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Self Sovereign Identity

A revolution in digital identity management

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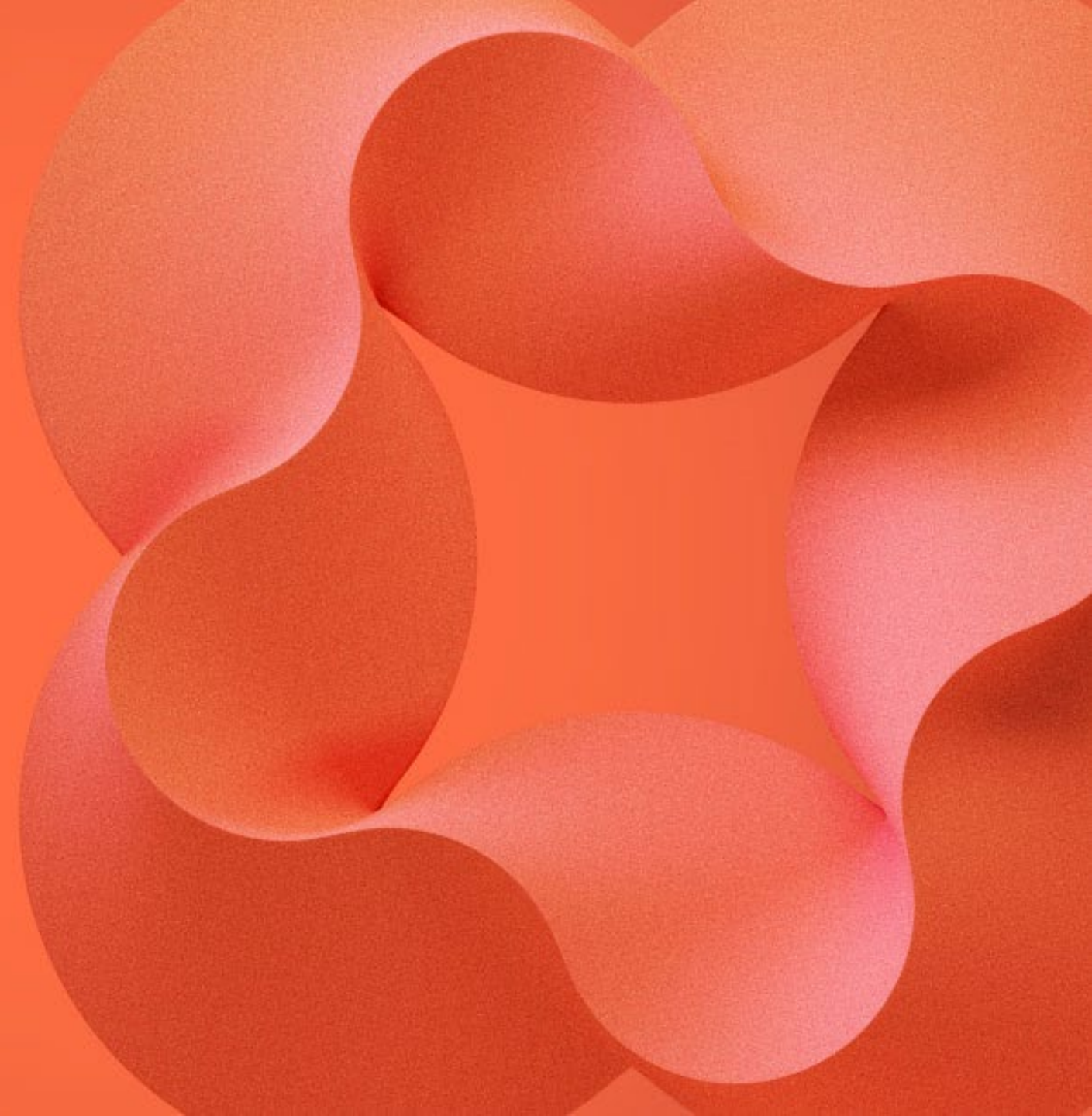
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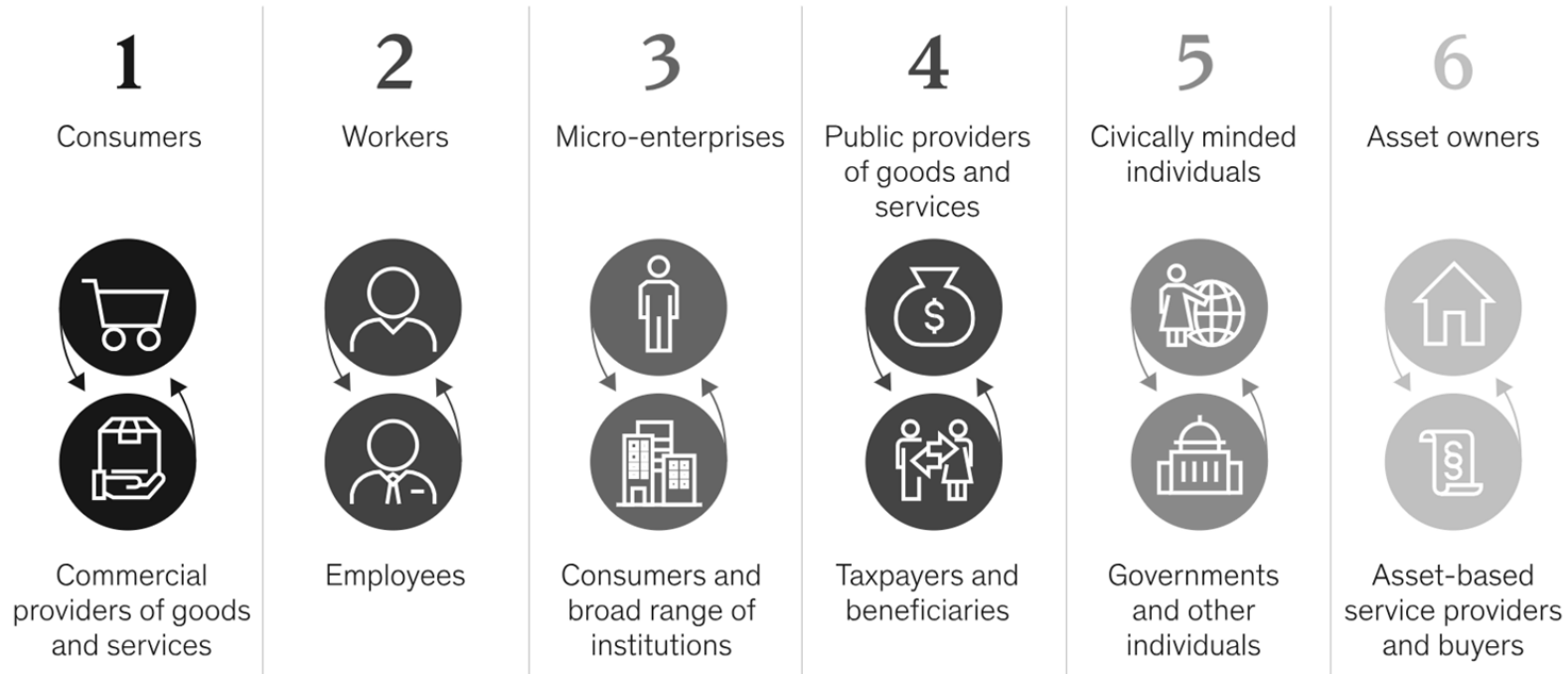
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01 Introduction



Introduction

People uses Digital Identities in 6 roles



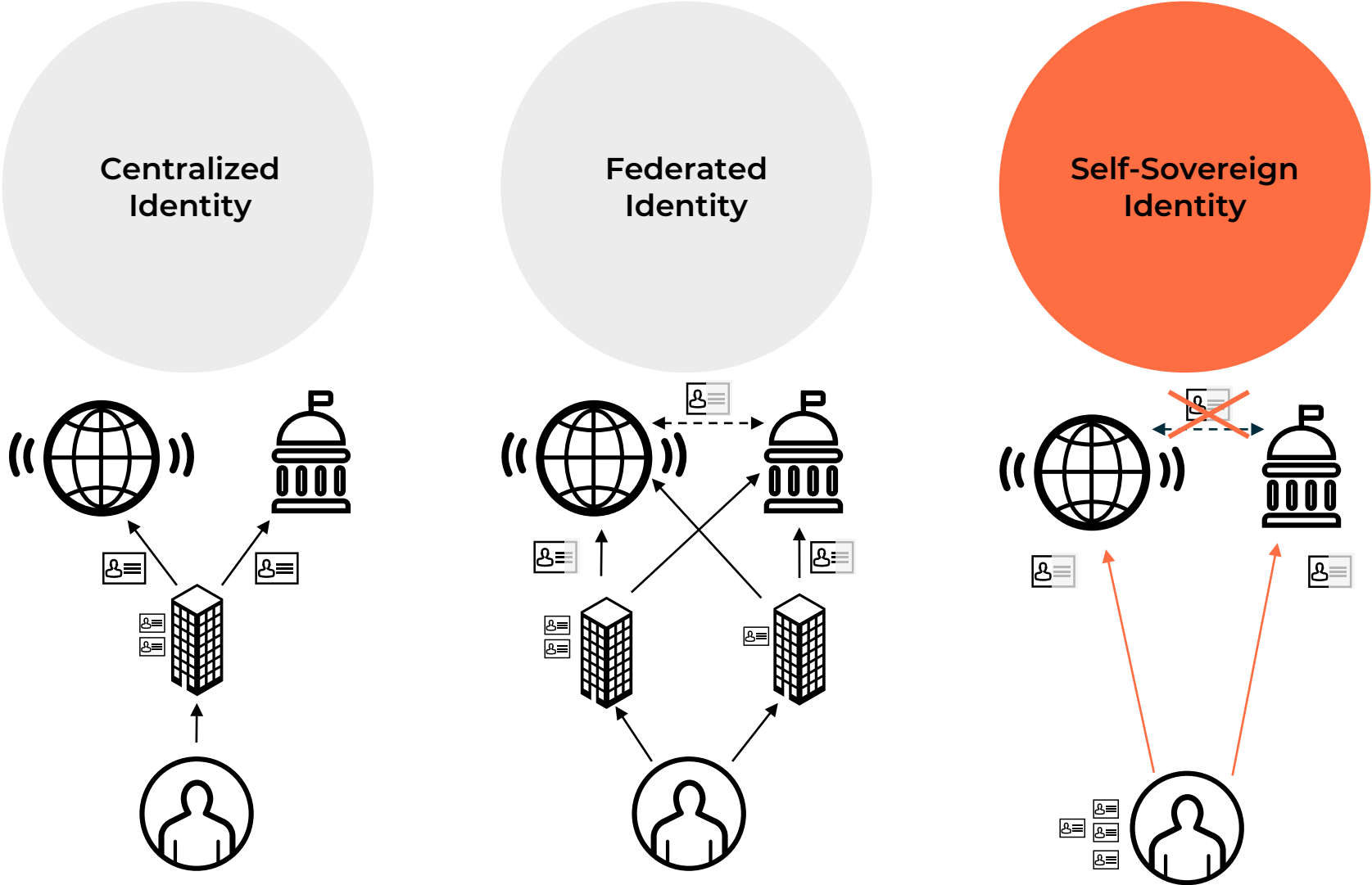
Source: <https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/digital-identification-a-key-to-inclusive-growth#section-header-3>

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2 Digital Identity Evolution

The evolution of Digital Identity management

Three approaches over time



Brief history of Self Sovereign Identity (SSI)

Several systems, inspirations and initiatives before:

- 1991, the Pretty Good Privacy (PGP)
- 2005, the Seven Laws of Identity
- last 2000s, openID

Arises from the Blockchain technology explosion:

- 2008, Satoshi Nakamoto paper
- 2009, Bitcoin first block

Term coined by Christopher Allen, in 2016:

- “The 10 principles of SSI”

Concept to reality:

- 19 July 2022 W3C announced DIDs is now an official standard



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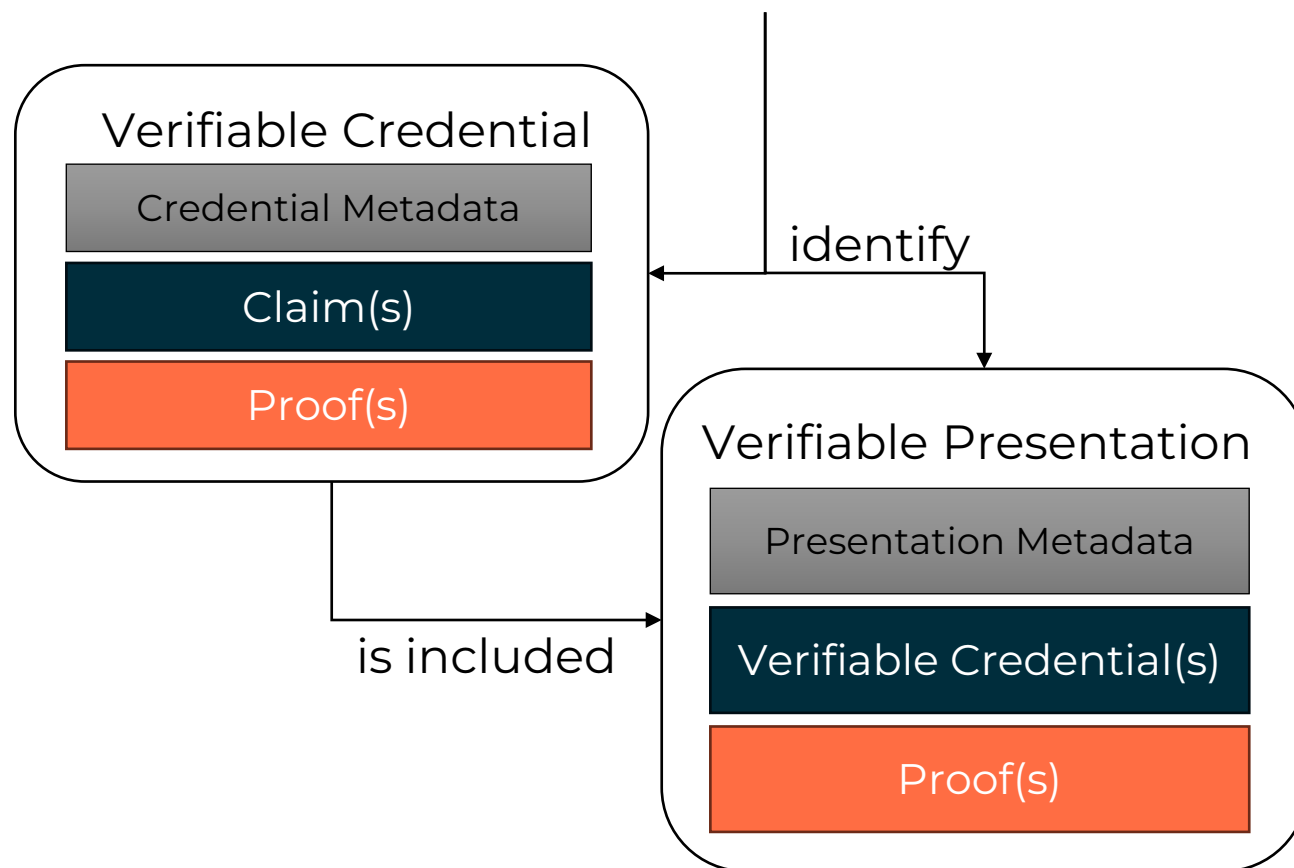
3 The Self-Sovereign Identity System

Some definitions

W3C* terminology

- **Decentralized Identifier (DID):**
 - new type of globally unique identifier
- **Verifiable Credential (VC):**
 - a tamper evident credential, that can be used to build Verifiable Presentation
- **Verifiable Presentation (VP):**
 - a tamper evident presentation, in such a way that authorship of the data can be trusted after cryptographic verification
- **Verifiable Data Registry:**
 - role a system can perform by maintaining identifiers, schemas, revocation registries, public keys, etc.

did:example:123456789abdcefg
Scheme DID Method DID Method-Specific Identifier

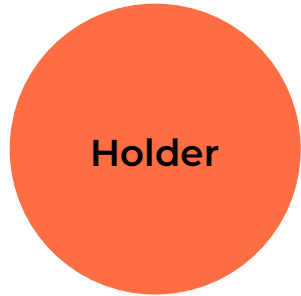
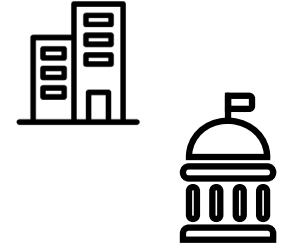


The SSI entities

The triangle of trust



Performs by asserting claims about one or more subjects, creating a Verifiable Credential from these claims, and transmitting the Verifiable Credential to a holder.



Possesses one or more Verifiable Credentials (VC) and able to generate Verifiable Presentations (VP)

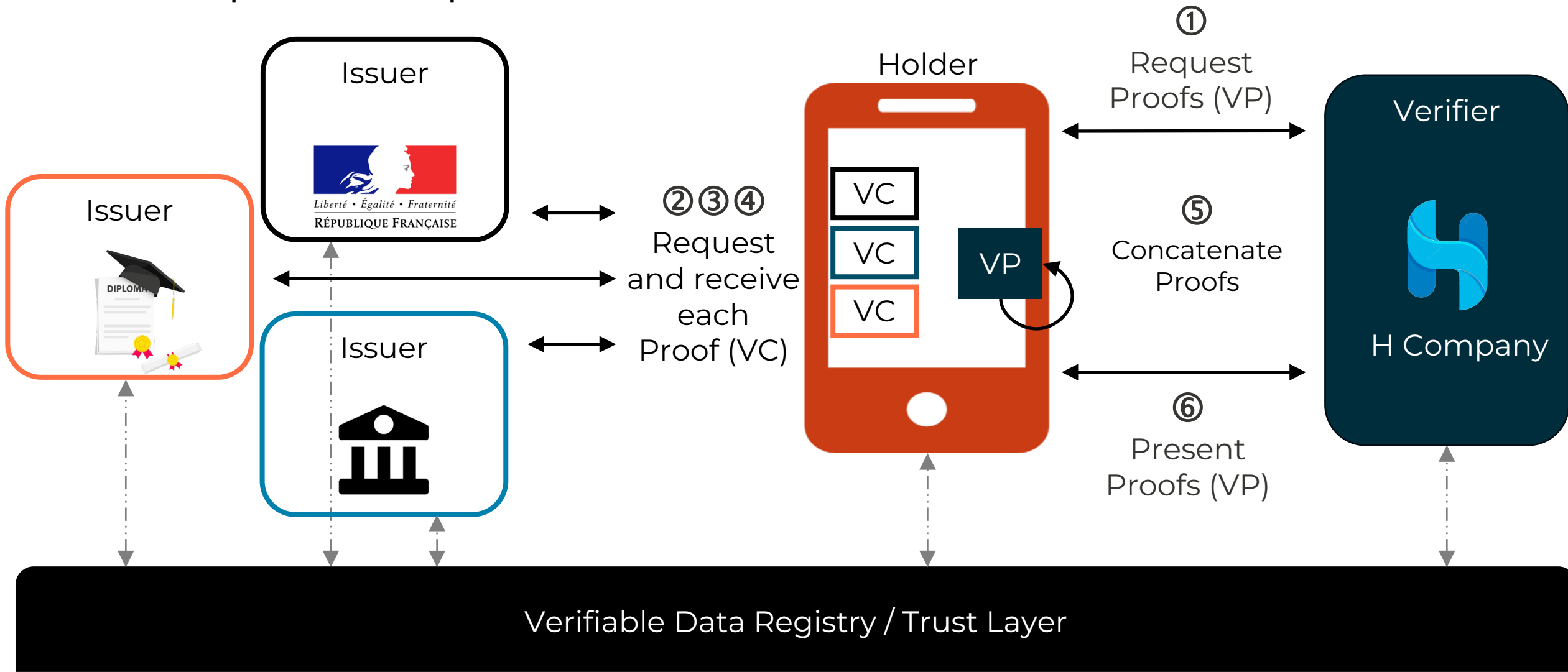


Performs by receiving one or more Verifiable Credentials, inside a Verifiable Presentation, for processing.



Use case example: onboarding of a new employee

The main steps of the whole process



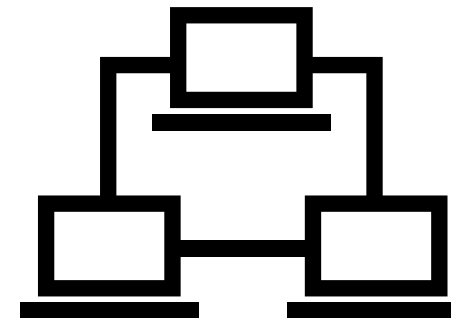
Verifiable Data Registry (VDR) focus

Examples

VDR includes “Trusted” databases, decentralized databases, etc.

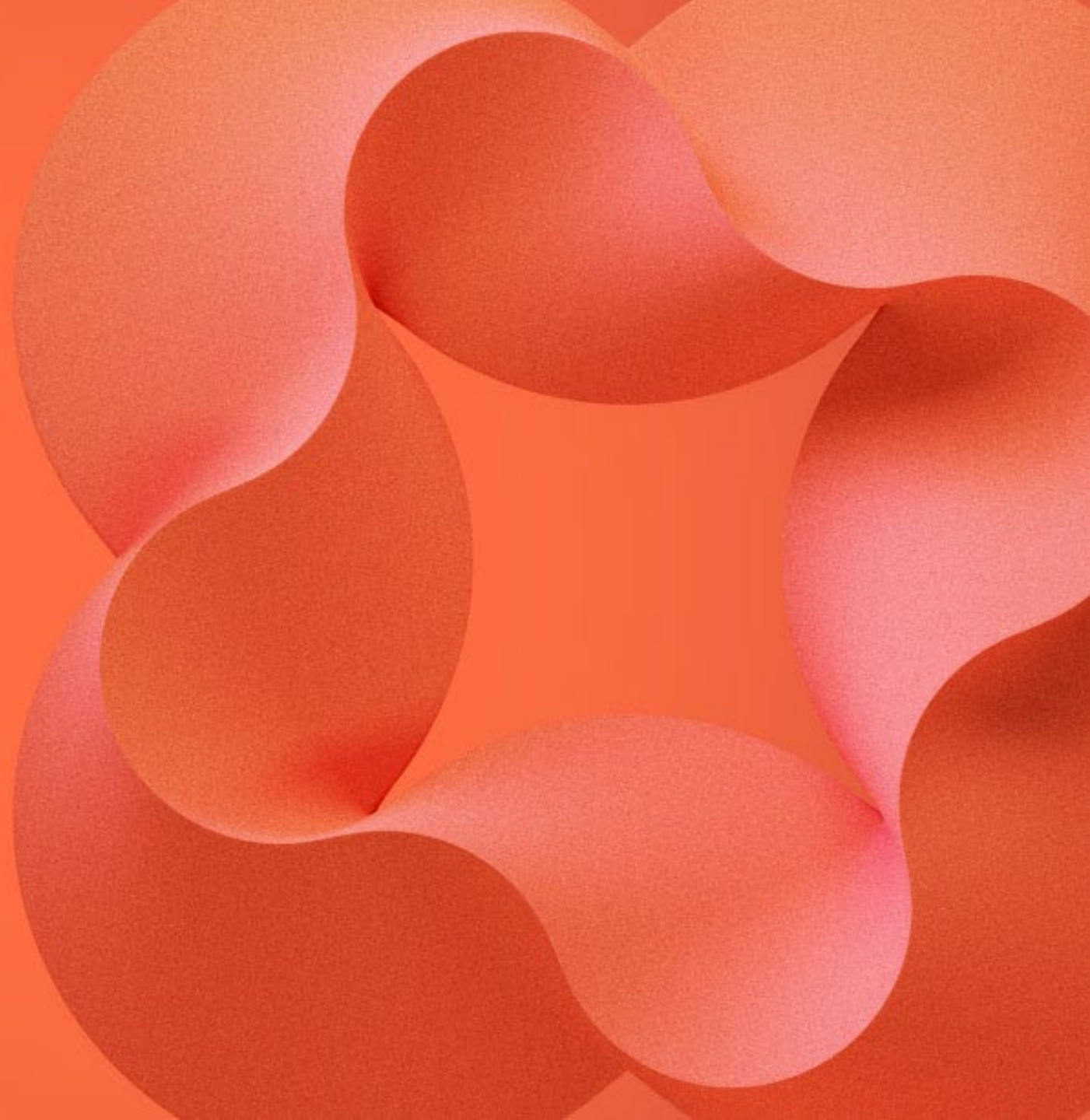
- Can be Domain Name Server (DNS)
- Can be Distributed Ledger Technology (DLT)
 - Can be InterPlanetary File System (IPFS)

- No yet defined by eIDAS regulation



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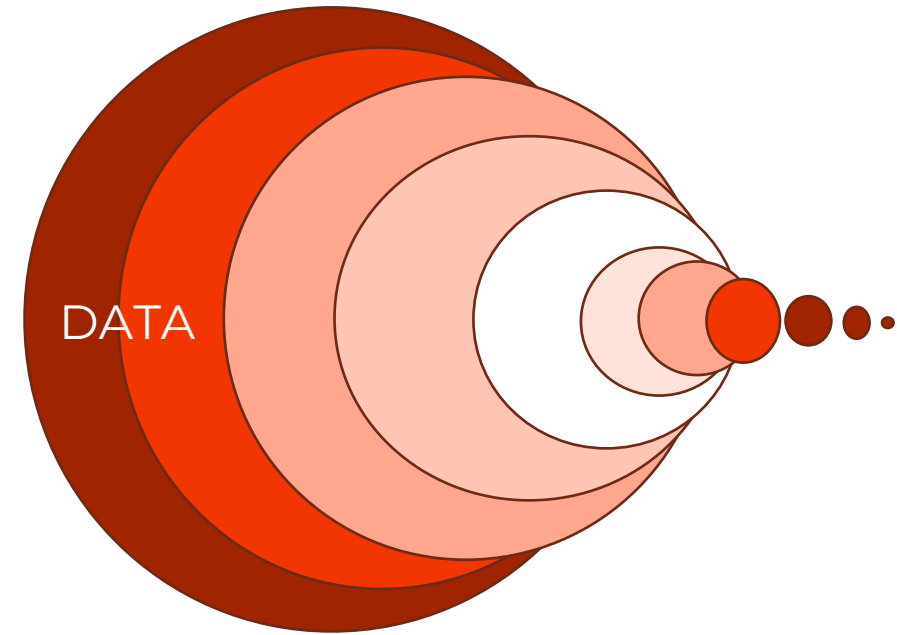
4 Privacy concerns



Privacy concern in all fields of application

Fill existing gaps...

- On the road to the GDPR compliancy
 - SSI meets data protection requirements
- Solutions for data minimization
 - Zero Knowledge Proof (ZKP)
 - Selective disclosure

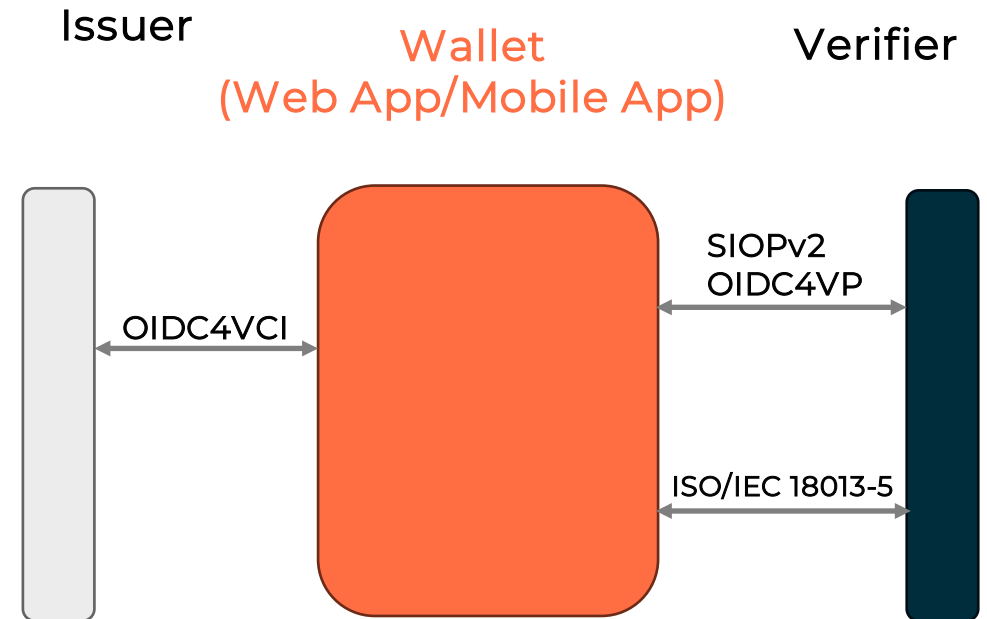


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5 Standardization and regulation

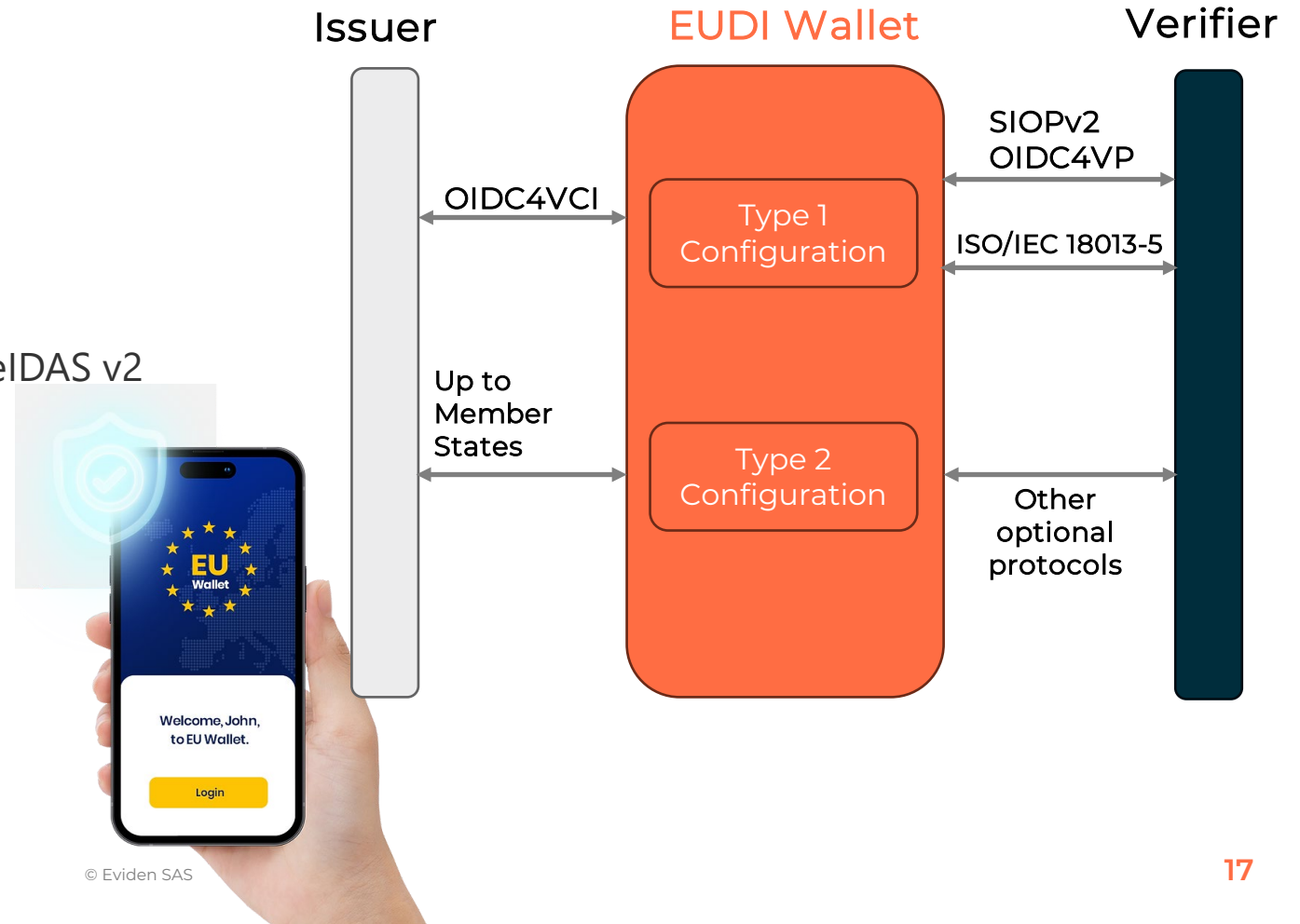
Standards and protocols

- Standards
 - W3C
 - Self-Issued OpenID Provider (SIOP) v2
 - OpenID 4VC / OpenID 4VP
 - Aligned with ISO/IEC 18013-5 about mobile Driving Licence (mDL) although there are differences



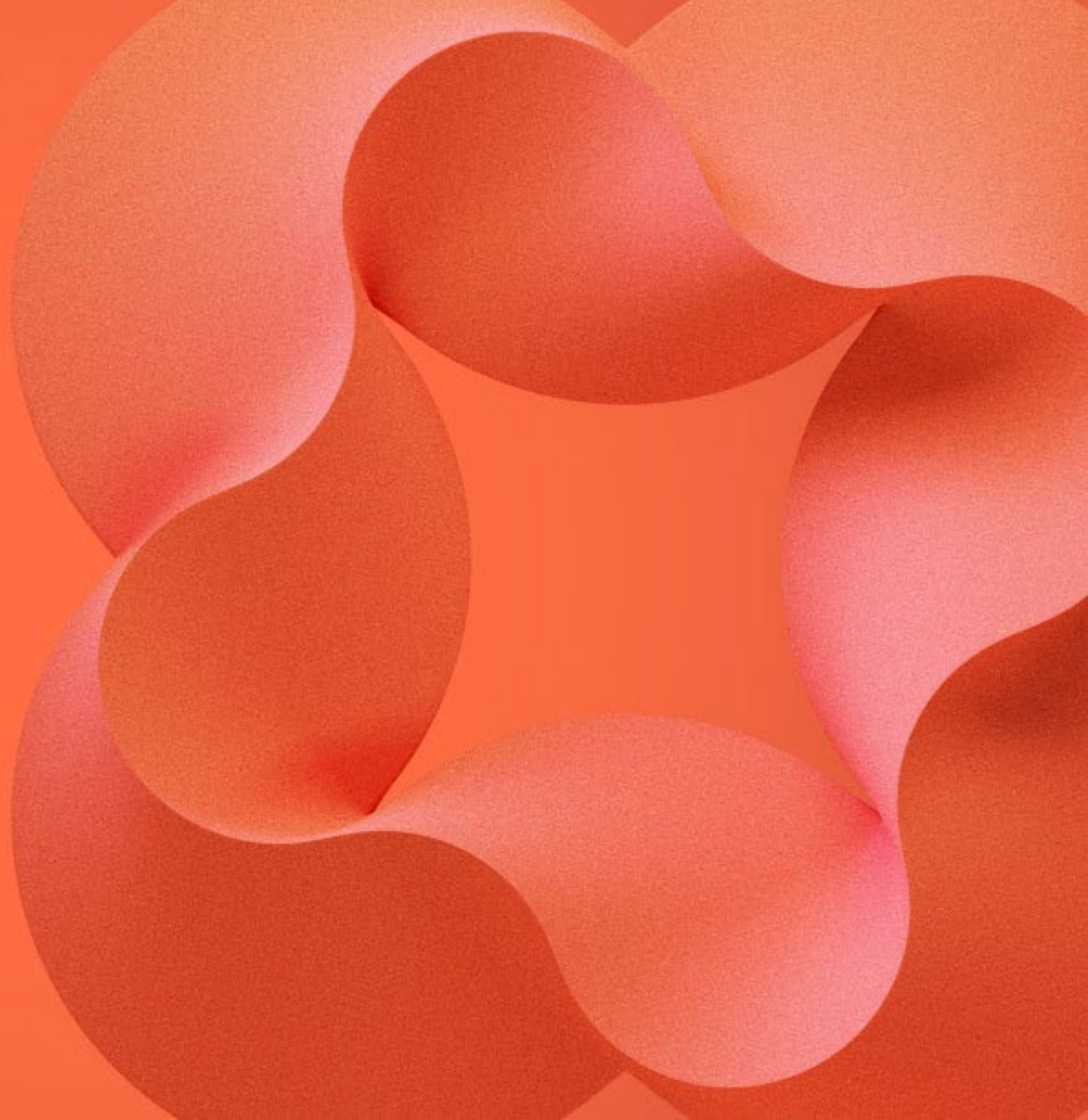
Regulation and others

- eIDAS v2
- European Digital Identity Wallet (EUDIW)
 - Download a recognised EUDI wallet
 - Decide what data store and share
- **Feb. 2023:** Architecture Publication adopted by eIDAS v2
- **2024:** Technical Specifications
- European Blockchain Services Infrastructure (EBSI)



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6 Conclusion



Towards adoption of the SSI



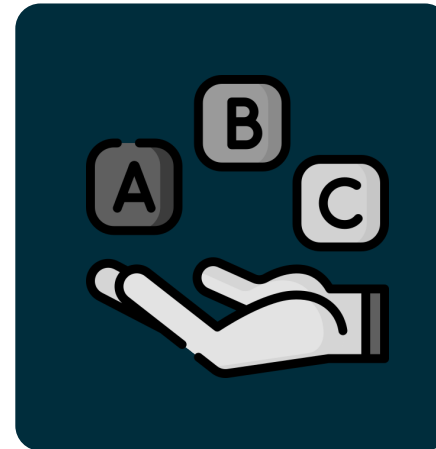
Concepts are well defined



A toolkit requirements and specifications for creating a clean digital identity wallet application are mandatory



Development of technical solutions in line with standards and regulations are ongoing



Co-existence between existing technologies (PKI, national identities schemes, etc.) and SSI need to be considered

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Questions



The Eviden logo is rendered in a white, outlined, sans-serif font. The letters are spaced out and have a consistent thickness. The background of the slide features a dark teal color with a large, abstract, 3D-style graphic of interlocking loops on the right side, creating a sense of depth and movement.

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Thank you!

For more information, please contact:
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