



# Key data development issues International Manufacturing-X and DPP

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## Manufacturing-X international - Make Data Work

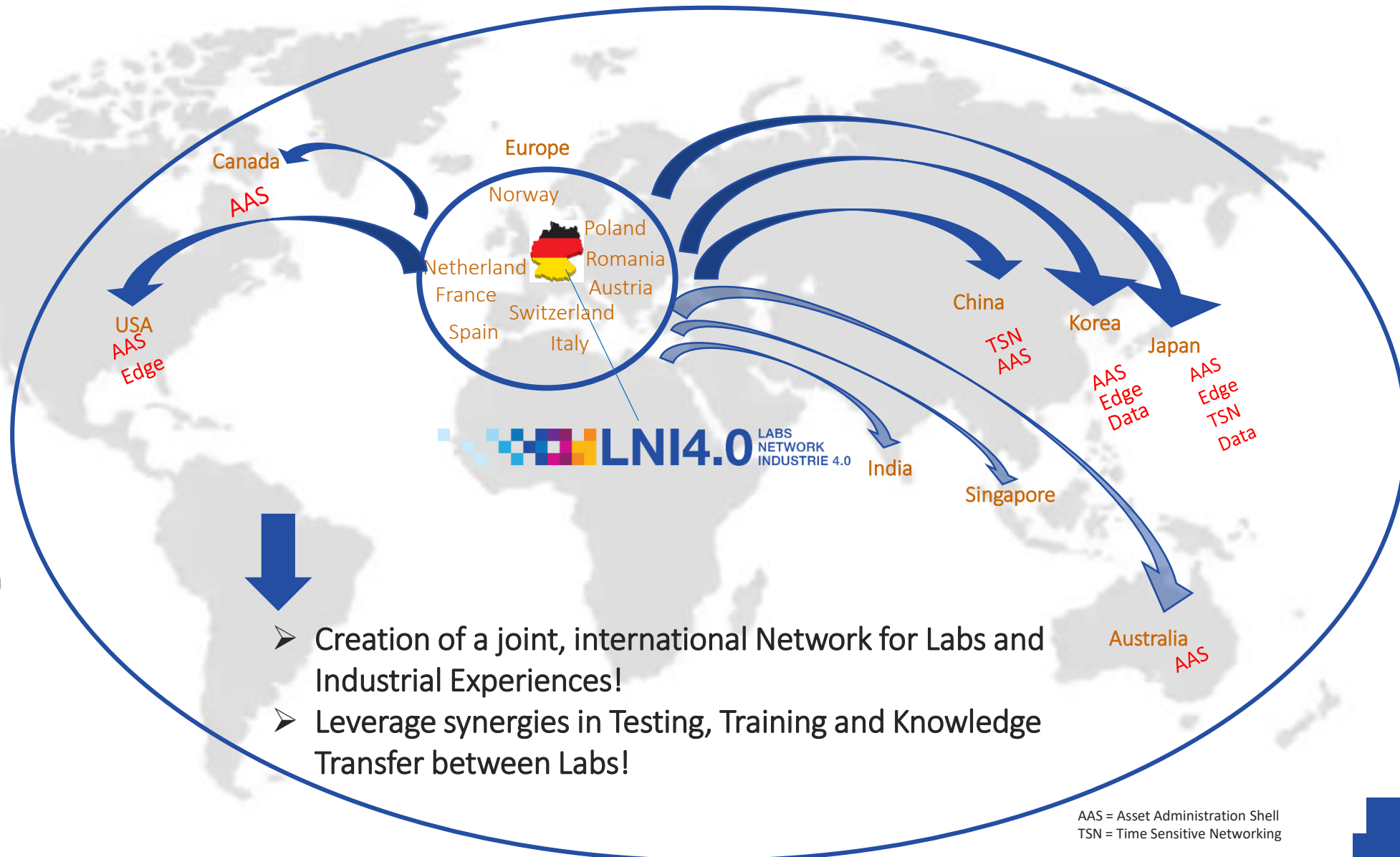
Barcelona, March 2025  
Dr. Dominik Rohrmus



# The international network of LNI 4.0

## Focus of International cooperation:

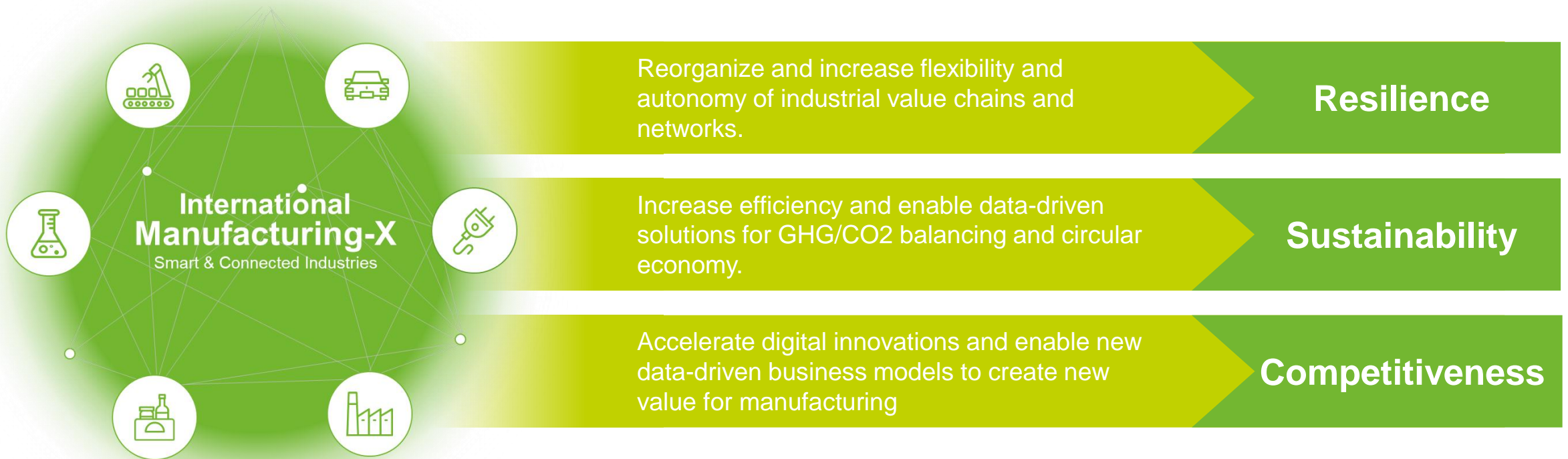
- International use cases & test scenarios
- Facilitate knowledge exchange
- Coordinate standardization effort



Motivation & Big Picture

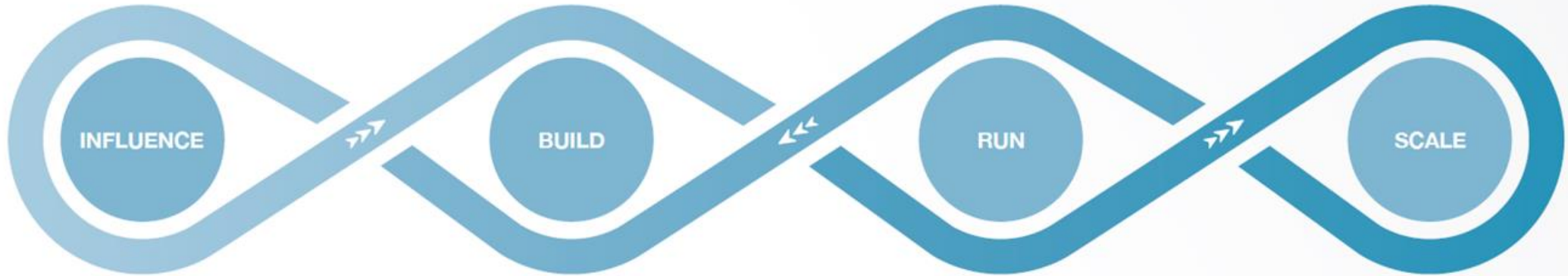
# International Manufacturing-X (IM-X): Make Data Work

IM-X will implement a federated, decentralized and collaborative data ecosystem for smart manufacturing. Open, global and cross-industry, following FAIR Data Principles.



What?

# How Industrial Data Ecosystems work

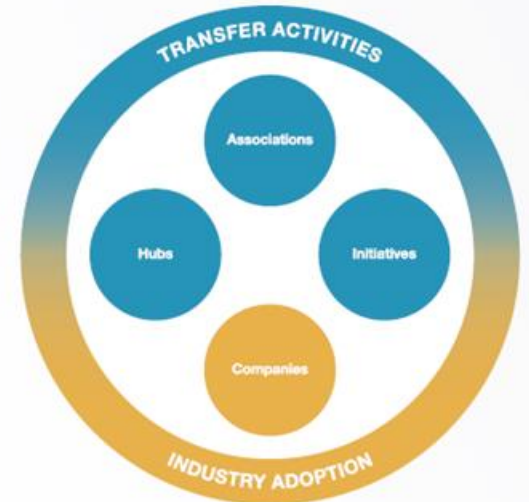
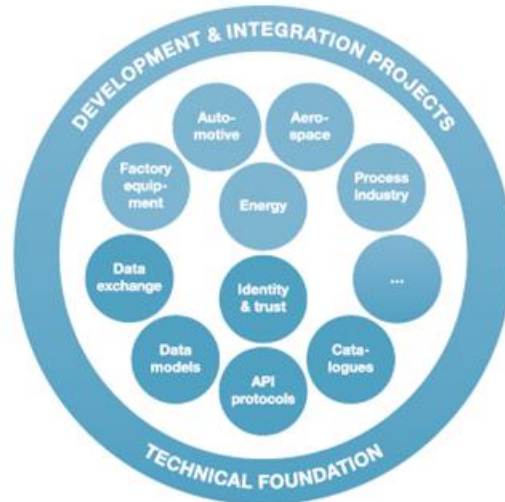


ALIGN OBJECTIVES & VISION | AGREE GOVERNANCE & RULES | DESIGN CONCEPTS, PRINCIPLES & ROAD MAPS

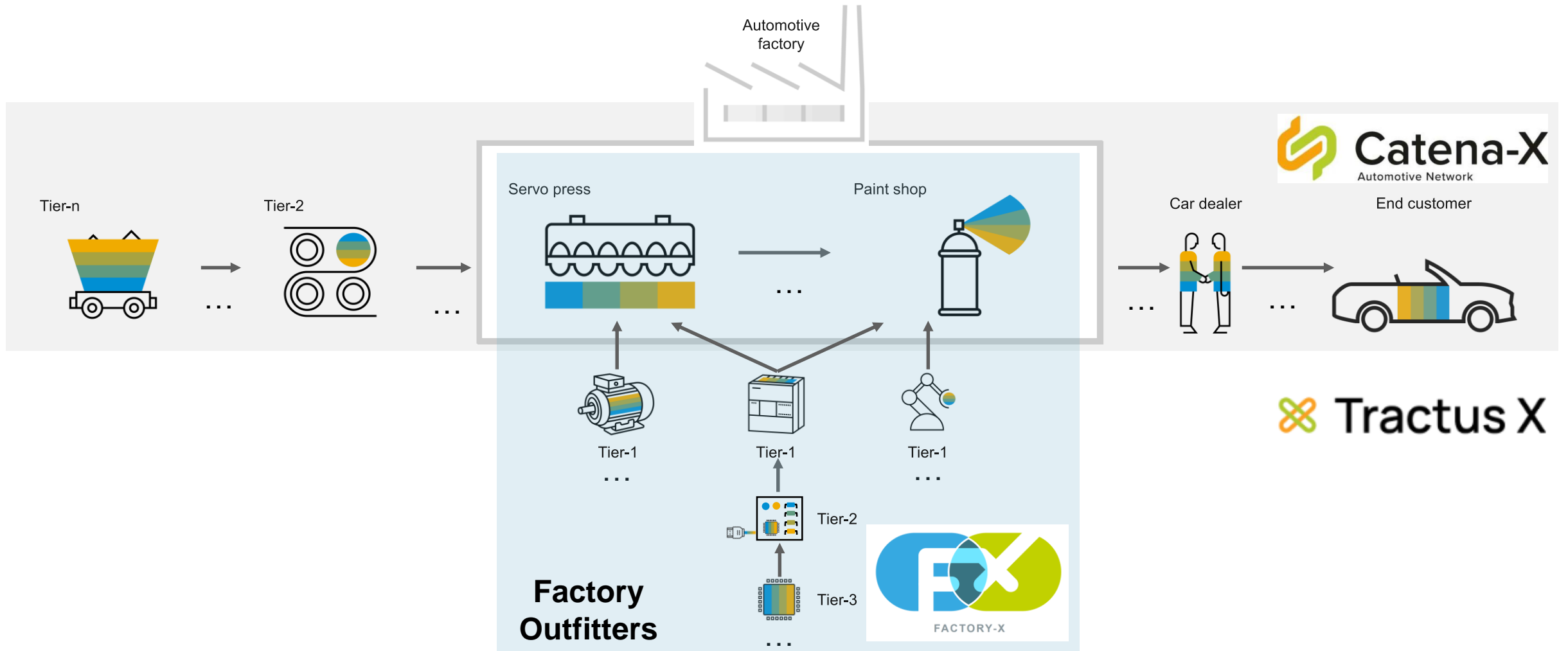
DEVELOP OSS COMPONENTS WITHIN THE COMMUNITY TO SUPPORT USE CASES | INTEGRATE TECHNICAL BUILDING BLOCKS

SECURE AND TRUSTED OPERATION OF ENABLING AND VALUE-CREATING SERVICES IN A DISTRIBUTED MODEL

SME SUPPORT ACTIVITIES | CONSULT & TRAIN | PROVIDE TEST BEDS & TEST SUPPORT | USE CASE ROLL OUT

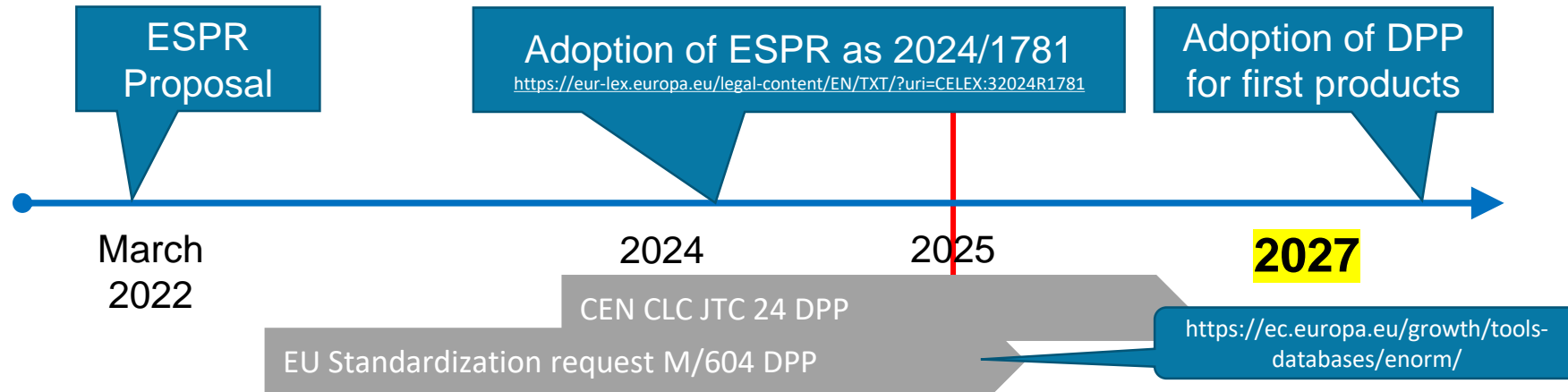


# German projects: Catena-X and Factory-X: lead project and follower



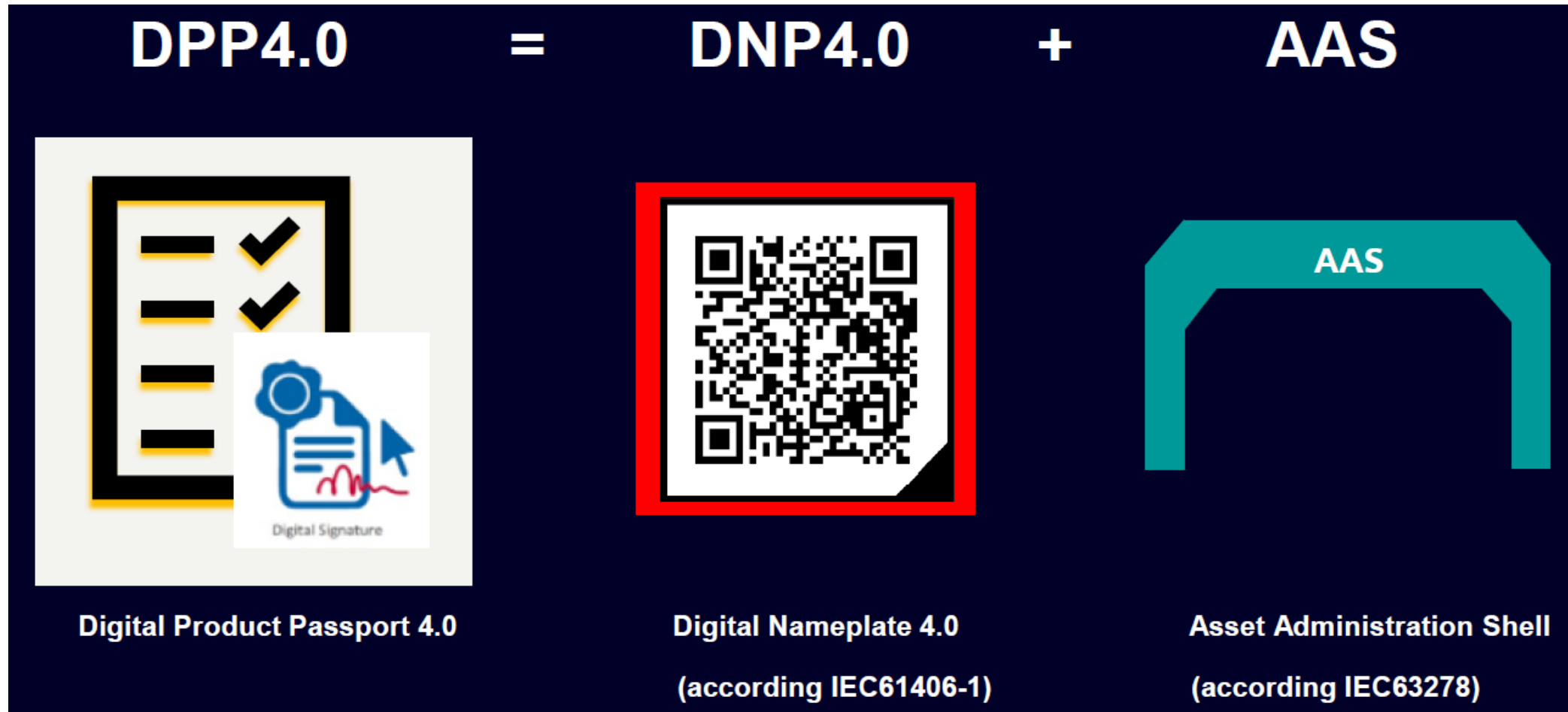
Why? EU Regulatory

# DPP (Digital Product Passport)



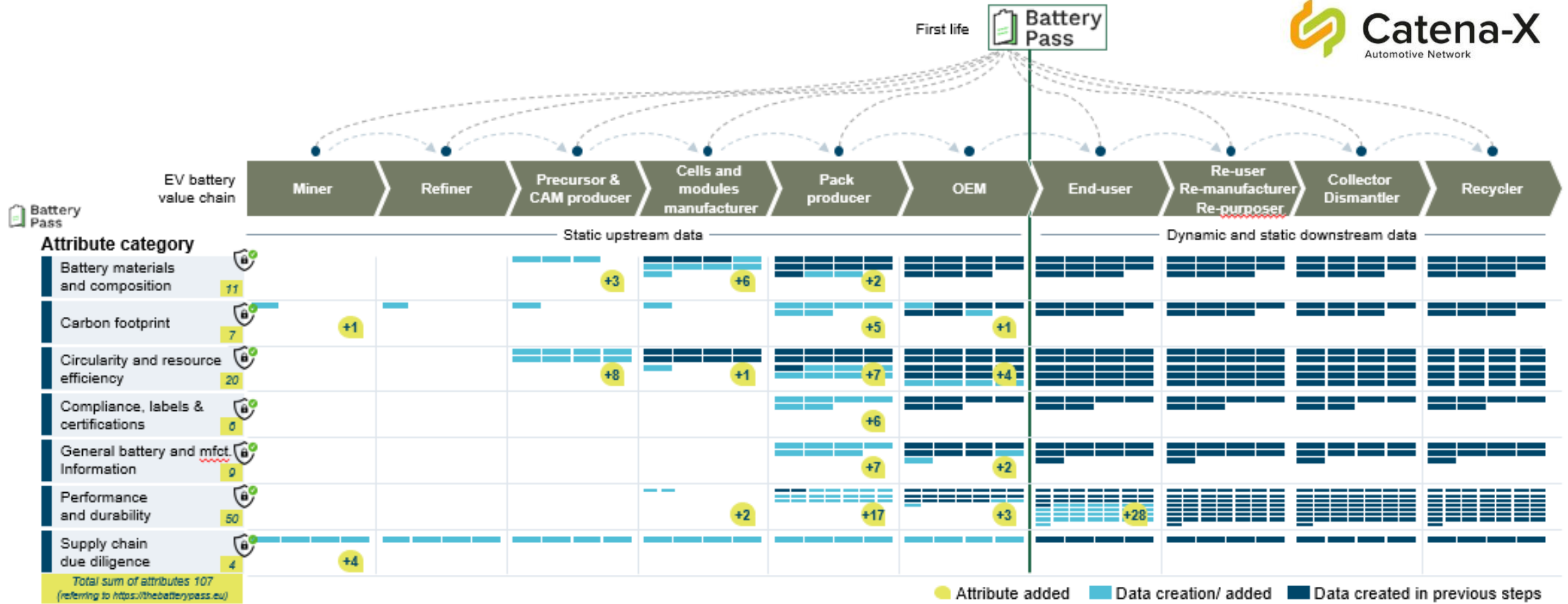
DPP4.0

# Digital Product Passport for Industry



# Why? Industry Example 1

## Battery Passport



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# Aerospace Industry

## E2E-Quality Management for Safety Critical Aero Engine Components



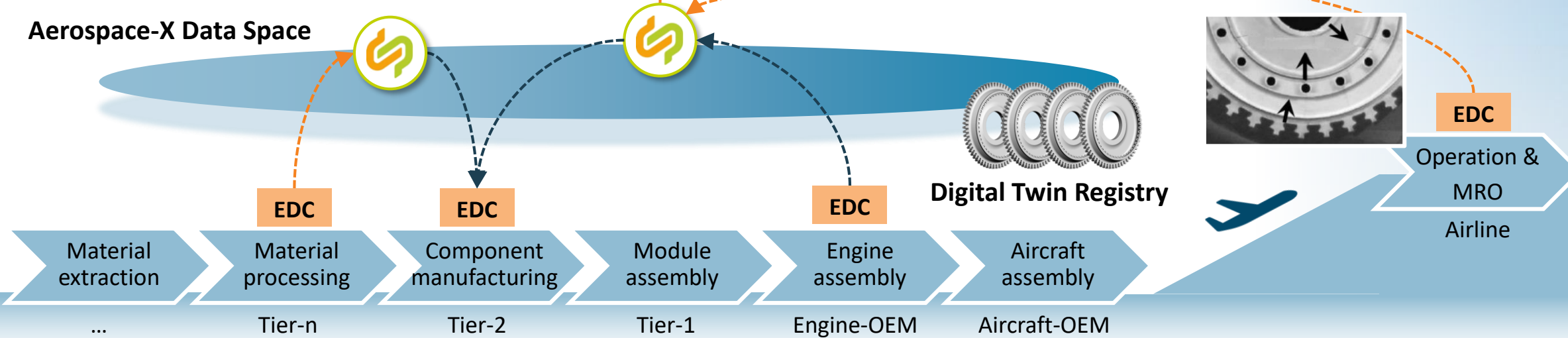
**3. Containment and Countermeasure**  
„Engines identified where worn tool was used...”



**1. Production Monitoring and Early Warning**  
„Material batch shows difficult machinability...”

**2. Traceability and Root Cause Analysis**  
„Cracks at drill holes detected during MRO...”

### Aerospace-X Data Space



Picture: Lufthansa, Maciejewski (2013)

Motivation

# IMX: Important topics and status

- **Industry data only**
- Peer to peer with **industrial cyber-security**
- **Trustworthiness**: International standards used, Trust Anchor (ID, Decentralized Systems)



Who?

# Initiatives Involved in Establishing the IMX Council



## What has happened so far:



**2023 July**  
Initiation  
Brussels,  
Belgium



**2023 October**  
Inauguration  
Tokio,  
Japan



**2024 February**  
Kick-off  
Paris,  
France



**2024 Novem.**  
November 5th  
in USA/CESMII

**OAK RIDGE** National Laboratory | **MANUFACTURING DEMONSTRATION FACILITY**

**Quick Facts**  
2011 IMX is established  
2/3 of the U.S. population is within a day's drive of MCF  
60,000 sq ft of R&D floor space

**Impact**  
\$1B+ of follow-on private industry investment

# Contact

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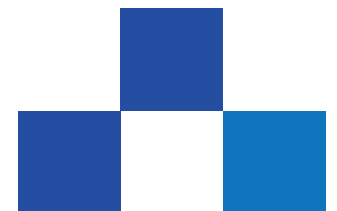
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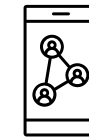
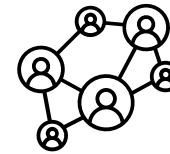
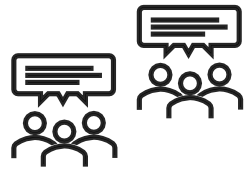
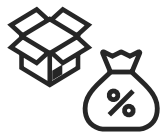
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# LNI 4.0 Community



LNI 4.0 Use Cases  
(continuously)

LNI 4.0 Testbeds  
general Assembly  
incl. information for  
specific topics  
(monthly)

LNI 4.0 Plugfests  
(4-6 x yearly)

Network of  
Associated Partner  
and  
Associated test labs  
(on demand)

Conferences and events  
presentations  
Webinars  
(on demand)

Blog and Podcasts  
(6 x yearly)

Social Media  
(continuously)

LNI 4.0 Newsletter  
(3-4 x yearly)

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