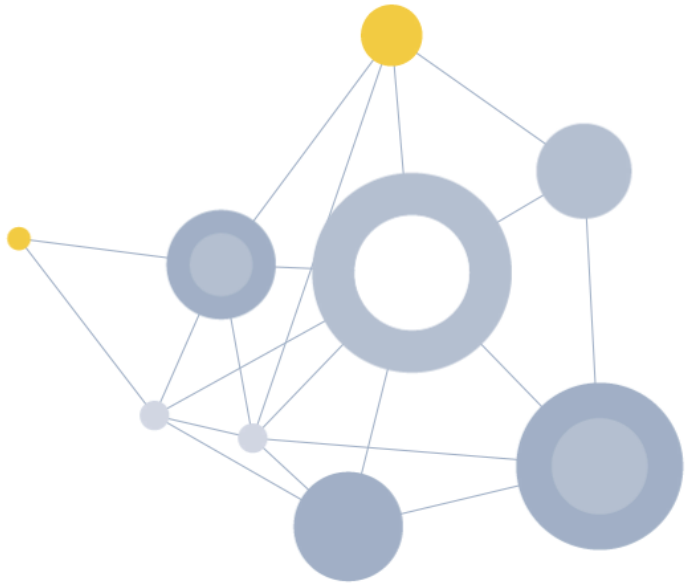
Accelerating Digital Identity with the LEI

The Legal Entity Identifier (LEI):
A catalyst for universal digital identity in blockchain



W3C Credentials Community Group Meeting
July 28, 2020

Agenda

1. What is an LEI?
2. LEI in the Digital World
3. How does it practically work?
4. Use Cases

© 2020 GLEIF and/or its affiliates. All rights reserved. | GLEIF | Accelerating Digital Identity for Commerce | v1.0

What is an LEI?

© 2020 GLEIF and/or its affiliates. All rights reserved.

What is an LEI?

- The LEI initiative is driven by the Financial Stability Board (FSB) on behalf of the finance ministers and governors of central banks represented in the Group of Twenty (G20).
- The development of a system to uniquely identify legal entities globally had its beginnings in the 2008 financial crisis.
- Regulators worldwide acknowledged their inability to identify parties to transactions across markets, products, and regions for regulatory reporting and supervision.
- The LEI itself is a 20-digit, alpha-numeric code based on the ISO 17442 standard developed by the International Organization for Standardization (ISO).
- The code connects to key reference information that enables clear and unique identification of legal entities participating in financial transactions including their ownership structure.
- The Global LEI System provides freely accessible look up (identification) of the complete database of LEIs and the associated LEI reference data, is available free of any charge or barrier to anyone on the web, operated under the Open Data Charter terms so that LEI data can be used by all users without limitations.

© 2020 GLEIF and/or its affiliates. All rights reserved.

LEI in the Digital World

© 2020 GLEIF and/or its affiliates. All rights reserved.

LEI in the Digital World

- The LEI can have relevance in the digital world by leveraging the strength of the LEI to provide unique and permanent global identification of organizations/businesses.
- One effort is to combine the strengths of the LEI and digital certificates.
- The second effort leverages the use of the LEI in Verifiable Credentials.
- Verifiable Credentials are defined as the format for interoperable, cryptographically-verifiable digital credentials being defined by the W3C standards organization (Verifiable Claims Working Group).

© 2020 GLEIF and/or its affiliates. All rights reserved. |

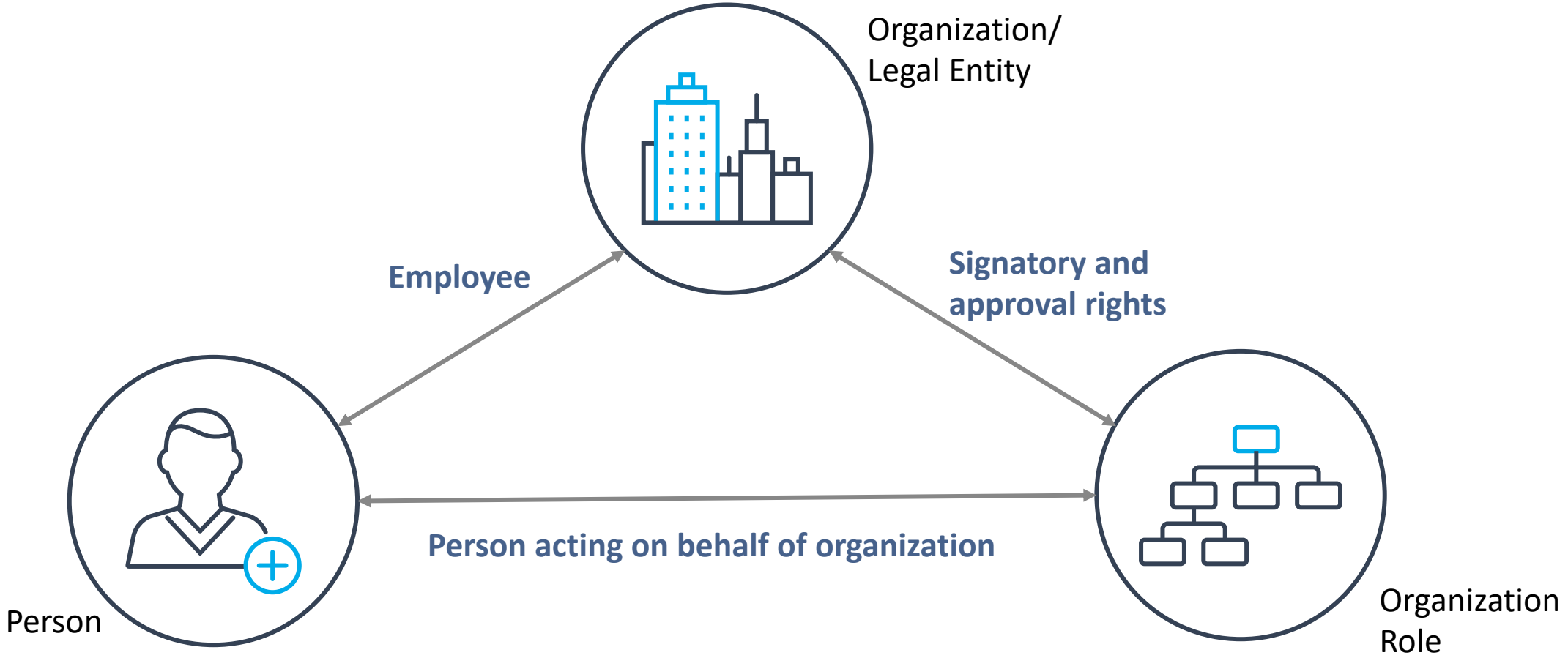
LEI in the Digital World

Use of the LEI in Verifiable Credentials (VCs)

- Proofs of Concept (PoCs) leverage the use of the LEI in Verifiable Credentials (VCs).
- This technique works for automated issuance and verification of organizations having LEIs and using LEIs.
- GLEIF has conducted PoCs that produce VCs, prove identity (based on the LEI) cryptographically, and are recorded on a distributed ledger (blockchain).
- The PoCs allow verification of identity of both legal entities having LEIs and for persons in their official roles within these legal entities.
- GLEIF, being technology agnostic, has conducted POCs on both Ethereum and Hyperledger blockchains.

© 2020 GLEIF and/or its affiliates. All rights reserved.

Digital identity and the LEI based on a triple concept



© 2020 GLEIF and/or its affiliates. All rights reserved.

Digital identity and the LEI based on a triple concept

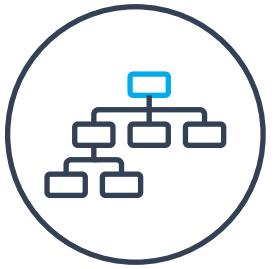
Organization/ Legal Entity

Legal Entity Identifier (LEI Standard)

Person

Person's Name (String)

Organization Role

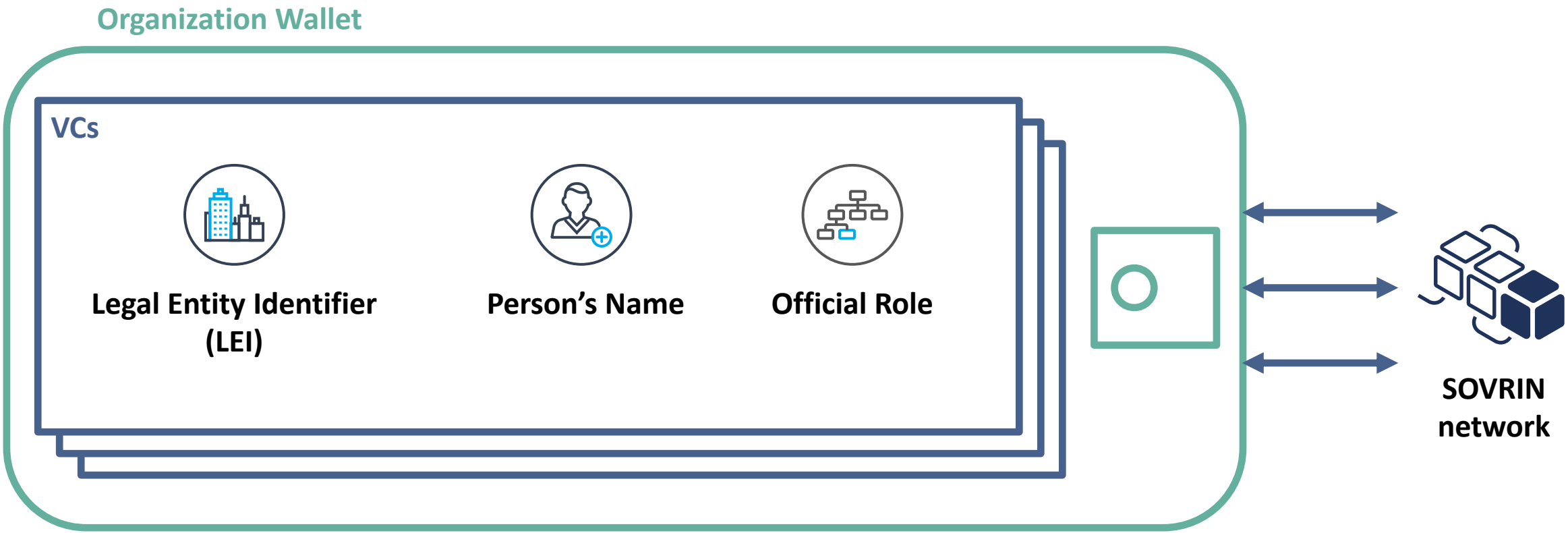


Official Role (String)

© 2020 GLEIF and/or its affiliates. All rights reserved. | GLEIF | Accelerating Digital Identity for Commerce | v1.0

Digital Identity and the LEI based on a triple concept

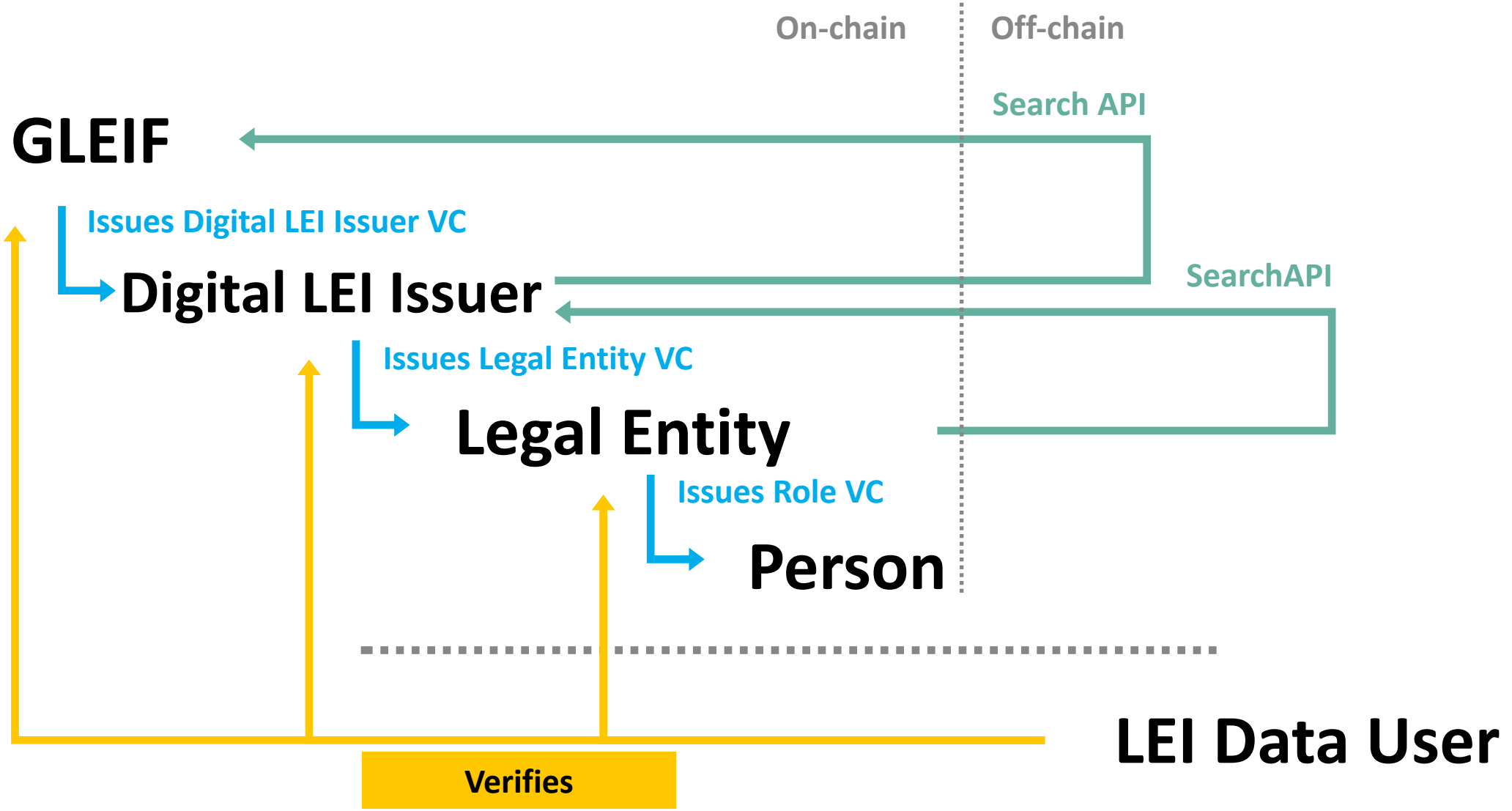
Organization Wallet - Hyperledger example



© 2020 GLEIF and/or its affiliates. All rights reserved.

Digital Identity and the LEI based on a triple concept

Chain of Trust

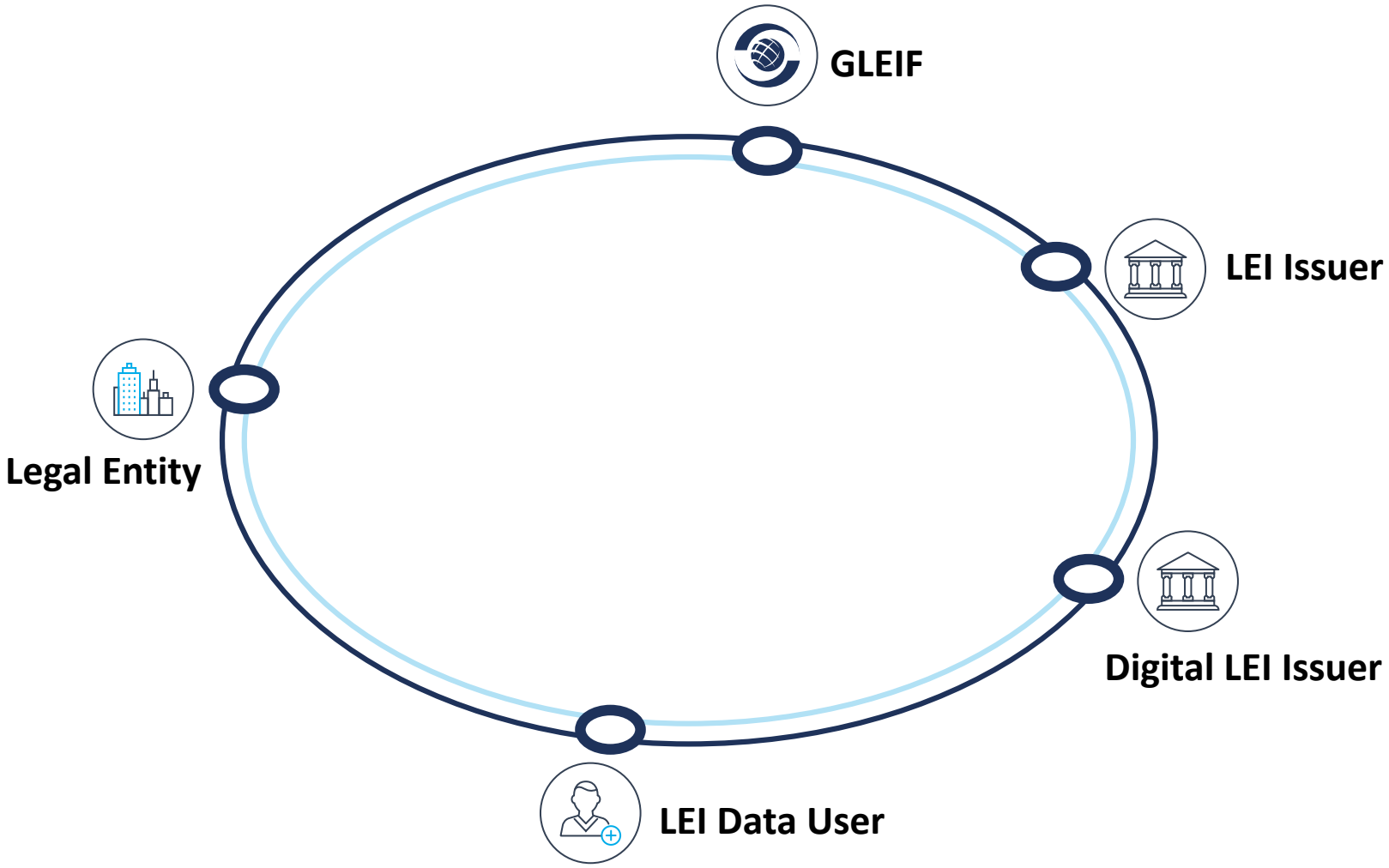


© 2020 GLEIF and/or its affiliates. All rights reserved.

How does it practically work?

© 2020 GLEIF and/or its affiliates. All rights reserved.

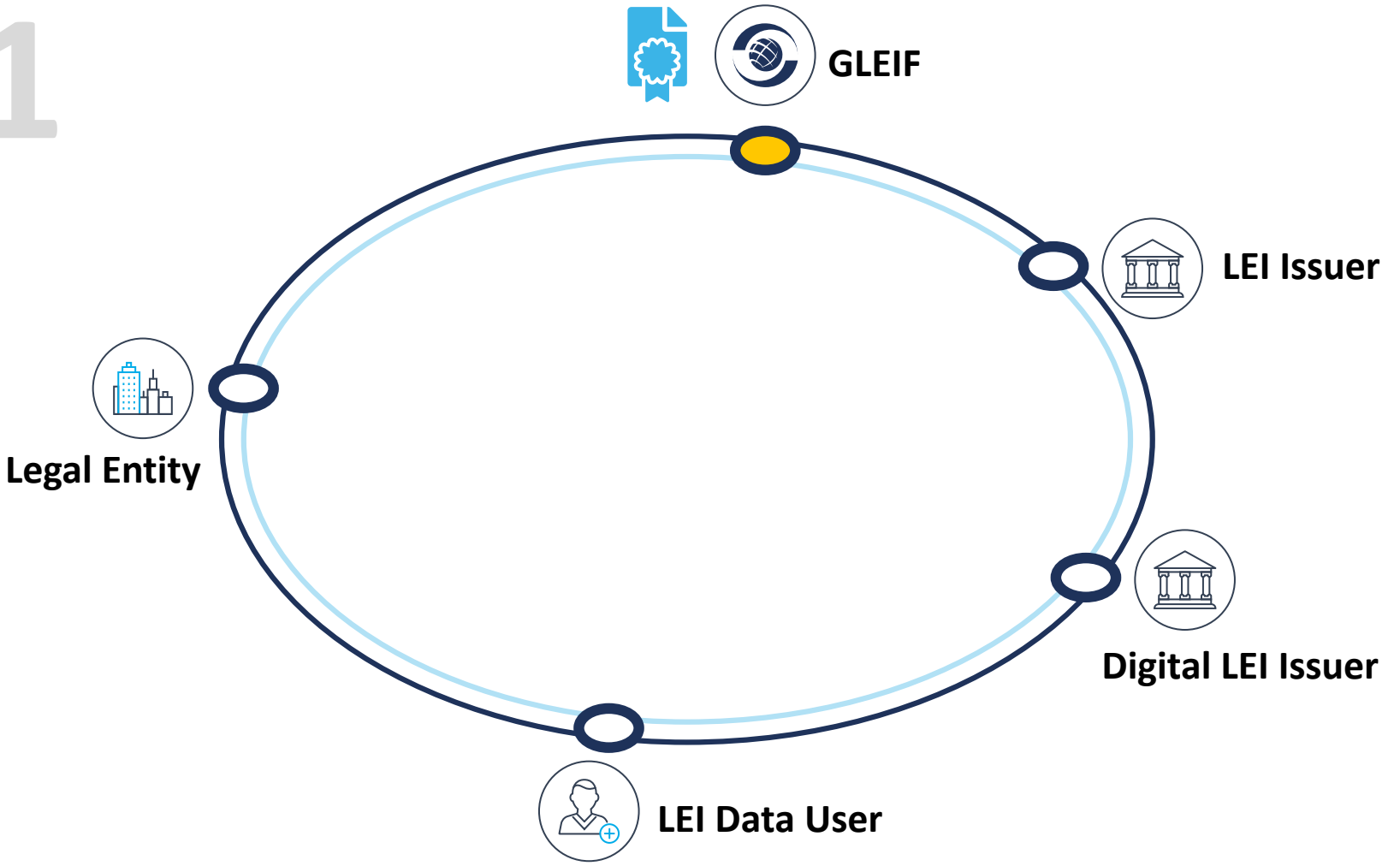
Five actors in place



© 2020 GLEIF and/or its affiliates. All rights reserved.

Step 1: GLEIF to receive VC

1

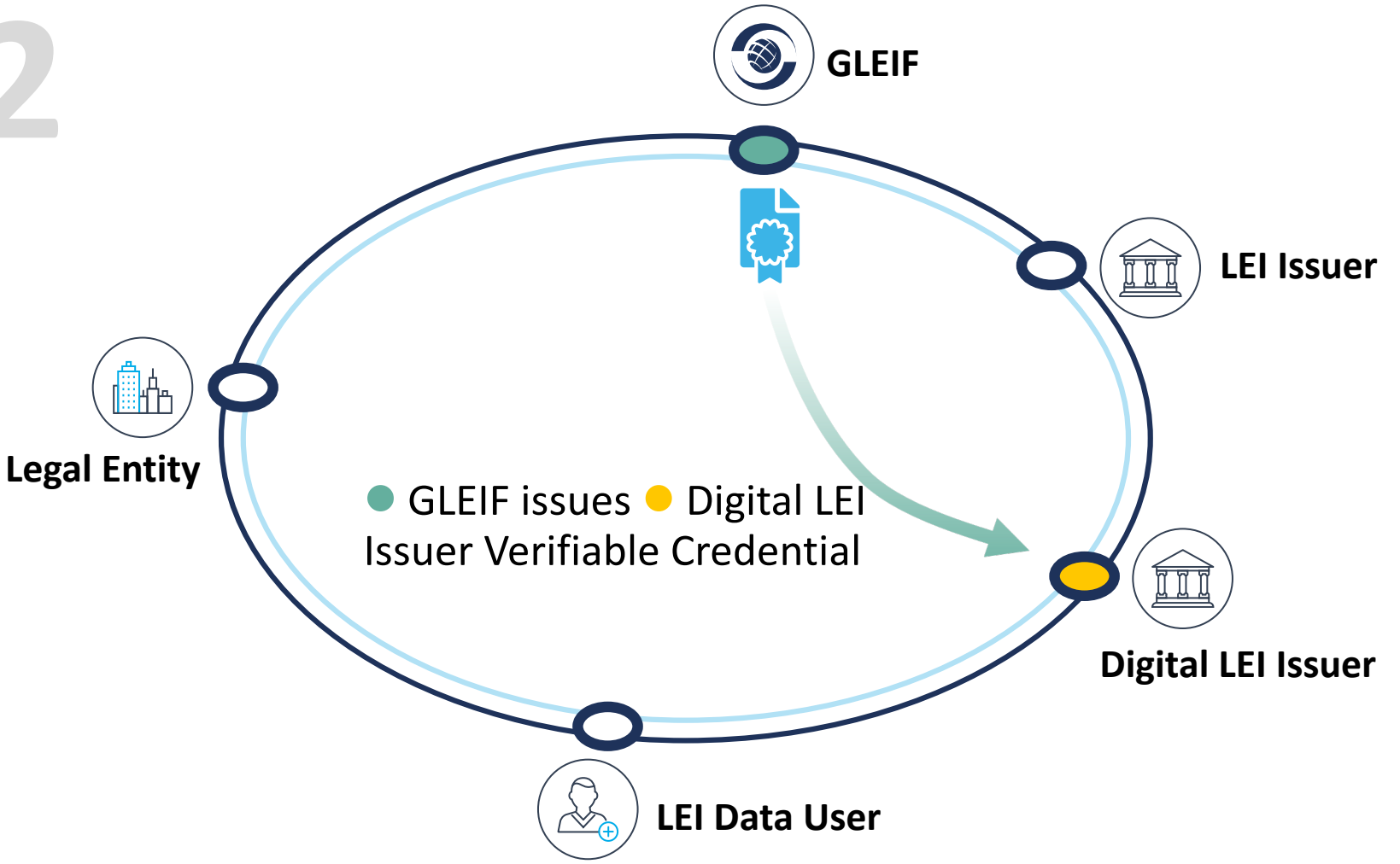


GLEIF receives a Verifiable Credential (VC) issued by the SOVRIN Trusted Framework.

© 2020 GLEIF and/or its affiliates. All rights reserved.

Step 2: GLEIF certifies Digital LEI Issuer

2

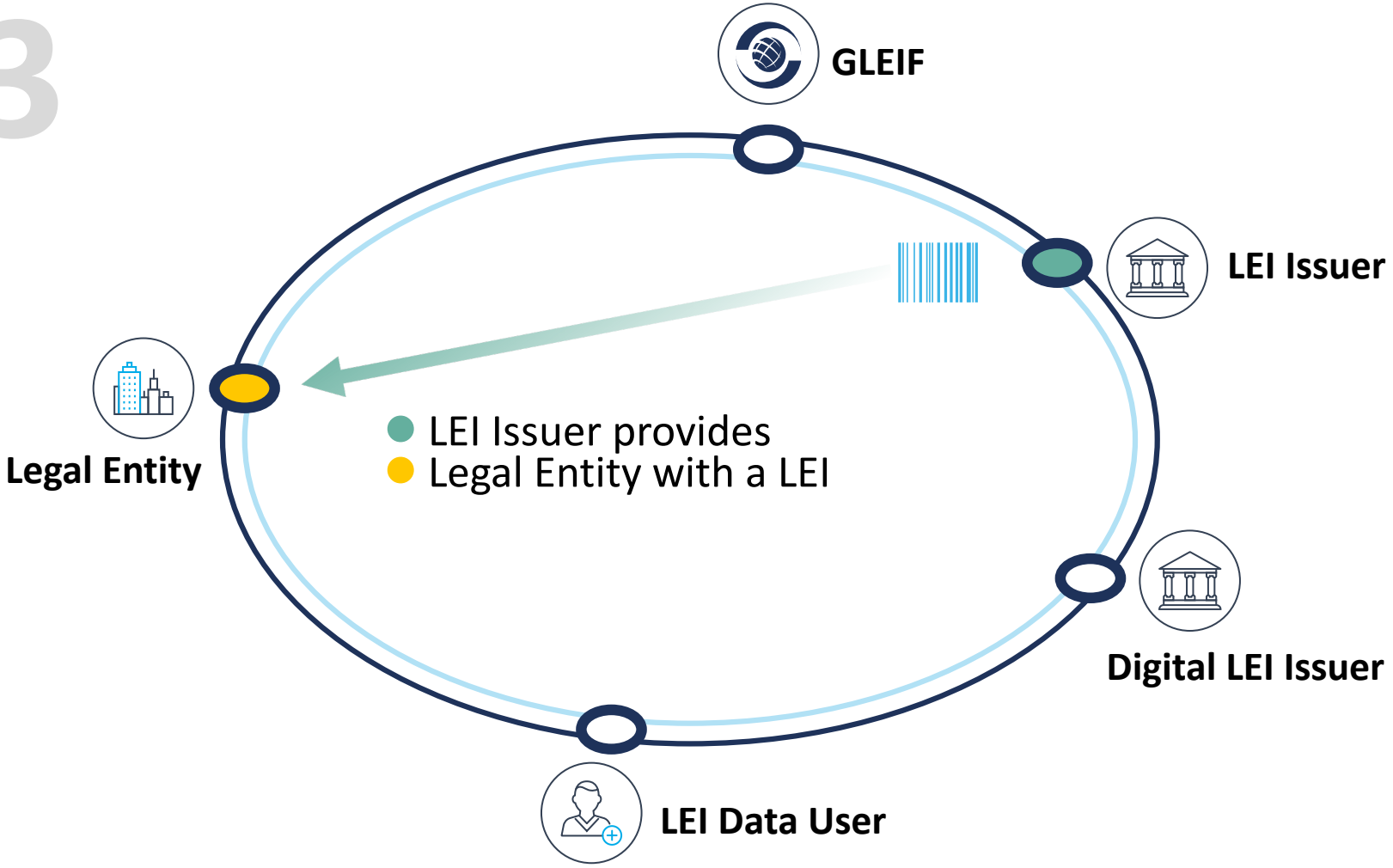


GLEIF certifies Digital LEI VC Issuer with capability to issue VC to Legal Entities.

© 2020 GLEIF and/or its affiliates. All rights reserved.

Step 3: LEI Issuer issues the LEI

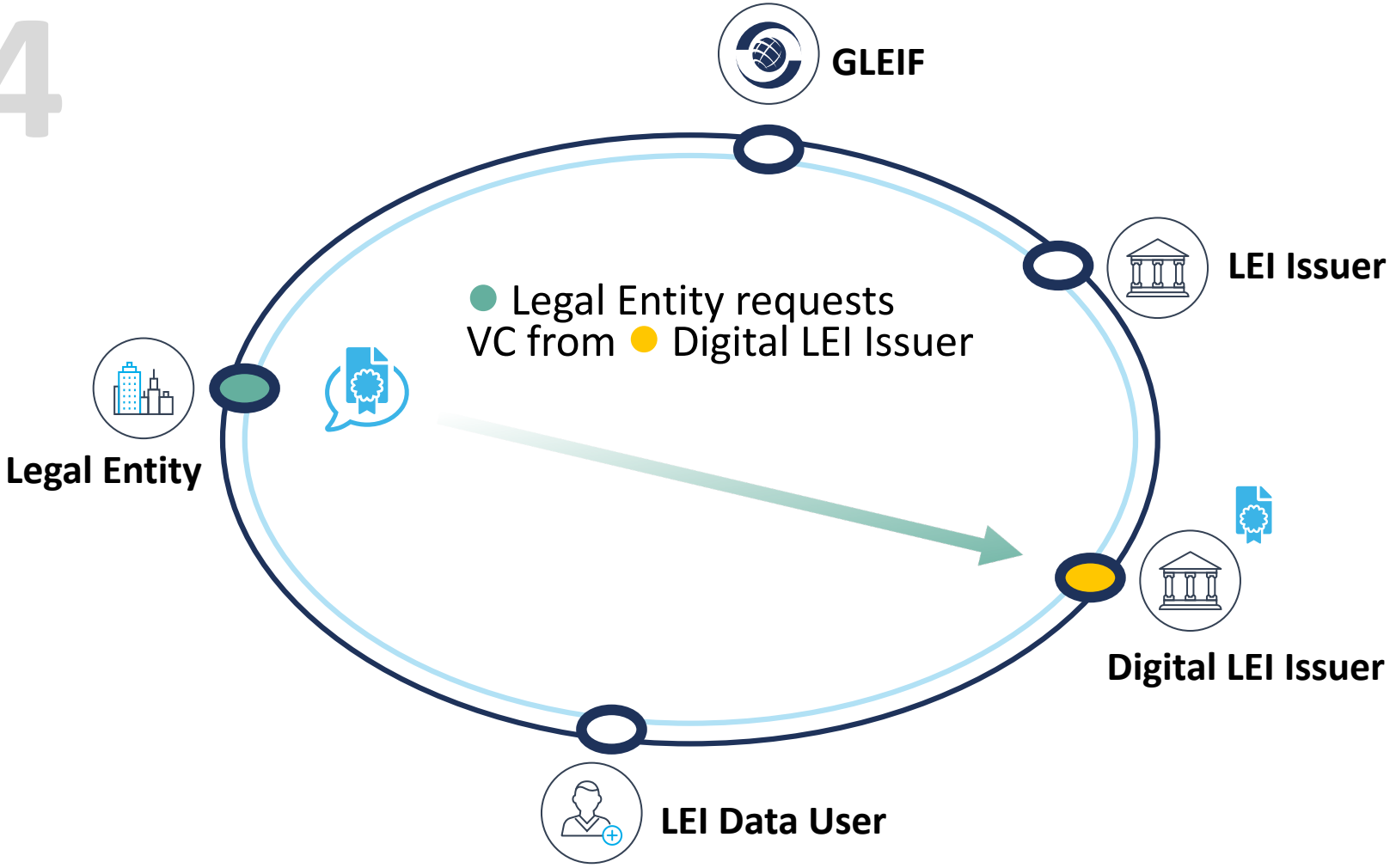
3



The Legal Entity is validated by the LEI Issuer and receives its LEI.

© 2020 GLEIF and/or its affiliates. All rights reserved.

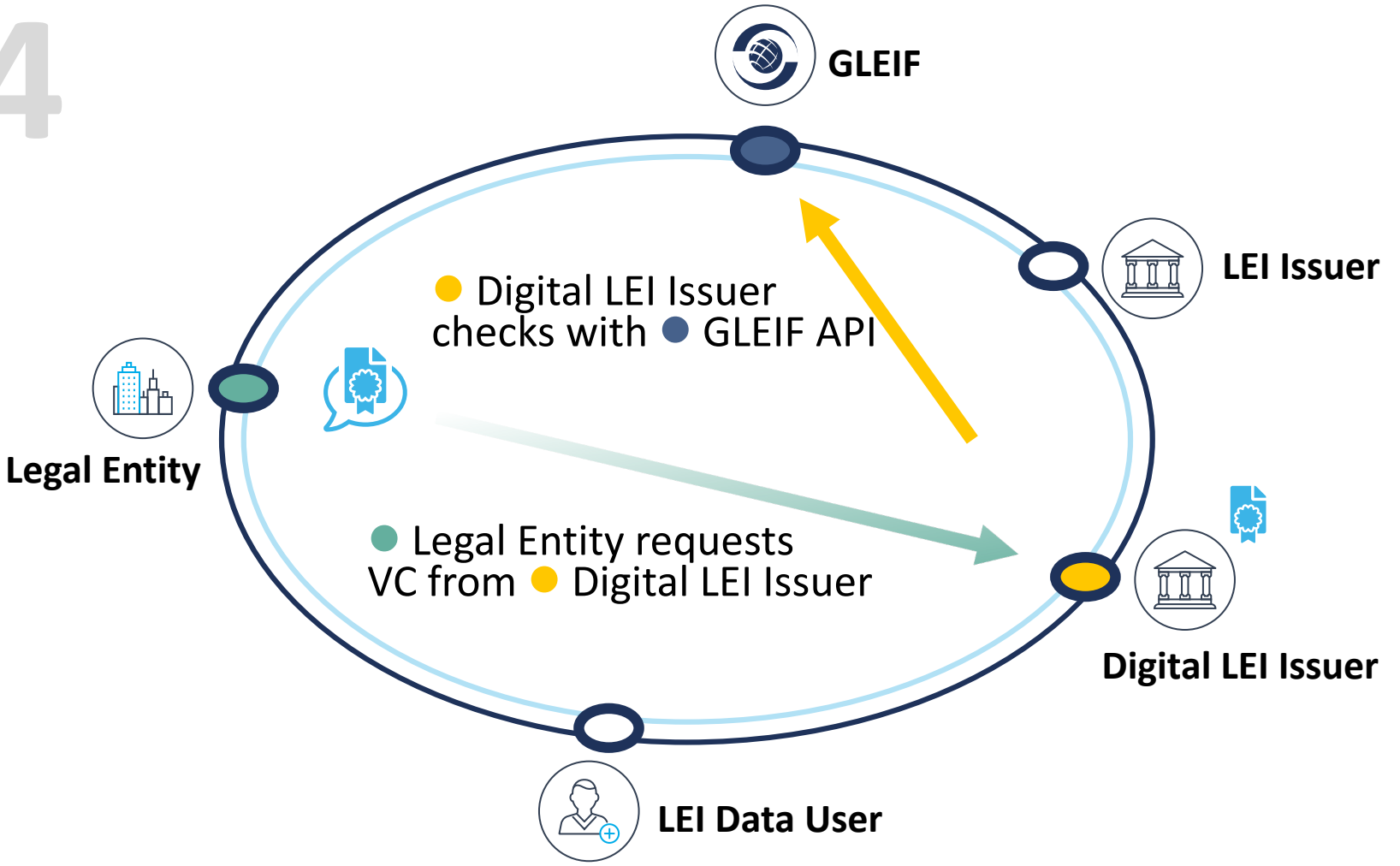
Step 4a: Legal Entity requests VC from an LEI Issuer also certified as a Digital LEI Issuer



The Legal Entity requests VC in addition to receiving its LEI to establish its digital identity.

© 2020 GLEIF and/or its affiliates. All rights reserved.

Step 4b: Legal Entity requests VC from a Digital LEI Issuer not also accredited as an LEI Issuer



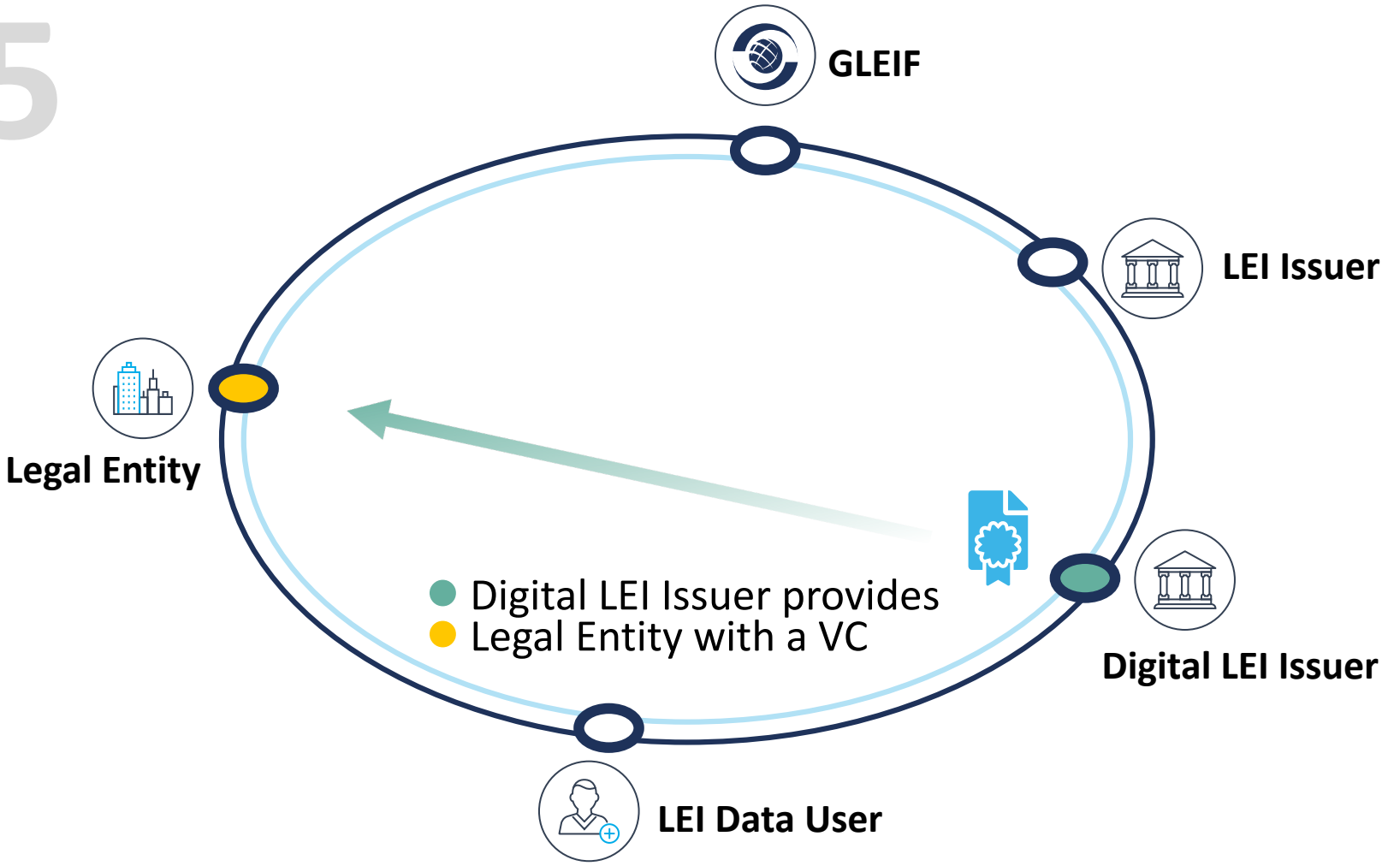
The Legal Entity requests VC in addition to receiving its LEI to establish its digital identity.

Digital LEI Issuer, using API, checks for status of an Issued and Active LEI before issuing VC.

© 2020 GLEIF and/or its affiliates. All rights reserved.

Step 5: Digital LEI Issuer issues the VC

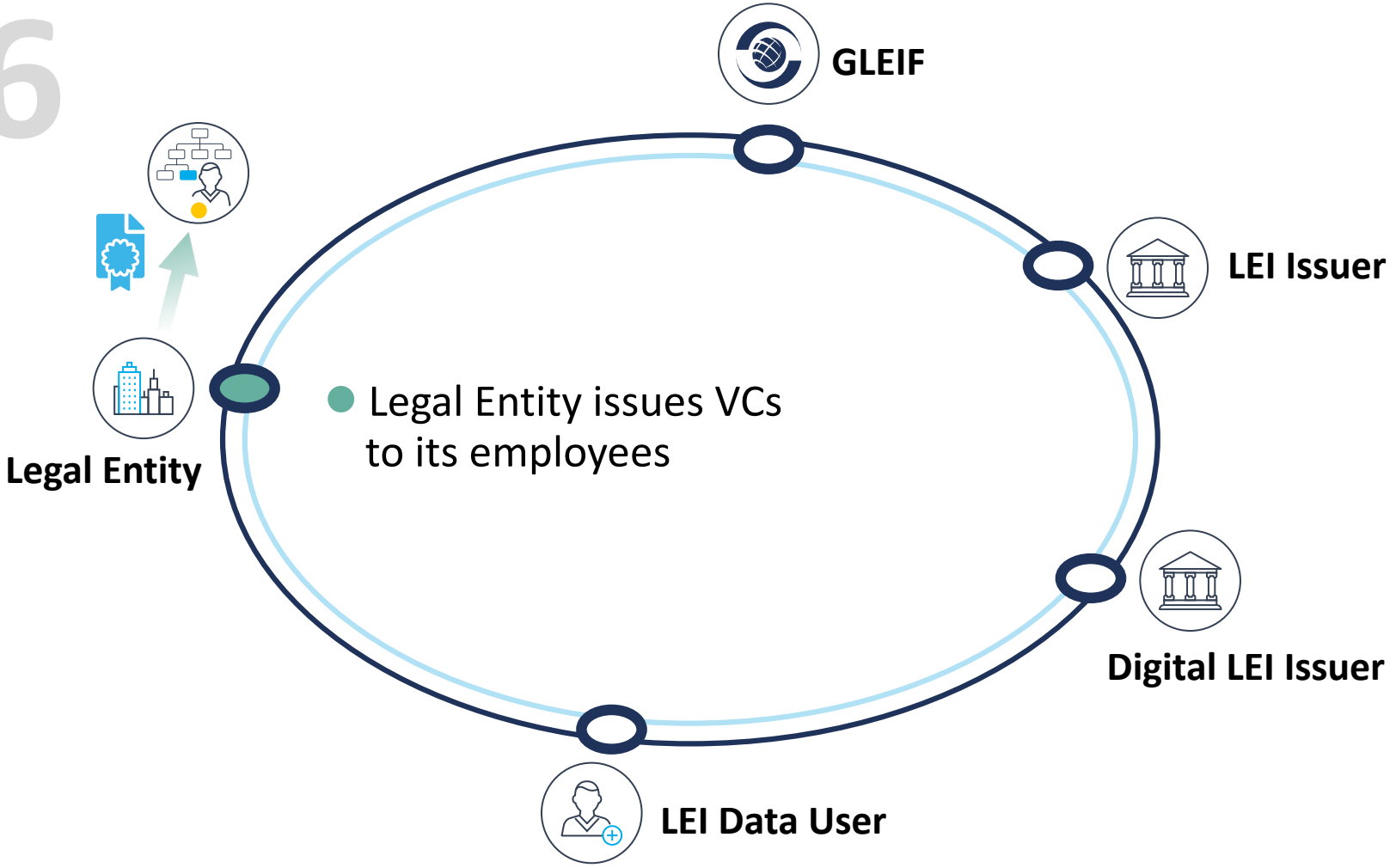
5



The Digital LEI VC Issuer issues the VC for the Legal Entity.

© 2020 GLEIF and/or its affiliates. All rights reserved.

Step 6: Legal Entity to issue VCs to its employees



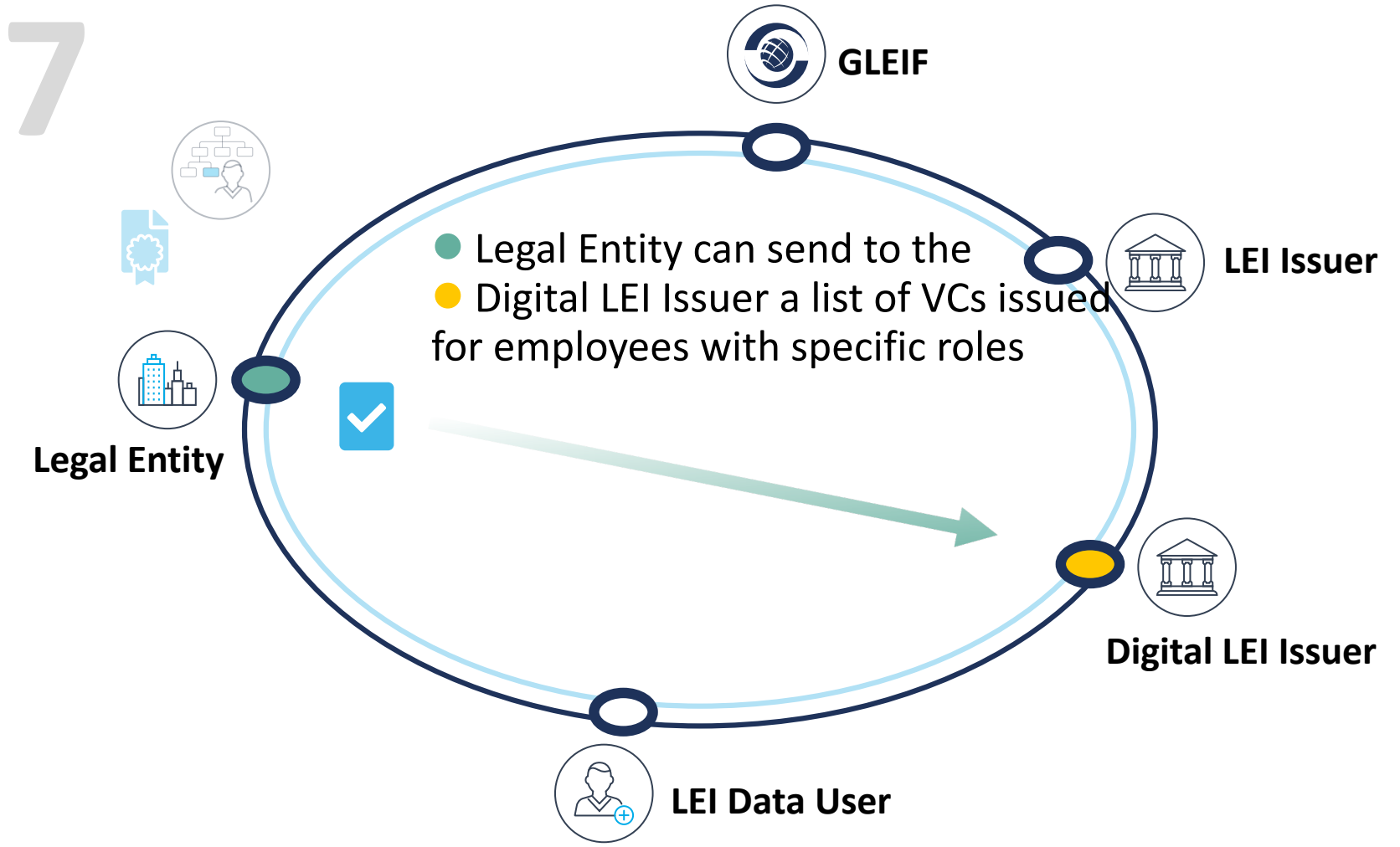
With its VC, the Legal Entity can issue credentials to its employees which identify the official roles that they play in the Legal Entity.

This enables the employees to use their VCs to officially represent the Legal Entity.

These VCs form the Organization Wallet of the Legal Entity.

© 2020 GLEIF and/or its affiliates. All rights reserved.

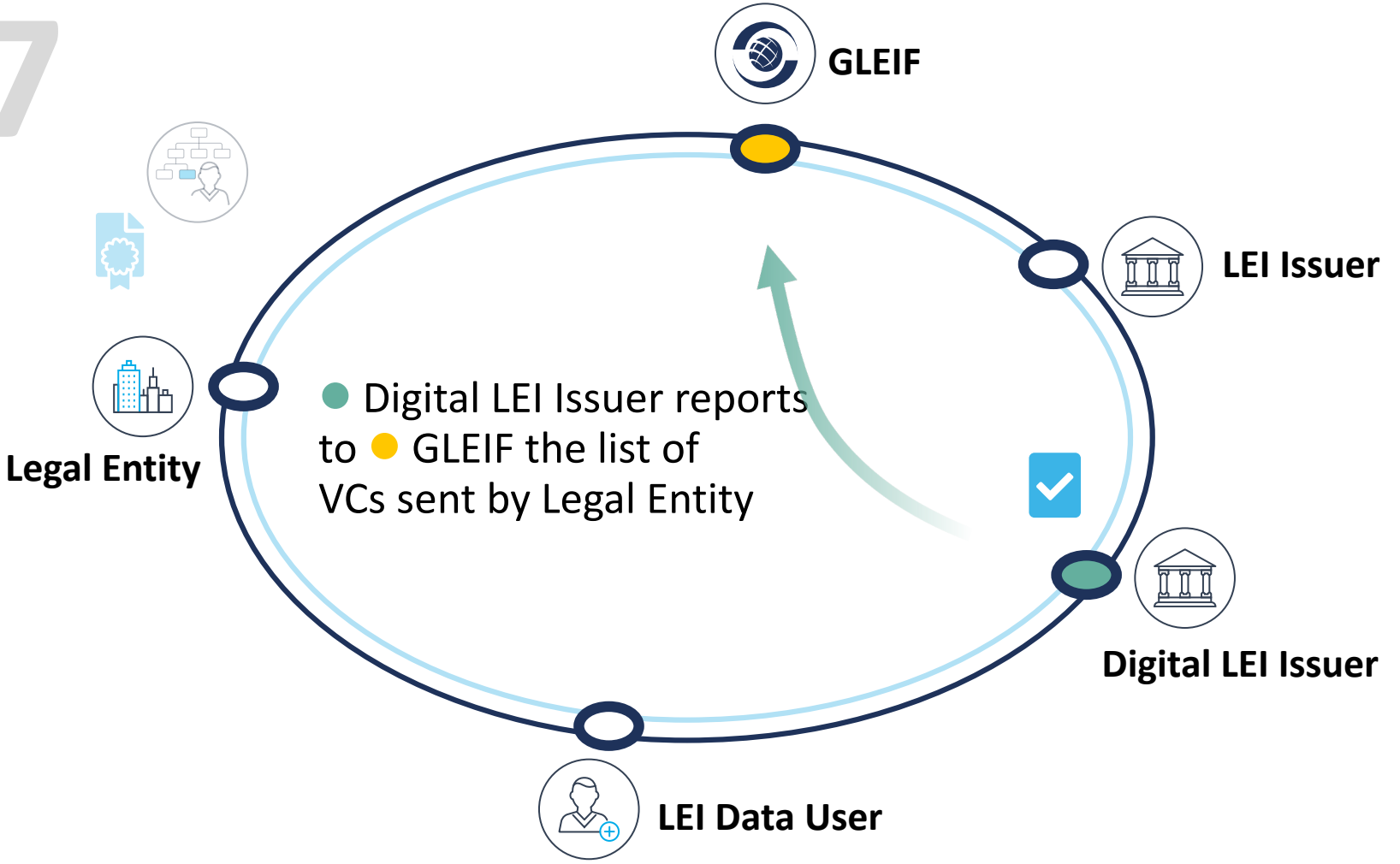
Step 7: Legal Entity to share the VCs with the Digital LEI Issuer



In order to enable the discovery of VCs issued by the Legal Entity, roles assigned by the legal entity can be sent to the Digital LEI Issuer.

© 2020 GLEIF and/or its affiliates. All rights reserved.

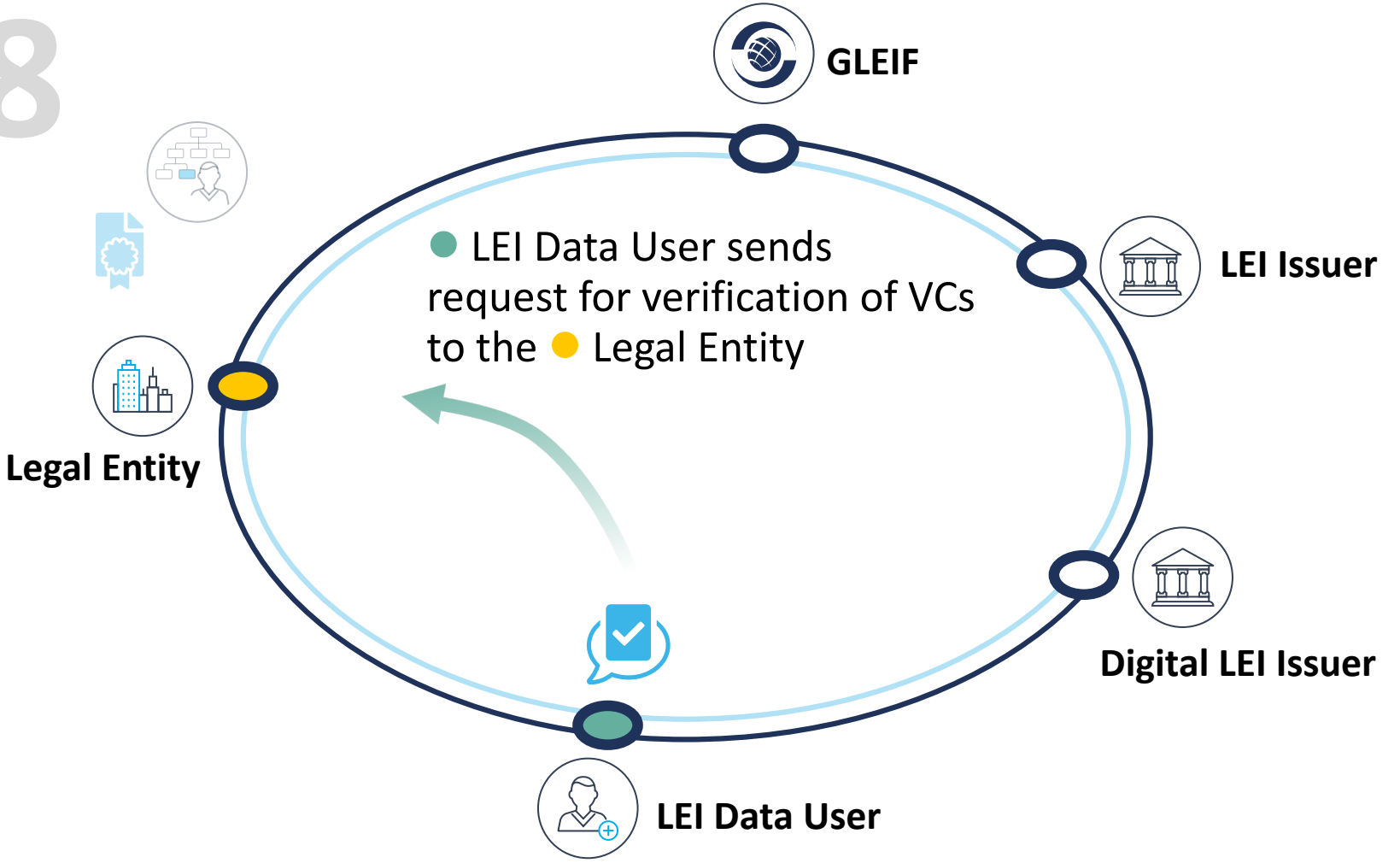
Step 7: Digital LEI Issuer to share the VCs with GLEIF



And subsequently this list can be published in the Global LEI Repository without containing any personally identifiable information (PII).

© 2020 GLEIF and/or its affiliates. All rights reserved.

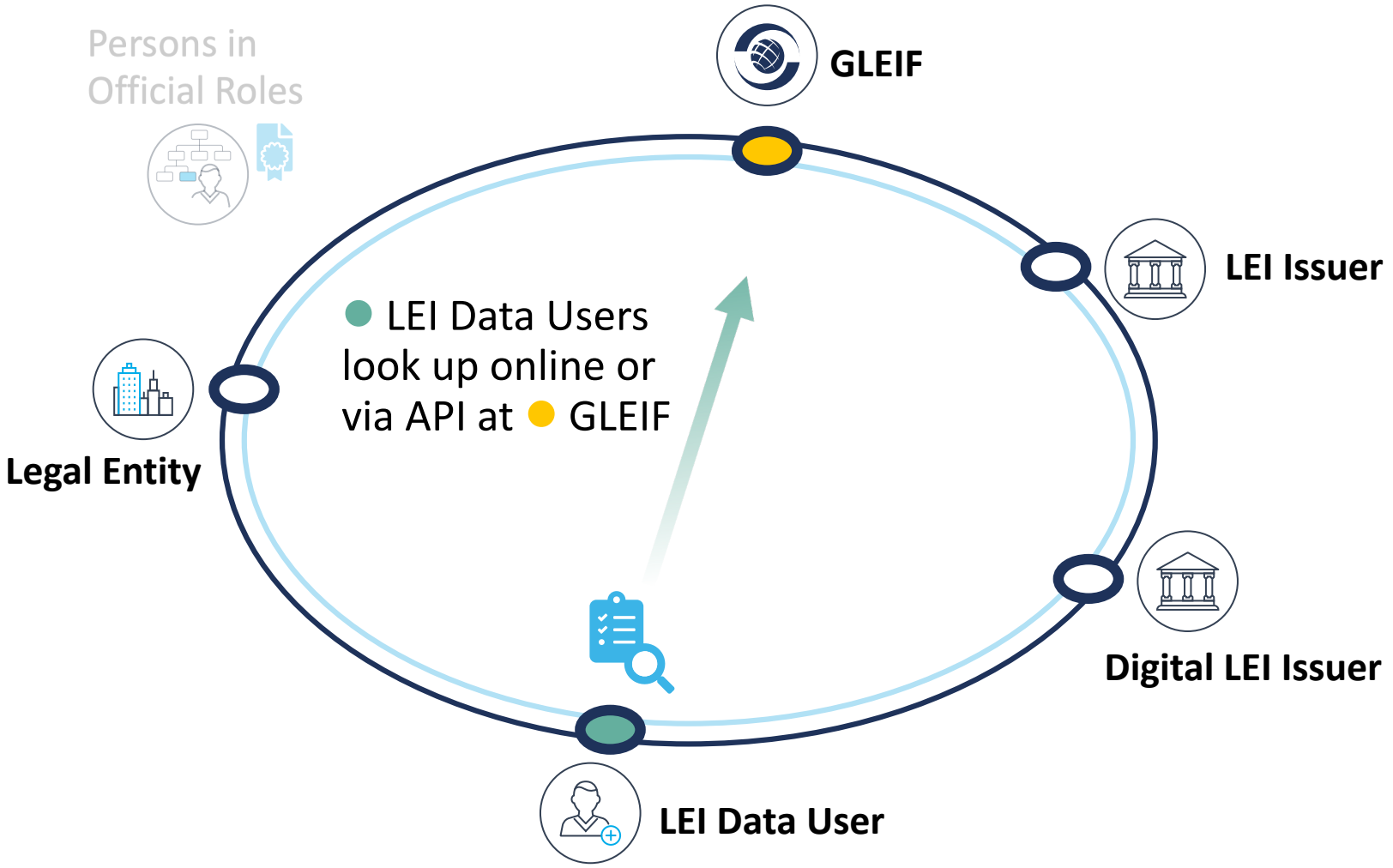
Step 8: LEI Data User to request for verification



Response will indicate whether the VC is authentic and current (since Legal Entities will have the ability to revoke VCs issued to Persons in Official Roles).

© 2020 GLEIF and/or its affiliates. All rights reserved.

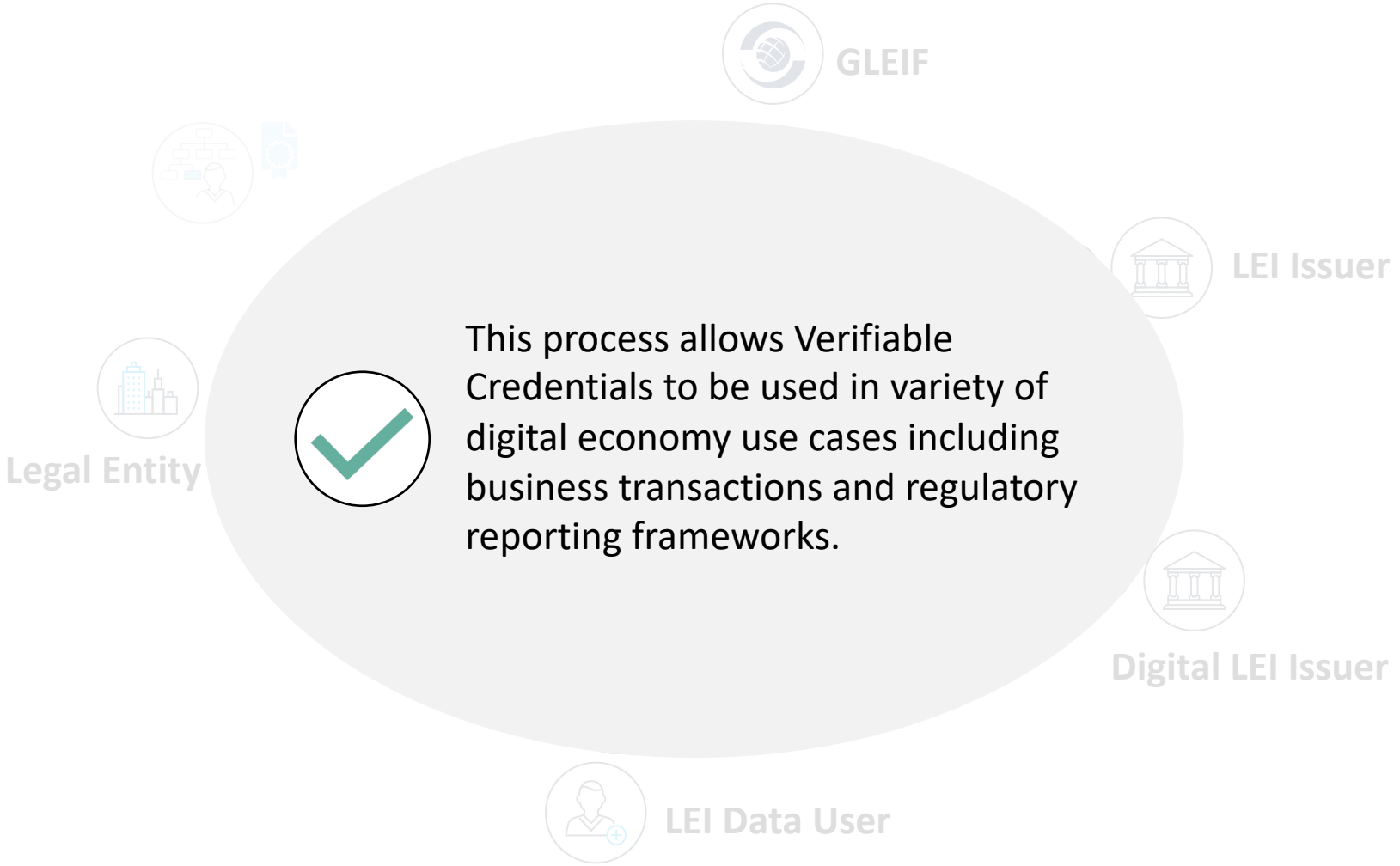
Result: Complete trust chain and transparency



Now in addition to the freely accessible look up of LEIs and the associated reference data, LEI Data Users can look up published list of official roles for which VCs have been issued by the Legal Entity.

© 2020 GLEIF and/or its affiliates. All rights reserved.

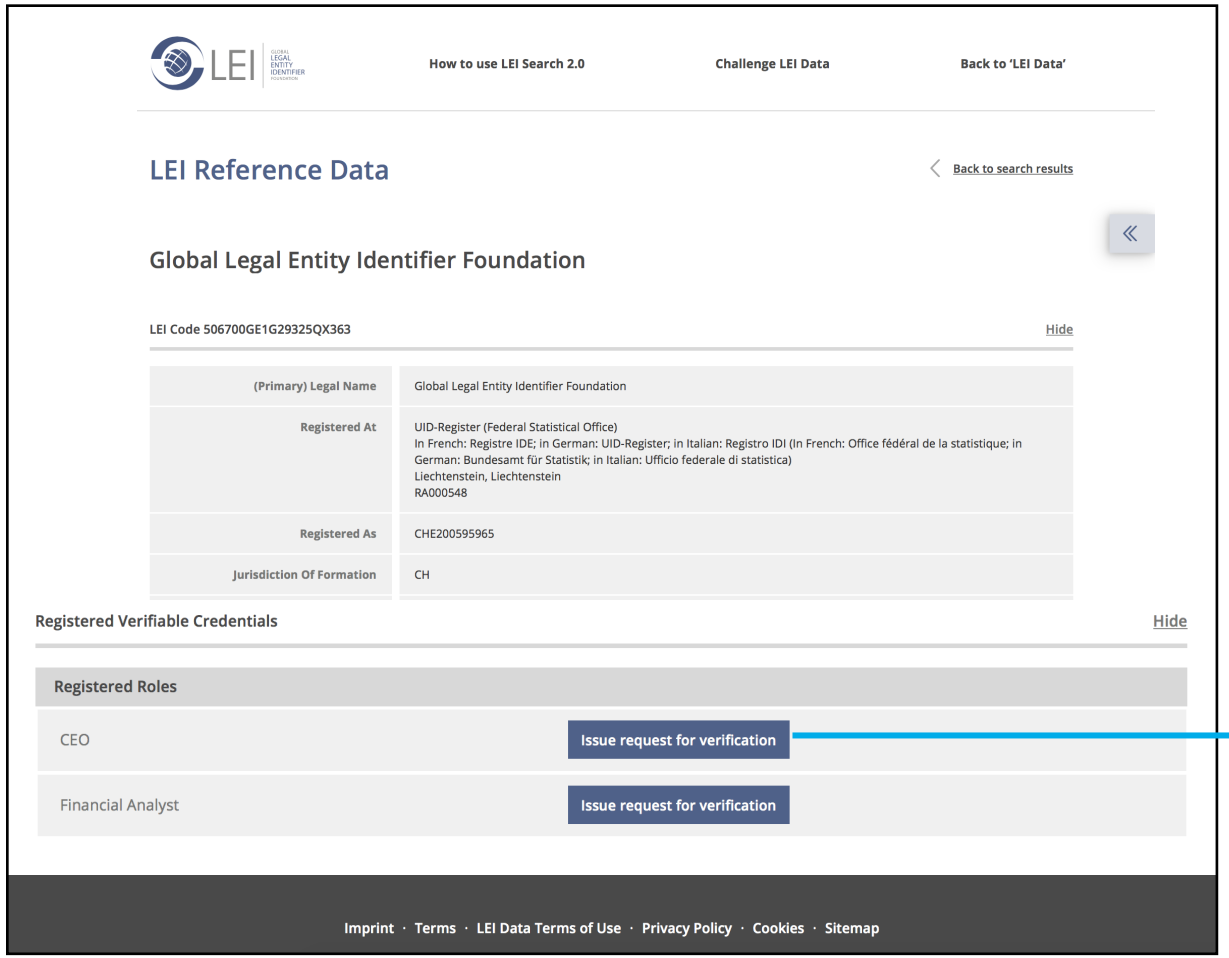
Use case agnostic approach

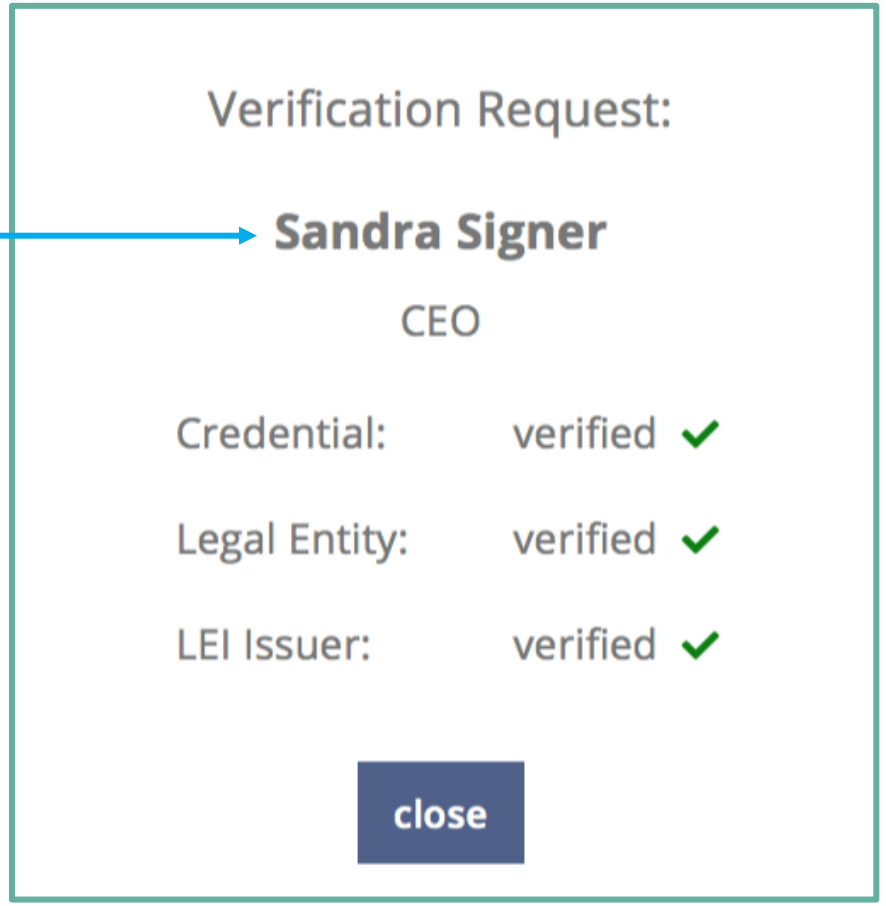


This process allows Verifiable Credentials to be used in variety of digital economy use cases including business transactions and regulatory reporting frameworks.

© 2020 GLEIF and/or its affiliates. All rights reserved.

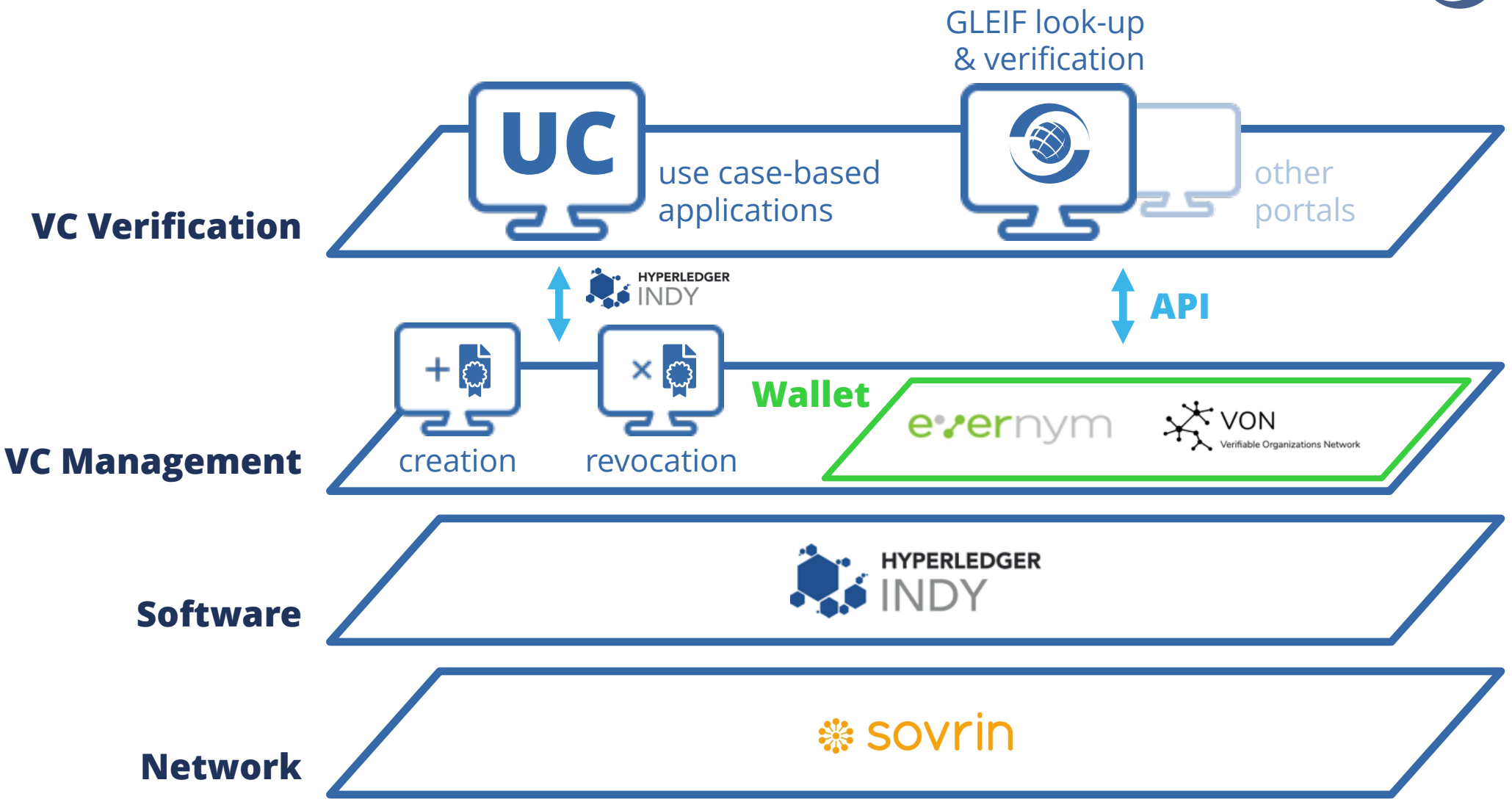
How would it look in the Global LEI Repository?
An example





© 2020 GLEIF and/or its affiliates. All rights reserved.

Technical Architecture



© 2020 GLEIF and/or its affiliates. All rights reserved.

Use Cases

© 2020 GLEIF and/or its affiliates. All rights reserved.

Use Cases

1. Regulatory filing and reporting – by the filer/ reporting entity, by a third-party filer on behalf of the filer/ reporting entity or by an auditor
2. Client onboarding/ know your customer process
3. Import/ export, supply chain, customs/ border control, payment for goods
4. Trusted supplier/ provider network membership and registration
5. Payment systems membership and registration
6. Executing and securing business contracts with clients, suppliers and providers
7. Business entity registration and licenses
8. General Data Protection Regulation

© 2020 GLEIF and/or its affiliates. All rights reserved.

Limitations

This presentation contains confidential and proprietary information and/or trade secrets of the Global Legal Entity Identifier Foundation (GLEIF) and/or its affiliates, and is not to be published, reproduced, copied, or disclosed without the express written.

GLEIF is not responsible for any errors or omissions, or for the results obtained from the use of this information. All information in this presentation is provided "as is", with no guarantee of completeness, accuracy, timeliness or of the results obtained from the use of this information.

Global Legal Entity Identifier Foundation, the Global Legal Entity Identifier Foundation logo are trademarks of GLEIF. ISO and the ISO logo are service marks of International Organization for Standardization. W3C trademarks and logos are service marks of the World Wide Web Consortium.

© 2020 GLEIF and/or its affiliates. All rights reserved.