

# **IoTWeek**

Dublin — June 20-23, 2022

## **Security & Privacy, Trustworthiness Perspectives to Secure Data Platforms in a competitive Digital Single Market**

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**GLOBAL VISION:**

**IoT TODAY AND BEYOND**

**IoTForum**

Promote **INTEROPERABILITY**  
ensuring **SECURITY**  
and **PRIVACY**

When removing the barriers security must be increased

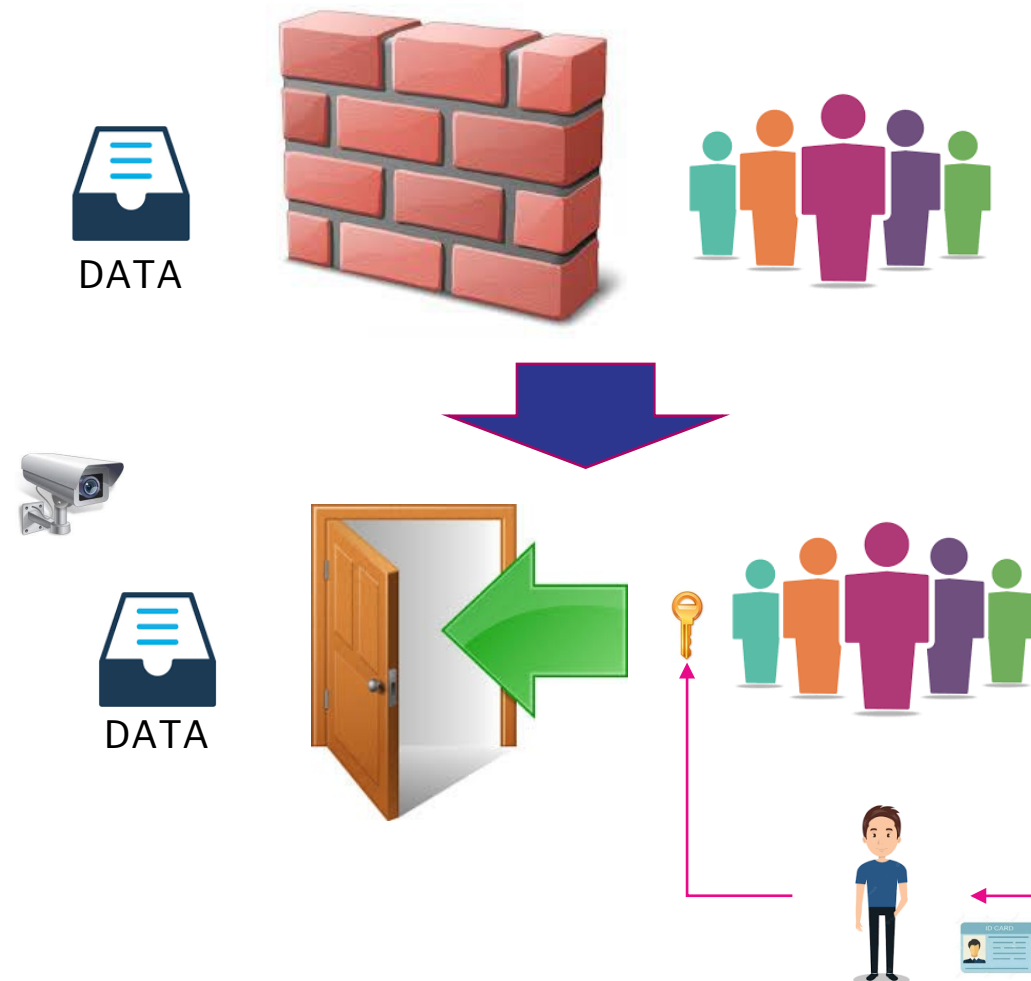
We need to **know** who wants to access

We can give a **key** to enter and **control** what a person is doing

So we'll have enough **trust** but...

Are the **benefits** higher than **costs**?

And what about **privacy**?



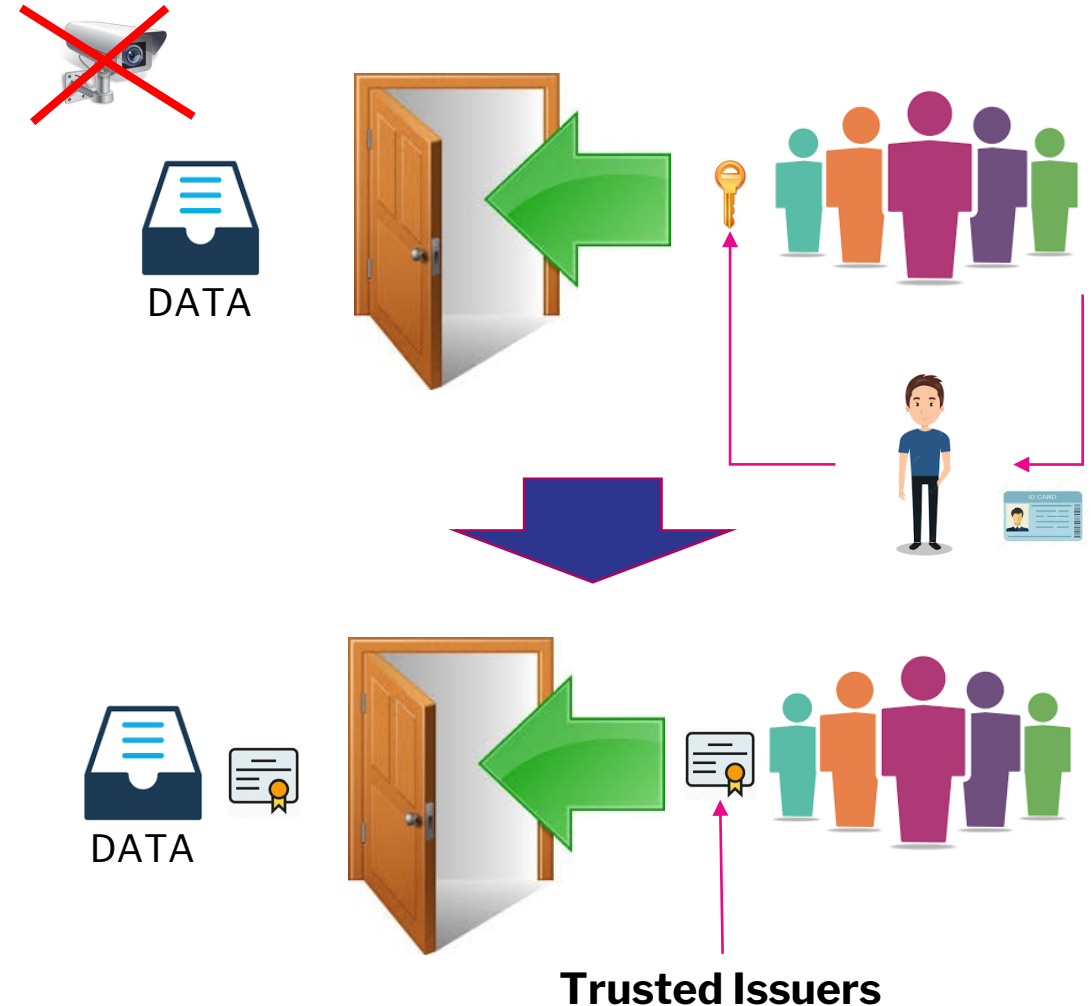
# Privacy

When increasing the security the privacy could be an issue

GDPR compliance for PII (Personal Identifiable Information)

Data Breach risks

Let's the users own and manage PII and use anonymized credentials to control access to the data

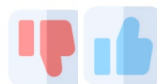


## Blockchain Technology & Self sovereign Identity provides security and trust preserving Privacy



### **Tamper-proof Ledger**

Transactions are recorded in a chain of related block and a malicious attack would broken chain integrity



### **Consensus-based Governance**

Changes to the system must be approved by the majority of participants



### **Cryptographic keys**

All transaction are signed with Cryptographic keys which provide security and reliability



### **Verifiable credentials**

All stakeholders are identified by tamper-evident credentials that has authorship that can be cryptographically verified.



### **Non-repudiation protocol**

Data exchanges and payments are made through a P2P communication protocol with cryptographically signed proofs



# I3-Market Solution

As **Data Marketplace** I can have more data to provide to my users

As **Data Provider** I can sell my data on more Data Marketplaces

As **Data Consumer** I can find interesting data on a single Data Marketplace

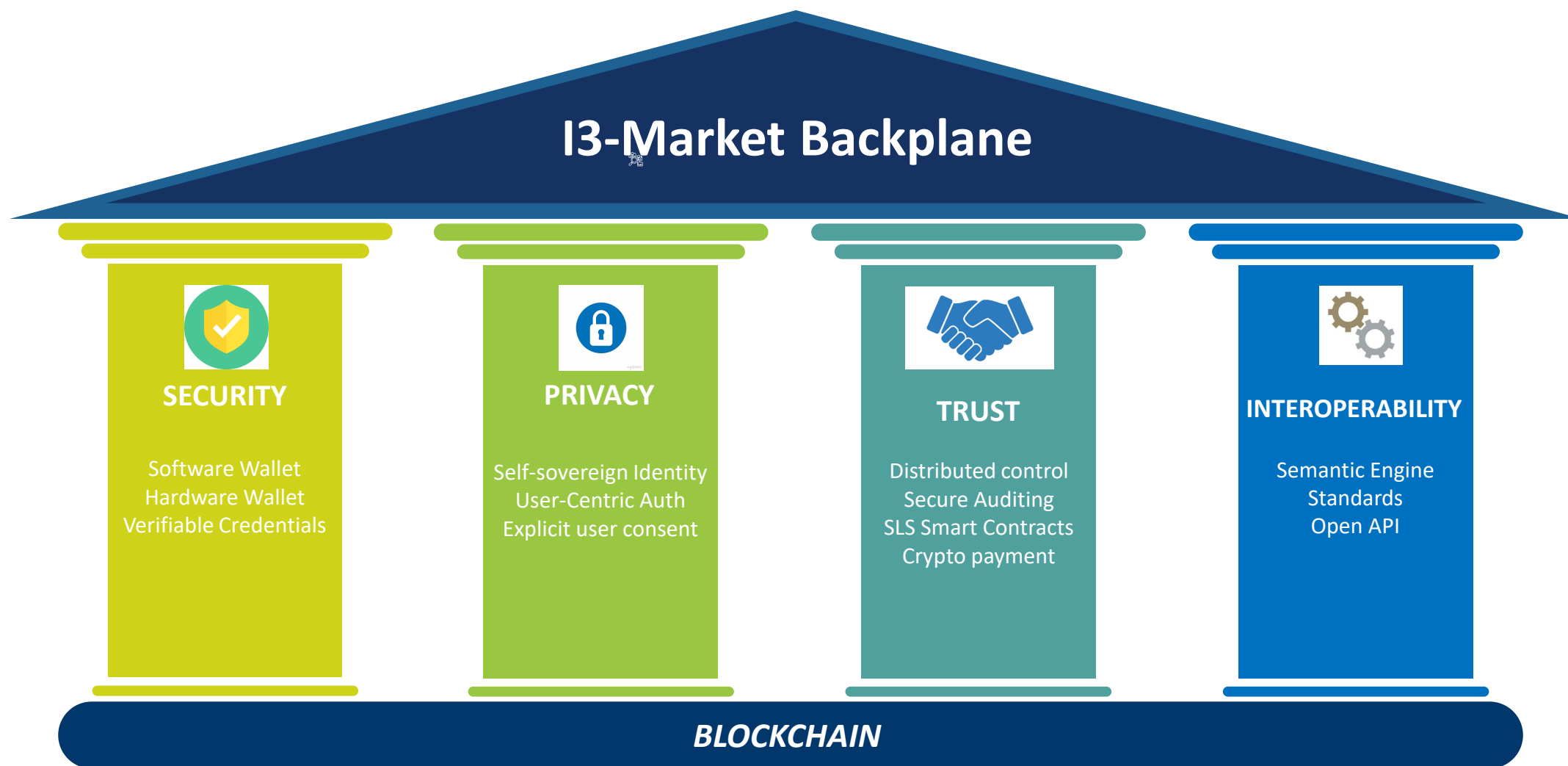
As **Data Owner** I can give my consent and control data sharing



# I3-Market Pillars

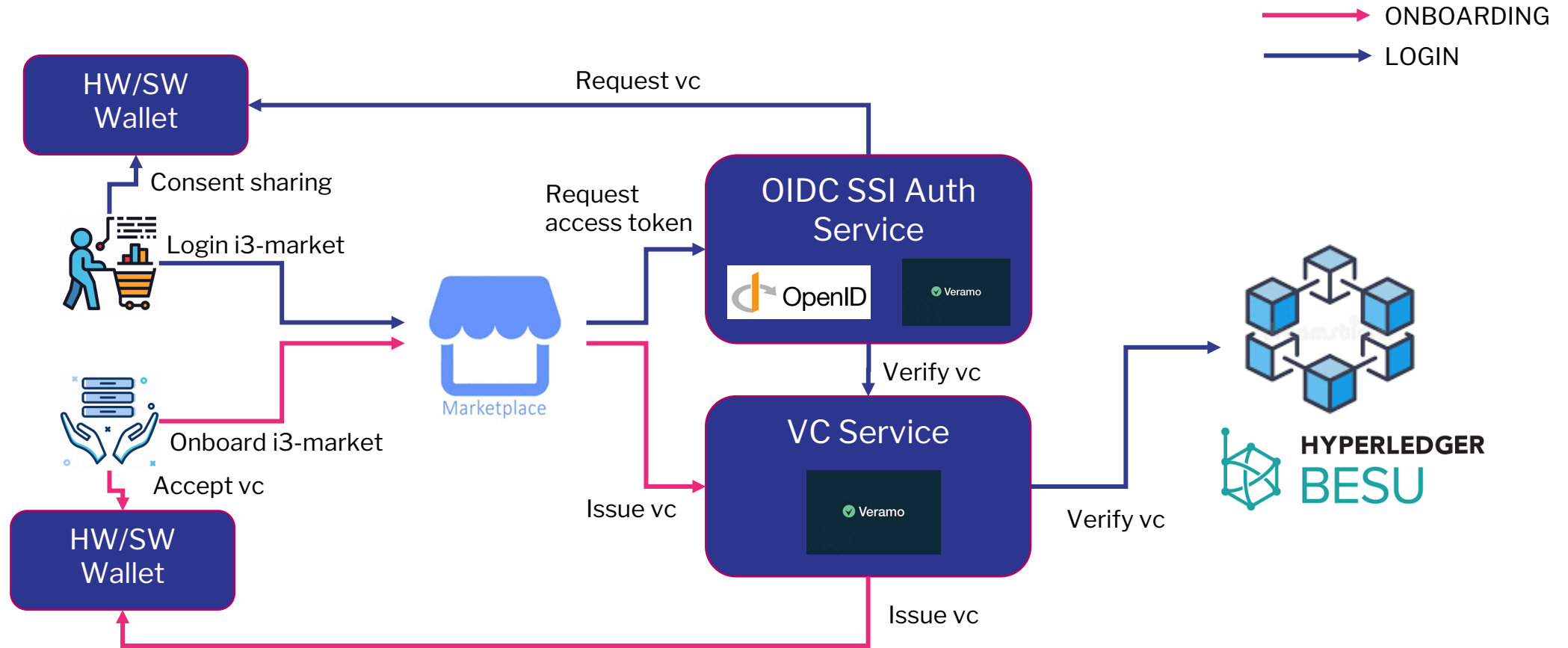
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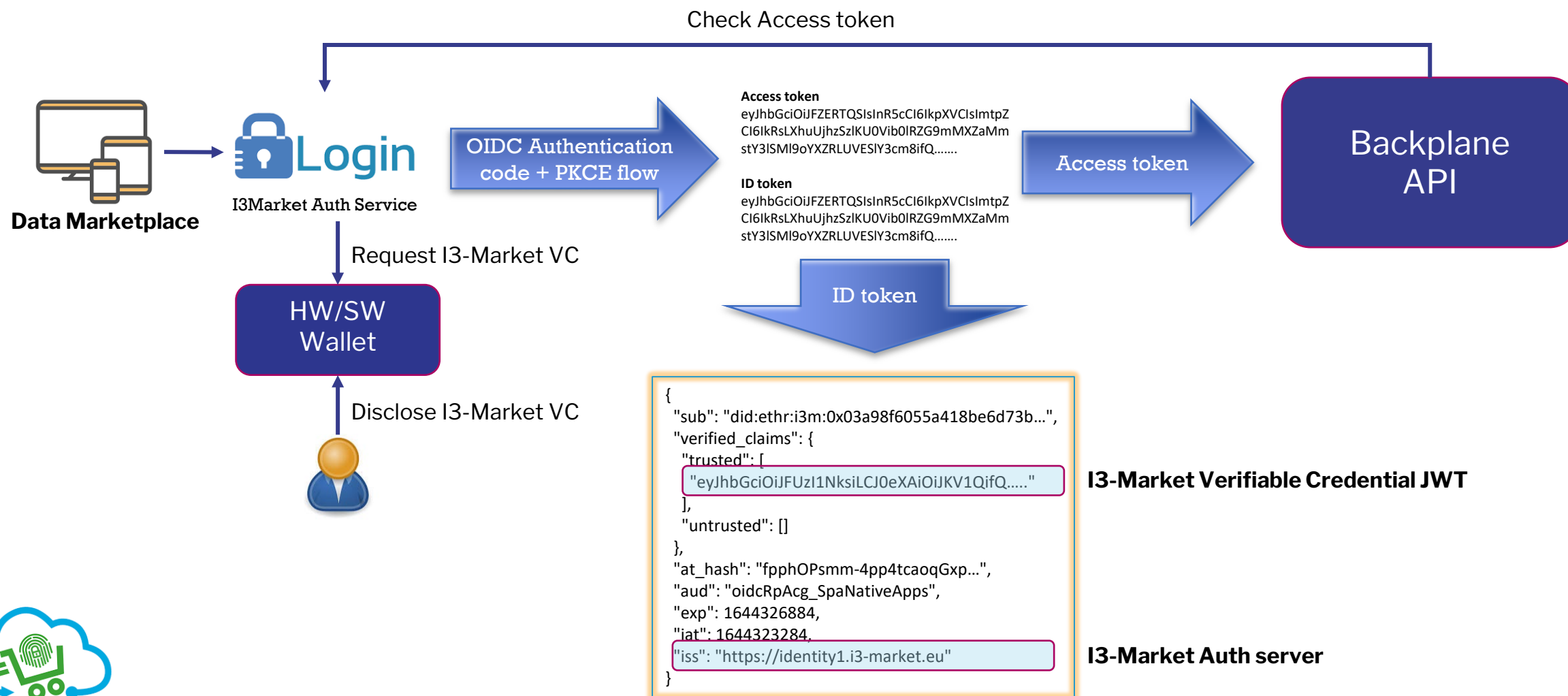


# i3-Market Identity & Access Management





# I3-Market Login



# I3-Market Verifiable Credential JWT

```
{
  "vc": {
    "credentialSubject": {
      "role": "provider",
      "profile": {
        "name": .....,
        "surname": .....,
        ...
      }
    },
    "@context": [ https://www.w3.org/2018/credentials/v1 ],
    "type": [ "VerifiableCredential" ]
  },
  "sub": "did:ethr:i3m:0x03a98f6055a418be6d73b6caf6.....",
  "nbf": 1637597151,
  "iss": "did:ethr:i3m:0x2e3592788eb9154914f87e4bb820110...."
}
```

**CREDENTIAL**

**CREDENTIAL SCHEMA & TYPE**

**SUBJECT DID**

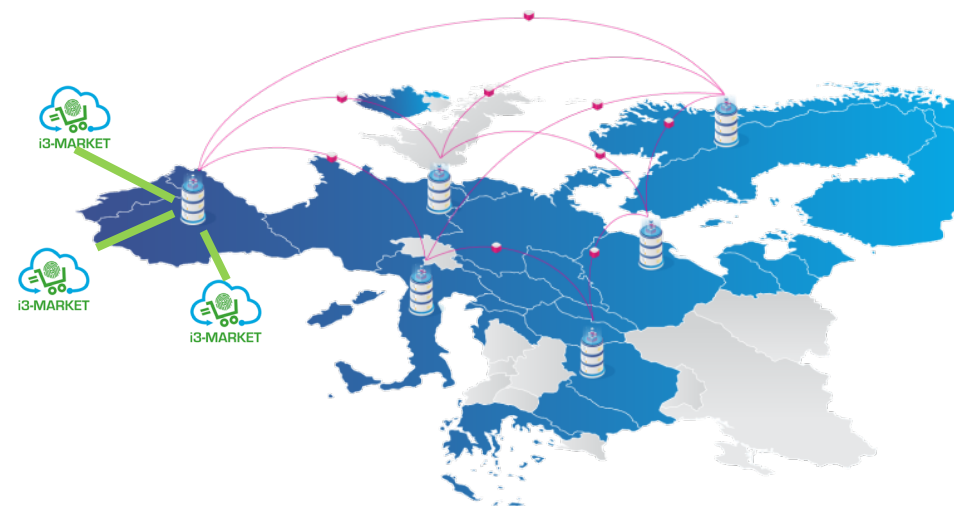
**ISSUER DID**

...

# Future works

Evaluate integration with EBSI  
(European Blockchain Service  
Infrastructure) and ESSIF (European  
Self Sovereign Identity Framework)

Evaluate the use of eIDAS bridge  
credentials for Marketplace  
onboarding





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# Thank you!

Find more:

<https://www.i3-market.eu/>

[iotweek.org](https://www.iotweek.org)