

Augmenting Open Badges

With International Identity Standards

Steve McCown

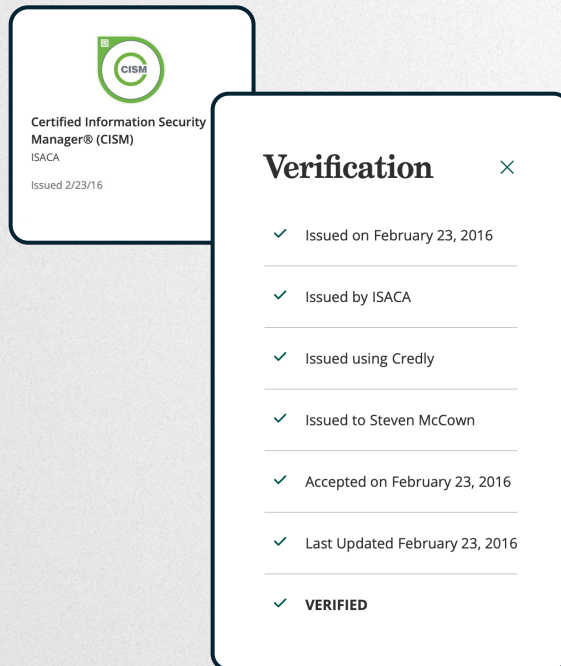
Anonymome Labs, Chief Architect

5 Jun 2025

Open Badges 3.0: New Opportunities

Previous Versions

- Static references to certifications, degrees, etc.
- Resumes, LinkedIn, etc.
- Very useful functionality



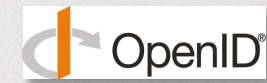
New Specification Format

- W3C: Verifiable Credential Data Model

New Use Cases

- Activate the credentials
- Daily use
- On & Off Campus
- Expanded branding: during & after education

Welcome to Decentralized Identity!



Identity Industry – Quick Summary

“The Internet was built without an identity layer.”

~ Kim Cameron

Microsoft Chief Identity Architect

The Laws of Identity, May 2005.

Identity on the Early Internet...

- ‘Identity’ = login name + computer name / IP
- Email address
- Insecure authentication

Identity Community Today

- Creating a new interoperable identity layer
- Strong cryptography
- Interoperable / open standards



Identity Standards Organizations

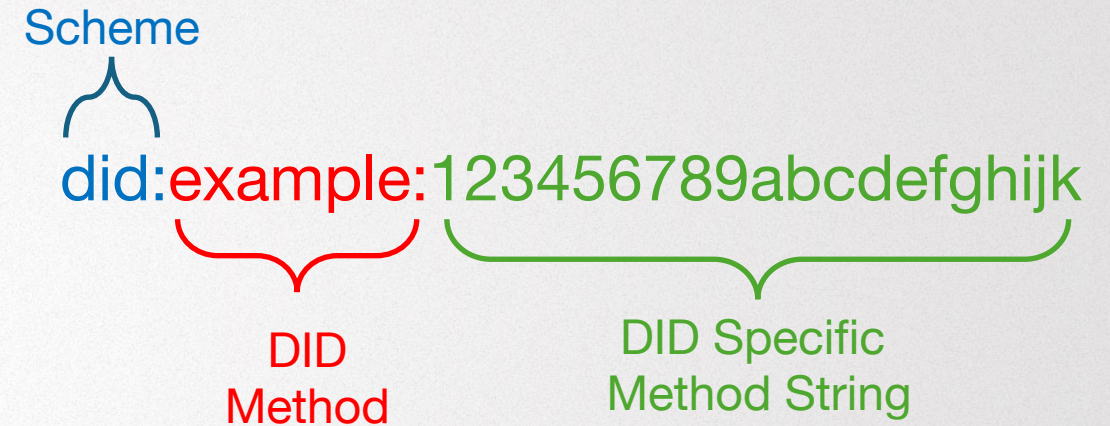
W3C Decentralized Identifier WG

- Decentralized Identifiers (DIDs) v1.1
- DIDs are like a web addresses
 - Users make them ... and share them
 - Digital: People, places, and things
- 2 Types
 - Public: on a Verifiable Data Registry
 - Peer DIDs (between 2 Holders)
- DIDs Point to DID Docs
 - Communication (address & protocols)
 - Security (public keys, auth / verification methods)
 - Data for Verifiable Credentials

Scheme
did:example:123456789abcdefghijk

DID Method

DID Specific Method String

A diagram showing the structure of a Decentralized Identifier (DID). The string 'did:example:123456789abcdefghijk' is displayed. A blue bracket above 'did:' is labeled 'Scheme'. A red bracket below 'example:' is labeled 'DID Method'. A green bracket below '123456789abcdefghijk' is labeled 'DID Specific Method String'.

Scheme
https://example.com/123456789abcdefghijk

Website

Webpage

A diagram showing the structure of a web address. The string 'https://example.com/123456789abcdefghijk' is displayed. A blue bracket above 'https://' is labeled 'Scheme'. A red bracket below 'example.com/' is labeled 'Website'. A green bracket below '123456789abcdefghijk' is labeled 'Webpage'.

Identity Standards Organizations

DIDs Point to DID Docs

- Communication (address & protocols)
- Security
 - Public keys, verification methods
 - Verifiable Data Registry
- Data for Verifiable Credentials

```
{
  "@context": "https://w3id.org/did-resolution/v1",
  "didResolutionMetadata": {
    "contentType": "application/did+ld+json",
    "retrieved": "2024-05-23T21:42:24Z",
    "did": {
      "didString": "did:cheqd:mainnet:PslysXP2Ae6GBfxNhNQKN",
      "methodSpecificId": "PslysXP2Ae6GBfxNhNQKN",
      "method": "cheqd"
    }
  },
}
```

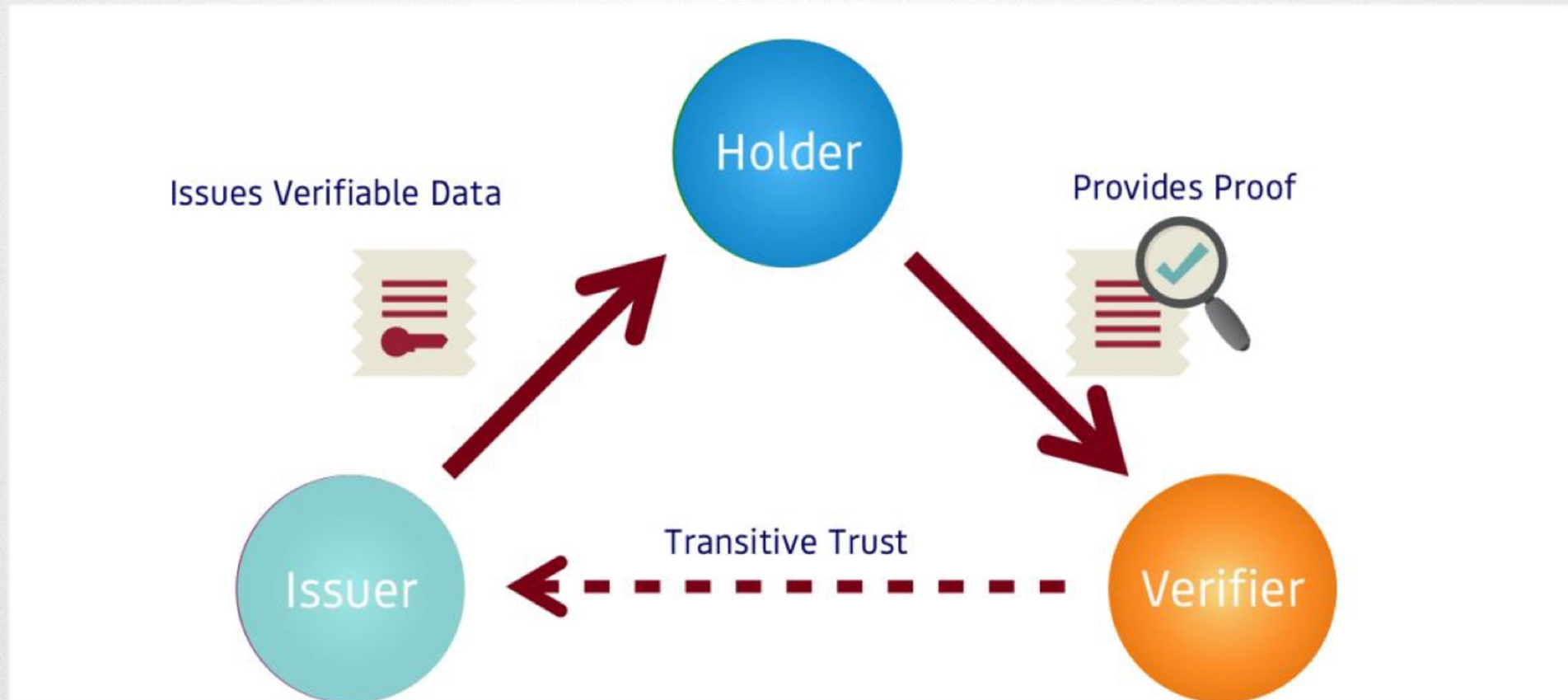
```
  "service": [
    {
      "id": "did:cheqd:mainnet:PslysXP2Ae6GBfxNhNQKN#website",
      "type": "LinkedDomains",
      "serviceEndpoint": [
        "https://www.cheqd.io"
      ]
    }
  ],
}
```

```
{
  "@context": "https://w3id.org/did-resolution/v1",
  "didResolutionMetadata": {
    "contentType": "application/did+ld+json",
    "retrieved": "2024-05-23T21:42:24Z",
    "did": {
      "didString": "did:cheqd:mainnet:PslysXP2Ae6GBfxNhNQKN",
      "methodSpecificId": "PslysXP2Ae6GBfxNhNQKN",
      "method": "cheqd"
    }
  },
  "didDocument": {
    "@context": [
      "https://www.w3.org/ns/did/v1",
      "https://w3id.org/security/suites/ed25519-2020/v1"
    ],
    "id": "did:cheqd:mainnet:PslysXP2Ae6GBfxNhNQKN",
    "verificationMethod": [
      {
        "id": "did:cheqd:mainnet:PslysXP2Ae6GBfxNhNQKN#key1",
        "type": "Ed25519VerificationKey2020",
        "controller": "did:cheqd:mainnet:PslysXP2Ae6GBfxNhNQKN",
        "publicKeyMultibase": "z6Mkta7joRuvDh7UnoESdgr9rDUMh5LvdoECDi3WGrJoscA"
      }
    ],
    "authentication": [
      "did:cheqd:mainnet:PslysXP2Ae6GBfxNhNQKN#key1"
    ],
    "service": [
      {
        "id": "did:cheqd:mainnet:PslysXP2Ae6GBfxNhNQKN#website",
        "type": "LinkedDomains",
        "serviceEndpoint": [
          "https://www.cheqd.io"
        ]
      },
      {
        "id": "did:cheqd:mainnet:PslysXP2Ae6GBfxNhNQKN#non-fungible-image",
        "type": "LinkedDomains",
        "serviceEndpoint": [
          "https://gateway.ipfs.io/ipfs/bafybeihetj2ng3d74k7t754atv2s5dk76pcqtvx1s6dntef3xa6rax25xe"
        ]
      },
      {
        "id": "did:cheqd:mainnet:PslysXP2Ae6GBfxNhNQKN#twitter",
        "type": "LinkedDomains",
        "serviceEndpoint": [
          "https://twitter.com/cheqd_io"
        ]
      },
      {
        "id": "did:cheqd:mainnet:PslysXP2Ae6GBfxNhNQKN#linkedin",
        "type": "LinkedDomains",
        "serviceEndpoint": [
          "https://www.linkedin.com/company/cheqd-identity/"
        ]
      }
    ]
  },
  "didDocumentMetadata": {
    "created": "2022-04-05T11:49:19Z",
    "versionId": "4fa8e367-c70e-533e-babf-3732d9761061"
  }
}
```


Identity Standards Organizations

W3C Verifiable Credentials WG

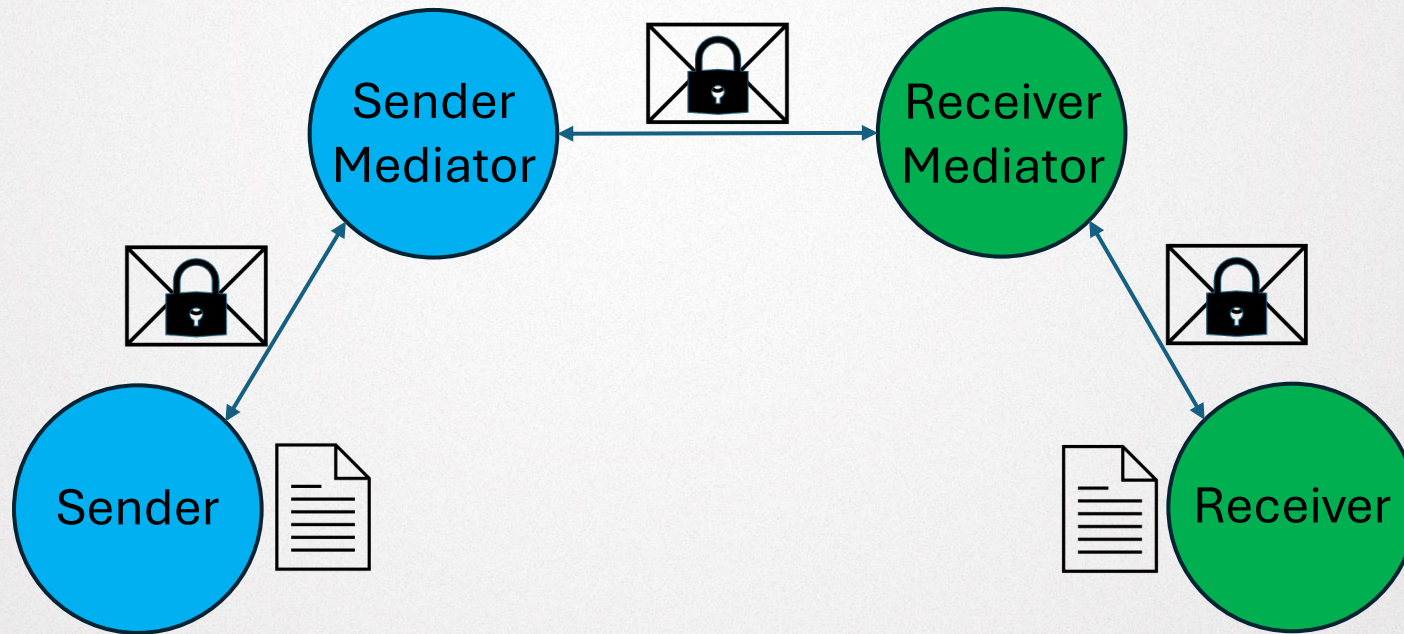
- [Verifiable Credentials Data Model v2.0](#)



Identity Standards Organizations

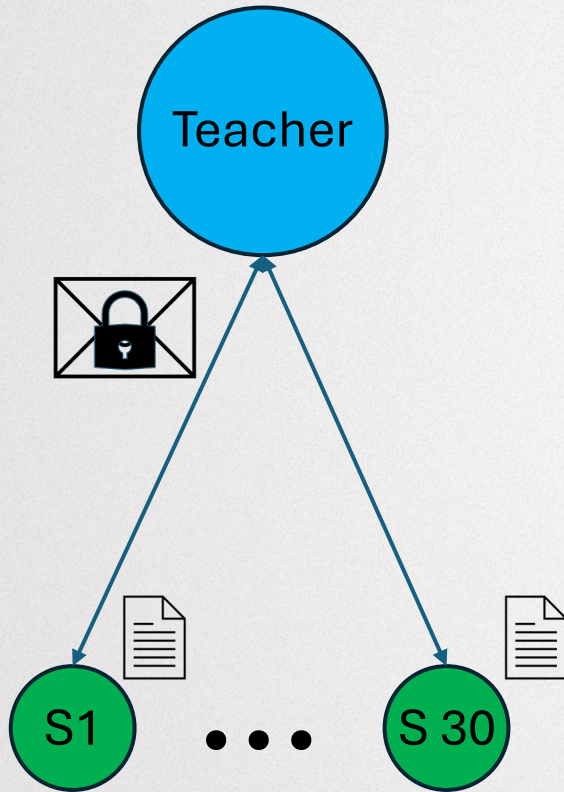
DIF DID Communications WG

- [DIDComm Messaging v2.x](#)
- DID-based cryptographic communication protocol

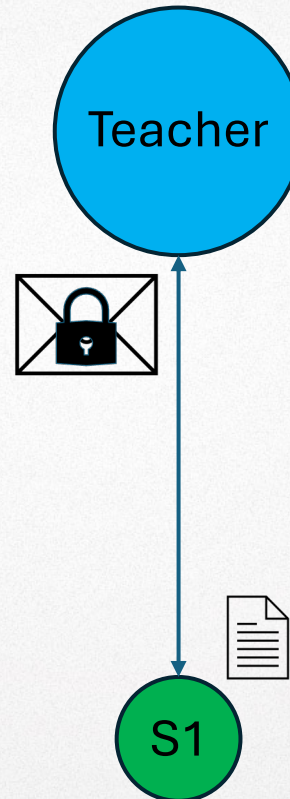


Bonus: [OpenIDIDComm](#) enables an OpenID verification to spawn a DIDComm connection!

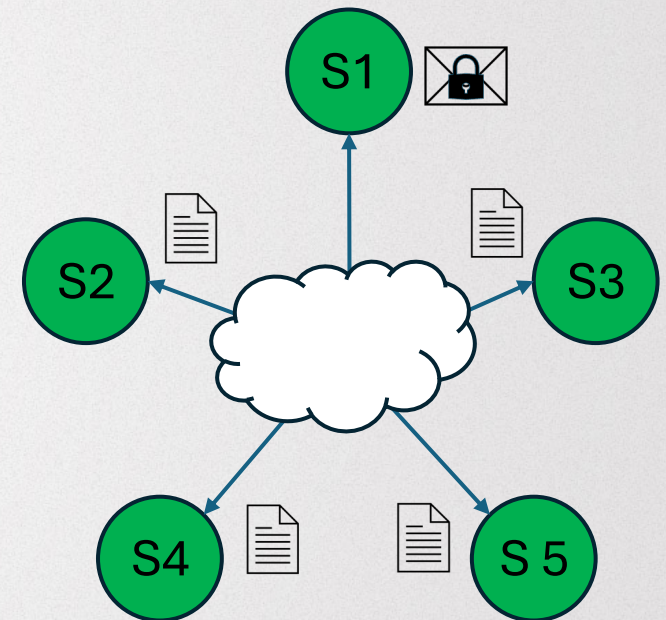
DIDComm For Education



Teacher <-> Class



Teacher <-> Student



Ad Hoc Study Group

New Use Cases...

Artifacts or Credentials?

- OB3 for *graduates* ... or incoming *freshmen*?

Use Them On Campus

- Class sign-ups
- Homework submissions
- Bookstore
- Testing Center
- Gym
- University Rentals
- E2EE Communications
 - Health center
 - Counselors

Use Off Campus

- Student discounts
- Restaurants
- Book Rentals
- Apartment rentals / payments
- Job Boards

Remember the Alumni

- Alumni discounts
- Bookstore purchases
- University contributions
- Directory

... Build Your Community ... & Your Brand

Identity Industry Research

How to distinguish between
real people and AI's?

Is this real or fake?

How do you know?



What about this one?



Now It Gets Serious...

CNN: Finance worker pays out \$25 million after video call with deepfake 'chief financial officer'

“...worker had grown suspicious after he received a message that was purportedly from the company’s UK-based chief financial officer.”

“...the worker put aside his early doubts after the video call because other people in attendance had looked and sounded just like colleagues he recognized.”



... and Potentially Fatal

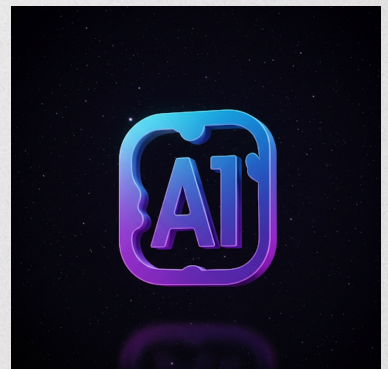


26.11.2024

Breakthrough in the treatment of type 2 diabetes in Australia

- Real Doctor
- Deepfake Video
- Promoted on Facebook
- Stop taking Metformin
- Try “All-Natural Drug”

AI is awesome, but ... it also makes
fraud easy, fast, and cheap.



Solution: Personhood Credentials

Digital Credential that

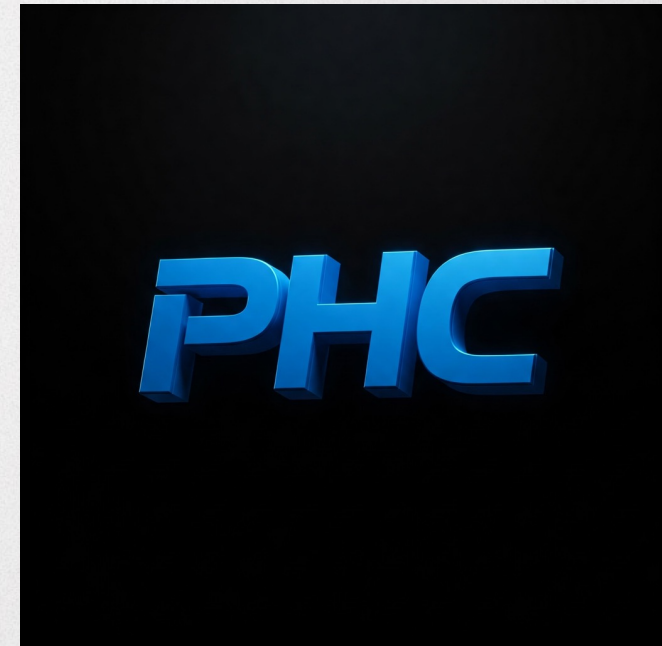
Empowers holders to prove they are a real person ... *and nothing more*

100K Foot View:

1. Give everyone a single PHC credential
2. Digitally-sign everything
3. Make it super easy to verify
4. Uncorrelatable usage
5. Can't be forged by AI

Plus:

Must preserve personal privacy ... and not track users



Source: <https://arxiv.org/abs/2408.07892>

Thank You!

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ANONYOME LABS

<https://anonymome.com>