

JOINT STATEMENT
between
Plattform Industrie 4.0 (Germany)
and
Robot Revolution & Industrial IoT Initiative (Japan)
on
Collaboration Strategy

Introduction

Climate change, geopolitical tensions, and interrupted supply chains: around the globe, manufacturing industries are facing challenges that manifest uniquely within individual countries, yet stem from global trends that transcend national borders. In response, digitalization and data-driven solutions have emerged as powerful tools – enabling manufacturers to reduce carbon footprints, enhance supply chain resilience, and unlock innovative business models, such as digital marketplaces and pay-per-use services.

As access to vast datasets and advances in artificial intelligence continue to accelerate, the manufacturing sector is entering a new phase of transformation. This evolution is giving rise to novel possibilities: sustainable value creation models that align economic growth with environmental responsibility, collaborative value ecosystems that foster cross-sectoral innovation, and advanced engineering approaches capable of addressing increasingly complex and dynamic requirements.

At the heart of this transformation lies a shared commitment to human-centered innovation – one that prioritizes individual well-being, inclusivity, and long-term societal resilience. By integrating these values into industrial strategies, Robot Revolution & Industrial IoT Initiative (RRI) from Japan and Plattform Industrie 4.0 (PI40) from Germany aim to shape a future in which manufacturing not only drives competitiveness but also contributes meaningfully to the prosperity and sustainability of global communities.

Background and Motivation

This document was jointly written by RRI and PI40 from Germany. The initiatives share the common goal of strengthening competitiveness through Industrie 4.0 and Industrial IoT in both countries, and of facilitating a smooth transition to digital production. Based on this common goal, they have built a successful history of cooperation that goes back to the announcement of a joint action plan at Hannover Messe 2016.¹ This joint statement by the two organizations builds on a collaboration document issued at the same time between German and Japanese governments.

The partnership between the organizations so far has mostly focused on the topics of cyber-security, international standardization, digital business models and manufacturing dataspace. In all these areas, it has resulted in numerous joint publications and contributions to conferences, a better understanding of common challenges and potential solutions, and above all the strengthening of trust between the partners.² Based on the joint statements in 2016, strategy papers of expert groups were developed, and accordingly joint activities were launched, focusing for instance on trustworthiness, asset oriented data model, business model transformation and user readiness in the era of sovereign data exchange.

Visions & Views

In Japan, realizing Society 5.0 from the industrial standpoint is one of RRI's key themes. Proposed by Japan government, Society 5.0 is a concept of a human-centered society in which economic development and the resolution of social issues are compatible with each other through a highly integrated system of cyberspace and physical space.³ In Society 5.0, the human factor is recognized as a vital element alongside cyber-physical systems. Moreover, with the rapid advancement of artificial intelligence, it becomes essential to consider how

¹https://www.jmfrri.gr.jp/archive/content/files/Open/2016/20160428_Joint_Statement_PF_I40/Joint_Statement_E.pdf

² <https://www.plattform-i40.de/IP/Navigation/EN/ThePlatform/Structure-Organization/InternationalCooperation/Japan/japan.html>

³ https://www8.cao.go.jp/cstp/english/society5_0/index.html

humans interact with such technologies within social systems.

Building robust digital ecosystems to support these developments is also a strategic priority. To accelerate industrial globalization and innovation, Japan is expected to take an active role in shaping interoperable digital ecosystems—not only within its domestic framework but also in collaboration with the international community.⁴ Japan's existing technical concepts and their consisting specifications for dataspace are now jointly encompassed as “Open Data Spaces”, and which is a cornerstone of contributing open and international interoperability.⁵

In Germany, Plattform Industrie 4.0 and its Manufacturing-X Initiative focus on digitizing industrial supply chains by creating collaborative, decentralized, and interoperable, federated data ecosystems.

They aim to shape and jointly initiate interoperable solutions for the seamless, secure, and sovereign data exchange in industrial production and across supply chains. This evolution is unlocking new opportunities: sustainable value creation models that balance economic growth with environmental responsibility, collaborative ecosystems that drive cross-sector innovation, and advanced engineering solutions designed to tackle increasingly complex and dynamic challenges.

Beyond that, the implementation of such industrial data ecosystems will be pivotal to exploit the full potential of industrial artificial intelligence in the future.

As a visionary outlook, the metaverse is emerging – a virtual, human-centered environment in which people can collaborate, learn and create in real time. It opens new forms of social and economic interaction, but also brings challenges like data protection, digital identity and fair participation with it.

Collaboration Strategy: Co-Creating the Future of Manufacturing

Through the mutual understanding of the visions/views outlined above, the two organizations share the following common visions:

⁴ <https://www.ipa.go.jp/en/digital/architecture-guidelines/ouranos-ecosystem-dataspace-ram-white-paper.html>

⁵ <https://www.ipa.go.jp/en/digital/opendataspace>

- **Redefining Manufacturing's Role in Addressing Societal Challenges**

In response to issues such as the circular economy, demographic shifts, and regional disparities, manufacturing must evolve into a driver of sustainability and social value creation. International standardization provides a shared foundation, while new business models spanning the entire product-service lifecycle enable both industrial transformation and societal impact.

- **Evolving Human-Machine Relationships and Rebuilding Industrial Culture**

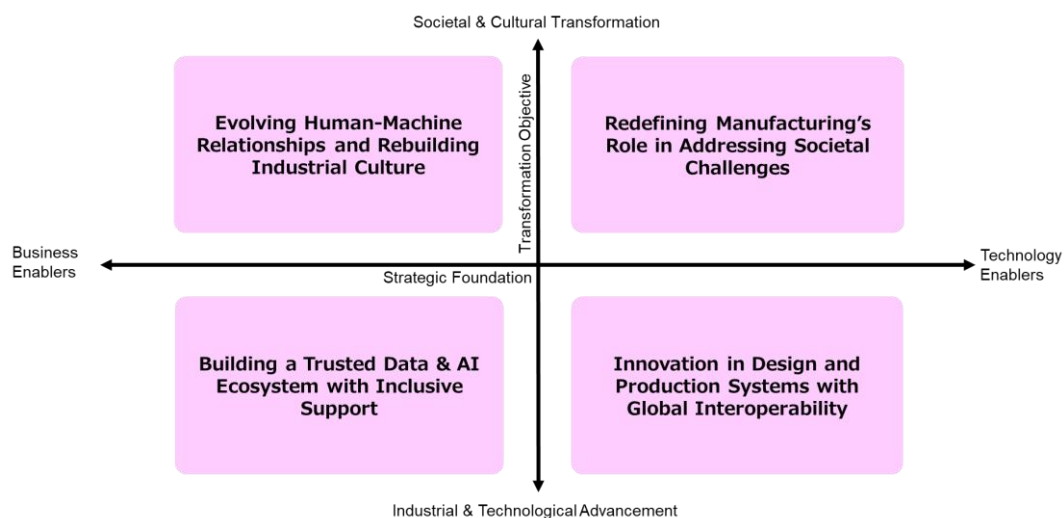
The collaboration between humans and machines is shifting from efficiency to co-creation and emotional engagement. Promoting a positive working culture and a sense of purpose in manufacturing is key to attracting future talent. International frameworks for skills development and standardized competencies are essential to support this cultural renewal.

- **Innovation in Design and Production Systems with Global Interoperability**

Design and production systems are becoming more agile, flexible, and sustainable through digital technologies. International standardization ensures interoperability, while modularization, decentralized production, and data-driven service models support global collaboration and competitiveness.

- **Building a Trusted Data & AI Ecosystem with Inclusive Support**

Accelerating the use of data and AI requires a trusted, transparent, and interoperable ecosystem. Inclusive support structures for all stakeholders – including SMEs – and international education initiatives are vital to foster sustainable innovation and the emergence of new business models.



Tasks and outlook

Based on the common strategy above, the four existing expert groups will continue to fruitful cooperation. Furthermore, collaboration of two organizations will not end there; RRI and PI4.0 will continue to explore new areas of collaboration in order to realize their common vision.

Expert Group “Industrial Trustworthiness and Security”

The group develops a structured approach to trustworthiness for organizations, products, and data across supply and value chains. With seven white papers published, it now focuses on product-data trustworthiness to help shape policy through global standardization.

Expert Group “Digital Platforms in Manufacturing Industries”

This group promotes digital business models via real-world B2B use cases, expanding focus to SMEs and publishing joint insights on platform ecosystems and data-sharing challenges.

Expert Group “International Standardization”

The group fosters shared understanding of standards, contributing to global harmonization through six whitepapers and active engagement in ISO and IEC standardization efforts.

Expert Group “Manufacturing Dataspaces”

The group advances secure dataspaces for cross-border supply chains, exploring industrial readiness and governance across value networks.

For more information on the Plattform Industrie 4.0, please visit <https://www.plattform-i40.de/IP/Navigation/EN/Home/home.html> or contact Dr. Daniel Senff, Plattform Industrie 4.0 (geschaeftsstelle@plattform-i40.de).

For more information on RRI, please visit <https://www.jmfrri.gr.jp/> or contact Mr. Satoru Serizawa, RRI (office@jmfrri.gr.jp).

Signed in Tokyo, Japan on 20th, October 2025

For Plattform Industrie 4.0

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