Press Release

October 27, 2026

Keio University Global Research Institute (KGRI)
WingArc1st Inc.

Building a Domestic Digital Trust Infrastructure for International Mutual Recognition
— New Trust Functions, Including Digital Signature, Verification, and Digital Certificate Validation, Added to a Data-Sharing Platform Connector to Establish a Proof-of-Concept Environment for International Mutual Recognition —

Keio University Global Research Institute (KGRI) and WingArc1st Inc. are jointly building a domestic Digital Trust Infrastructure for International Mutual Recognition. They are adding digital certificate validation and digital signature and verification functions to the CADDE data connector to establish a proof-of-concept environment that links trusted data distribution with trust services.

1. Main Points of Research

・KGRI[*1] and WingArc1st Inc.[*2] are jointly building a domestic Digital Trust Infrastructure for proof-of-concept activities toward International Mutual Recognition.

・The project targets Layer 2 (Trust Data Distribution Layer) and Layer 3 (Trust Service Infrastructure) of the three-layer model proposed by KGRI[*3][*4]. It adds digital certificate validation and digital signature and verification functions, enabling data recipients to verify the issuer of a document and whether the document has been altered.

2. Background of Research

In cross-border data flows, users need mechanisms to verify that the issuer of a document has not been spoofed and that the document has not been tampered with, in addition to mechanisms for exchanging data. Enabling these checks across different legal and technical environments requires data-sharing mechanisms to work together with trust functions.

This initiative develops a domestic technical foundation in connection with the Japan–Taiwan proof-of-concept activities being advanced by KGRI and Taiwan's Industrial Technology Research Institute (ITRI)[*5]. By combining university research with private-sector technology, it aims to support Data Free Flow with Trust (DFFT)[*6].

3. Content of Research and Results

The proof-of-concept environment uses the connector of CADDE[*7][*8], an open-source cross-domain data-sharing platform. Trust functions for digital certificate validation and digital signature and verification are being added to the connector, enabling document users to verify the issuer and integrity of a document.

KGRI leads the overall proof of concept and is building the domestic infrastructure in cooperation with WingArc1st Inc. KGRI will work with Cybertrust Japan Co., Ltd.[*9] to establish connections with certification authorities serving as trust service providers. The environment will be demonstrated at the 16th Cyber Security International Symposium[*10].

4. Future Developments

The domestic digital trust infrastructure will be used in joint proof-of-concept activities between Japan and Taiwan to accumulate technical knowledge toward Data Free Flow with Trust (DFFT) based on International Mutual Recognition. The findings will also inform the exploration of potential connections between digital trust infrastructures in other regions, starting with ASEAN and extending to the EU, India, the United States, and the Global South.

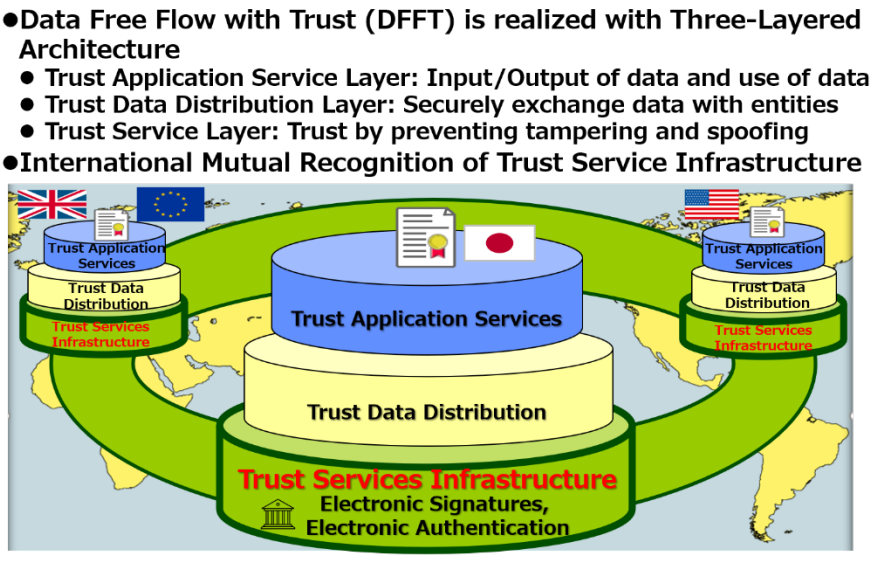
References

[*1] https://www.keio.ac.jp/en/org/kgri/
[*2] https://www.wingarc.com/
[*3] https://d-trust.sfc.wide.ad.jp/#g7
[*4] https://www.keidanren.or.jp/policy/2025/026.html
[*5] https://www.itri.org.tw/
[*6] https://www.digital.go.jp/policies/dfft
[*7] https://github.com/CADDE-sip/connector
[*8] https://www.hitachi.com/ja-jp/press/articles/2023/04/0407/
[*9] https://www.cybertrust.co.jp
[*10] https://symp.cysec-lab.keio.ac.jp/2026oct/

Glossary

※1 Digital Trust: Mechanisms that enable users of a document to verify that its issuer has not been spoofed and that the document has not been tampered with.

※2 Three-Layer Model: The model proposed by KGRI, which organizes the functions of Trust Application Services, Trust Data Distribution, and Trust Service Infrastructure into layers and enables them to work together.



*Please direct any requests or inquiries to the contact information provided below.

・Inquiries about research

Keio University Global Research Institute (KGRI)
Cyber Civilization Research Center (CCRC)
E-mail : d-trust@sfc.wide.ad.jp https://d-trust.sfc.wide.ad.jp/

・Inquiries about press release
Keio University Global Research Institute (KGRI)
Tel: +81-3-5427-1702
E-mail: kgri-pr@adst.keio.ac.jp https://www.keio.ac.jp/en/org/kgri/

・Inquiries Regarding Products and Services
WingArc1st Co., Ltd. TEL: 03-5962-7300
Inquiry Form: https://www.wingarc.com/contact/
URL: https://www.wingarc.com/

・Media Inquiries Regarding This Matter
WingArc1st Co., Ltd. Public Relations: Yamamoto and Nakatani
E-mail: pr@wingarc.com