Ernst Stoeckl-Pukall

Eclipse AOSS – June 6th
Creation of a Data Driven Economy – Design Principles and Activities

Data Ecosystem

Gaia-X Competition (11 projects)  Catena-X  Gaia-X 4 Future Mobility  Manufacturing-X

Gaia-X Federation Services

IPCEI Next Generation Cloud  Sovereign Cloud Stack

Infrastructure Ecosystem
#1 | Motivation & „Big Picture“

Vision and mission for Manufacturing-X

**Manufacturing-X Vision**

1. Connects value chains and manufacturing networks across sectors and countries

2. Implements the global foundations for resilient, sovereign and climate-neutral production

3. Enables innovative value creation in an interoperable and sovereign data ecosystem

Develops use cases on collaborative use of data in all sectors of manufacturing industry

Implements the basic infrastructure to deploy federated data-ecosystem

Provides easy-to-use applications to scale the ecosystems dynamically

Sets-up organizational structures to facilitate the cooperation of the global MFX-community

**Manufacturing-X Mission**
The Foundational Framework for Manufacturing-X

The Foundational Framework as common guideline for Manufacturing-X activities & international stakeholders.

Individual Industry Business Challenge
Design and implementation of innovative business models based on data-driven use cases.

Joint Community Challenge
Building the common technical foundation cross-industry wide to guarantee compatibility and interoperability.

Iterative interplay between individual implementation of use cases & joint development of basic infrastructure.

Fitting of established building blocks as modular foundations for Manufacturing-X.
Manufacturing-X implements cross-industry use cases and application with both: High business impact and significant ecologic benefit.

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<th>Strategic Goals</th>
<th>Resilience</th>
<th>Sustainability</th>
<th>Competitiveness</th>
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<td><strong>Production Optimization / Autonomous Factory</strong></td>
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<td>- Synchronous Planning for Production</td>
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Manufacturing-X develops the foundations for a resilient and competitive industry in a sustainable society.

Manufacturing-X enables innovative business models based on a unique data-infrastructure.

Manufacturing-X addresses cross-sectorial use cases based on a collaborative use of data with high economic and ecologic impact.

Manufacturing-X implements cross-industry use cases and application with both: High business impact and significant ecologic benefit.

Manufacturing-X builds on a common technical, organizational and legal framework and contributes to the future development in cooperation with European and international legislative.
An *overarching technical architecture* for Manufacturing-X is THE key-enabler for interoperability within and across manufacturing industries.

MFX-architecture aims to ensure the *technical integration* of existing and to-be-developed systems within manufacturing data spaces.

MFX-architecture is being built based on a *number of building blocks*. Those building blocks shall be developed in a designated cooperative approach.
#4 | Conclusion & Next steps

**Manufacturing-X**

Make data work. Competitive, Resilient & Sustainable.

Manufacturing-X implements the basic infrastructure to deploy **federated data-ecosystems for industrial applications**:

- In an international **approach** Manufacturing-X connects value chains and manufacturing networks across all industrial sectors.

- A **common technical core** build on basic cornerstones from recent developments of Industrie 4.0 guarantees interoperability.

- A use-case based approach focuses on the **economic & ecologic impact** of collaborative use of data and ensures a dynamic scaling of the ecosystem.

- Setting-up an organizational structure will facilitate the **open cooperation of the global MFX-community**.

Join in, participate and contribute to the collaborative development of the Data Space Industrie 4.0!
IPCEI-CIS: the way to a “Multi-Provider Cloud Edge Continuum”
Edge and Cloud: Use Case Requirements

- Manufacturing as a Service
- Digital Twins
- Autonomous Driving/Smart Logistics
- Energy and Utility Networks
- Aviation/Defense
- Smart Health/Telemedicine
- Entertainment (Tourism, Cloud Gaming)

Edge Devices
On-Premises

**Real-time: Latency guarantee**

- Bandwidth guarantee
- Assured data integrity
- Access Security
- Resilience & Sustainability
- Distribution of data, compute & networking („Mesh“)

Telco Edge

Cloud Provider
IPCEI-CIS Value Chain (Multi Provider Cloud-Edge Continuum)

1. **Federated Data Processing digital Infrastructure**

2. **Interconnection and Network Continuum Structure**

3. **Core functional Services**

4. **Platform & Smart Processing Services**

5. **Initial roll-out and prototypical Use Cases**

*Compare IPCEI-CIS Value Chain, IPCEI-CIS Value Chain Description, June 2021*
Thank you!