



# SSI

# Self-Sovereign Identities

---

Introduction to the latest generation of authentication and authorization system for persons, organizations and things.



**Michael Doujak**  
Product Manager



*ergon*

**Founded 1984**

**350 employees**

**85% with a university degree**

**4 locations**





# AIRLOCK

**20 years of experience**

**650 Airlock customers  
in 20 countries**

**> 30'000  
secured applications**

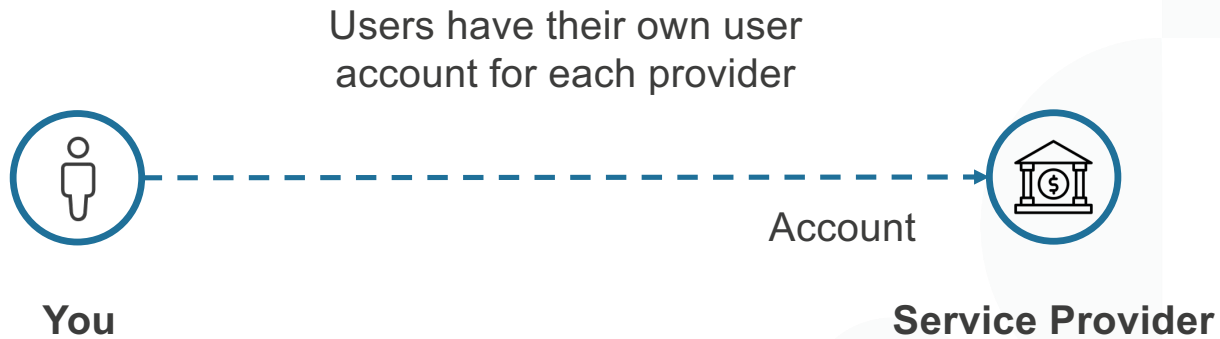
**Very high customer  
satisfaction**



# SSI The Basics



# Generation 1: Silo Architectures

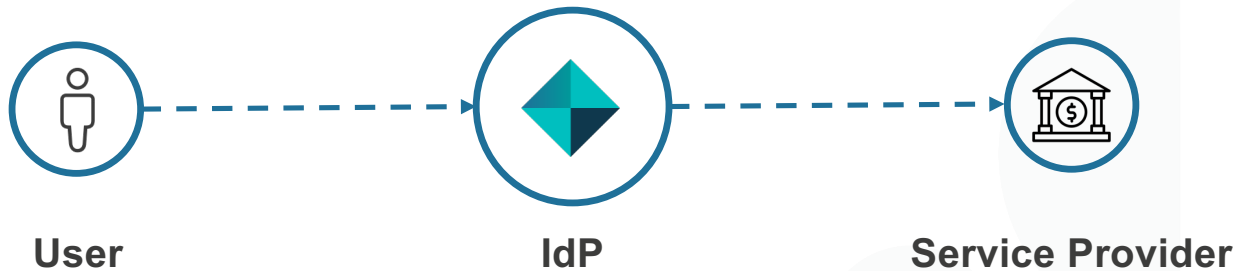


- + Good privacy (no central party)
- Too many accounts
- All providers must be security experts



## Generation 2: Federation Services and SSO

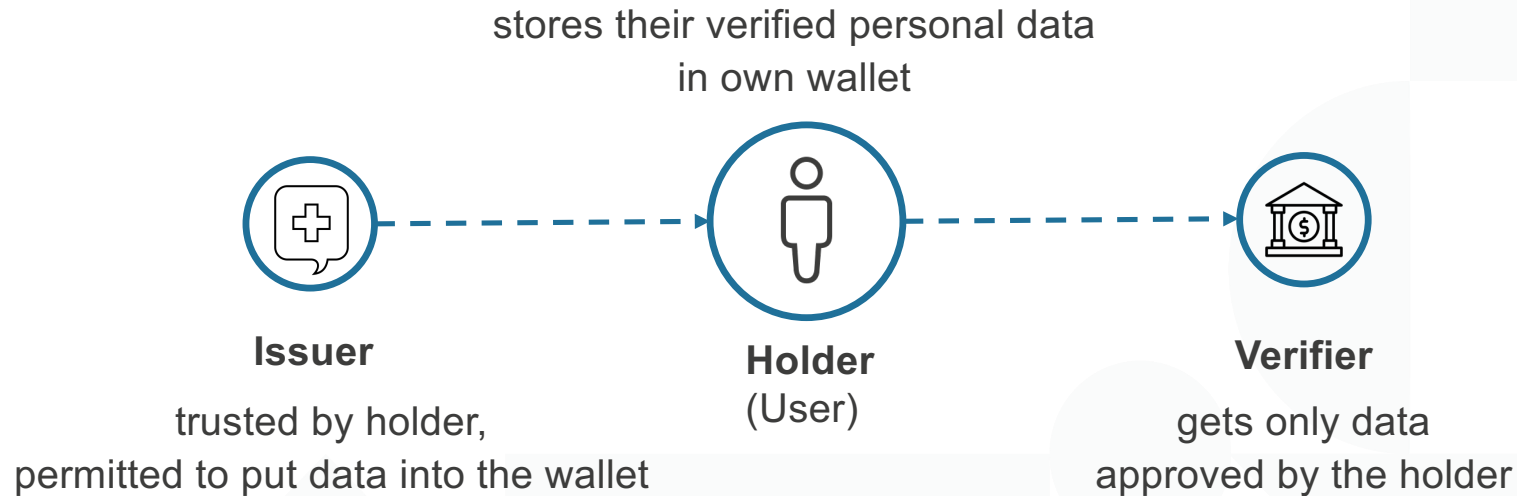
Identity provider confirms users identity to service providers.



- + Fewer accounts for user
- + Standard federation protocols
- **No privacy**
- Low trust level

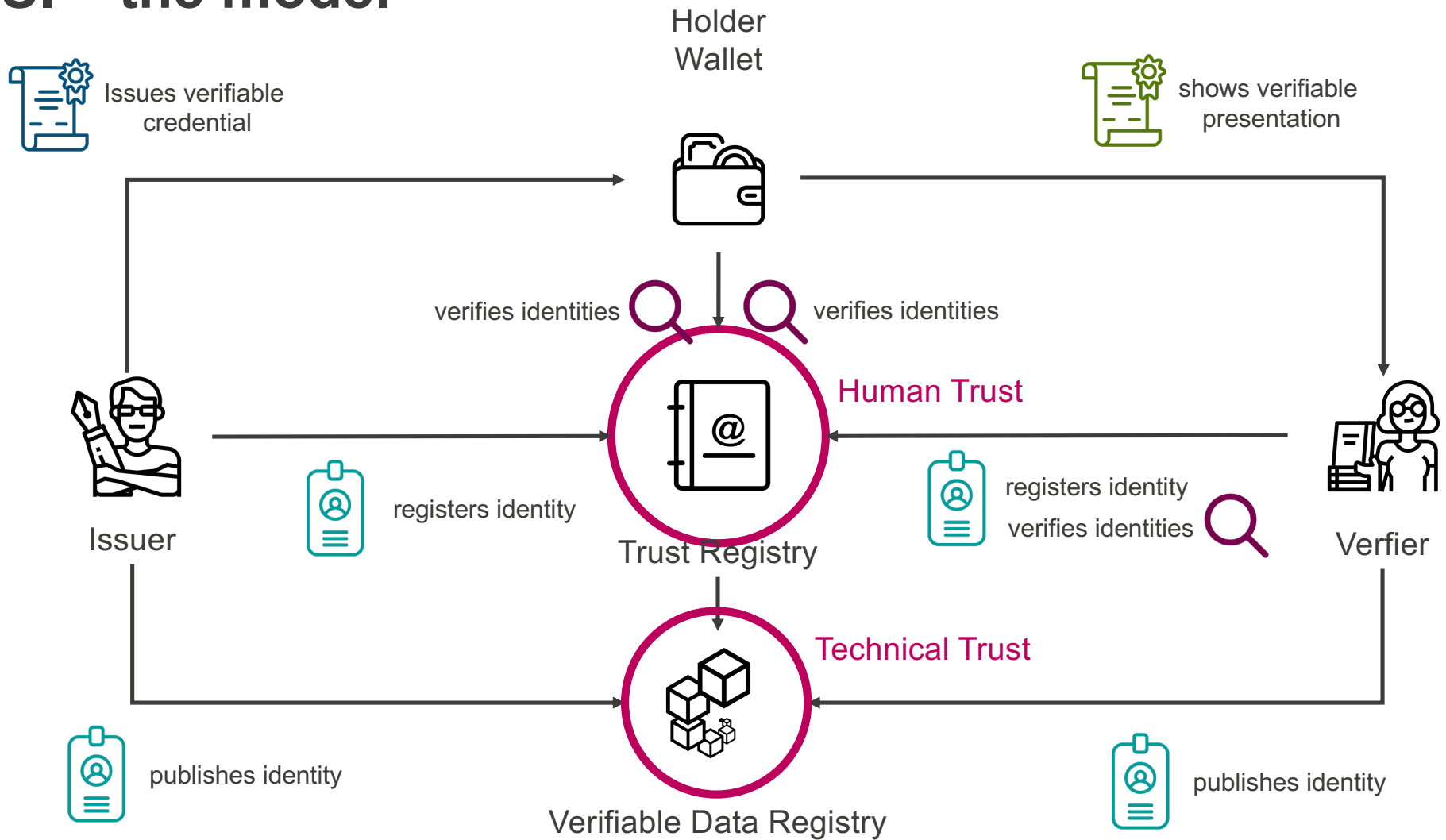


## Generation 3: Self-Sovereign Identity



- + Good privacy (no central party)
- + Verifiers receive data from authoritative source
- Standardization still in progress
- New and complex technology, adoption may be slow

# SSI – the model







# Verifiable Credentials

## Metadata

- Id - URI
- Issuer - DID
- Subject - DID

## E-ID

- <https://admin.ch/cred/123>
- did:ch-chain:switzerland
- did:ch-chain:abc123

## Claims

- Key - Value

## Claims

- Name = Doujak
- AHVN13 = 756....
- DoB. = 1.1.1970

## Proof

- Signature

## Proof

- Signature

### Verifiable Credential: Metadata

- id
- issuanceDate
- credentialSubject
- issuer

### Verifiable Credential: Claims

- Claim 1
- Claim 2
- ...

### Verifiable Credential: Proof

- type
- signatureValue
- nonce
- created
- Creator



Self Sovereign Identity

# Relevance of SSI today



# Analysts on SSI

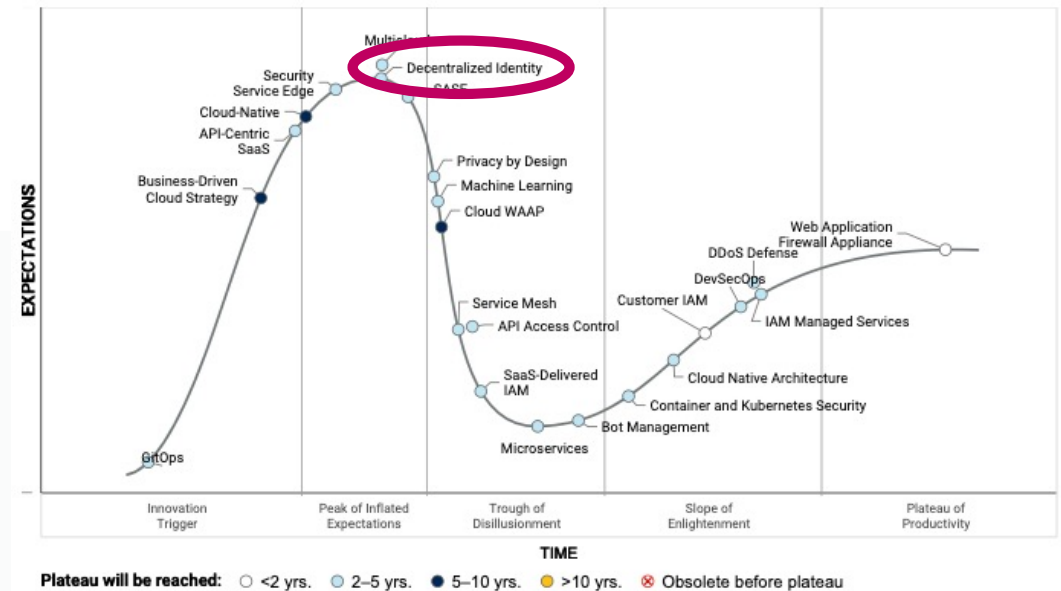
Gartner 2022:  
«Peak of Inflated Expectation»

Kuppinger-Cole 2022:  
European Identity & Cloud Conference

- One entire stream on SSI
- Various workshops and keynotes

Gartner 1Q2022

## Custom WAAPAM Hype Cycle





# National Projects and Solutions

## Implemented

- **Denkmark:** MitID  
Migration V2 (IdP) to V3 (SSI)
- **Singapore:** SingPass
- **South Korea:** Drivers License
- **British Columbia, Canada:**  
OrgBook (el. Trade Register)

## European Union

- eIDAS Version 2  
(**e**lectronic **ID**entification,  
**A**uthentication and trust **S**ervices)
  - Priority until 2024
- EU funds projects:
  - European Self-Sovereign Identity Framework Lab
  - European Blockchain Partnership

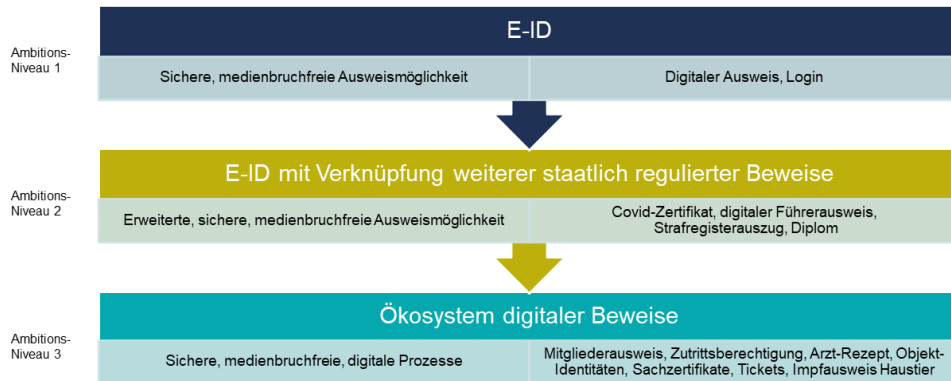




# Switzerland

## E-ID (Bundesamt für Justiz)

- March 2021 – E-ID fails in public vote
- Public Enquiry Oct. 2021



- Public Consultation: 7. July - 20. October 2022
- Parliamentary Debate starts in 2023

## Projects

- Orell Füssli and Swisscom, 4.1.2022
  - SSI Angebot within 12 Months
- Kt. Aargau, Adnovum, cardossier and SwissSign, 12.1.2022
  - Wohnsitzbescheinigung
  - Fahrzeugregister
- Kt. Zug, ti&m, HSLU and uPORT, since 2017
  - Zug ID, eVoting, eZug App
- Kt Schaffhausen
  - eGov Box mit eID+

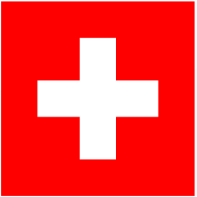
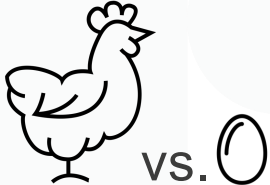


Self Sovereign Identity

# Benefits of SSI



# The Chicken and Egg Problem



**Issuer**

I will issue VCs, if there are many holders

- Führerschein
- Wohnsitzbestätigung
- Handelregistrauszug
- ...



**Holder**



I will get a wallet, if I can use my VCs often



**Verifier**



I will receive VCs, if there are many issuers



# Privacy by Design



- Verwendung von VCs nur mit Einverständnis des Inhabers
- Holder entscheidet, welche Claims freigegeben werden



Datensparsamkeit  
Dezentrale Speicherung



Umsetzung garantiert:

- DSG
- GDPR
- DSGVO





# Persons, Organisations and Things



E-ID  
Education  
Banking / Insurance  
Memberships

UPI  
Commercial Register  
VAT-ID  
Billing Signature  
PSD2 Seals  
Ownership of Assets



Vehicle Registration Card  
Maintenance Log

Rental Cars and  
Self-Driving Cabs

- Insurance
- Fuel

# SSSI is a Game Changer

SSSI opens up new  
Business Models

SSSI dramatically  
changes the User  
Experience of IAM

SSSI changes the way  
organizations can  
present themselves  
to their customers

SSSI implies a shift in  
responsibility from  
services to the end user

SSSI can help to save  
costs (KYC)

AIRLOCK®





SSI offers new business opportunities:

Now ist the time to **explore**  
which **opportunities** are  
relevant **for your organization**

SSI challenges existing business models:

Now is the time to verify how  
your organization is affected and  
take **action** to **avert** the **threat**.

# Vielen Dank

---



Michael Doujak  
Product Manager

