

The Robot Revolution and Industrial IoT International Symposium 2024

Japan-Germany Expert Forum

S3-4 Manufacturing Data Space as Booster to be a data-driven Society

Mr. Ingo Sawilla, Trumpf MT SE+Co.KG, R&D Manager Research Head of Manufacturing-X

Prof. Dr. Shinsuke Kondo, Chairman of Manufacturing Data Space AG, RRI / The University of Tokyo

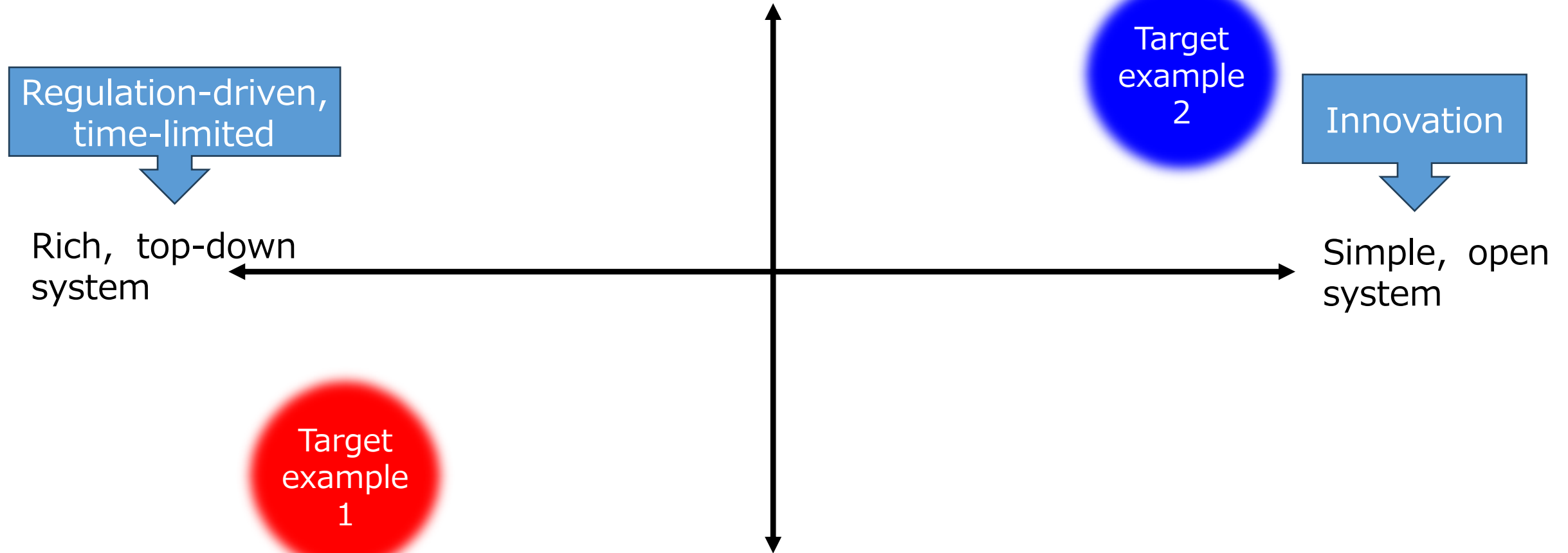
- History
- About Data Governance
- Activity in Germany
- Activity in Japan
- Summary

- Collaboration started in 2023
- Activity on Manufacturing Data Spaces in both countries and the outline of the collaboration were introduced at RRI symposium 2023
- Discussion Paper published at Hannover Fair 2024
 - Core Aspects and Design Elements
 - Data Integration and Governance
 - Interoperability
 - Semantic Understanding and Ontology
 - Data Sovereignty and Security
 - Evolution and Adaptability
 - Data Management
 - Shaping Digital Ecosystems in Germany and Japan



Are companies ready for data spaces?

Participants are ready in terms of data governance/management/culture



Participants are **NOT** ready in terms of data governance/management/culture

Data culture eats Dataspace for breakfast

ドラッカー博士の「Culture eats strategy for breakfast : 企業文化というものは戦略を超えるパワーがある」のオマージュ

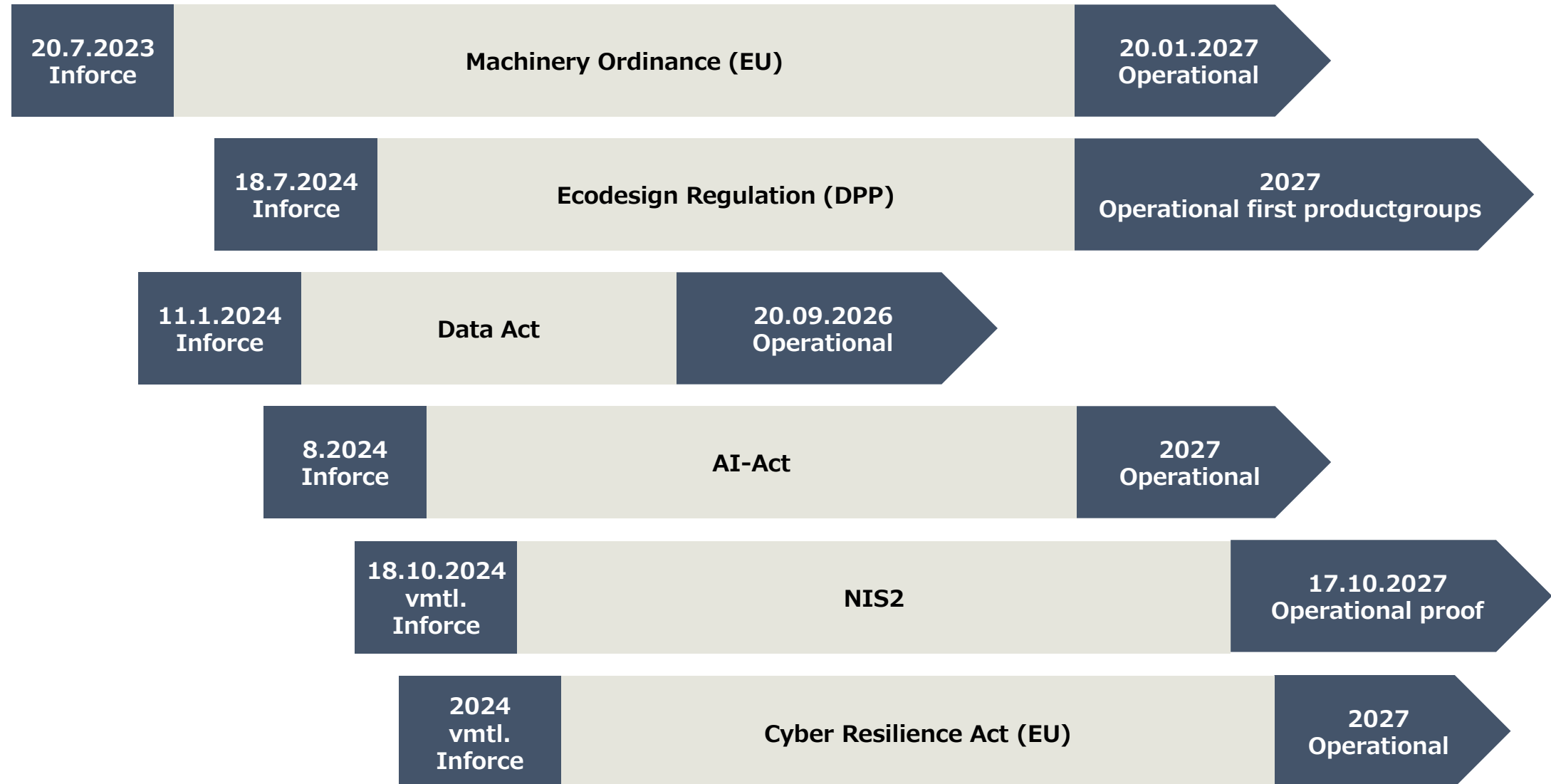
- What we learned at Hannover fair: it is not a technical thing.
- Ask and explain: What's in for me? As a society, organization, human.
- It is not a change. It is a big global transformation.
- Shift from classical roles to “data” responsible roles. Let us train our employees.
- Data governance is the enabler to get the Data culture we need together.

Data Acts (EU)

Implementation (Enterprise)

Data governance (Manufacturing-X Projects)

Activity in Germany: Implementation of EU regulations



Activity in Germany

All
Enterprises

...

1. Enterprise learn to understand the new regulation
2. Organizations start to implement the new regulations through new roles and responsibilities
3. Enterprise Architecture change effect
4. Operationalization through providers and IT systems
5. Update monitor systems and cybersecurity topics



View#1:
Operationalize
enterprise

View#2:
Establishing it in
corporate culture

Government

...

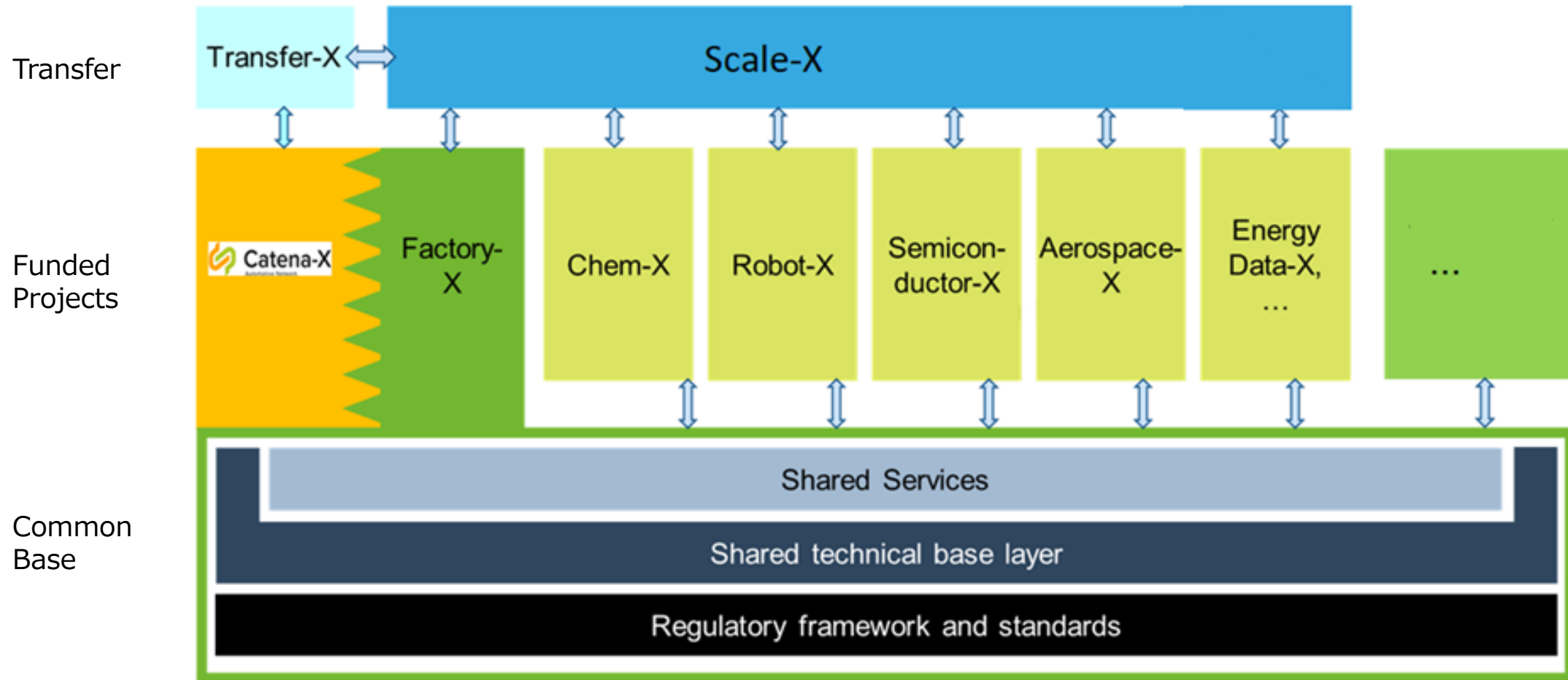
1. Government build new units and regulate the responsibilities to control enterprises
2. Has to solve conflicts between the regulations



View#3: Solve
regulation
conflicts

Activity in Germany

Talks about the current situation on Factory-X, Manufacturing-X
Activity on Data governance



Talks about the current situation on Factory-X, Manufacturing-X
Activity on Data governance

MX Guidance Board

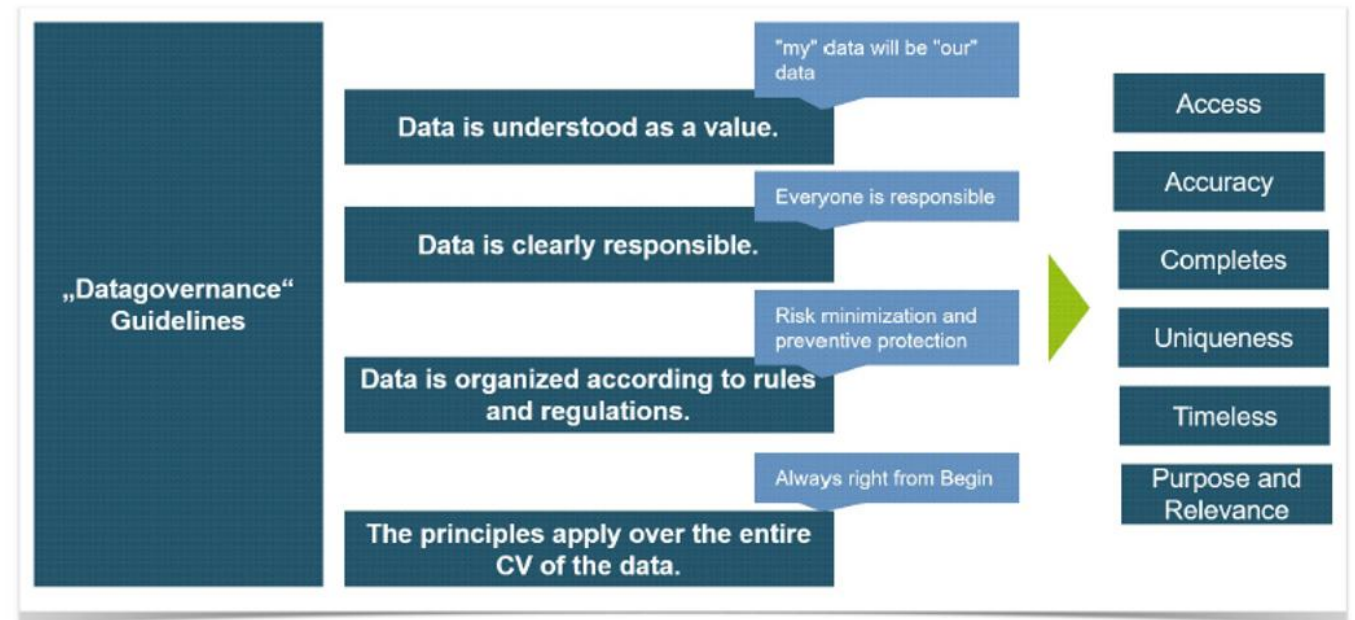
1. Understand the importance of data
2. Organize and synchronize teams in the MX projects
3. Improve data literacy and data maturity
4. Check inhouse data, create catalogs
5. Create shared service based on regulations

Activity in Germany

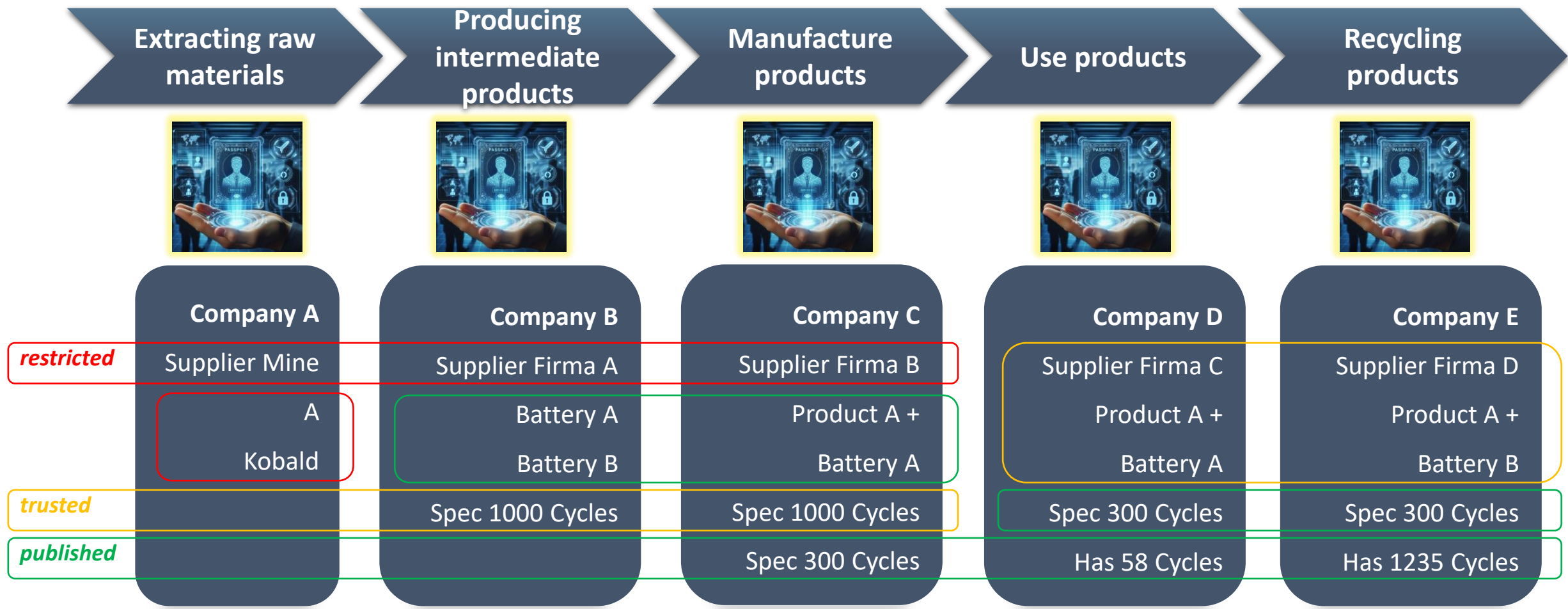
Talks about the current situation on Factory-X, Manufacturing-X
Activity on Data governance

FX TF Data governance

1. Create Guidelines and principles
2. Create awareness and culture
3. Establish Data classification



Ecodesign Regulation and Digital Product Passport (2027)



Who defines? How is the exchange carried out? Can I trust?

Activity in Japan: Data Governance

Digital Governance Code (METI)

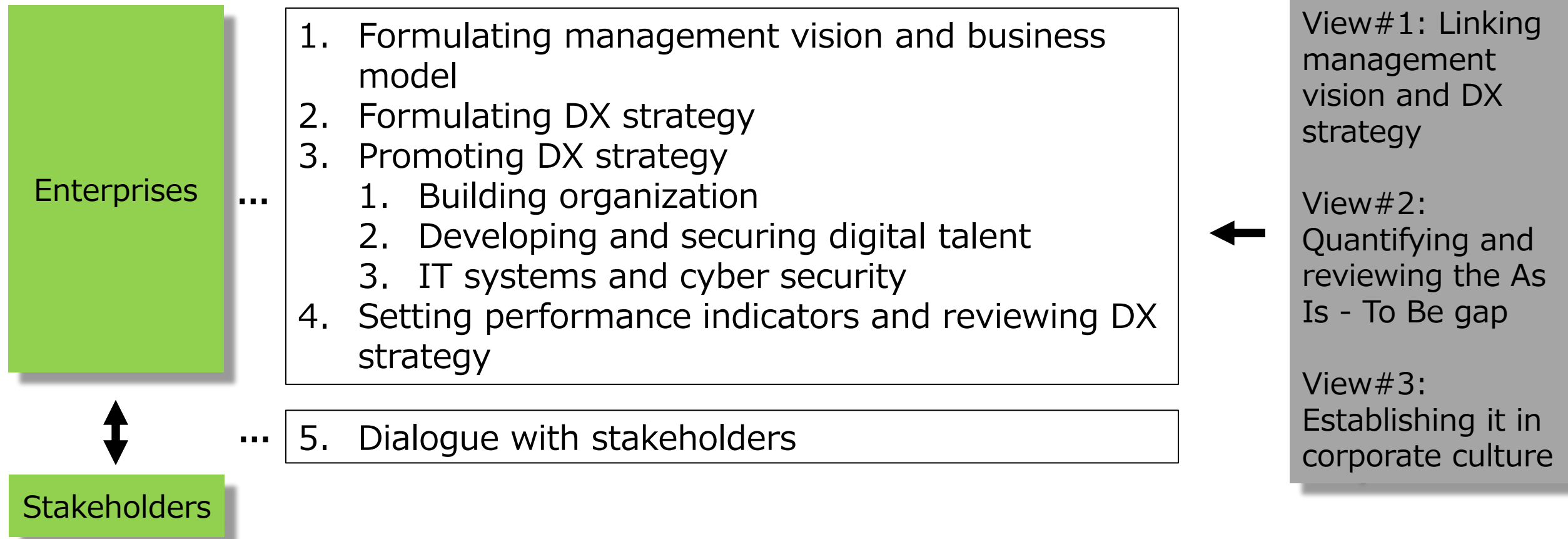
Data Management Handbook for Corporate Execs. (IPA)

Data driven command center – CDO Handbook (IPA)

Future work: Reference Use Cases (e.g. DPP execution)

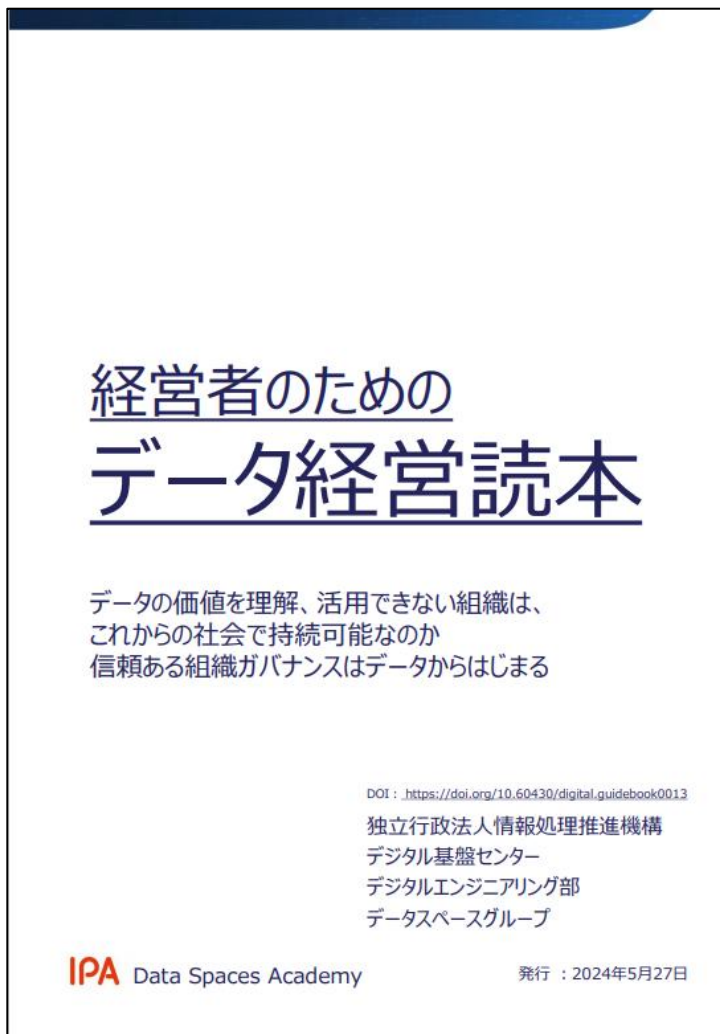
Note: These documents are only available in Japanese. This English translation is made by RRI. RRI is not responsible for accuracy of the translation.

Activity in Japan: Digital Governance Code (METI)



<https://www.meti.go.jp/press/2024/09/20240919001/20240919001-1.pdf>

Note: This document is only available in Japanese. This English translation is made by RRI. RRI is not responsible for accuracy of the translation.



Preparation

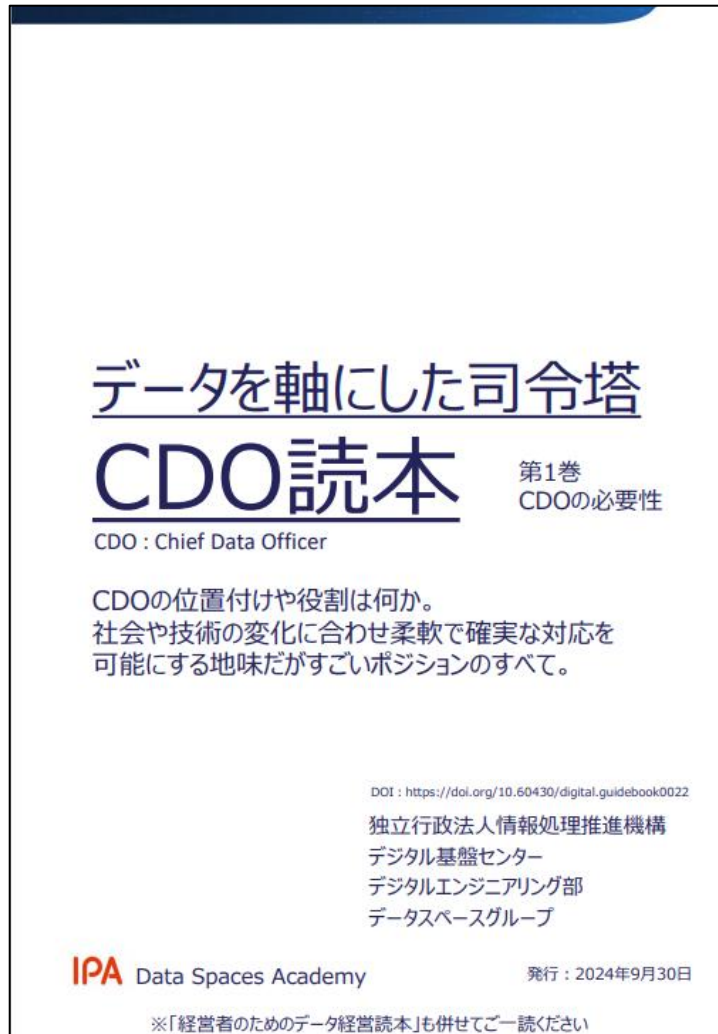
1. Managements to understand the importance of data.
2. Organize teams (incl. CDO)
3. Improve data literacy and data maturity
4. Check inhouse data, create a catalog

Execution

1. Plan and design data policy
2. Prepare data
3. Utilize data

<https://www.ipa.go.jp/digital/data/m42obm000000flkc-att/dsa001-data-management-guidebook-for-managers.pdf>

Note: This document is only available in Japanese. This English translation is made by RRI. RRI is not responsible for accuracy of the translation.



From management to staff, CDO will instill a culture of thinking and making decisions based on data, and create an organization that will continue to evolve.

1. Providing data necessary for decision-making
2. Responding to changes in society and technology
3. Digital transformation using data
4. Increasing profits and customer satisfaction
5. Improvement of business operations
6. Ensuring safety, security, and reliability, and avoiding risks
7. Creating new services and mining data

<https://www.ipa.go.jp/digital/data/f55m8k0000005msd-att/dsa002-the-chief-data-officer-handbook-volume1.pdf>

Note: This document is only available in Japanese. This English translation is made by RRI. RRI is not responsible for accuracy of the translation.

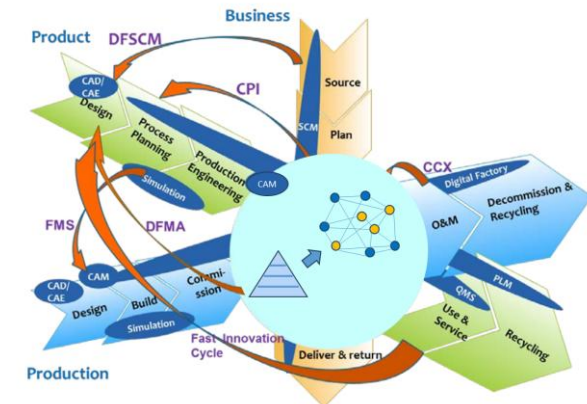
Reference Use Cases will answer these questions ...



maroke / stock.adobe.com

The case of DPP implementation

- Where do I keep supplier's component information in my system?
- How do I confirm it is trusted?
- How can I calculate exact energy consumption at my production line?
- Where is it stored in my system?
- What kind of information should be prepared as the evidence?
- How do I make DPP information available to my stakeholders?
- What kind of system to be considered?
- ...



Modified on "Current Standards Landscape for Smart Manufacturing Systems" <http://dx.doi.org/10.6028/NIST.IR.8107>



- Organizations are busy adapting their structure, architecture and processes to the new circumstances.
- Organizations are busy adapting to technical progress.
- Organizations are wondering what information should be provided via which infrastructure.

Call for participation

If you are

- interested in contributing to the Joint Paper,
- would like to be part of future collaboration,
- or simply would like to know more:

Please contact us!



RRI:
office@jmfrri.gr.jp



Plattform Industrie 4.0:
geschaeftsstelle@plattform-i40.de

Thank you for your attention

Danke für Ihre Aufmerksamkeit

ご清聴ありがとうございます