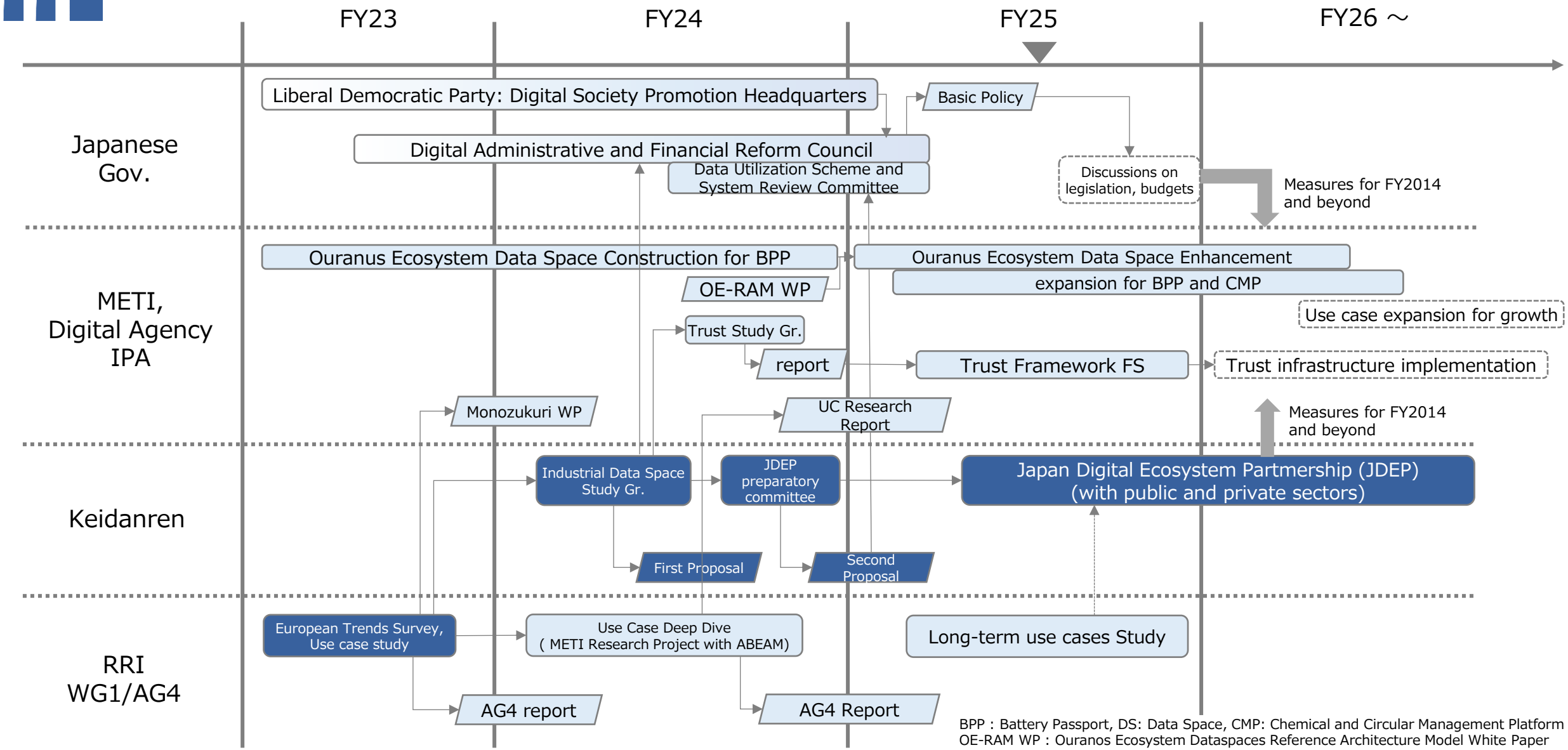
Initiativs toward industrial data spaces era in Japan

'25/10/21

RRI International Symposium Session Day

Robot Revolution and Industrial IoT Initiative (RRI)
WG1 Co-Chair, AG4/TF2 Leader
Naohiko Irie (Hitachi , Ltd.)

Activities for industrial data spaces in Japan



BPP : Battery Passport, DS: Data Space, CMP: Chemical and Circular Management Platform
OE-RAM WP : Ouranos Ecosystem Dataspaces Reference Architecture Model White Paper
UC: Use Case, FS: Feasibility Study

Keidanren Proposal "Towards the Construction of an Industrial Data Space" (Oct. 15, 2024)

Keidanren: Towards the creation of an industrial data space (2024-10-15) (keidanren.or.jp)

company
Data utilization
Data collection and management
Registration
company
Data utilization
Data collection and management
Registration
...
Through the distribution of trusted information
Realizing of Society5.0 for SDGs
Ensuring "Data Sovereignty"
Attractive Use case creation
Utilizing existing initiatives
Domestic Other data space
...
European Data Space
International Data distribution
industry Data Space
Use case dependent part
Data Model
application
Data Model
application
...
Basic part
Dataspace Management Layer
Data Distribution Layer
International expansion
Asian data space
interoperability
Building a national "Trust Framework"
International Mutual authentication
European Trust Framework
Trust basis
Participating companies' identity verification
Preventing data tampering and spoofing
Asian Trust Framework

Keidanren Second Proposal for the Construction of an Industrial Data Space
(May 13, 2025)

3. Developing Trust Framework

- Establishment of infrastructure to prove the authenticity and existence of entities, and definition and visualization of the assurance level for a certain service
- Organize and systematize the concept of trust services, and improve each aspect of the system, technology, and operation.
- Accelerating intergovernmental discussions on trust services that require international interoperability

4. Creating use cases

- From a proactive perspective, such as business growth and opportunity creation, it is necessary to create use cases and implement them in society.
- First, in the environmental field, where there is high social demand and international need, it is necessary to prototype, including a trust infrastructure.
- In addition, to expand internationally, it is necessary to involve willing countries and regions such as the EU and ASEAN.

5. Establishment of a public-private promotion

- In building industrial data spaces, it is essential to establish a promotion system in which the public and private sectors work closely together and cooperate.
- Keidanren needs to work with the Digital Agency to deepen concrete considerations toward the establishment of a "Japan Digital Ecosystem partnership" involving public and private sector.

Second Recommendation for Building an Industrial Data Space (May 13, 2025)

Japan Digital Ecosystem Partership (since June 2025)

Steering Committee

Co-chairs: Director-General of the Digital Agency,
Executive Director of Keidanren
Members:
(Public Sector) MIC, METI, IPA
(Private Sector) DPFJ, DSA, JDTF, RRI

for making decisions on important matters .

Planning and Steering Committee

Co-chairs: Counselor of the Digital Agency,
Director of the Industrial Technology, Keidanren
Members:
(Public) Digital Agency, MIC, METI, IPA
(Private) DPFJ, DSA, JDTF, RRI, and others

A comprehensive coordinating body for the overall operation of the council .

Working Group

・・・

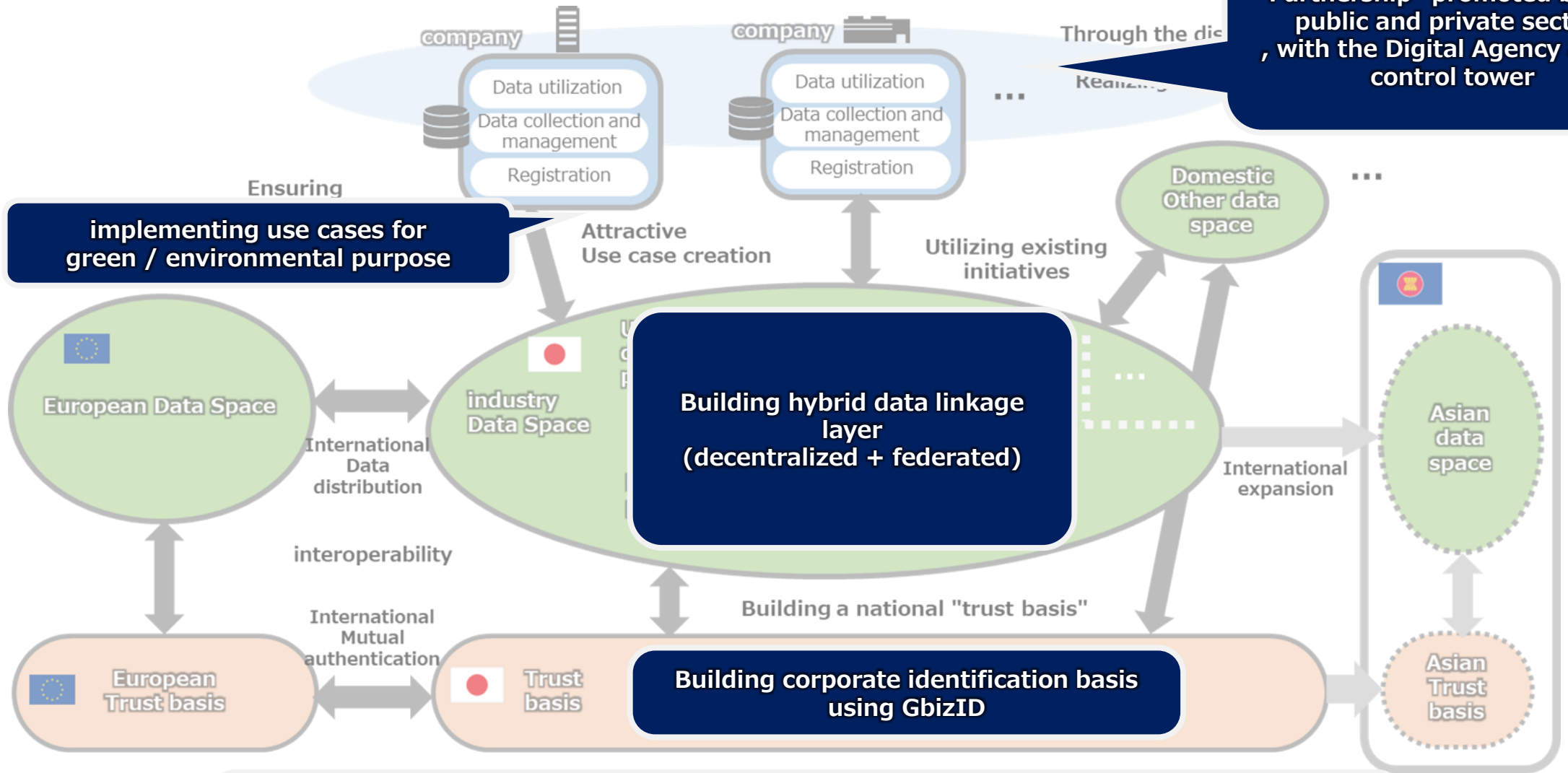
＊Not installed as of June 20th

Source: Keidanren Secretariat

Discussions will be held on the development and social implementation of trust infrastructure and use cases. Specific themes will be considered by the Planning and Steering Committee and will be established one after another.

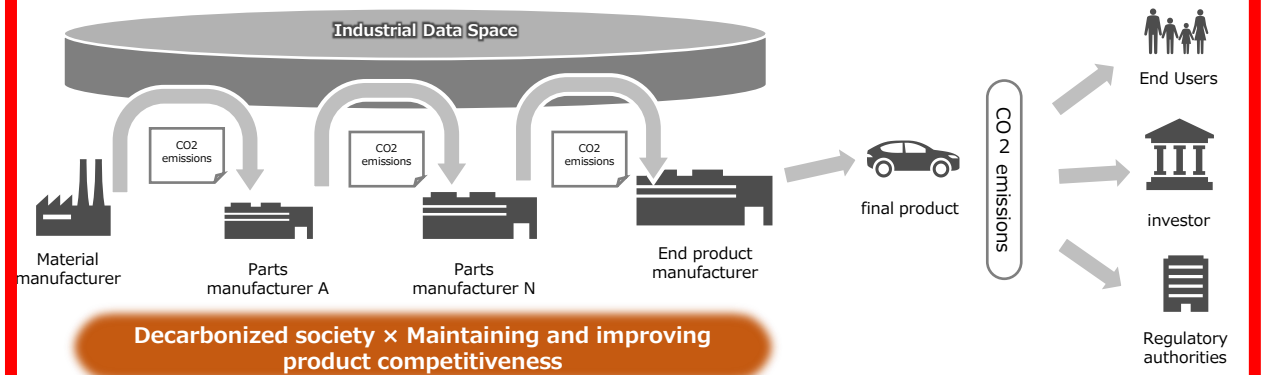
Japan Digital Ecosystem Partnership

Summary of current status in Japan



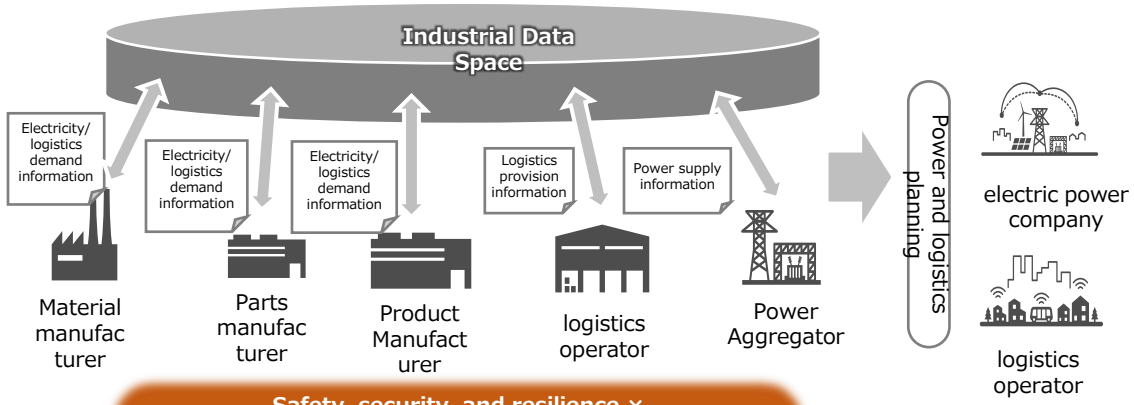
RRI Use Case Discussion (FY23)

[G1] Disclosure of ESG indicators throughout the supply chain/value chain



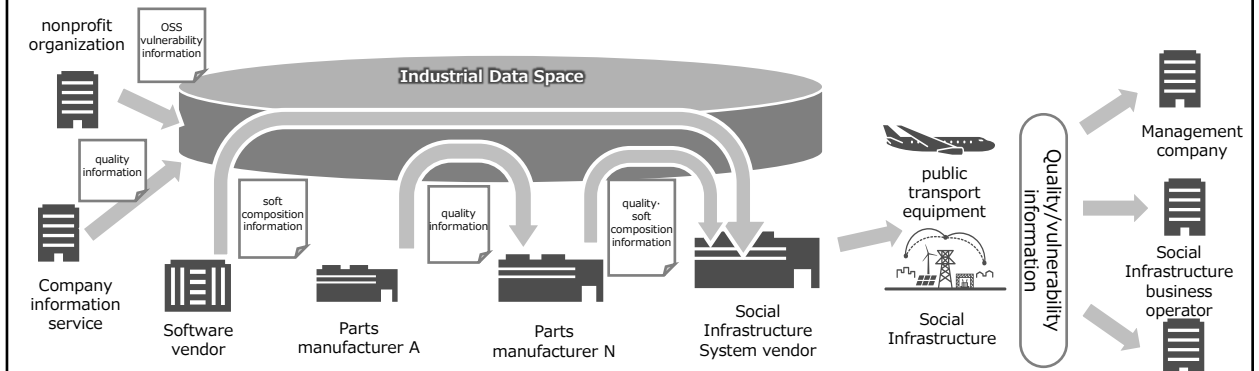
Decarbonized society × Maintaining and improving product competitiveness

[G3] Stable provision of services through sharing of corporate resources/business plans



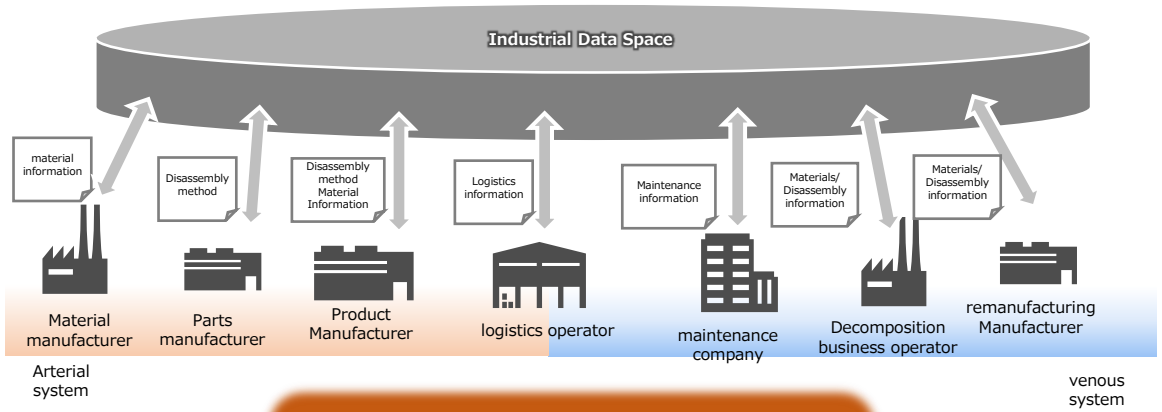
Safety, security, and resilience × improved productivity and reduced costs

[G2] Ensuring traceability in the product engineering chain



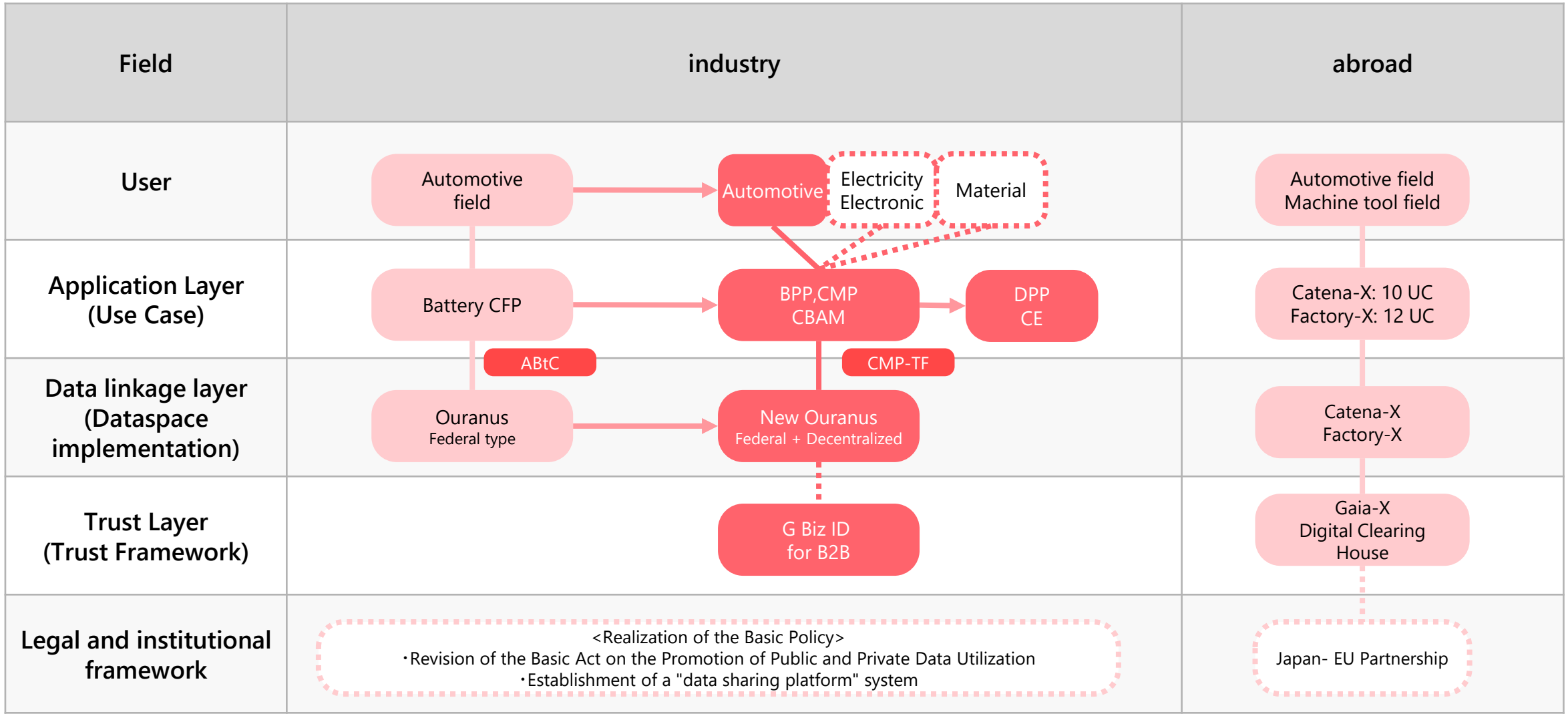
Safety, Security, and Resilience × Corporate Social Responsibility

[G4] Arterial and venous collaboration to stimulate the circular economy



Recycling society × new market creation

Industrial Data Space : Status and Future Direction



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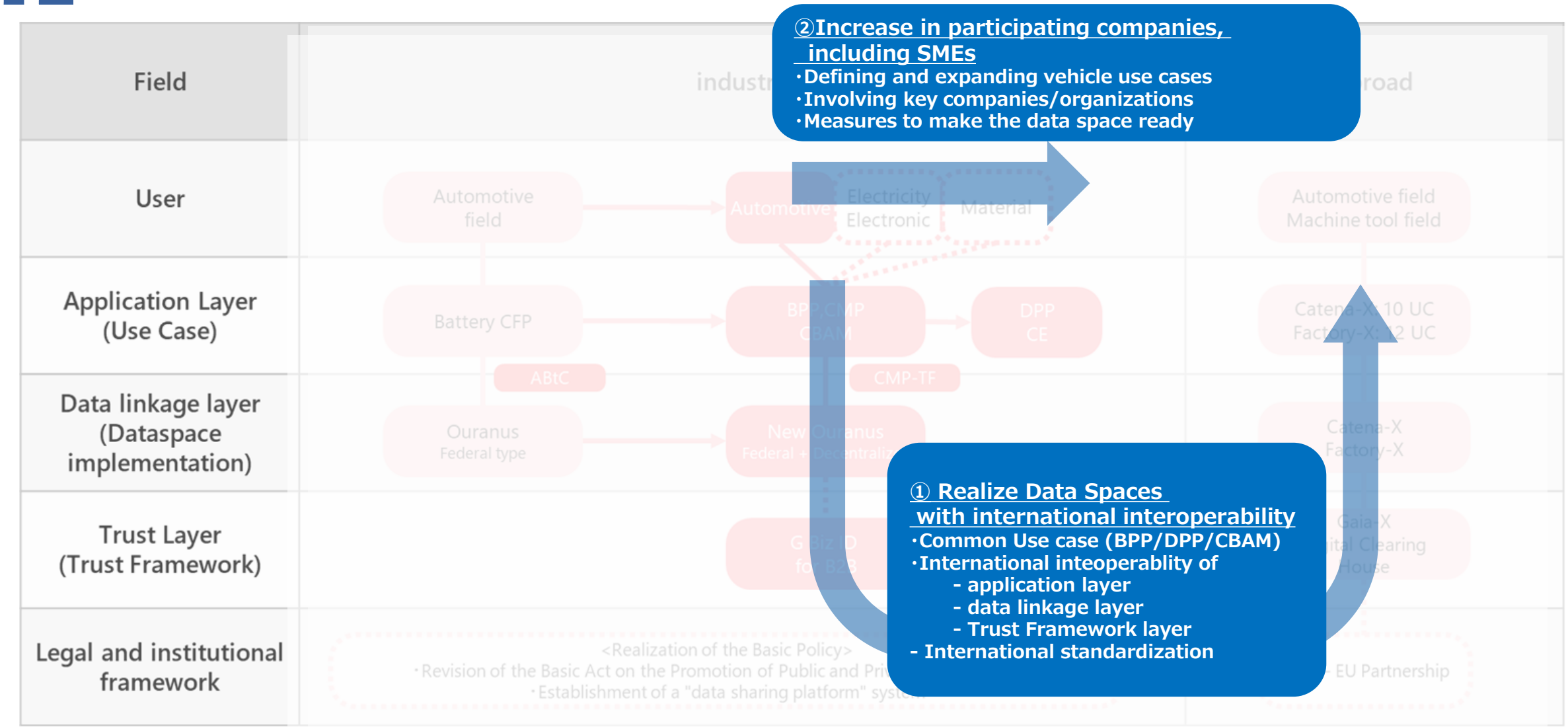

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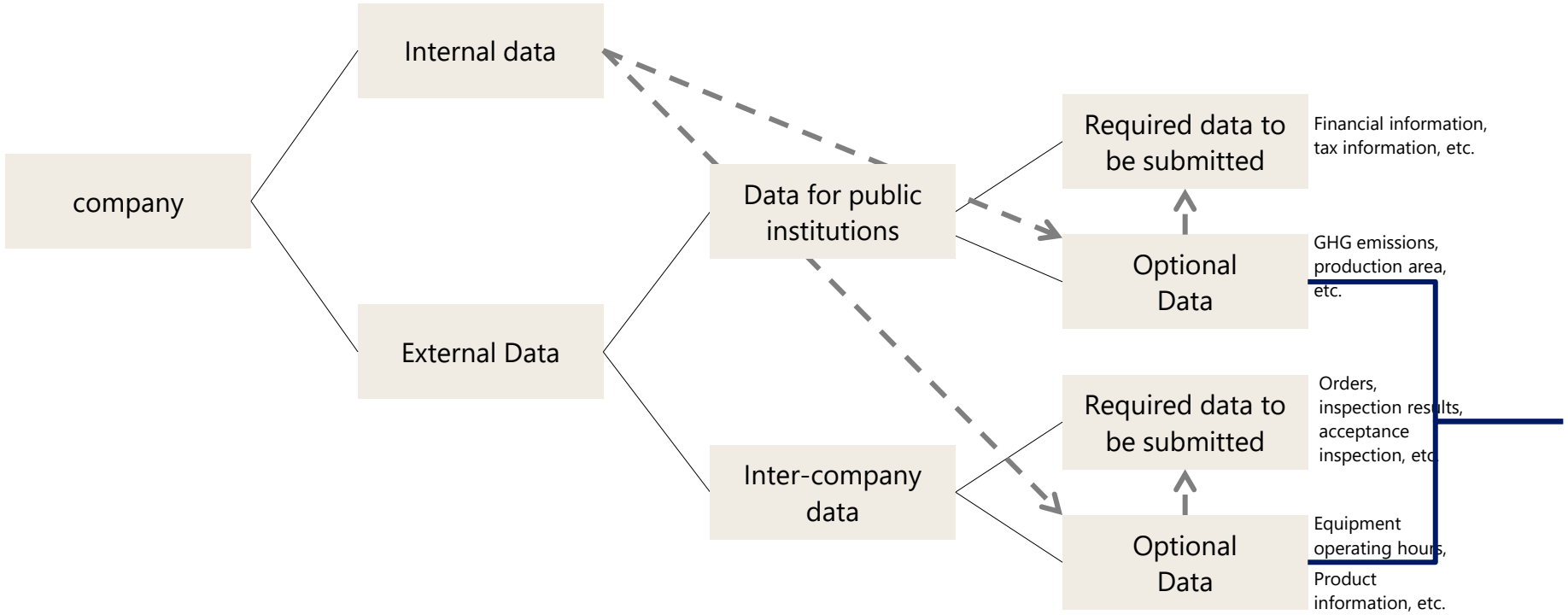
Difficulties in industrial data collaboration (discussed at FY24 RRI)

- The difficulty in industrial data collaboration is thought to be that when the benefits to data providers are unclear, data providers tend to give low priority to submitting data.
- In data sharing between companies, it is desirable to have a common platform for sharing data within each company, but in reality, the current situation is that the necessary information is only available when it is needed.



- Additional data that must be submitted **will not be provided unless it is necessary** (there is no pressure to share data)
- In order to promote data sharing, data must be made mandatory, and it is important to motivate people to do so.

ロボット革命・産業 IoT イニシアティブ協議会

Robot Revolution & Industrial IoT Initiative

Towards formulating use cases for industrial data integration

- There are growing expectations for data integration efforts, not just in response to regulations, and data integration is considered necessary in every industry.
- In order to advance initiatives in each industry, it is necessary to consider the motivation of the main business operators who want to reap the benefits and participate in data collaboration.

Hearing results (general)

G1	**CO2 traceability**	• Japanese companies need to understand that behind the rules and regulations required by Europe there are comprehensive system architectures and institutions for achieving sustainability, and they need to move forward with their response.
G2	**/ vulnerability traceability in social / public infrastructure**	• Since "ensuring aircraft safety" is at the core of the aircraft supply chain, quality control is necessary for each individual part. • Cybersecurity measures must be addressed at the national level
G3	**Sharing resources necessary for business activities such as logistics and renewable energy**	• It is necessary to build a data sharing system for emergency response in • Collaborating on data necessary for the development of long-life consumer goods to realize a
G4	**Compliance with Ecodesign Regulations (Digital Product Passport) for clothing**	• To realize a circular economy, it is necessary to consider incentives for data providers and consumers. • Adding information about the place of production and fabric makes it possible to add value to products.

Issues in formulating use cases for data integration

Where the needs lie	• It is necessary to clarify who is facing the problem and what needs to be done, and to define the purpose and significance of specific use cases.
Identifying stakeholders	• After defining the above needs, it is necessary to organize the necessary business schemes, systems, and legislation, and clarify the stakeholders involved in the initiative.
Motivation	• It is important to design a system that allows all parties involved in data sharing to enjoy the benefits.