

International Manufacturing-X presents a DPP Showcase at Hannover Fair 2025

Hannover, Germany – March 31st, 2025 – The International Manufacturing-X (IM-X) initiative represents a pivotal effort to address the pressing need for global interconnectivity and interoperability in the manufacturing sector. As industries worldwide face increasing complexity and competition, the ability to seamlessly exchange data and collaborate across borders has become crucial. IM-X aims to create a federated, decentralized, and collaborative environment that facilitates open, global, and cross-industry data networks. This approach ensures that manufacturing data can flow efficiently and securely, enabling companies of all sizes to thrive in a digitally connected ecosystem.

IM-X is driven by several national initiatives represented by important stakeholders, including Australia, Austria, Belgium, Canada, France, Germany, Greece, Italy, Japan, South Korea, Spain, The Netherlands, and the USA. Each country contributes, fostering pre-competitive collaboration that benefits the entire manufacturing sector. By focusing on a federated data ecosystem, IM-X supports the development of sustainable, resilient, and competitive industrial solutions. This collaborative framework is essential for tackling global issues, as it allows for the harmonization of standards and the creation of trustworthy data ecosystems.

To demonstrate the potential of this interconnected international approach, the IM-X showcase highlights the tangible benefits of data interoperability and federated networks. The use cases span various industries, illustrating how enhanced data sharing can drive innovation, improve efficiency, and support climate-neutral production. By validating these concepts through real-world applications, IM-X aims to inspire broader adoption and investment in smart manufacturing technologies.

The success of IM-X hinges on the active participation of thought leaders and decision-makers from both the public and private sectors. By fostering continuous dialogue and collaboration, the initiative aims to shape a future where manufacturing is not only more efficient but also more equitable and environmentally conscious. This collective effort underscores the importance of global cooperation in addressing the challenges and opportunities of the digital age.

IM-X Showcase

The IM-X Showcase, powered by LNI 4.0, demonstrates cross-country and inter-company data exchange based on industry standards and federated trust. Interoperability is achieved through modern data space and digital twin technologies. The use case of the showcase is the Digital Product Passport (DPP), which is created during the manufacturing of a battery and continuously enriched with additional data from various companies along the supply chain.

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All participants adhere to internationally recognized standards such as the Asset Administration Shell (AAS) by IDTA, OPC UA by OPC Foundation, and CESMII Smart Manufacturing Profiles (CESMII SMP). The IM-X Showcase realizes the interoperability collaboration as announced during the SPS 2024 fair between OPC UA and AAS, as well as the integration of dataspace technologies. The dataspace connectivity is based on the IDSA protocol and Eclipse Dataspace Components (EDC), while using their respective IT environments. The DPP provides detailed information about the product itself and its key components from a global supply chain spanning Austria, Germany, Italy, France, Japan, Korea, the Netherlands, Spain, and the USA.

Dynamic Carbon Footprint Calculation via Federated and International Data Ecosystems

One of the key innovations demonstrated is the dynamic calculation of the battery Product Carbon Footprint (PCF). The total PCF is the sum of the manufacturing-related carbon emissions of its individual components and the overall logistics processes. By leveraging data space interoperability, these values are updated continuously based on factors such as energy sources used in production or transportation routes.

In addition to the static DPP data, State of Health (SOH) information—such as current capacity and performance—is also continuously updated through additional international data spaces.

Why is the IM-X Showcase important?

The IM-X Showcase highlights the significant value of industry-standardized, interoperable data exchange across global supply chains using federated trust. It demonstrates how a secure, trusted, federated, controlled, and automated flow of information can be realized with minimal integration effort for spaces among partners across the world.

With this, global initiatives can validate interoperability in real-world implementations, accelerating the realization of a digitally connected data ecosystems. The IM-X Showcase will remain after the Hannover Messe 2025. More details in imxc.org.

Statement of Thomas Hahn, Chairman of the IM-X Council

“Interoperability and trusted data exchange are the key enablers for the future of global manufacturing,” says Thomas Hahn, Chairman of the IM-X Council. “With the IM-X Showcase at the Hannover Messe 2025, we demonstrate how international partners from government, industry, research, industry associations and other stakeholders from around the world collaborate on federated and secure data ecosystems. The Digital Product Passport (DPP) is a crucial use case for sustainable and transparent industry applications. By integrating international industry standards such as AAS, OPC UA, CESMII SMP and EDC, we are setting an important milestone on the path to a connected, resilient, and competitive industry. We invite



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companies worldwide to join this initiative and actively shape the future of the industrial data ecosystems.”

Contact and Booth presentation

For further information and contact please refer to: www.imxc.org

Visit the IMX Showcase and its partners live at the **Hannover Fair 2025 in Hall 8 at Booth D26**

Acknowledgment and Partners

The IM-X Showcase is realized by strong international partners. Our special thanks go to:

ARVATO Systems, Catena-X Association, Catena-X Competence Center Spain | Innovalia, CESMII, Confindustria, Congatec, complement, Dawex | Data4Industry-X, Engineering, EVIDEN, FESTO, Fujitsu, German Edge Cloud, Hilscher, IDTA, KOSMO, Labs Network Industrie 4.0, Microsoft, Mitsubishi Electric, MURR Elektronik, Nestfiled, NTT Communications, OPC Foundation, Phoenix Contact, Plattform Industrie 4.0 Austria, Politecnico di Milano, SQS, Siemens, SiMa.ai, Sovity, SCI 4.0, Smart Industry | Brainport Industries, The University of Tokyo, Toshiba, T-Systems and Weidmüller

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