Accelerating safe and secure data exchange: Fujitsu Data e-TRUST

eu-LISA Industry Roundtable

12 June 2024

Background

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EU-Japan Cooperation

- EU and Japan signed an ambitious economic partnership agreement (EPA) in 2019
- On the same year, the EU and Japan agreed on a mutual adequacy decision for a **secured personal data exchange**
- In 2021 the EU and Japan signed the Memorandum of Cooperation on Digital Identity and Trust Services supporting the **Data Free Flow with Trust: DFFT**
- The EU and Japan added to the EPA a specific set of rules for **Data Flow for non-personal Data** considered a “milestone in our joint efforts to advance the digitalization of the two societies and economies.

Positive outcome

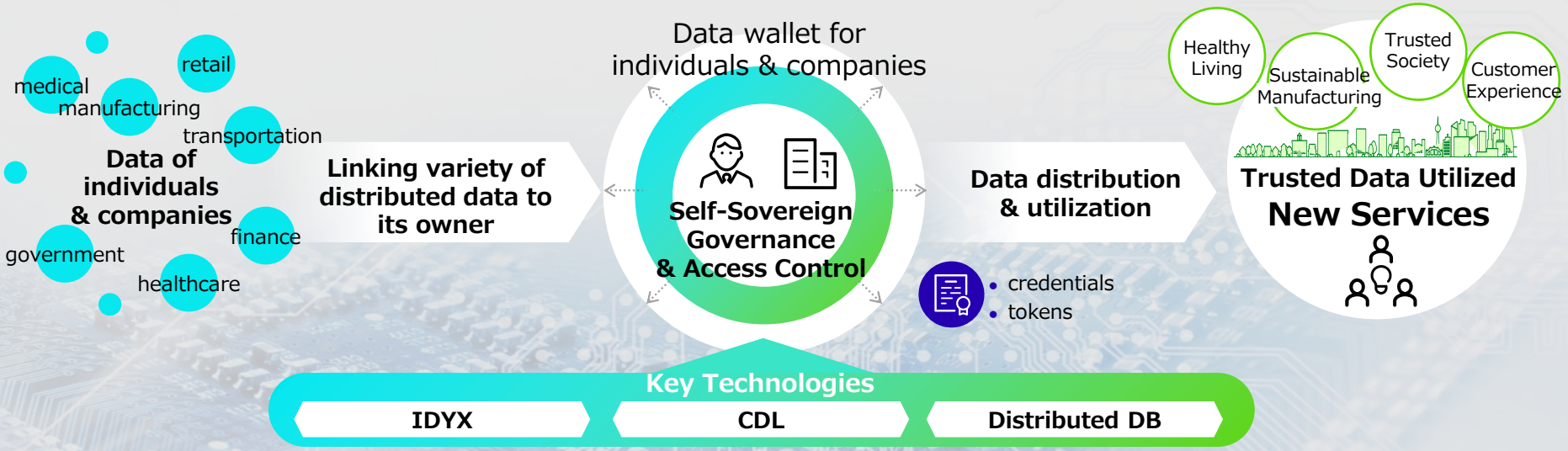
- **Common approach on digital trade and cooperation**, sending a strong message against digital protectionism and arbitrary restrictions
- **Removal of costly data localization requirements**, an unnecessary burden for European and Japanese businesses, which leads reduced costs and complexities and improvement of the data security

Fujitsu Data e-TRUST

- Fujitsu’s secure platform for data sovereignty
  - Enables **data linkage across organizations**, including public services
  - Provides governance in **data ownership and disclosure**
  - Individuals can **grant consent** and finely controlled access
  - Offers a range of **digital credentials** to prove the identities of users and organizations
  - Enables **tamper-proof management of data trails** including the proof of origin, ownership, and authenticity of data
- Combined with Fujitsu’s advanced technologies:
  - Interoperable with other blockchain ecosystems
  - Enables cross-region trust data exchange

Fujitsu Data e-TRUST: Concept

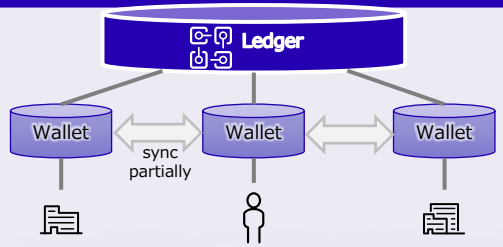
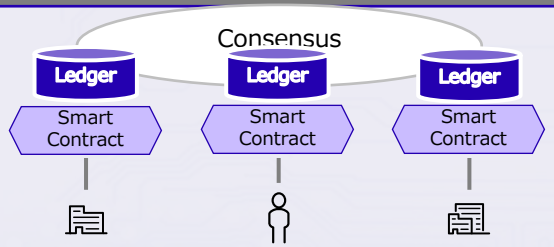
Enables free, safe and secure collaboration with distributed personal and corporate data



*IDYX: IDentitY eXchange is a technology that guarantees "trust in data exchange".
*CDL: Chain Data Lineage is a technology that guarantees "trust in origin and trail of data".

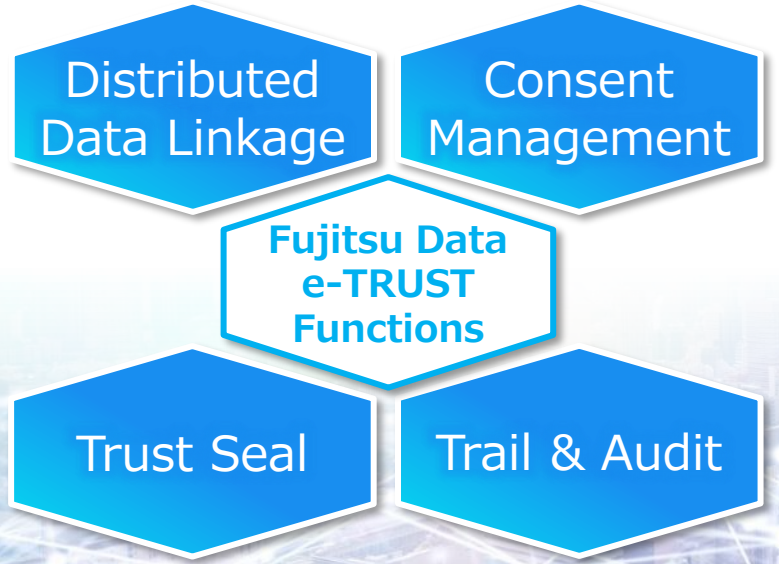
Fujitsu Data e-TRUST: Features

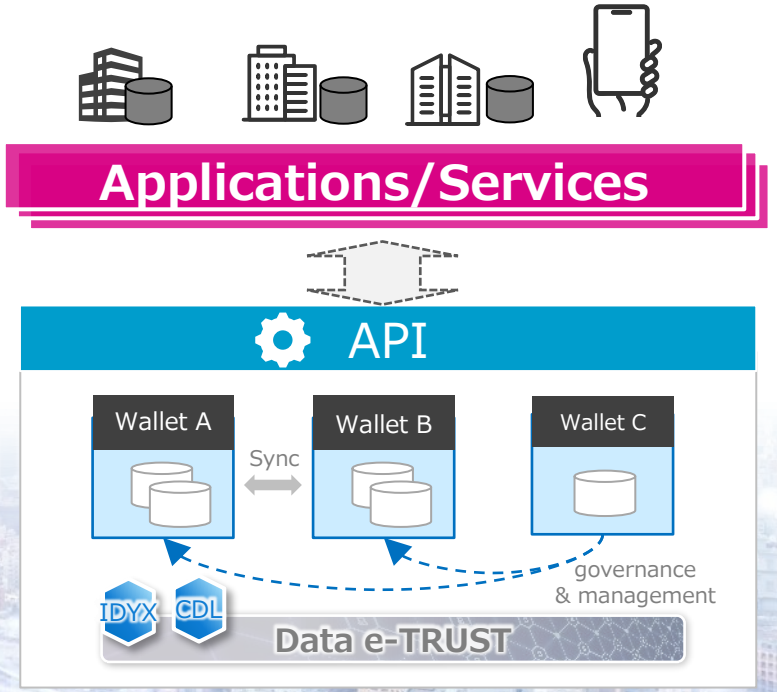
Fujitsu Data e-TRUST is a scalable ledger that extends the blockchain adopting the concept of data ownership

	Fujitsu Data e-TRUST	Standard Blockchain Systems
		
Consent/Access Management	✓ **Can share data with a consent of data owner**	✗ All transactions are public Do not have a concept of data ownership
Data control (Cancelling submission /Opt-out)	✓ **Data owner can cancel data submission on one's will**	✗ Once transaction is recorded in ledger, it substantially can not be cancelled
Tamper resistance	✓	✓
Traceability	✓	✓
Decentralized DB	✓	✓

Fujitsu Data e-TRUST: Platform as a Service

- Provides 4 core functions for safe and secure data distribution and utilization
- Deployed wallets are manipulated/transacted with front-end applications by APIs





Examples of distribution of trusted learning information

Kwansei Gakuin University

Trial system to distribute and utilize academic records and career histories as a form of certificates safely and securely

- The certificate on various student activities and learning achievements in university life is issued, distributed and managed by the students themselves
- Only the data required can be selectively disclosed to the receiver of the certificate
- The receiver can verify the certificate to know whether it is legitimately issued by the University

Demonstrative Examples for Achieving Carbon Neutrality

JEITA Green x Digital Consortium

Demonstration of data exchange between 35 companies for visualizing CO2 emissions in the supply chain

- Because CO2 emissions are calculated on an organizational basis and suppliers' efforts to reduce CO2 emissions are not reflected in the calculation, suppliers are required to provide CO2 emissions data on a product-by-product basis
- Technical verification of inter-solution data coordination based on an international framework, and practical verification of supply chain CO2 calculations

Advanced technologies: Extending the Trust Ecosystem

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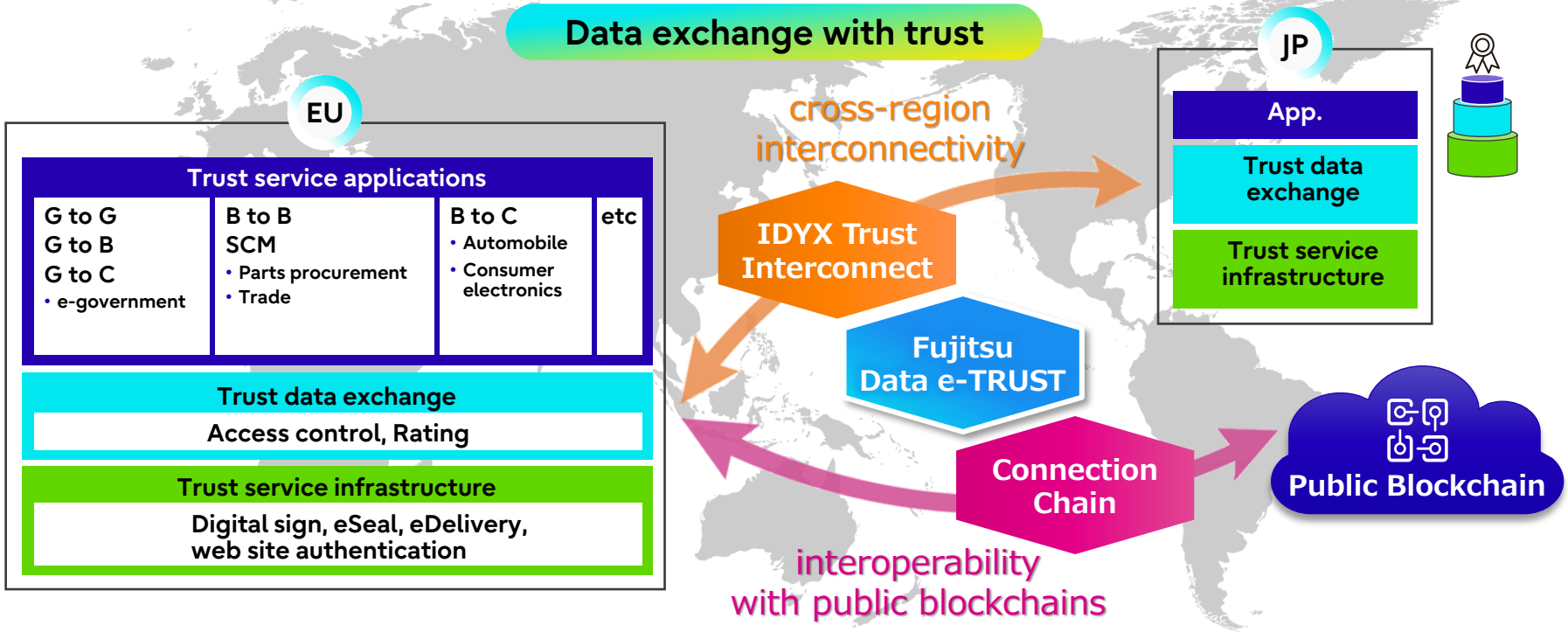
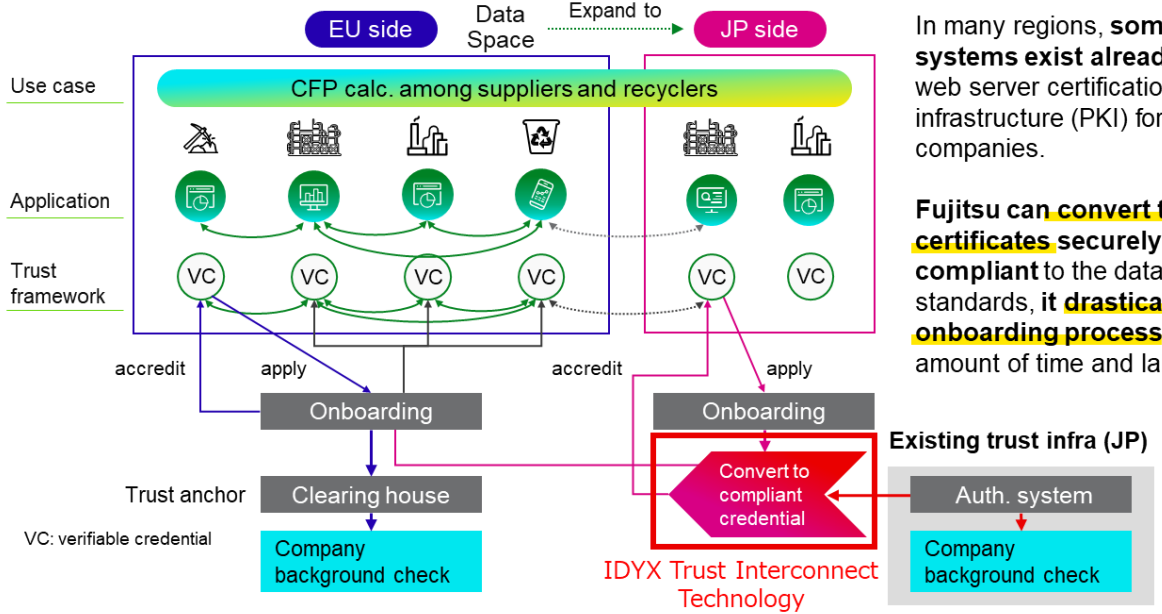
Fujitsu Data e-TRUST combined with Fujitsu's advanced technologies enables existing trusted ecosystems to interconnect with other systems



Cross-region Data Exchange: IDYX Trust Interconnect

- How to absorb differences b/w regional existing trust systems and global standard
- "IDYX Trust Interconnect" can convert existing certificates for cross-region onboarding securely and compliant to standards

Demonstrated at Hannover Messe 2024

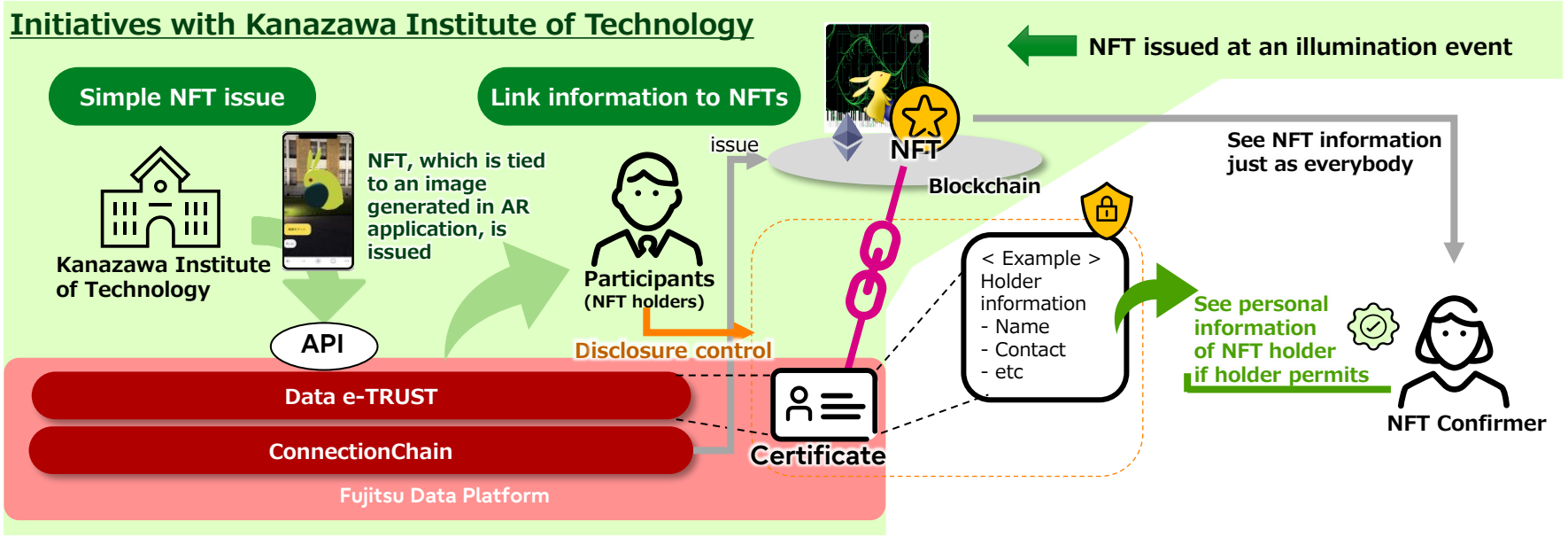


In many regions, **some trust systems exist already**, such as web server certification, public key infrastructure (PKI) for individuals or companies.

Fujitsu can convert those existing certificates securely and compliant to the data space standards, **it drastically changes onboarding process** in terms of amount of time and labor.

Interoperability with Public Blockchain Services: ConnectionChain

- Fujitsu Data e-TRUST can interconnect with various blockchain platforms using "ConnectionChain" with Hyperledger Cacti
- NFTs can be issued on blockchain through an extended smart contract in ConnectionChain



Conclusion

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Fujitsu Data e-TRUST accelerates safe and secure data exchange

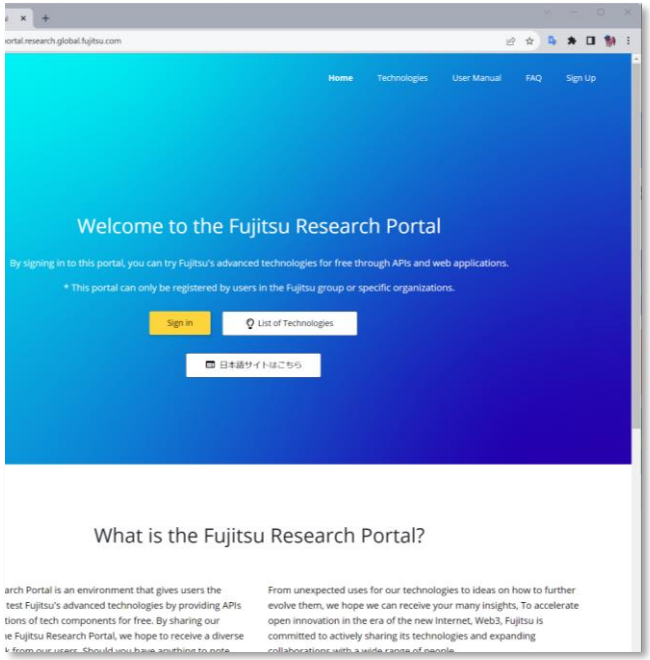
- Fujitsu Data e-TRUST provides users and organizations with data sovereignty

- With the advanced technologies, it extends existing trust ecosystems to:
  - cross-region trust ecosystems with interconnectivity
  - public blockchain services with interoperability

- We will contribute to the expansion of the EU trust ecosystems and realization of a Society with Data Free Flow with Trust (DFFT)

Fujitsu Research Portal

Open to 49 countries worldwide



New technologies are available for everyone

– Easy registration via email/SMS authentication –

https://en-portal.research.global.fujitsu.com/

Provide Fujitsu's advanced technologies

Technologies for AI, Web3, Digital Twin, etc.
with common authentication infrastructure for free

Accelerate open innovation

Creating a technical community to expand co-creation

Improve technology based on feedback

Quickly release technology out into the world
and revise it based on the feedback from the audience

Contact

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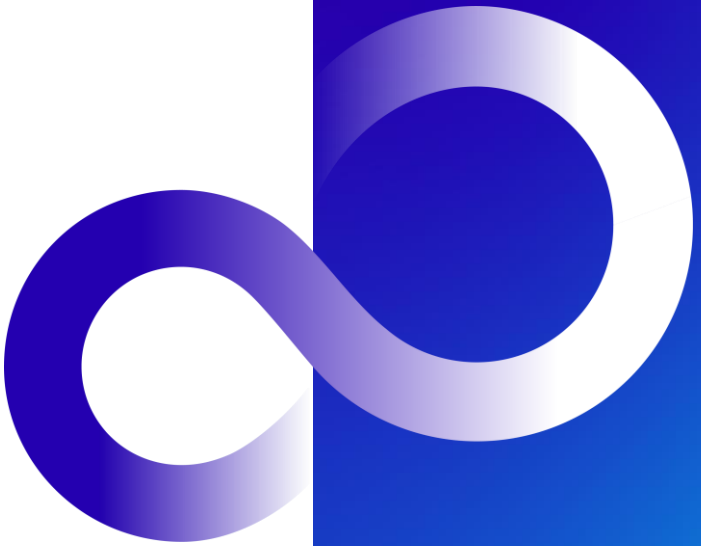
- More about Fujitsu Data e-TRUST and advanced technologies:
  - Fujitsu Data e-TRUST:
    https://www.fujitsu.com/global/services/caas/data-e-trust/
  - Fujitsu Research Portal:
    https://en-portal.research.global.fujitsu.com/

Thank you

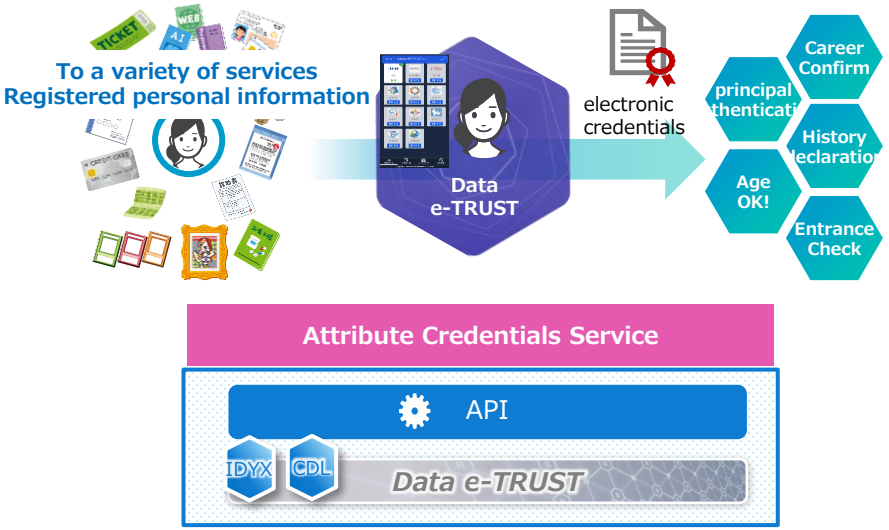


Appendix

Fujitsu Data e-TRUST Use Cases: 1. Ensured Data Authenticity

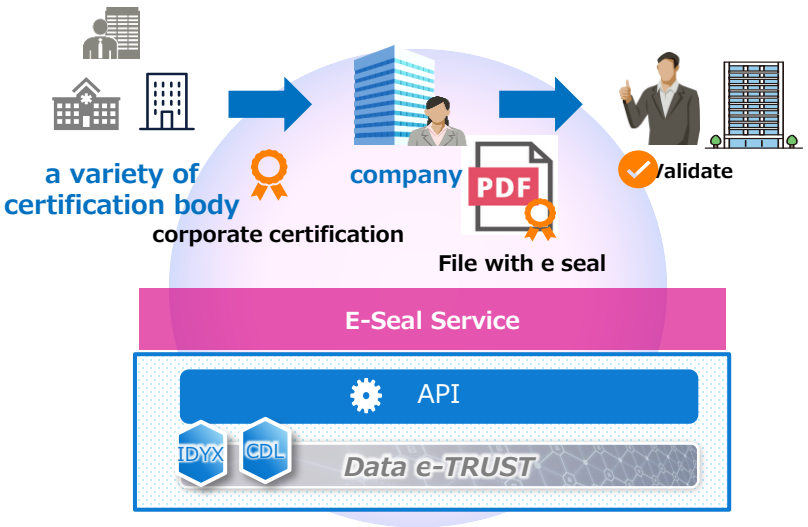
Personal Career Certificate

Proof of identity, skill and background



Corporate Certification/e-Seal

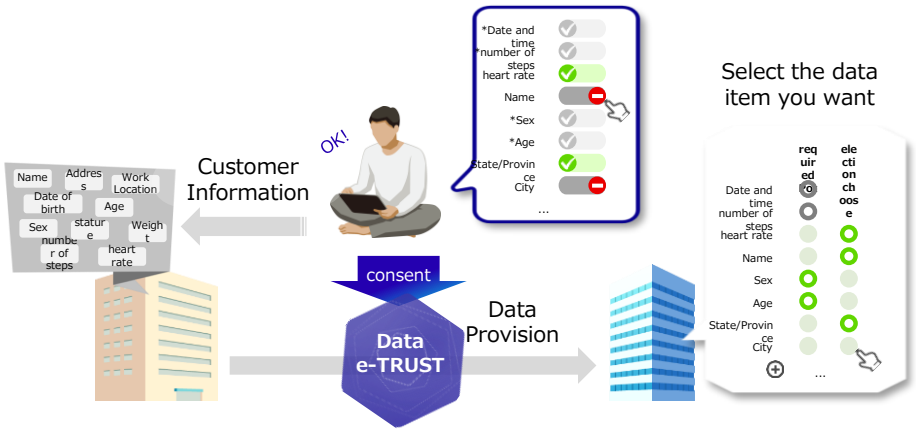
Japan's first e-seal service demonstration
Cross-Industry corporate certification mechanisms



https://www.fujitsu.com/global/about/resources/news/press-releases/2022/0331-01.html

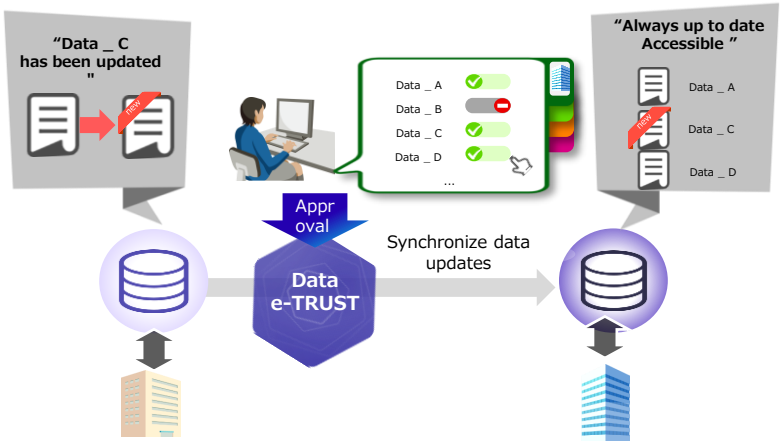
Fujitsu Data e-TRUST Use Cases: 2. Secure Linkage of Distributed Data

Personal Data Exchange



Agree on the data items to be linked between the data provider company and the user company. However, confirmation is requested for each user, and only the confirmed data is shared.

Automatic Data Synchronization

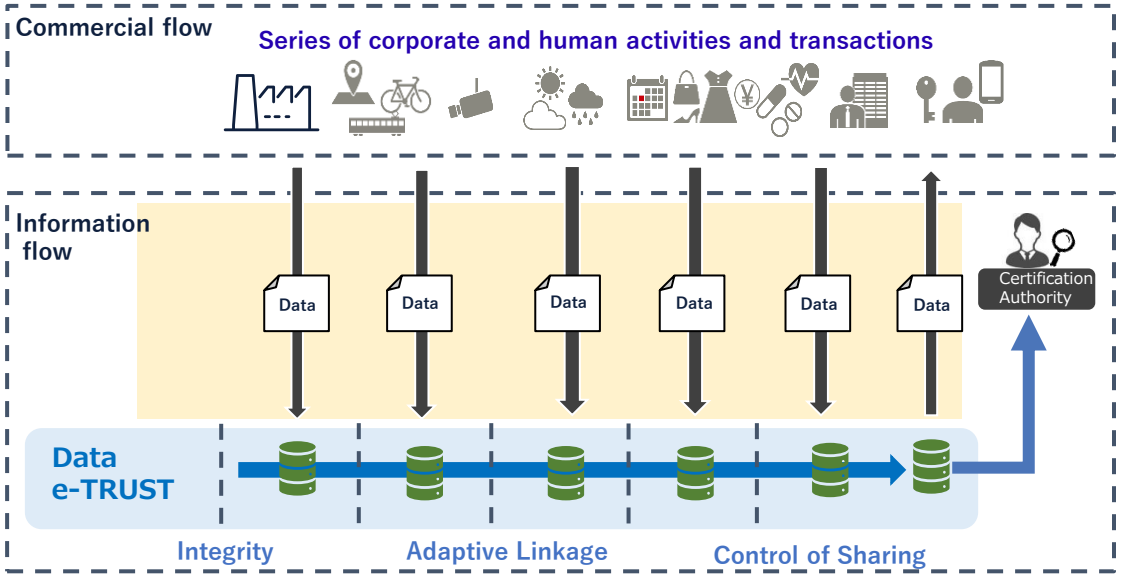


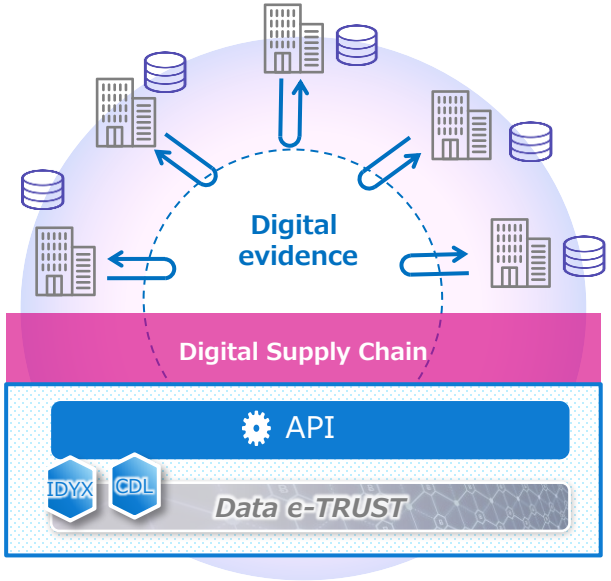
The update of the data file is reflected in a DB of the client company. Select an entry for each business partner and synchronize only the data you need.

Fujitsu Data e-TRUST Use Cases: 3. Tamper-free Evidence Management

Digital Supply Chain

To manage trails of various transactions and activities related to supply chains and value chains of inter-company transactions as unfalsifiable evidence





Trustworthy Information Coordination between Companies

Nagase Co., Ltd. (chemical trading company)

Digitalized analog business processes in the chemical supply chain

- Applying Data-TRUST to the DocuValue document management cloud service provided by Nagase
- Achieving a secure information collaboration mechanism for the distribution management of complicated chemical documents between users and inter-company communication

Press Release: October 2022

Demonstrative Example of Social Implementation of "Japanese e-Seal"

TEIKOKU DATABANK, Ltd. (Corporate Credit Research Company)

Operations for "corporate verification" and "e-seal", established delivery mechanism for trusted documents across multiple companies

- Japan's first demonstration test for the social implementation of the Japanese version of e-Seal, a technology that certifies the authenticity of companies issuing digital documents, was conducted, and issues and proposals were published as a report.
- In the future, digital systems for corporate customers in Europe will be different from those in Japan.
  Aim to link with signatures.