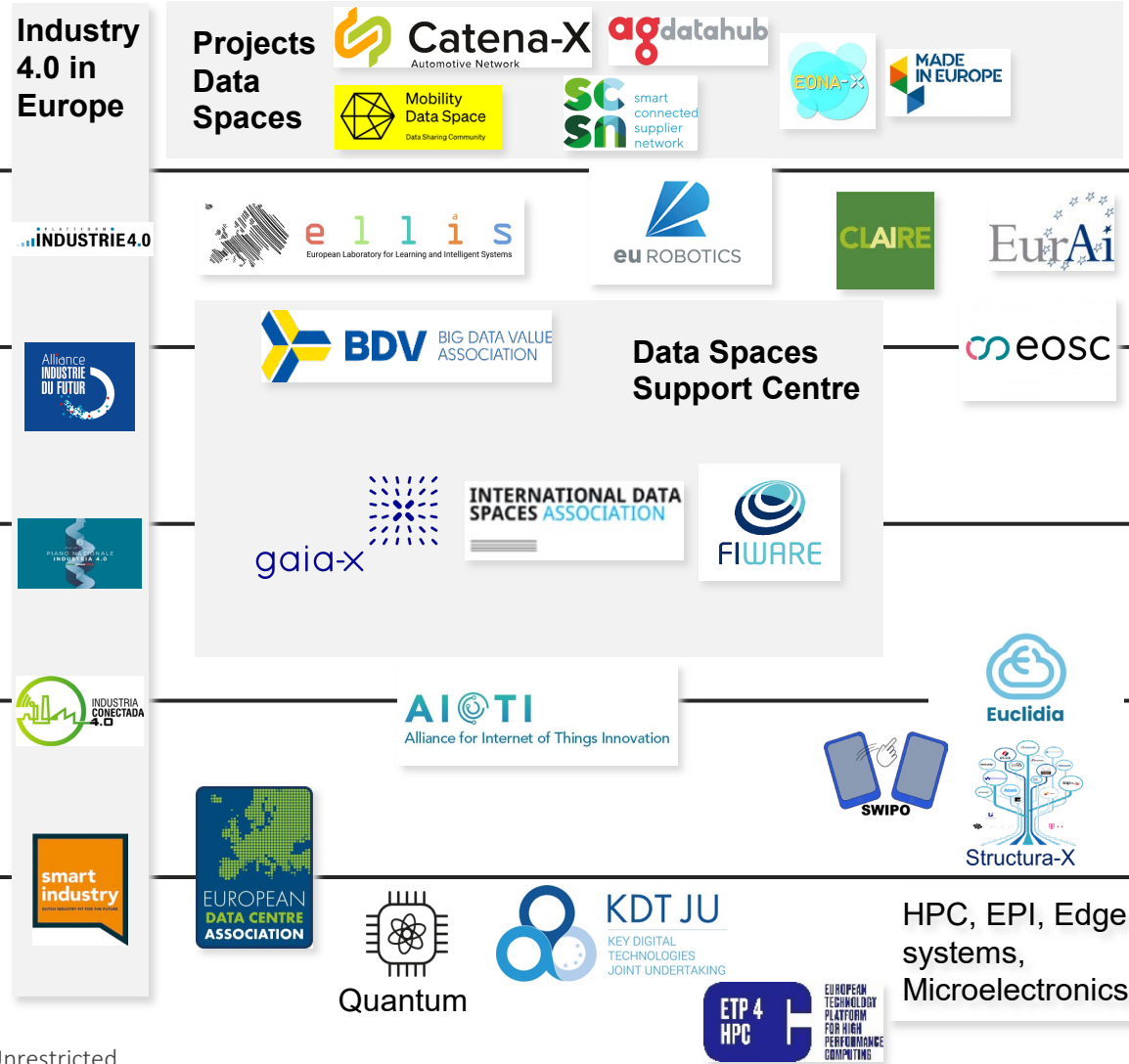
Data Value
Creation / AI

Data Spaces

Data
Infrastructure

Software
Infrastructure

Hardware
Infrastructure



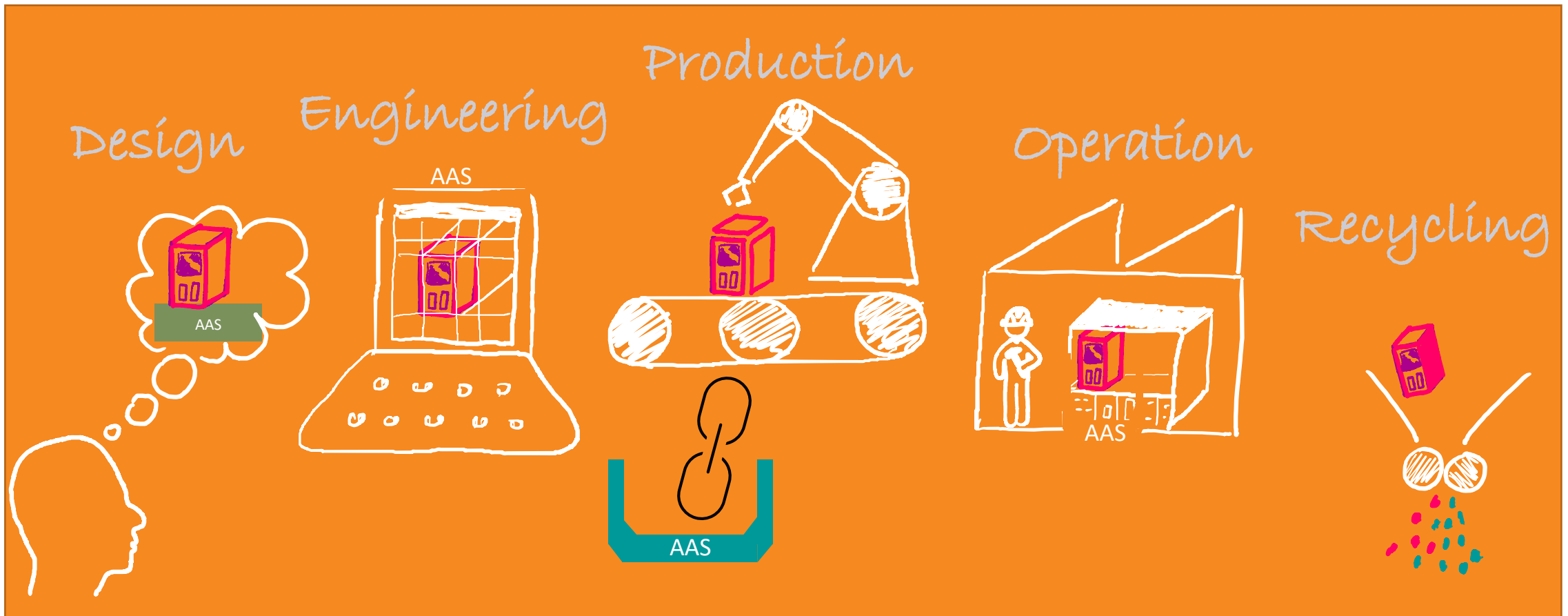
Digital Product Passport and PCF

Product Carbon Footprint – situation in manufacturing



Digital Product Passport and PCF

„Product Life Cycle“ of an industrial product - Implementing of the „Digital Twin“ with the „Asset Administration Shell“ (AAS)



Digital Product Passport

Functional approach

Product



ID-Link

i.siemens.com >

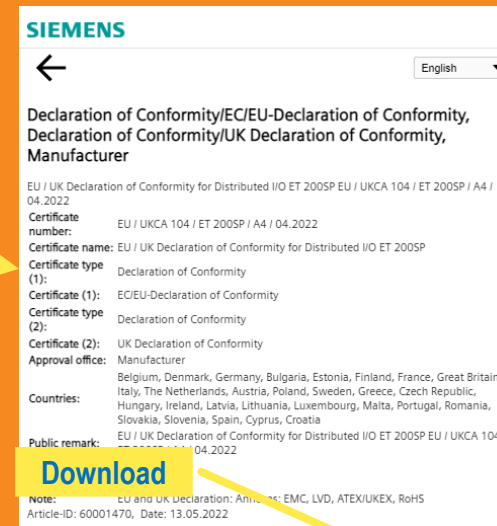
Package



Online Digital Nameplate



Online Declaration of Conformity



PDF of original Dec. of Conf.



Product Carbon Footprint

Demonstrator



zvei Product Carbon Footprint Showcase

1642.5 kg CO₂e

zvei Combination - Control Cabinet PCF Demo

- zvei Control Cabinet PCF Demo
- Knick > Knick_P42000_2357292
- cyber® simco® drive 2
- PHENIX CONTACT ATP-ST 4
- PHENIX CONTACT US-EMLP (15X5)
- ABB Combination - SACE Emax 2
- ABB SACE Emax 2
- ABB SACE Emax 2 Fixed Part
- SIEMENS S7-1500, DQ 32x24VDC/0.5A HF



zvei Product Carbon Footprint Showcase

1761.7 kg CO₂e

zvei Combination - Control Cabinet PCF Demo

- zvei Control Cabinet PCF Demo
- Wall-mounted cooling unit Blue e+
- Knick > Knick_P42000_2357292
- cyber® simco® drive 2
- PHENIX CONTACT ATP-ST 4
- PHENIX CONTACT US-EMLP (15X5)
- ABB Combination - SACE Emax 2
- ABB SACE Emax 2
- ABB SACE Emax 2 Fixed Part

Manufacturing-X connecting industrial verticals internationally using AAS, etc.

Ideation Status

-  Resilience
-  Sustainability
-  Competitiveness



Building blocks for a Manufacturing-X data space (R&D)
Act: Establishing an extensive Manufacturing-X data space with Catena-X as the standard

- 1 Flagship projects and use cases
- 2 Synchronisation project

Building blocks for transfer (widespread impact)
Act: Enabling small and medium-sized enterprises with help of needs-based application strategies

- 3 Transformation hubs and transformation projects
- 4 Transfer management

Building block for community-building (embedding)
Act: 'Internationalizing by implementing global standards for a comprehensive data economy'

- 5 Governance in Manufacturing X

International Partner Data Spaces, e.g.



Contact

Labs Network Industrie 4.0 e.V.

Website: www.lni40.de

LinkedIn:

<https://www.linkedin.com/company/labs-network-industrie-4-0-e-v>



Anja Simon

CEO Labs Network Industrie 4.0 e.V.

Phone: +49 174 3097300

Email: anja.simon@siemens.com

LinkedIn: [linkedin.com/in/anja-simon-6a9676b](https://www.linkedin.com/in/anja-simon-6a9676b)



Dominik Rohrmus

CTO Labs Network Industrie 4.0 e.V.

Phone: +49 173 2509101

Email: Dominik.Rohrmus@siemens.com

LinkedIn: [linkedin.com/in/dominik-rohrmus-68b958250](https://www.linkedin.com/in/dominik-rohrmus-68b958250)

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