

EMPOWERING GLOBAL DATA SPACES
SHAPING TOMORROW'S CLOUD INFRASTRUCTURE

Helsinki, Finland | 14 & 15 November

In partnership with gaiα-X

Hub Finland

gaia-x

Gaia-X Institute: Investigation of the Economics of Data-sharing & Automated compliance by design



09:30 - 10:30

Joelle Toledano, Professor Emeritus associated with the Governance and Regulation Chair, Paris Dauphine-PSL University, Member of the French National Digital Council

Lucas Eustache, PhD student, the Governance and Regulation Chair, Paris Dauphine-PSL

Jakob Rehof, Professor of Computer Science, TU Dortmund University

Pierre Gronlier, Chief Innovation Officer, Gaia-X

Moderator: Hubert Tardieu, Independent Board Member, Gaia-X



Investigation of the Economics of Datasharing

Lucas Eustache, Ph.D student, the Governance and Regulation Chair, Paris Dauphine-PSL

Joelle Toledano, Professor Emeritus associated with the Governance and Regulation Chair, Paris Dauphine-PSL, Member of the French National Digital Council

Presentation of the Study



- Study on the Economics of Data Sharing initiated in 2023.
- 20 interviews (totaling 48 hours) covering various dimensions of the economics and dynamics of DSEs.
- Objective: Understand the economics of data sharing and data sharing ecosystems.
 - Study at the participant level, relying on a cost-benefit approach, focusing on the significance of use cases and value creation.
 - Study at the organization of data sharing, both at the data space and the use cases level
- This analytical framework has been developed iteratively thanks to the interviewees and the support and expertise of an advisory board of Gaia-X experts

The Actors of Data Sharing Ecosystem



- Participants: Mainly firms that are often both providers and users
 - Involved in the ecosystem to enhance the efficiency and develop their core activities
 - They both share and use data or develop services
- Orchestrator(s): it's an actor that coordinate the participants to develop use cases in the context of data sharing ecosystem, different types of orchestration exist:
 - Technical orchestration: Provides the technological infrastructure necessary for data sharing.
 - Strategic orchestration: Maximizes value creation, ensuring fair distribution of value and associated costs.
- Governance: where stakeholders use a set of rules, to align the interest and mitigate potential conflict

Data-Sharing Ecosystems: A Process of Innovation



- Data sharing corresponds to a long-term process that involves the implementation of a set of technological and contractual agreement.
- Aim to implement use cases, meaning a collaborative value creation between a data user(s) and a provider(s) under the supervision of an orchestrator
- The gains from use cases, process digitization, learning effect, etc., correspond to a general innovation process that, in the long term, enables the overhaul of production processes and the discovery of new, innovative use cases.
- DSE are then characterized by: the need for a long-term strategic vision, with a need for initial investment and uncertainty.
- Data Sharing ≠ transaction that would establish a match between supply and demand around a price.

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Data Sharing Ecosystem as a Club



- Data-sharing ecosystems function as clubs that unite diverse stakeholders and processes, with the goal of developing use cases through bilateral or multilateral data exchanges among participants.
- Data-sharing ecosystems aren't data marketplaces; they are not about matching supply with demand around a price, importance of the onboarding
 - They must incentivize providers to join by absorbing set-up costs and assisting in the establishment of a viable business model for uses cases.
 - They must help users locate the providers that meets their needs while offering essential guarantees (e.g., security, compliance, etc.).
- The added value provided by the data-sharing ecosystem lies in the delivery of services that enable data sharing and the engineering of use cases

Economics of the Use Cases



- A use case is a specific application or solution that leverages data, technology, or processes to address a
 particular problem or need within one or several value chains (mainly Automation and Analytics
 Services).
- Use cases can provide varying levels of benefits, each of which is associated with certain costs:
 - The benefits range from traditional optimization gains through digitalization to innovation-driven gains.
 - Each benefit requires an integration cost, ranging from the digitalization of processes to the complete reorganization of value chains. These integration costs depend on the characteristics of the participants.
- Different conditions are required to realize these benefits:
 - A gradual, dynamic approach tailored to participants, allowing each to progress in ecosystem integration according to their data maturity and prior organization.
 - A strategically coordinated approach by the orchestrator, ensuring that all participants can extract direct value. The value created must be balanced with the costs incurred to incentivize full participation.

Costs

Benefits

Digitalization of data exchange

Cost of modifying data collection process (standardization, dematerialization)

Reduced exchange costs (lower error costs, better information conformity, etc.)

Automation of processes

Cost of modifying data-sharing processes (Work habits, interoperability between services ...)

Efficiency gains from automated exchanges (fewer delays, increased information flow)

П

Optimization / reorganization

IV

Innovation and Development of new products

Cost of modifying the firm's internal organization

Lock-in effect

In-depth management benefit (human resources, new production processes, etc.)

Cost of marketing a new product plus R&D costs

Gains from the development of new products/services

Orchestration of an Ecosystem



- Orchestration is the mission of coordinating the data-sharing ecosystem use case by use case :
- Orchestration is plural, it can be managed by multiple players within the same ecosystem (depending on the use case), who may have different profiles:
 - Within or outside the value chain / in a dominant or non-dominant position / with a public, private, or hybrid business model.
- Orchestration can be defined on a two-dimensional scale, based on:
 - The alignment of stakeholder interests.
 - The centrality of the orchestrator(s) within the value chain.
- The characteristics of orchestration depend on the phase the ecosystem is in (emergence, critical mass, expansion)

Economics of "Trust"



- "Trust" corresponds to the mitigation of risks associated with data sharing.
- It is necessary to mitigate two types of risks inherent to ecosystems.
 - The technological risk refers to the risk that data may be accessed or viewed by unauthorized individuals, as well as the risk of misuse of the data.
 - The risk related to the opportunistic behavior of the orchestrator: the more a participant is integrated into the ecosystem, the more dependent they become (lock-in effect). An orchestrator can exploit this dependence to extract more value.
- These risks depend on the nature and sensitivity of the data provided, or the use case, as well as the level of integration of participants within the ecosystem.
- Participants will only join and create use cases if the benefits outweigh the risks; therefore, creating trust
 by design is a crucial solution, that need to be confirmed dynamically.
 - Technological solution; smart contracts, federated learning etc., can improve "trust".
 - "Trust" by design (Data mesh, neutral intermediary..), yet business model question

Main Take-aways



- Data-sharing ecosystems can be viewed as clubs facilitating the development of provision of automation and analytics services supporting value creation use case by use case.
- Data-sharing ecosystems should be analyzed dynamically since the challenges to be faced differ across
 the phases of the life cycle of innovation.
- The benefits for participants in an ecosystem are sequential, ranging from the most direct to the most indirect, and involve reorganization costs.
- The dynamic and shape of data-sharing ecosystem is depending on the value chain structure:
 - Homogeneity and complementarity among stakeholders' needs.
 - Complexity and atomicity.
- Orchestration of the ecosystem can be technical and/or strategic,
 - ...and must focus on a diversity of challenges,
 - ...and a variety of business models

in function of the phases of development of the uses cases and of the strategic challenges characterizing the value chain

Economic Theater: Economy of Use Cases



- Digital Ter-X
- EuProGigant
- Pontus X
- Dynamo
- FutureCraft Open-Source Habitats
- International theater with initiatives from Slovakia, Portugal, Finland, France, Germany, Belgium, Italia











Economic Theater *Chatham House* Feedback



- A heterogeneous group of participants : difficult to generalize feedback
- The technical focus was striking, yet the focus should now be on value creation
- Developing use cases, which should rely on ongoing projects of general interest
- Need to showcase direct benefit for participants, as part of the overall need for an appropriate onboarding
- Need for technical tools for sure, yet tailored to participants' needs and resources
- Need to check if the ecosystem business model benefits participants
- Ecosystem should be structured around use cases, not the reverse!
- Thank you to all the participants, your efforts, and for your implication



Thank you!

Lucas Eustache, Ph.D student, the Governance and Regulation Chair, Paris Dauphine-PSL

Joelle Toledano, Professor Emeritus associated with the Governance and Regulation Chair, Paris Dauphine-PSL, Member of the French National Digital Council

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Appendix

Stage	Emergence	Critical Mass	Expansion
Definition	Initial operational use case is implemented, establishing the ecosystem's foundation.	Achieve sufficient activity levels to ensure ecosystem viability.	Expand ecosystem boundaries by adding new participants and use cases.
Focus	 Establish governance. Finance infrastructure and first use case. 	Extracting value(e.g., subscriptions, pay-per-use).Keep people engaged	Integrate new members (enrichment).Attract new participants and value chains (enlargement).
Financing	 Orchestrator/Key Participants: Effective, but risky for others. Public Subsidies: Trust-building but requires commitment. Hybrid Model: Balanced approach. 	 Direct Value Capture: Subscription Entry Fees Pay-per-use Indirect Value Capture 	 New Funding/Cross-Subsidies: To reduce adoption costs. Strategic orchestration to align costs and benefits.
Challenges	- Attract members, provide short- term benefits, and establish long- term vision.	- Ensure sufficient activity and sustainable value capture.	- Manage risks (e.g., lock-in, data misuse).- Maintain neutrality to align diverse interests.

Automated Compliance by Design





Jakob Rehof

Professor

TU Dortmund, Fraunhofer-ISST, Lamarr Institute for ML and Al

The ACbD Equation



- Automated compliance is necessary for making regulation compatible with innovation
- Automation has inherent limitations
 - Legal system has essential human components (e.g. judges)
 - Uncomputability
- Automated Compliance by Design =
 Compliance by Design + Design for Automation
- Design (tools, infrastructure, and governance structure) can help automation
 - Frameworks: Gaia-X Trust Framework
 - Trusted components (e.g. smart contracts)
 - Programming and verification technology

The 800 Pound Gorilla in the Room



Al as driver for data sharing in data ecosystems

Interactions between Data Acts and Al Act

Al as driver for compliance automation

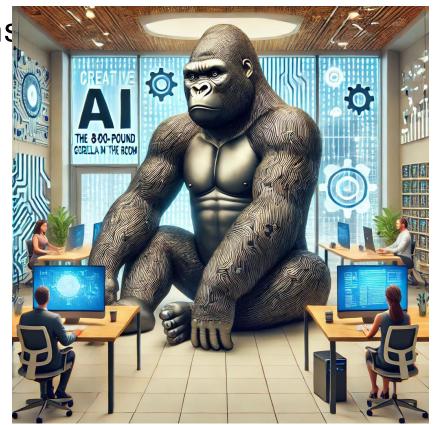


Image by ChatGPT (OpenAI)

Plaidoyer for EU Research



- EU should be leading in R&D on data spaces/ecosystems and trustworthiness
 - We care about it more than anyone else
 - We are good at it
- EU should initiate massive ramp up on R&D enabling innovation for data sovereignty and trustworthy systems
- What could a "CERN for trustworthy AI" look like?



Thank you!

Automated Compliance





Pierre Gronlier

Chief Innovation Offier

Gaia-X

Why "automating" compliance?

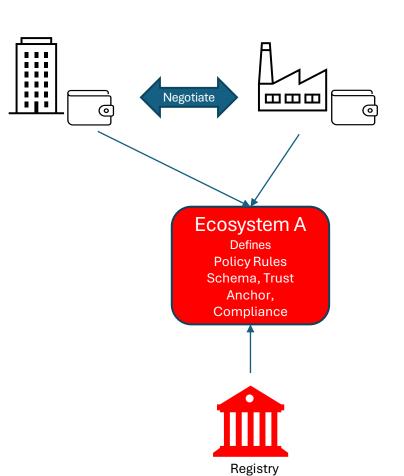


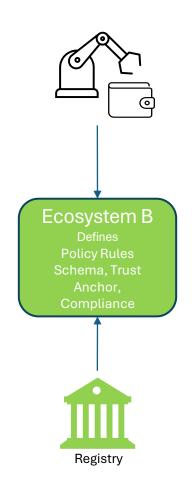
The market size of regulatory compliance is evaluated to be between 15 to 17 billion USD in 2023, with an expected annual growth of between 6% and 9%.

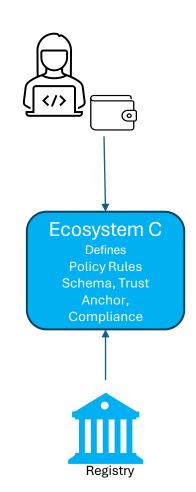
^{1. &}lt;a href="https://www.grandviewresearch.com/horizon/outlook/regulatory-affairs-market-size/global">https://www.grandviewresearch.com/horizon/outlook/regulatory-affairs-market-size/global

^{2.}https://www.marketgrowthreports.com/enquiry/request-sample/22382791

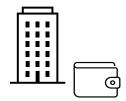
What is a Trust Anchors (TA)?









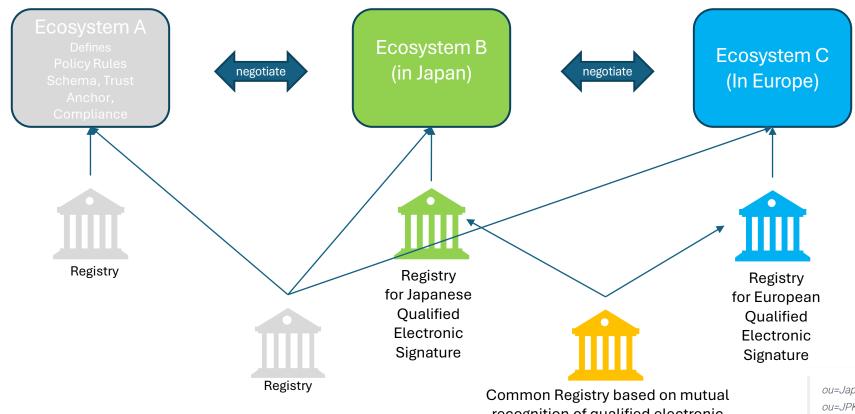


How to build interoperable ecosystems/dataspaces? gaia-x negotiate negotiate Negotiate . . . **Ecosystem A** Ecosystem C Ecosystem B Defines **Defines** Policy Rules Policy Rules **Policy Rules** negotiate negotiate Schema, Trust Schema, Trust Anchor, Compliance Compliance Registry Registry Registry Domain Specific (e.g. compliance to specific regulation or standards) Common (e.g. availability of a digital Registry ID) / future positioning of Gaia-X

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How to build interoperable ecosystems/dataspaces?





recognition of qualified electronic signatures

(https://ec.europa.eu/commission/pressc orner/detail/en/ip_23_5378)

Ex: My Number Card' (マイナンバーカード) Ex: eIDAS ou=Japan Agency for Local Authority Information Systems ou=JPKI for digital signature o=JPKI c=JP

Alternatively:

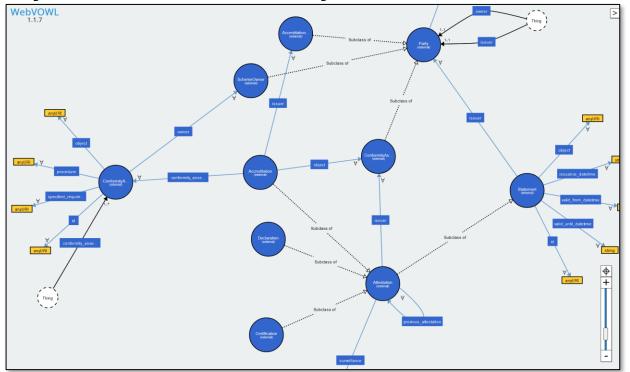
ou=地方公共団体情報システム機構 ou=公的個人認証サービス署名用 o=公的個人認証サービス c=JP

Gaia-X is going for ISO standardisation



Gaia-X as lead contributor on the

Eclipse Conformity Assessment Policy and Credential Profile (Eclipse CAP)



https://eclipse-dataspace-cap.github.io/



Thank you!





10:30 - 11:30

'X-Road 8 "Spaceship" – converting public sector data ecosystem into a data space in a backwards-compatible manner

• Petteri Kivimäki, CTO, Nordic Institute for Interoperability Solutions

The Estonian Public Administration Approach to Data Spaces

 Kuldar Aas, Data Governance Programme Lead, Ministry of Economic Affairs and Communications for Estonia

Maritime Data Space as an enabler for Virtual Port Arrivals

• Eliisa Sarkkinen, Lead Service Designer & Delivery Lead, Siili Solutions

BESPORT ecosystem – Dataspace for decarbonised global ports

Henna Suomi, COO, IOXIO

From Space to Fields – Agri-food data crosses borders

Jaana Sinipuro, CEO, DataSpace Europe Ltd

X-Road 8 "Spaceship" - Converting Public Sector Data Ecosystem into a Data Space in a Backwards-Compatible Manner



Petteri Kivimäki

CTO, Nordic Institute for Interoperability Solutions (NIIS)

DIGITAL SOCIETY SOLUTIONS AND CROSS-BORDER COOPERATION







Non-profit association to ensure the development and strategic management of X-Road® and other cross-border solutions for digital government infrastructure.

Open-source software and ecosystem solution that provides unified and secure data exchange between organisations.

x-road.global

A free and actively maintained open-source component for joining one or more eDelivery policy domains.

edelivery.digital

niis.org

X-ROAD® DATA EXCHANGE LAYER

X-Road® is open-source software and ecosystem solution that provides unified and secure data exchange between organisations.

X-Road® is licensed under the MIT open-source license and is a digital public good verified by the Digital Public Good Alliance.

25 ECOSYSTEMS

DEPLOYED BY GOVERNMENTS OR OTHER ORGANISATIONS

160 COUNTRIES

REPRESENTED IN THE X-ROAD COMMUNITY

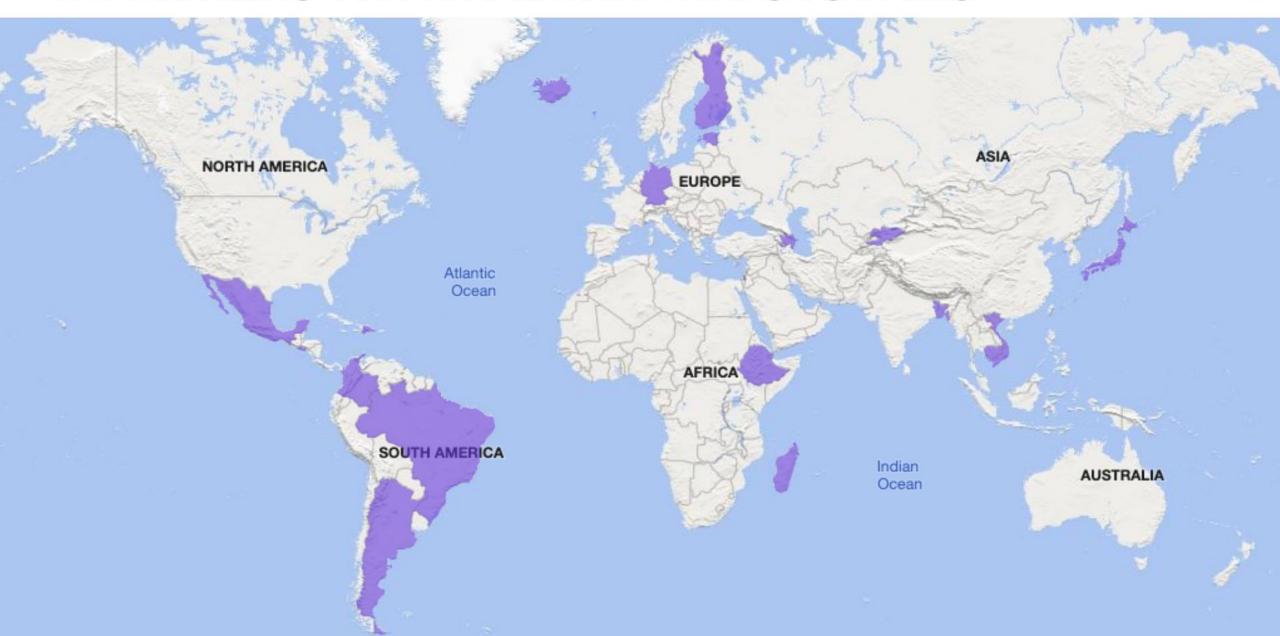
4200MEMBERS

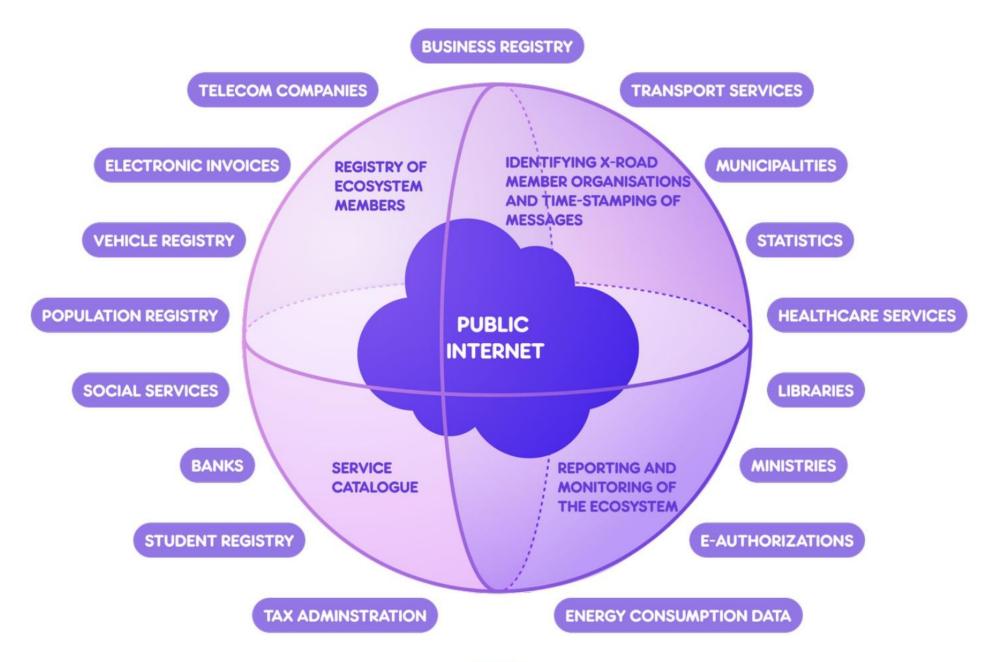
PARTICIPATING IN THE X-ROAD COMMUNITY

542M END USERS

WORLDWIDE

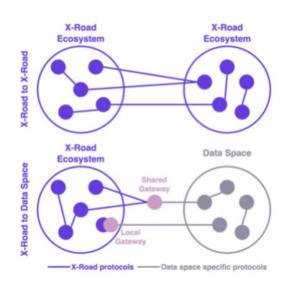
COUNTRIES WITH X-ROAD ECOSYSTEMS





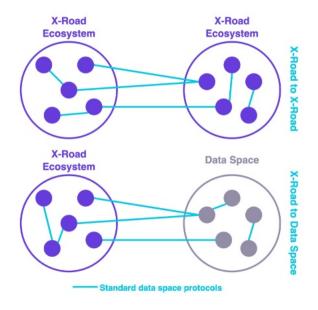
TOWARDS A DATA SPACE SOLUTION

TRANSITION TO A DATA SPACE TECHNOLOGY



Current state

X-Road has its own custom protocol stack and being interoperable with other data exchange ecosystems requires building and maintaining custom ecosystem-specific gateway solutions. NIIS is alone responsible for maintaining and developing X-Road.

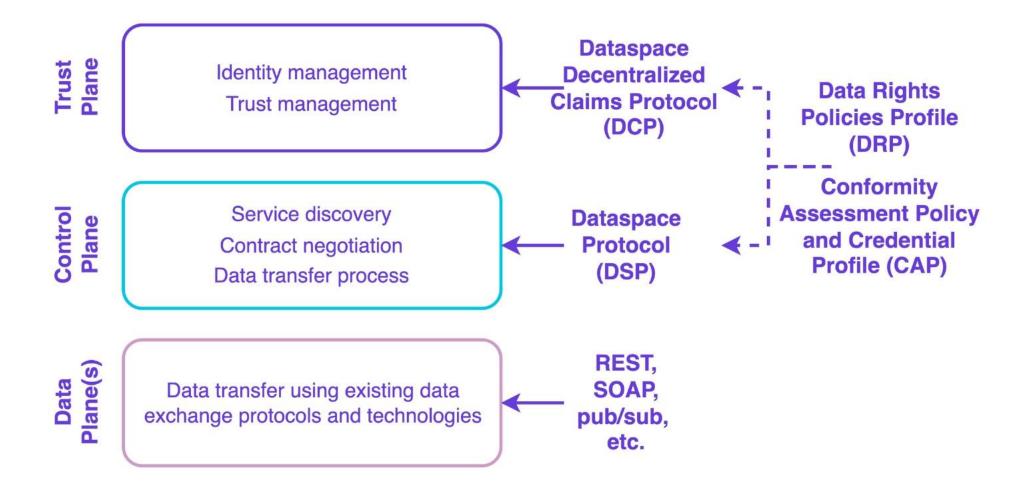


Target state

X-Road uses the standard data space protocols and is interoperable with other data exchange ecosystems following the same standards and specifications. X-Road is based on existing open-source components that are maintained by their international developer communities. NIIS contributes to the maintenance, but the main focus is in developing new business features for the NIIS members.

THE DATA SPACE PROTOCOL STACK

Dataspace Protocol Layers



X-ROAD 8 "SPACESHIP"

The X-Road 8 "Spaceship" nurtures the proven ecosystem model and security while it takes X-Road to the next level by providing a solid data space infrastructure.

NIIS aims to replace X-Road's custom protocol stack with the data space protocol stack and align X-Road's trust framework with the Gaia-X trust framework. X-Road 8 will be interoperable with other data spaces and data exchange ecosystems following the same specifications.

X-Road 8 will provide improved cloud compatibility and make using X-Road easier in the cloud. In practice, X-Road 8 will be designed and built to leverage the capabilities and advantages of cloud computing environments. X-Road 8 will be built to run in cloud infrastructures and take advantage of the scalability, flexibility, and resilience that cloud platforms offer.

Light context will be a new feature that provides a more lightweight way to consume services without a Security Server on the consumer side. Service providers will be able to decide which services can be accessed using the light context and which services require a consumer Security Server.

The aim is to ensure smooth integration with previous X-Road versions for backwards compatibility, and minimize the changes required for information systems when transitioning to X-Road 8.

X-ROAD 8 TIMELINE



x-road.global

X-Road 8 is implemented iteratively using agile software development methods.

All the changes are not included in the first production version, but they will be introduced one by one over time in various X-Road 8 minor versions.



Thank you!

Petteri Kivimäki petteri.kivimaki@niis.org

Nordic-Baltic Perspectives



Estonian Public Administration Approach to Data Spaces

Kuldar Aas

Data Governance Programme Lead

Ministry of Economic Affairs and Communications of Estonia

X-Road

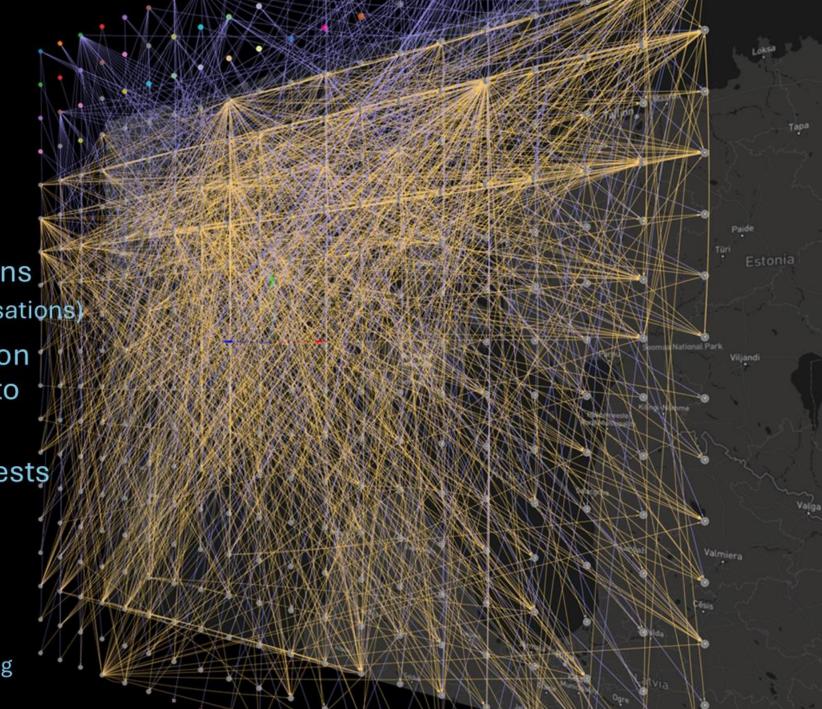
Live since 2001

844 connected organisations

(52 000 indirect user organisations)

 1 814 connected information systems providing access to 3 439 services

270+ million monthly requests

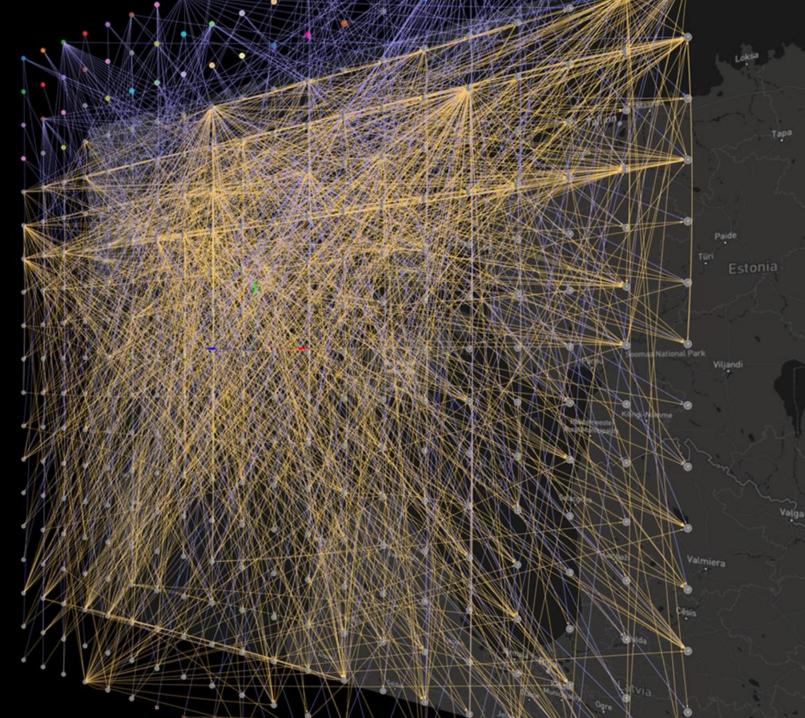


https://www.x-tee.ee/factsheets/EE/#eng

X-Road: vision

X-Road (v8) to serve as the secure data exchange platform:

- between Estonian information systems (as-is)
- to enable novel data sharing patterns and models
- to enable data sharing with international partners, incl data spaces



Lessons learned



- **Backwards compatibility:** Implementing a data exchange platform is easy. Migrating 3439 services (involving 844 individual institutional struggles) is not.
- **Security:** Setting strict (national) security requirements is easy. But what is the cost of enforcing these for everyone involved?
 - Beyond current experiences: can we trust international parties connecting to X-Road services through other networks? Do we have sufficient legal interoperability to support trusted cross-border data exchange?
- Scalability vs functionality: responding to a query is easy. Doing it a million times daily sets some requirements both on your system and the platform..

Gaia-X Hub Estonia?





Thank you!

Kuldar Aas, kuldar.aas@mkm.ee



Nordic-Baltic Perspectives

Q&A





Eliisa Sarkkinen

Delivery lead of the VPA project Business & Service Design Team Lead Siili Solutions



Virtual Port Arrival



Seldom we have moments where gaining money aligns with saving the planet

Kälvinmäki Miikka, Siili's customer, Fintraffic VTS

C6P27
SHAM B-SHOOT
EGYPT 2022

Estimations of monetary savings in total

CO2 emission savings in total

45 м€

> 24 %

In 2022 / in Finland

Virtual Port Arrival solution aims at cutting emissions for vessels arriving at the port when expecting a delay at service.

Case example siili.com/maritime



Maritime Data Space as an enabler for Virtual Port Arrivals



Supports complex multi-stakeholder processes

Adapts to various contract types

Enhances situational awareness by shared estimations

SIILI.



Promoting greener maritime

Virtual Port Arrival Establishes a solid ground for trust

Improves operational efficiency

Fosters transparency across the logistical chain



Thank you!

Eliisa Sarkkinen

Tel: +358 50 324 4983, Email: eliisa.sarkkinen@siili.com

LinkedIn



BESPORT ecosystem Dataspace for decarbonized maritime ports

Henna Suomi

COO, standardization lead IOXIO

Sea Freight Emissions

WAYBILL NR AZ3731076

Freight type
Palletized
GHG Intensity CO2e
102.2 kg g/CO2e/km





BESPORT ecosystem partners sharing data for

optimizing the ship and cargo turnaround times in the port

Improve the ability to share and utilize data from cargo handling machines, and port operations to develop new digital and sustainable services and especially new business value and performance for the whole port ecosystem.

facilitating port electrification and carbon neutral logistics

Support the transition to electric fleets by providing better data for simulations, optimizing charging, and comparing emissions.

enhancing business driven decision making

Use comprehensive data to refine simulations, improve cost-benefit analyses, and drive informed decisions in port and fleet operations.









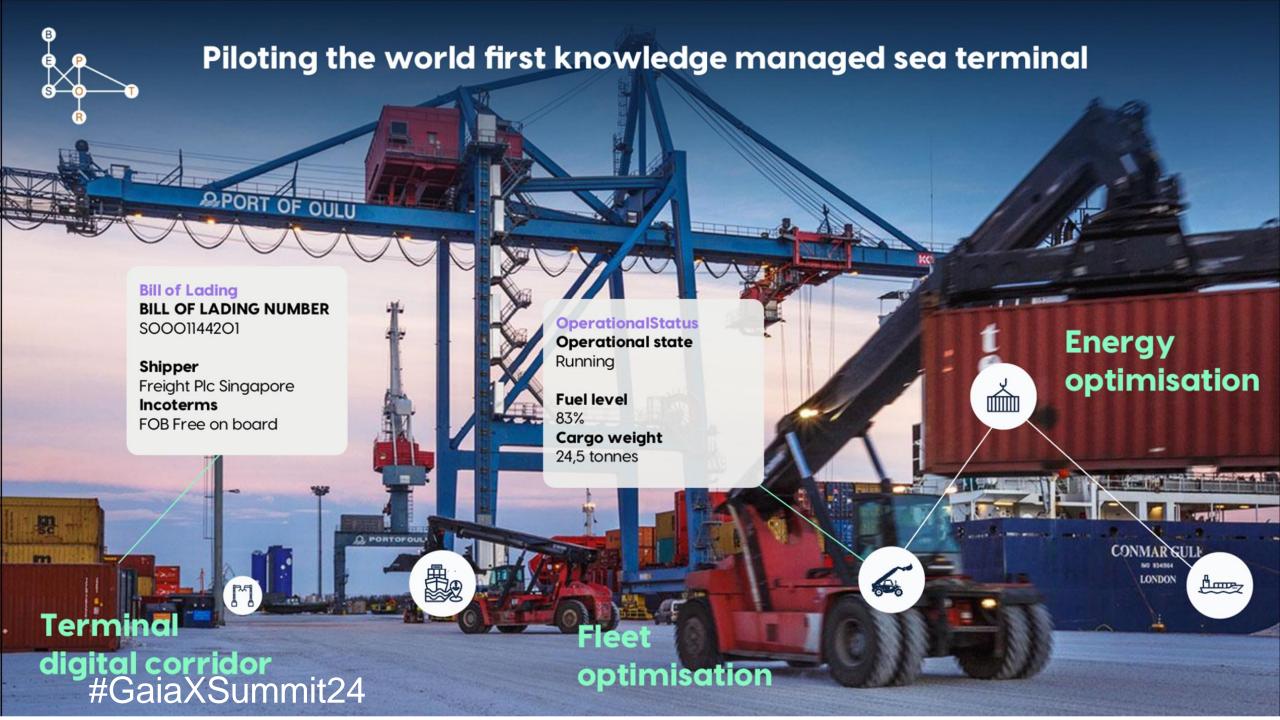




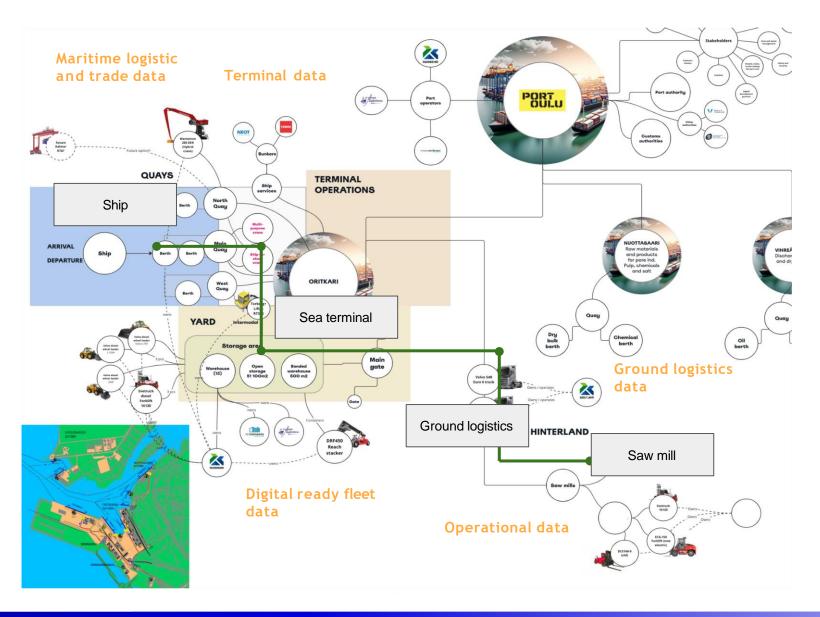


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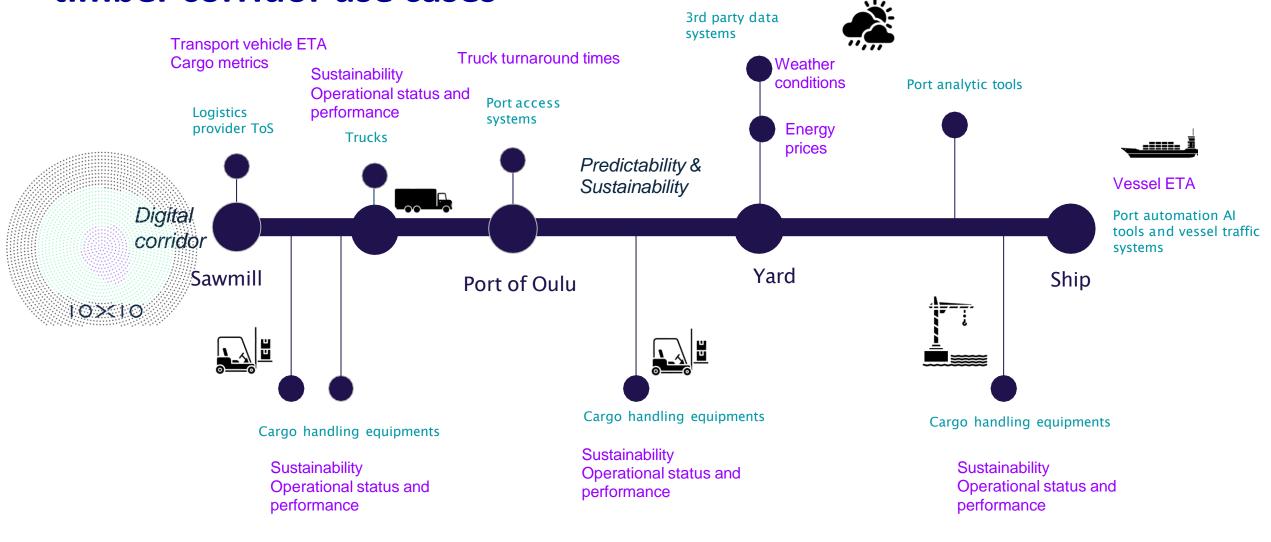
data intermediary service as an enabler



Connecting the first timber corridor in the Port of Oulu



Productized data sharing as the enabler for digitalizing the timber corridor use cases



Link to EU standardization and data requirements set by the regulations





Brussels, 31.7.2024 C(2024) 5423 final

COMMISSION IMPLEMENTING DECISION

of 31,7,2024

on a standardisation request to the European Committee for Standardisation, the European Committee for Electrotechnical Standardisation, and the European Telecommunications Standards Institute as regards digital product passports in support of Union policy on ecodesign requirements for sustainable products and on batteries and

DPP JTC 24, Dataspaces JTC25,

Smart manufacturing... nan texts are authentic)

EU data architectures and standards (CEN/CENELEC)





CIRPASS-2 will support its 13 lighthouse pilots in validating functioning DPP in real settings and at scale in four value chains: textiles, electrical and electronic equipment, construction products and tyres. Each of these pilots will focus on different B2B activities that promote circularity.

Furthermore, CIRPASS-2 will demonstrate cross-pilot interoperability of the DPP Information System and confirm the feasibility of large-scale DPP issuing, management, and usage across extended circular value chains and product life cycles

The 13 pilots are united in demonstrating the DPP's potential as an enabler of the circular data economy transition, an essential element of the EU green transition.

EU Digital product passport implementation (ESPR)



DG ENV DG GROW DG ENER

EU Digital strategy for 2024-2029

Thank you!

Henna Suomi henna.suomi@ioxio.com

Sea Freight Emissions WAYBILL NR

WAYBILL NR AZ3731076

Freight type
Palletized
GHG Intensity CO2e
102.2 kg g/CO2e/km





Nordic-Baltic Perspectives

Q&A

From Space to Fields – Agri-food data crosses borders



Jaana Sinipuro

CEO

DataSpace Europe Ltd

Building business on European values since 2016



EU Digital Strategy

EU Data Strategy **EU Digital** Compass

Data Governance Act (DGA) 2023



Data Act (DA) 2025

ValueNet initiative (2016)

ValueNet first version (2018)

ValueNet presented to European Commission as "a solution that implements the EU data strategy" (2019)

DataSpace Europe founded. ValueNet modernization towards PaaS for Ecosystems' **Governance** (2022)

Tritom® 1.0 launched (2023)

First data intermediation service provider registred in **Europe** (2024)

Signing MoU with **Agdatahub** and ILVO. **Preparing** for CEADS (2024)









Our promise



DataSpace Europe Oy is a pioneer of data spaces in Europe. We develop and offer data intermediation services across Europe for various industries with strong roots in agriculture.

Our solution is the lightweight but reliable data intermediation service Tritom® that complies with EU requirements and is build on proven trust framework.

With Tritom®, your business can drive innovation by securely and cost-effectively sharing data without risking intellectual property. Tritom® enables responsible data collaboration that not only protects your IPRs but also supports reducing your carbon footprint.

Potato-X: Agri-food data crosses borders



Objective: Connect and enhance data sharing platforms for seamless cross-border interoperability in agriculture.

Key Actions:

- Interoperability Achieved: Established technical and semantic standards for data exchange, ensuring different systems can communicate effectively.
- Pilot Yield Data Flow: Demonstrated end-to-end data sharing from an AVR harvester to a Farm Management Information System (FMIS) in Finland, showing how yield data car be seamlessly shared, permissioned, and visualized.
- Automated Data Contracts: Developed a prototype for automated data contracts, streamlining policy enforcement and agreements in data exchanges.
- 4. Data Sharing Rulebook: Created a governance framework for potato data sharing between DjustConnect (BE) and Tritom (FI), adaptable for other networks.

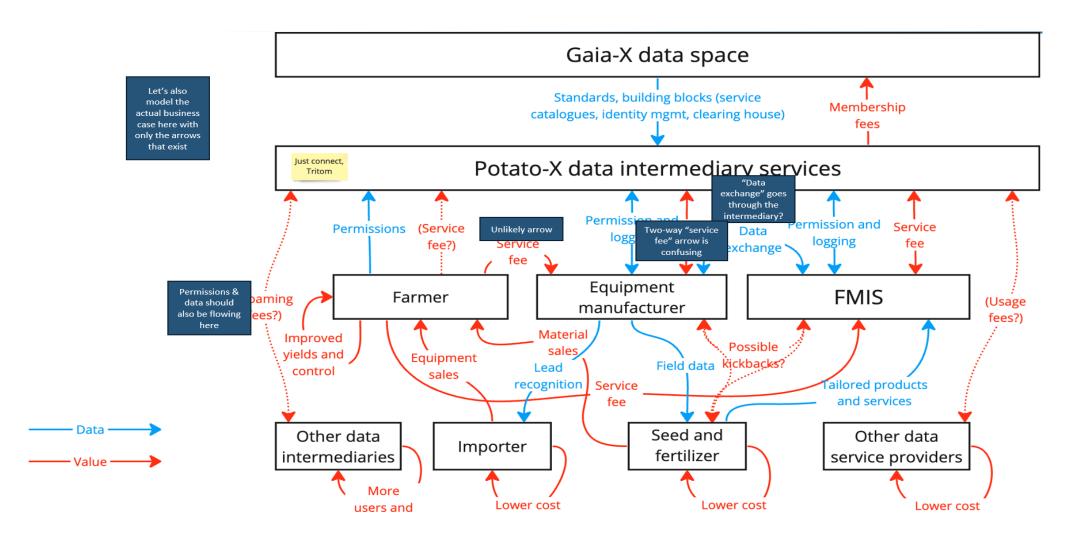
Outcome: Proved the viability of interoperable data sharing in agriculture, enhancing data governance and operational efficiency across platforms.





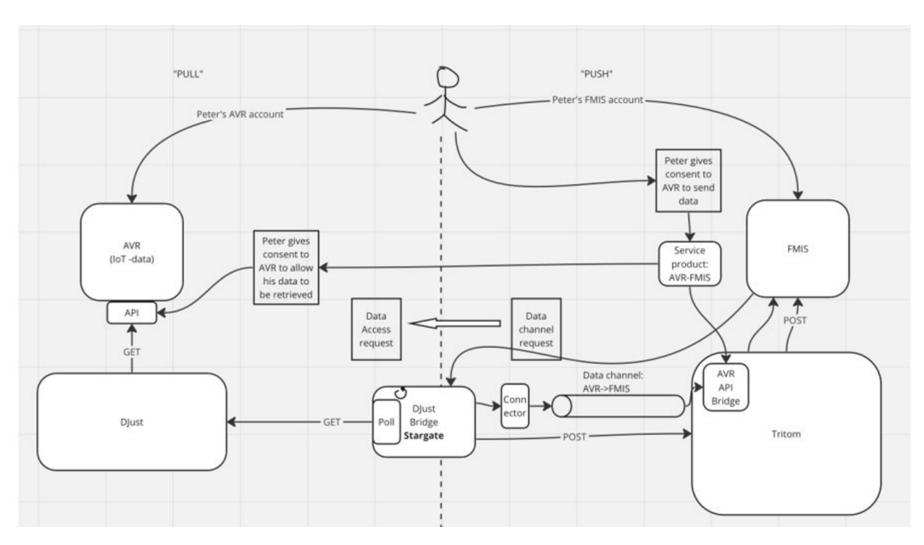
Start from Business modelling...





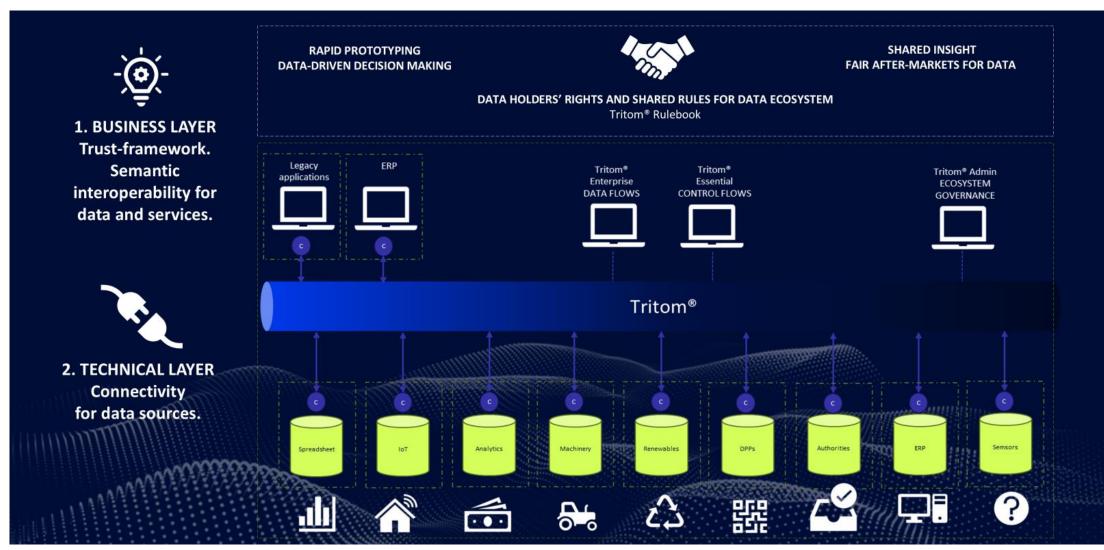
Technology will follow...





Tritom® reduces complexity in Ecosystem-level Data Management





Back to Basics: Can you achieve platform benefits without being a platform?



- Yes! By working with a data intermediation service provider, you can innovate and develop business offerings on shared data in a secure, cost-effective way that protects your intellectual property. This approach lets you leverage capabilities from the entire ecosystem.
- Yes! Focus on cross-border data exchange cases and organize scattered technologies into user-friendly solutions.
- No! It is not about number of data intermediaries, is about quality. Move beyond
 national data intermediaries and stop reverse-engineering data platforms into
 neutral data intermediation services. In Europe, we need to pool resources,
 emphasize incentives and rapid learning loops to carve our path toward a Fair
 Data Economy. Strategy is about making choices!



Thank you!

Jaana Sinipuro, jaana.sinipuro@dataspace.fi @jsinipuro



Nordic-Baltic Perspectives

Q&A



Networking Coffee & Expo Area

11:30 - 12:00

Gaia-X Booth Programme

- 11:30 11:40 Benefits of Gaia-X Membership | Daniela Mockler, Gaia-X, Senior Members' Manager
- 11:40 11:50 Membership and Matchmaking Platform: an update for members | Daniela Mockler, Gaia-X, Senior Members' Manager
- 11:50 12:00 Gaia-X Digital Clearing House how to | Frederik Tengg, Gaia-X,
 Release Manager



12:00 - 12:45

12:00 - 12:30: Panel Discussion

Gaia-X Hub Spain: Francisca Rubio, General Manager, Gaia-X Hub Spain

Gaia-X Hub France: Anne-Sophie Taillandier, Director of TeraLab, Institut Mines Telecom

Gaia-X Hub Austria: Helmut Leopold, Head of Center for Digital Safety & Security, AIT Austrian Institute of

Technology

Gaia-X Hub Poland: Jarosław Kowalski, Polish Chamber of Information Technology and Telecommunication

Gaia-X Hub Norway: Hermund Arntzen Dale, General Manager, Gaia-X Hub Norway, Smart Innovation Norway

12.30 – 12:45: Hub sounding board Leads Insights

Peter Verkoulen, Dutch Gaia-X Hub Programme Director – TNO, Lead of Gaia-X Hubs sounding board **Jan Fischer,** Gaia-X Hub Germany coordinator – acatech, co-lead of Gaia-X Hubs sounding board

Moderator: Alessandra Perna, Gaia-X Senior Market Adoption Manager



Panel discussion

Francisca Rubio

General Manager, Gaia-X Hub Spain



Panel discussion

Anne-Sophie Taillandier

Director of TeraLab, Institut Mines Telecom



Panel discussion

Helmut Leopold

Head of Center for Digital Safety & Security,
AIT Austrian Institute of Technology



Panel discussion

Jarosław Kowalski

Polish Chamber of Information Technology and Telecommunication



Panel discussion

Hermund Arntzen Dale

General Manager, Gaia-X Hub Norway, Smart Innovation Norway



Hub sounding board Leads Insights

Peter Verkoulen

Dutch Gaia-X Hub Programme Director – TNO, Lead of Gaia-X Hubs sounding board



Hub sounding board Leads Insights

Jan Fischer

Gaia-X Hub Germany coordinator – acatech, co-lead of Gaia-X Hubs sounding board



Welcome to our newest Gaia-X Hubs!

Gaia-X Hub Norway Gaia-X Hub Denmark Gaia-X Hub Switzerland

Globalisation



12:45 - 13:00

Ulrich Ahle, Chief Executive Officer, Gaia-X

Noboru Koshizuka, Professor, Interfaculty Initiative in Information Studies, The University of Tokyo

Globalisation



Ulrich Ahle

Chief Executive Officer, Gaia-X

Globalisation



Noboru Koshizuka

Professor, Interfaculty Initiative in Information Studies, The University of Tokyo



"Toward Global Data Spaces"

越塚 登/KOSHIZUKA, Noboru

The University of Tokyo Data Society Alliance

This presentation is based on results obtained from the project,

"Research and Development Project of the Enhanced infrastructures for Post 5G Information and Communication Systems" (JPNP 20017), commissioned by the New Energy and Industrial Technology Development Organization (NEDO).

DATA-EX/DSA (Data Society Alliance) https://data-society-alliance.org/





DATA-EX

DATA-EX is the collective name for the efforts of the Data Society Alliance (DSA) to realize cross-domain data exchange.

The DATA-EX cross-domain data exchange platform (hereinafter referred to as "DATA-EX"), which is at the core of these efforts, is a technical and social platform that enables the discovery and use of data across fields.

Vision

"World of Data-Driven Innovation"

Mission

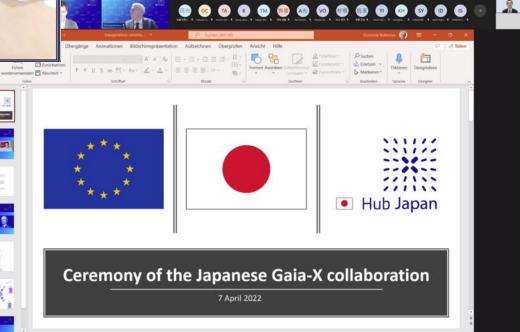
- 1. Establish Data Driven Society with democracy of innovation
- 2. Develop data-distribution infrastructure for the world
- 3. Accelerate social implementation with Technology and Service development
- 4. Collaboration and Contribution to the World

DSA is GAIA-X Japan Hub (April., 2022)





Cooperate Agreement between GAIA-X and DSA (April, 2022)



#GaiaXSummit24

The University of Tokyo/IDSA Japan Hub





Organization

Relevant terms and conditions were approved by the steering committee of Research Center for Ubiquitous Information Society Infrastructure which is an organization of Interfaculty Initiative in Information Studies, the University of Tokyo.

Member of the committees

► IDSA Japan Hub



Chair Noboru Koshizuka The University of Tokyo



Vice-Chair Hiroshi Mano Data Society Alliance



Vice-Chair Akira Sakaino NTT Communications



Member Kotaro Asai Mitsubishi Electric



Member Masaru Dobashi NTT DATA



Member Kenji Hiramoto IPA



Member Kazuo Nakashima RRI



Member Kazuma Hatano The University of Tokyo



Member Hirotsugu Seike The University of Tokyo

► ITDT (International Testbed for Dataspaces Technology)



Project Leader Noboru Koshizuka The University of Tokyo



Sub Project Leader Masaru Dobashi NTT DATA

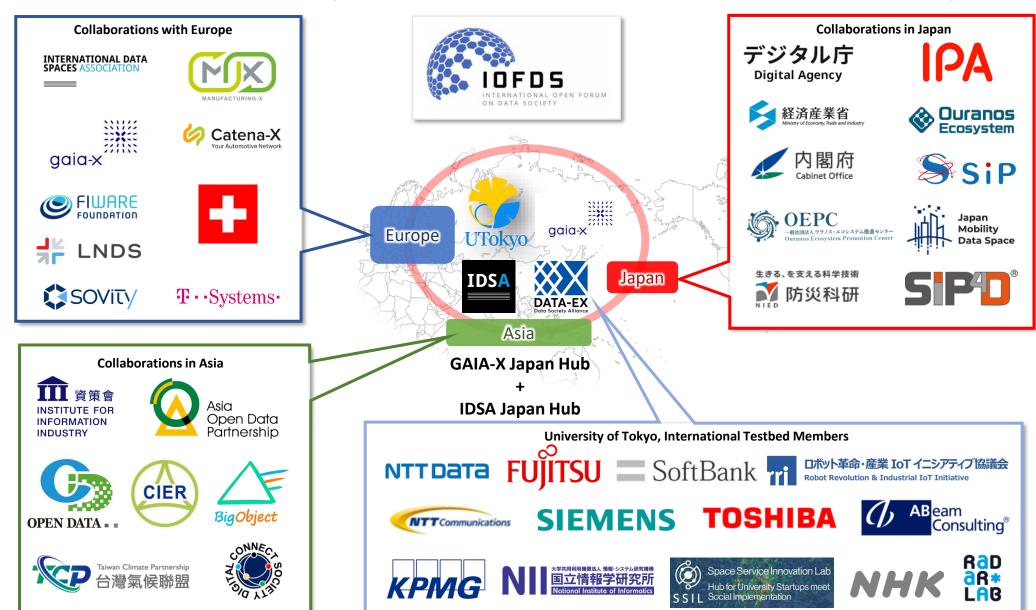


Sub Project Leader Kazuma Hatano The University of Tokyo

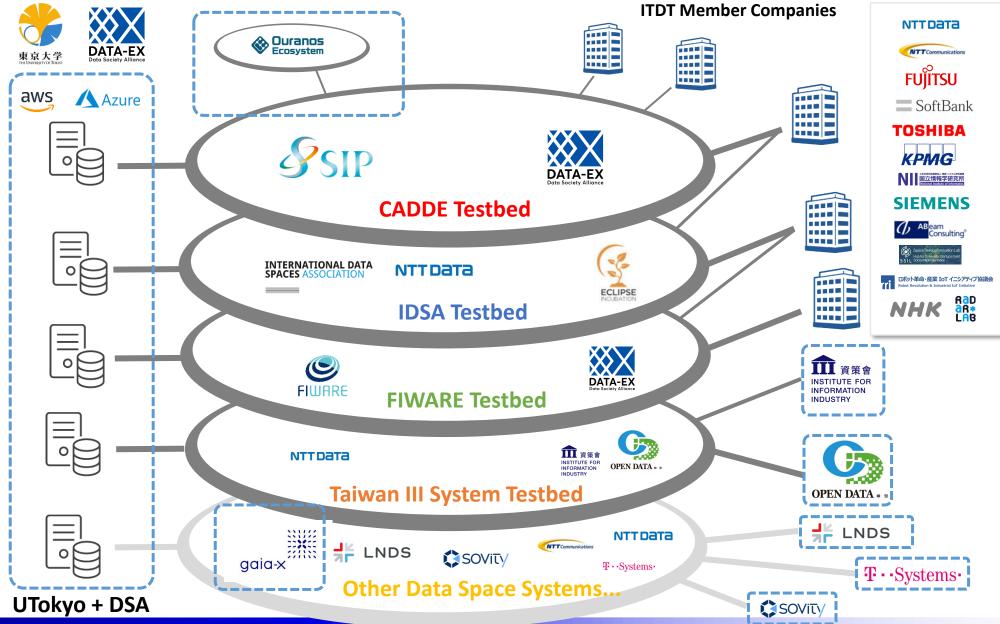


Sub Project Leader Hirotsugu Seike The University of Tokyo

New International Collaboration by IDSA Japan Hub, GAIA-X Japan Hub, DSA and UTokyo



International Testbed of Dataspaces Technology, The University of Tokyo



Trial for Global Trust Framework with GAIA-X, ...



Establishing global trust framework initiative for data spaces



- Establish technical federation of trusts across countries (e.g. trust anchors and trust services)
- Foster interoperability among dataspace initiatives worldwide
- Ensure secure and efficient data collaboration
- Prepare to establish a governance body



Technical pilot overview

Phase 1 Prototype the trust anchor on a testbed in Japan for broad participation.

Phase 2 Integrate Tractus-X sandbox to test interconnectivity with the prototype of the trust anchor and identify technical gaps

Phase 3 Deploy cross-regional use cases with partners to assess interoperability

Phase 4 Develop tools for technical mutual recognition and international interoperability of trust services and anchors



Use existing components and knowledge, examples are:

Gaia-X solutions

Leverage Digital.ID and Gaia-X Digital Clearing House by T-Systems and NTT

Federation expertise

Use Fujitsu & NTT's trust service and trust anchor federation knowledge and technology

Catena-X / Tractus-X Sandbox Use T-Systems' IDSA & Gaia-X compliant testbed at University of Tokyo











Collaboration among T-System, NTT Com, NTT Data, GAIA-X, and UTokyo (Sep.~Oct., 2024)





2024年9月25日

T-Systems NTTコミュニケーションズ株式会社

T-SystemsとNTT Com、日本でデータスペースのテスト 環境を提供開始

主要なグローバル通信サービス事業者である、ドイツテレコムのIT子会社T-SystemsとNTTコミュニケーション ズ株式会社(以下NTT Com)の2社が協業して、日本でのデータスペース *1 のテスト環境(サンドボックス *2)の提供 た開始します。

この協業で提供されるデータスペースのサンドボックスは、非営利団体であるEclipse財団^{X3}のプロジェクトが開発したオープンソースソフトウェア、Tractus-XとEclipse Dataspace Componentsをペースとしています。これらのソフトウェアは、自動車産業のデータスペースCatena- χ^{X4} など、主要なデータエコシステム^{X5}で実際に使用されています。実際のデータスペースで使われているソフトウェアを用いたサンドボックスの提供は、世界初の取り組みとなります。

テスト環境の提供を通して、日本における新たなデータエコシステムの開発を加速させ、欧州のデータスペース と日本のデータスペース間の相互運用の実現をめざします。

1.取り組みの背景

T-SystemsとNTT Comは、Gaia-X^{×6}、International Data Spaces Association: IDSA^{×7}、Catena-X Association など、欧州の数々のデータスペース関連のコミュニディーに積極的に貢献してきました。T-Systemsの親会社であるドイツテレーユはGaia-Xの創設メンバーであり、そのIT子会社であるT-SystemsはGaia-Xデジタルクリアリングハウス^{×8}の第一号たる運用事業者であり、Tractus-Xソフトウェアの主要な開発ペンダーでもあります。NTT Com もまた、信頼性の高いデータスペースの国際標準化についての議論を開始し、日本や欧州の取り組みと協力してデータスペース間の相互運用性の考え方を示すことにより、データスペース関連のコミュニティーに貢献しています。

今回T-SystemsとNTT Comの2社は、国を代表する通信サービス事業者としての専門技術と社会的な信用を活か し、信頼性の高いインフラストラクチャを提供し、データのプライパシーとセキュリティを最大限に保証する中立 的なプロパイダーとして、グローパルサプライチェーンなど組織や国境を越えたデータ交換を促進し、データ主権 **3の保護を担保します。

2.取り組みの内容

T-Systemsはこのサンドボックス環境として「Living Lab」というプロダクト、すなわち「データスペース・アズ・ア・サービス *10 」の開発環境を提供します。パートナーであるNTT Comはこの開発環境を日本の大学・企業などのお客さまへ提供します。サンドボックス環境は、ドイツのクラウドインフラ上で運用され、NTT Comが運用する日本のクラウドインフラ上の国際的なテストペッドを通じて、日本のユーザーやエンジニアがアクセスできる形で運用されます。この構成により、データスペース環境でのアプリケーションや接続サービス(イネーブルメントサービス) *11 0開発と利用が容易になり、日本のさまざまな業界での企業開データチェーンの技術実証実験(PoC)が加速します。「SystemsのLiving Labサンドボックスは、NTT Com経由で、2024年第3四半期以降に105A Japan Hub *12 、東京大学、慶應義塾大学、富士通、オムロンなどの日本の大学・企業などに提供可能となり、それぞれのテストペッド、コネクター、アプリケーションサービスとの相互運用性をテストし、日本のデータスペースの開発者とユーザーの数を増やします。

T-SystemsとNTT Comによるデータスペースの

October 8, 2024

NTT DATA and Gaia-X Expand Global Reach with Deployment of Gaia-X Digital Clearing House in Japan



TOKYO; BRUSSELS – 8 October 2024 – NTT DATA, a global digital business and IT services leader, is pleased to announce the successful deployment of a testbed for a Gaia–X Digital Clearing House in Japan. This milestone marks the first implementation of a Digital Clearing House outside of Europe, highlighting the association's commitment to its globalisation strategy and fostering international collaborations.

NTT DATA and Gaia-X recently convened in Brussels to work on a Digital Clearing House. The deployment in Japan is part of a data space test bed project led by the University of Tokyo, with active participation from industry giants including Toshiba, SoftBank Corp., NTT DATA, and NTT Communications. The purpose of this deployment is to create a development and testing environment that will facilitate the operation of interoperable Data Spaces within Japan's digital ecosystem.

A <u>Gaia-X Digital Clearing House (GXDCH)</u> is a network of execution nodes that ensures decentralized compliance across the <u>Gaia-X</u> ecosystem. These nodes safeguard the distributed and transparent nature of <u>Gaia-X</u>'s compliance framework, ensuring that it is not centrally operated by the association but open for use by anyone. This approach underpins <u>Gaia-X</u>'s mission to create a secure, federated digital ecosystem that is open, transparent, and beneficial to all participants.,

"We are thrilled to see the Gaia-X Digital Clearing House technology being adopted beyond Europe," said Ulrich Ahle, CEO of Gaia-X. "This collaboration with NTT DATA is a significant step forward in our mission to support the creation of a truly global, federated digital infrastructure that respects data sovereignty and promotes innovation."

GAIA-XとNTT DataによるGXDCHの実験に 東大テストベッドが協力 (Oct. 8, 2024)

Collaboration between Ouranos Ecosystem and DATA-EX (Oct., 11, 2024)

ウラノス・エコシステムとDSA、データ利活 用基盤の推進に向けて連携・協力を開始

2024.10.11 プレスリリース #協定 #データスペース #DATA-EX





2024年10月11日

一般社団法人ウラノス・エコシステム推進センター 一般社団法人データ社会推進協議会

経済産業省が提唱するウラノス・エコシステムを推進する民間団体である一般社団法人ウラノス・エコシ ステム推進センター(東京都新宿区、代表理事:浦川伸一、以下「OEPC」という。)とDATA-EX[1]による分 野・業界を超えたデータ活用を推進する一般社団法人データ社会推進協議会(東京都港区、代表理事:奥 井規晶、以下「DSA」という。)は、双方が協力することによって、両組織の所掌する領域において得意 とする能力及び人材等を活かし、データ利活用基盤整備及び活用を円滑かつ"より効果的に"共に推進する ことを目的として、2024年10月9日付で協定を締結いたしました。

本協定により、OEPCとDSAは、以下の事項を連携・協力して行います。

1.国内外において構築される各種データ利活用基盤の実装及び活用(データスペース[2]を含む)に係る取組 みを支援する事項

2.上記1.に係る国際標準化に伴う活動に関する事項

3.上記1.に係る推進・啓蒙に伴う活動に関する事項

今回の協定により、国内及びグローバルなデータ利活用基盤の関連団体の連携網が完成することとなり、 データ社会の推進に向けて各団体の活動が一段レベルアップいたします。

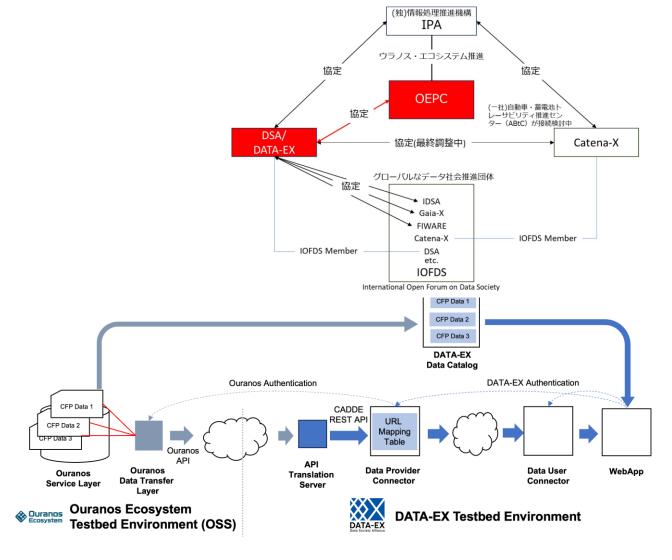
例えば、DSAは既にウラノスの公開APIを活用した、ウラノスとDATA-EXのデータスペース 接続実証に成 功しており、これにより、分野間データ連携基盤としてのDATA-EXを介して、Catena-Xをはじめとした 様々なデータ連携基盤との接続への道が開けました。

一般社団法人ウラノス・エコシステム推進センターについて

一般社団法人ウラノス・エコシステム推進センター(OEPC)は、経済産業省・デジタル庁が提唱するウラノ ス・エコシステムのイニシアティブに賛同し、主に産業界を中心に立ち上げた推進団体です。政府や経団 連と連携し、運用及び管理を行う者が異なる複数の情報処理システムの連携の仕組みに関して、アーキテ クチャの設計、研究開発・実証、社会実装・普及の取組を共同で進め、産業界のデジタル産業基盤のエコ 化を強力に進めていくことを目指しています。「OEPC」について詳細は当団体ホームページをご覧くだ さい。

一般社団法人データ社会推進協議会について

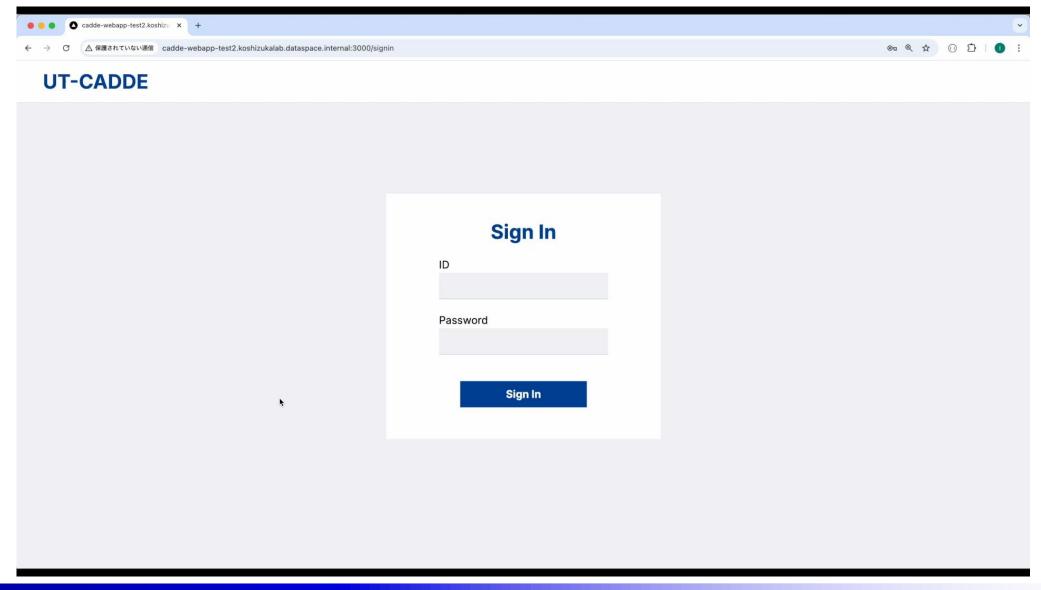
一般社団法人データ社会推進協議会(DSA)は、産官学が連携し、日本だけでなく世界とも協力しなが ら、分野を超えた公平で自由なデータの流通と活用ができる社会(データ社会)を通じて、豊かな社会の 実現に寄与することを目的として、連邦型の分野横断的なデータ連携を目指す「DATA-EX」を推進してい ます。また、国際的な取組みとしてDFFT(Data Free Flow with Trust:信頼性のある自由なデータ流通) の実現に向けた国際協調の体制であるInternational Open Forum on Data Society (IOFDS)[3]に参加して おります。「DATA-EX」について詳細は当団体ホームページをご覧ください。



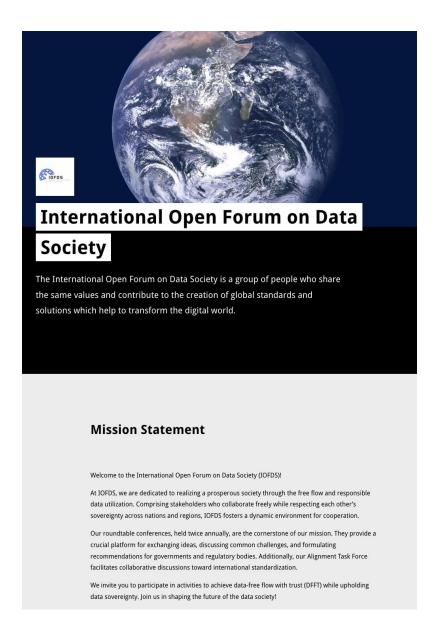


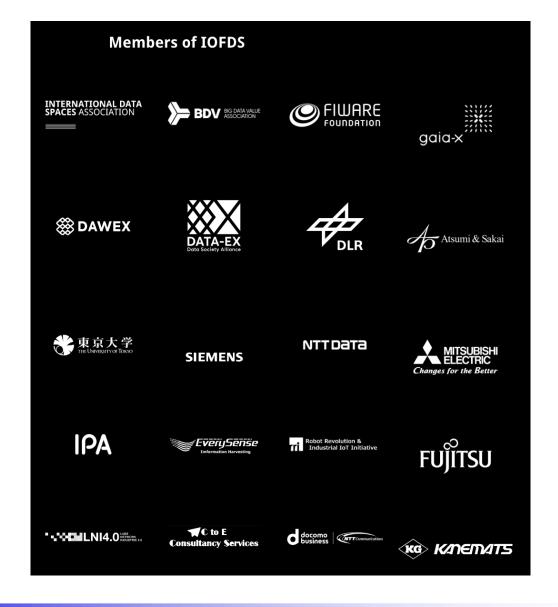
VPN Environment in UTokyo International Testbed for Datespace Technology

#GaiaXSummit24



International Open Forum on Data Society https://iofds.org/





#GaiaXSummit24 97

International Open Forum on Data Society

https://iofds.org/



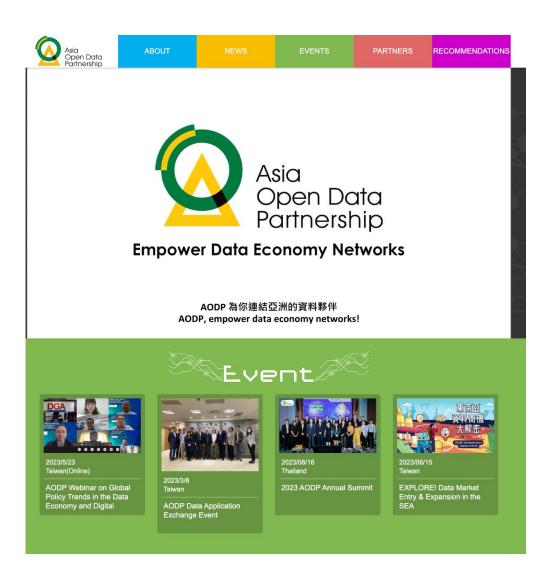






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Asia Open Data Partnership (AODP)





Considering that the pioneer of the promotion and development of open data is mostly from the Western countries, which is very different from the Asian in all aspects including politics, economics, culture, technique and so on. Asia Open Data Partnership (AODP) aims to facilitate the communication and cooperation on open data and data application between Asian countries, and strives to tailor a specific strategy based on our own need and situation. We hope that through this platform, we will be able to work closely with our partners in Asia and drive regional data-related economic prosperity.

Double-track development strategy





There are 2 tracks of the AODP operation:

- The first track is "international exchange," including events like hackathon, webinar, workshop or any creative event mainly for promoting understanding on policies or substantial actions across different partners.
- The second track is "business cooperation," including online business matching, trade mission or technical cooperation for creating substantial business opportunities among partners.

JOIN US → https://forms.gle/j6QVLwcQGHKzGcQZ8

Asia Open Data Portal https://dataportal.asia/home

Welcome to Dataportal.asia



- ♦73,148 dataset
- Government's open data from 12 Asian countries including Taiwan, Japan, Korea, India, Indonesia Malaysia etc.
- ◆Data for 12 issue areas including public information, agriculture, healthcare etc.

Asia Open Data Partnership Brief

Date of Founding: 2015/10/14

Founding Partners:

- Open Data Alliance (ODA), Taiwan.
- · Change Fusion, Thailand
- · Digital Government Development Agency (DGA), Thailand
- · National Information Society Agency (NIA), Korea.
- · National Strategy Office of ICT, Cabinet Secretariat, Japan

Socratoria

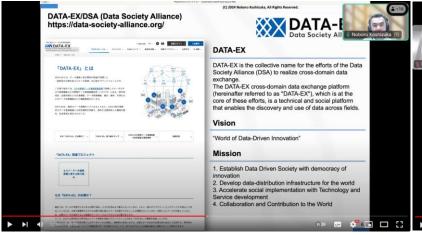
Taipei Computer Association (TCA), Taiwan

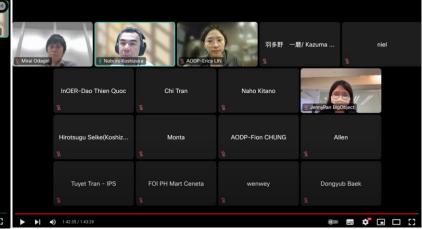
#GaiaXSummit24

AODP Data Spaces WG

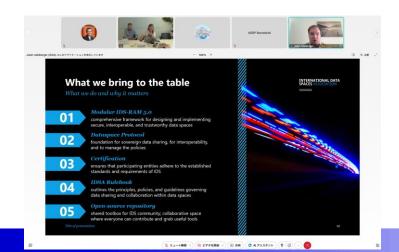
In "Data Space WG" we will study and share information and knowledge about data spaces, and discuss the role of open data in data spaces. Also, we would like to discuss how Asia should deal with data spaces.

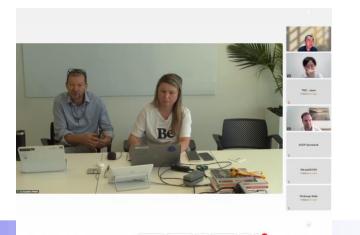












Al Taiwan 2024 https://money.udn.com/money/story/5635/8127379

☑ 首頁 經濟VIP 經濟彭博 即時 要聞 產業 證券 行情 國際 兩岸 金融 期貨 理財 房市 專欄 品味

經濟日報 > 商情 > 熱門亮點

解鎖資料流通33兆商機 國際組織AODP 來台分享國際趨勢



資料產業交流資料流通新商機,業者KKday(左起)、核桃運算、興創知能、Gogolook、 Vpon合影。 數位發展部/提供

本文共587字



2024/07/30 09:15:25 經濟日報 藍怡珊 ■ ■ ■ □

為促進亞洲的資料應用趨勢與商機交流,國際組織AODP(亞洲開放資料合作 夥伴) 7月27日攜手數位發展部數位產業署、Open Data聯盟以及日本DSA (數據社會推進協議會),共同舉辦「解鎖!亞洲資料流通新商機」國際論

具有海外客戶實績的企業如核桃運算、KKday、Gogolook、興創知能及威朋 大數據皆出席分享資料流通的挑戰與商機,領域涵蓋旅遊、交通、防災、防 詐與行銷。



主席越塚登教授分享國際資料空間趨勢。 數位發展部/提供

仍被封閉在「資料孤島」。越塚登呼籲應透過可靠的數位技術及管理機制,實 現資料共享、以資料驅動經濟的願景。他也邀請現場觀眾參加10月將在日本 舉辦的AODP年會。



數位發展部數位產業署林俊秀副署長蒞臨致詞。 數位發展部/提供

數位發展部數位產業署副署長林俊秀致詞時表示,資料經濟已成為過去10年 經濟發展的核心驅動力。臺灣政府積極推動資料開放,帶動資料經濟的蓬勃 發展,並成功建立資料經濟產業鏈,更長期參與國際組織AODP以利產業連結

Big Data Expo 2024 (Aug. 27~30, 中国貴陽市)



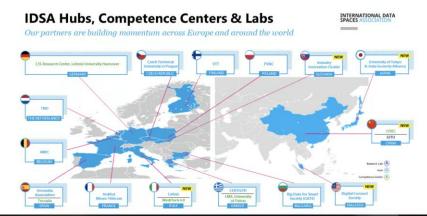
Collaboration with IDSA Malaysia Hub (Jan. 29, 2024)







Unlocking the Future: International Data Spaces Association (IDSA) Hub Malaysia Inauguration







Japan-Luxembourg Collaboration (June 11, 12, 13, 2024)







Collaboration on Data Space between Japan and Switzerland



Workshops

Purpose: In cooperation with the Koshizuka Lab. of U Tokyo and the Swiss Federal Government (スイス 連邦政府) (Directorate of International Law, Swiss Embassy to Japan and Federal Chancellery), this workshop will be held to discuss the possibility of collaboration on Data Space area between Japan and Switzerland, such as joint research and demonstrations. The workshops will introduce the data space initiatives in Japan and Switzerland and discuss possibility of collaboration between the two countries.

► Plan

- Session 1: Data Space Initiatives in Japan (August 23)
- Session 2: Data Space Initiatives in Switzerland (September)
- Session 3: Proposals and discussion on areas of collaboration (September / October)

■ 1st Session of the Workshop Series

- ▶ Date and Time Friday August 23, 18:00-20:00 JST / 11:00-13:00 CEST
- ▶ Venue Online (zoom)
- Program
 - Data Space Initiatives in Japan (Prof. Noboru Koshizuka, The University of Tokyo)
 - International Testbed of Dataspaces Technology (Prof. Hirotsugu Seike, The University of Tokyo)



Data Spaces Week 2024 (Oct. 7~11, 2024, UTokyo, Japan)



Asia Open Data Partnership (AODP) Summit 2024, Dialogue Meeting October 8, 2024, at The University of Tokyo, Japan





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Joint Symposium of AODP Summit 2024 and DSDD Tokyo 2024





4th International Open Forum of Data Society (IOFDS)





4th International Open Forum of Data Society (IOFDS)





International Collaboration of DSA (October, 2024)













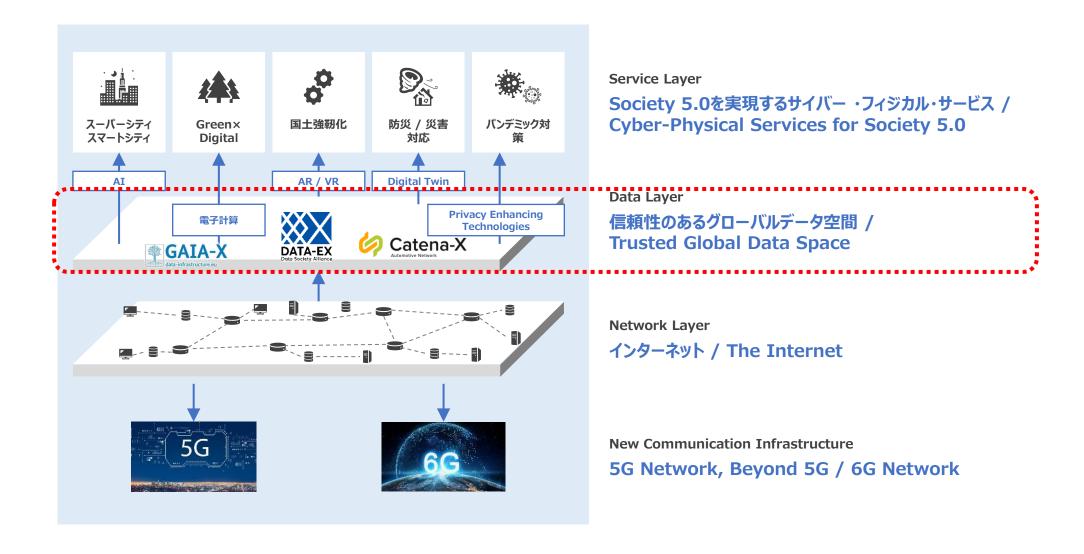
MoU with Institution of Information Industry (III), Taiwan



財團法人資訊工業策進會 STITUTE FOR INFORMATION INDUSTRY

111 #GaiaXSunııııı24

Toward the global data spaces as the future global digital infrastructure

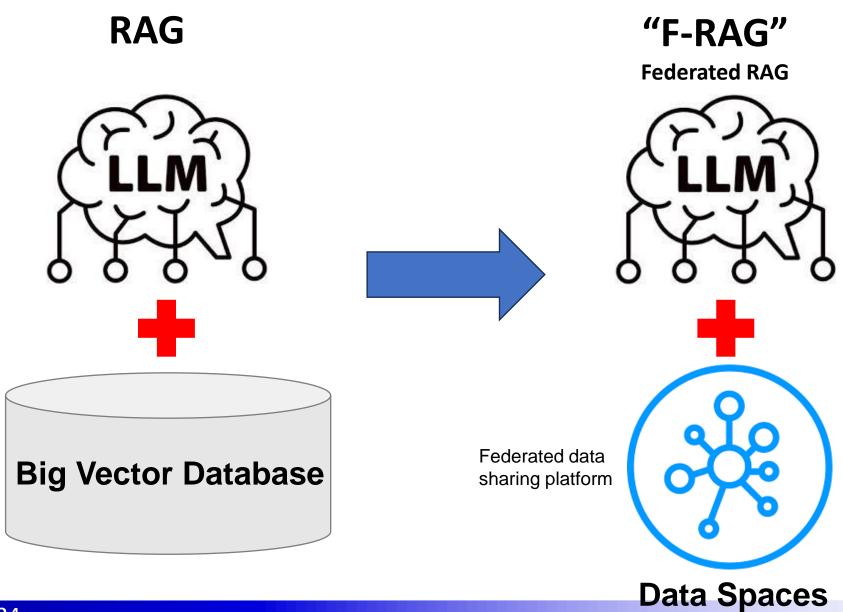




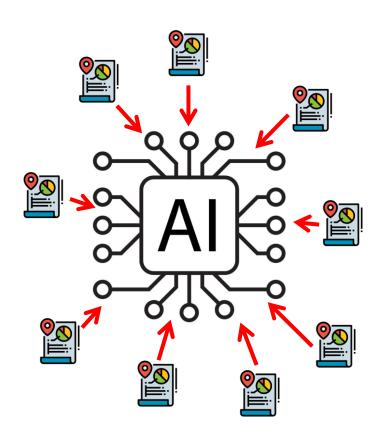


Data Spaces + AI = AI Spaces

"Federated RAG" [Koshizuka-lab, 2024]

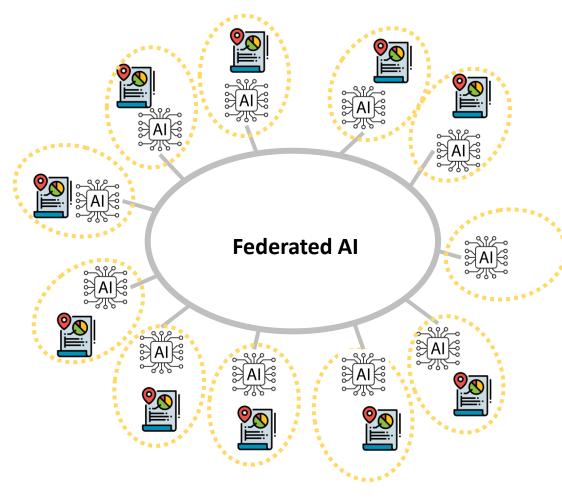


From Data Spaces into "Al Spaces" [Koshizuka-lab, 2024]



Data Monopolization Data Hegemony

Huge General AI



Data Sovereignty

Al Space





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Networking Lunch & Expo Area

13:00 - 14:00

Gaia-X Booth Programme

- 13:00 13:10 Sprints the agile member contribution | Przemek Halub, Gaia-X, Program Manager
- 13:10 13:20 How to become a Gaia-X Evangelist | Julien Vanwambeke, Gaia-X, Functional Architect

Maximising Synergies: DSBA, DSSC and Simpl Joined Framework for Data Spaces



14:00 - 15:00

Ulrich Ahle, Chief Executive Officer, Gaia-X

Ana García Robles, Secretary General, BDVA

Chandra Challagonda, Chief Executive Officer, FIWARE Foundation

Lars Nagel, Chief Executive Officer, IDSA

Manuel Mateo Goyet, Acting Head of Unit – Cloud and Software, European Commission

Moderator: Sille Sepp, Head of Urban Data Ecosystems, FinEst Centre for Smart Cities



Simpl Annual Community Event

30 January 2025 Autoworld, Brussels





Driving Transformation: The European Data Strategy and Gaia-X



15:00 - 15:15

Tanja Alemany Sánchez de León, Deputy Director-General for Innovation Policy and Digital Economy, Federal Ministry for Economic Affairs and Climate Action, Germany





15:15 - 15:35

Pearse O'Donohue, Director, Future Networks Directorate, DG CNECT, European Commission



gaia-x

15:35 - 16:00

Ulrich Ahle, Chief Executive Officer, Gaia-X



See you in Porto next year for the #GaiaXSummit25!

