Boosting Trust and Interoperability in Japan - EU Invoice Reconciliation

The challenge

The need to harmonize cross-border trust services continues to grow in line with the ever-increasing volume of trade and commerce taking place across digital platforms, globally.

The use of the eSeal - an electronic signature associated with a legal entity - is a popular means of confirming the authenticity of a digital document, like an e-invoice, shared between trading entities. Outside of the EU (where member states must comply with the region's eIDAS regulations), however, there is no international uniformity in eSeal format or requirements. Consequently, there is no mutually recognized way for the recipient of a sealed document to verify the authenticity of the sender's identity beyond national borders.

The value of the LEI

To address this problem, GLEIF has initiated a proof-of-concept (POC) to demonstrate how embedding the sender's LEI within an eSeal used to digitally seal an e-invoice can bring significant international gains in both interoperability and counterparty trust. The initiative was undertaken to support a Japanese consortium program which aims to develop entity-level trust services that are mutually recognizable by Japanese and European organizations.

The POC enables the authenticity of both the e-invoice document (via the eSeal) and the sending organization (via their LEI, embedded in the eSeal credential), to be confirmed simultaneously, together with the exact time of the document's sealing. The initiative shows how the process can be undertaken reciprocally, with the digitally sealed invoice issued by a Japanese organization to a European organization and vice versa. The authenticity of the LEI-embedded eSeal has been confirmed thanks to the recognition by both regions of the underlying proof-of-concept trust framework.

Through this proof-of-concept we demonstrated the benefits the LEI can bring in helping to establish an additional trust layer and the international interoperability of trust services. The nature of the LEI, globally accepted and trusted ID, is critical because it will support the realization of Data Free Flow with Trust (DFFT) – a G20 endorsed guiding principle for international cooperation on data flows at G20 Osaka summit 2019.

Japanese participants in the proof-of-concept, included: Hitachi, Ltd.; Secom Trust Systems Co., Ltd.; Seiko Solutions Co., Ltd.; Keio University; TEIKOKU DATABANK, LTD. European-based participants included: GLEIF; InfoCert S.p.A.; and Société Internationale de Télécommunications Aéronautique.

Following POC for the G7 Digital and Tech Minister's Meeting in Takasaki, Japan in April 2023

Based on the results of the POC implementation using the e-invoice as a use case, which was implemented mainly by private companies, Professor Tezuka of Keio University and his team conducted a POC with the EU Commission from January 2023.

At that time, it was implemented with the following contents as a business use case.
- Exchange of carbon offset certificates / CO2 emissions data, certificates of origin between participants in the supply chain
- With these certificates or data issued under the form of sealed documents

Japan side prepared the CFP (Carbon footprint) Mgmt. application, sample data, and API (API#1, #2) .

E-Seal were generated and verified by both side (Japan and EU) in each environment and tools.

E-sealed JSON data were exchanged by connector in data space.
But JSON raw data and e-Sealed data were transmitted to/from by the other method (ex. e-mail).
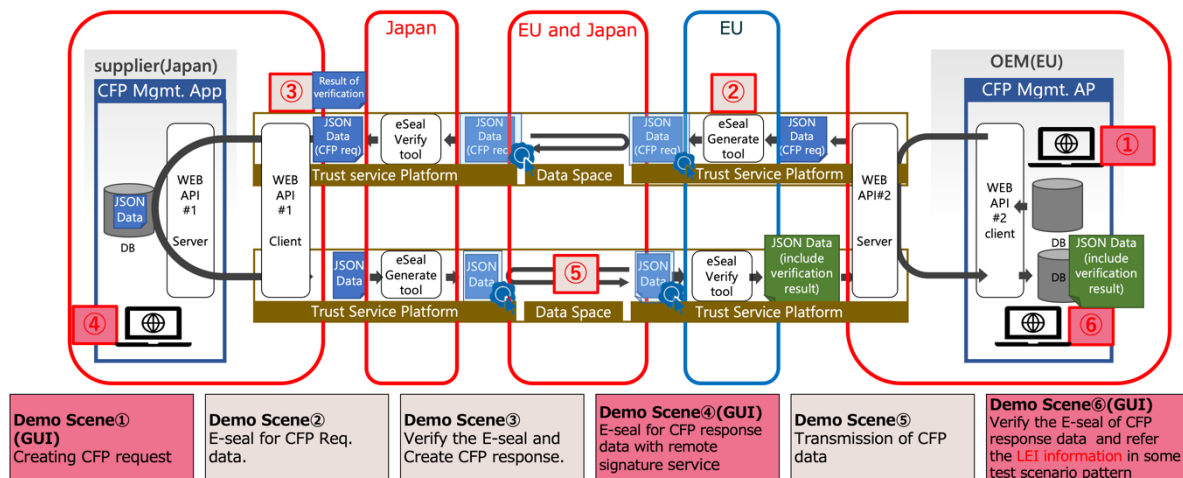
The result of the POC was showcased at the digital and tech exhibition which held at the site of the G7 Digital and Tech Minister's Meeting in Takasaki, Japan in April 2023.

GLEIF
Enabling global identity
Protecting digital trust

Future outlook

The successful POC has now led to further exploration of the use of the LEI in the eSeal system in digital interactions between Japanese and European organizations.

For more information on this initiative, download the press release.

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