Digital Identity with LEIs

LEI Digital Strategy – Digital Certificates
and Introducing the verifiable LEI (vLEI)

June 16, 2021
GLEIF
Agenda

1. Overview of the Global LEI System
2. LEI and Digital Identity Use Cases
3. Delivering the vLEI with an interoperable and technically agnostic solution
Overview of the Global LEI System
Who is Global Legal Entity Identifier Foundation?

- GLEIF is a not-for-profit Swiss foundation, founded by the Financial Stability Board (FSB).

- GLEIF is overseen by 71 regulators and 19 observers in the Regulatory Oversight Committee (ROC) from 50 countries.

- GLEIF Board has 16 independent directors.

 Partners for LEI issuing (LOUs)

- 39 partners and growing

 Issued LEIs to date

- > 1,800,000
Introducing the Global LEI System

In 2011, the G-20 leaders supported "the creation of a global legal entity identifier (LEI) which uniquely identifies parties to financial transactions."

1. **Regulatory Oversight Committee (ROC):** Represents public financial market authorities from around the world

2. **Global Legal Entity Identifier Foundation (GLEIF):** Ensures the operational integrity of the Global LEI system

3. **Local Operating Units (LOUs):** Issue LEIs to legal entities
The LEI
Live presentation

- The LEI is a life-long code **owned** by the respective legal entity.
- It points to the associated reference data.
- The LEI is an ISO standard ISO 17442
Distribution of the LEIs across jurisdictions
Numbers from end of 2020, pre-Brexit

16% North America
7% Asia Pacific
66% Europe
LEI and Digital Identity - Use Cases
LEIs in a digital world
Making LEIs verifiable

- When presenting an LEI, it is not clear if
  - The LEI is valid
  - the presenter is the LEI owner or an affiliate
  - the presenter has the right to use it

- As a result
  - the recipient of the LEI must still check and verify,
  - background checks are often done manually at a high cost

Verification examples

- The police verifies the driving license by comparing the photo on the ID with the presenter (biometrics are used widely)

- An employer calls the university to see if the job applicant’s diploma is real

- Despite the presented LEI, a bank asks for business register evidence during onboarding of a legal entity customer

Common problem is the lack of trust – and the costs involved for creating trust
The LEI has a critical role to play in today’s digital world through its ability to provide organizations with unique, permanent identification globally. This especially is important in the context of identifying legal entities involved in digital transactions.

LEI delivers value to both the more mature product - Digital Certificates - and the more recent innovation of Verifiable Credentials.
LEI and Roles
Official Organizational Roles and Engagement Context Roles

Organization/ Legal Entity

Person

Role

Real World

Digital Representation

Legal Entity Identifier (LEI Standard)
Person’s Name (String)
Role

Cryptographically bound to the owner of the keys
GLEIF’s Annual Report 2019

- Combines the strengths of the LEI and digital certificates
- Connect the role of the signatory to an organization through the LEI
- Watch how it works: youtu.be/w4muYdNIQ-Q
Example: embed the LEI within an annual financial report

The same LEI has been included in the filed report as well as in the digital signatures.
Benefits of embedding the LEI

**LEI in Document**
- Mandatory
- Automated access to aggregated data on the filing entity
- Improved ability for regulators to minimize market abuse
- Automatically links the filing entity to its verified LEI reference

**LEI in Signature**
- Best Practice
- Greater end user trust in authenticity and integrity of documents
- Increased transparency for end users on an entity’s ownership structure

**Usability**
- 2019

**Trust**
- 2021-06-16
The LEI as a Verifiable Credential – the vLEI Trust Chain

- Every Verifiable Credential is created by an issuer.
- The issuer cryptographically signs the credential with its private key.
- An issuer is the organization or entity that asserts information about a subject to which a credential is issued.
- In our example, the vLEI Issuer is an organization qualified by GLEIF.
- GLEIF issues vLEIs to vLEI Issuers as attestation of trust.
- GLEIF is the Root of Trust.
vLEI Role Credentials issued by Legal Entities to Persons whose **Official Organizational Roles** (ISO 5009 standard in development) that can be verified both by the Legal Entity as well as against one or more public sources.

- **Examples:**
  - Legal Entity – CEO
  - Legal Entity – Board Chair

vLEI Role Credential issued by Legal Entities to Persons **in the context of the engagement** of those Persons with the Legal Entities which can be verified by the Legal Entity.

- **Examples:**
  - Legal Entity – Other Employees
  - Hospital/Physician’s practice-patients
  - Community/Ecosystem/Exchange/Registered Member
Delivering the vLEI with an interoperable and technically agnostic solution
The vLEI ecosystem is in full accordance with ToIP standards

- Launched May 2020
- Grew from 27 to 125 member companies in less than six months
- Founding Members include Mastercard, IBM, Accenture, Government of British Columbia, LG, GS1, Mitre, SICPA, R3, Kiva, and 4 universities
- GLEIF joined ToIP as Contributor Member
- Hosted by the non-profit Linux Foundation
  - Home to over 250 of the world’s leading open source/open standard projects including Cloud Native Computing, Hyperledger, Automotive Grade Linux, Hyperledger, and the Decentralized Identity Foundation
vLEI Governance Frameworks

- vLEIs will be issued by vLEI Issuers of two types:
  - Existing LEI issuers who elect to issue vLEIs
  - New issuers who will issue vLEIs by calling APIs provided by GLEIF and current LEI issuers

- All vLEI Issuers will be qualified under the GLEIF vLEI Ecosystem Governance Framework
  - A ToIP-compliant Layer 4 governance framework

- The vLEI family of Verifiable Credentials will be defined by the GLEIF vLEI Credential Governance Framework
  - A ToIP-compliant Layer 3 governance framework

- Both frameworks are scheduled to be ready for initial review by Q2 2021
**Network-of-networks**
**True universality and portability**

vLEIs are hostable on both ledgers and cloud infrastructure

1. The decentralization of ledgers plus the control and performance of cloud
2. Portability enables GLEIF’s ecosystem to unify all ledger-based ecosystems that support the vLEI
GLEIF’s vLEI approach

Agnostic to any network

- Development of the capabilities needed for GLEIF to issue and verify vLEIs for vLEI Issuers does not need to operate on blockchain or distributed ledger technology.
- GLEIF can implement **KERI (Key Event Receipt Infrastructure)** to support fully decentralized portable secure key management operations on self-certifying identifiers.
- GLEIF is undertaking development of the capabilities based on KERI during 1Q to 3Q of 2021 and aim for initial live beta implementation with an SSI Network starting in 4Q.

Interoperability

- This would allow GLEIF to **connect to any blockchain or distributed ledger technology SSI network** without the need for custom implementation, cost and overhead of operation.
- KERI is **Quantum Safe**. It is resistant to attacks by both classical and quantum computers.

https://keri.one
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