



tbd

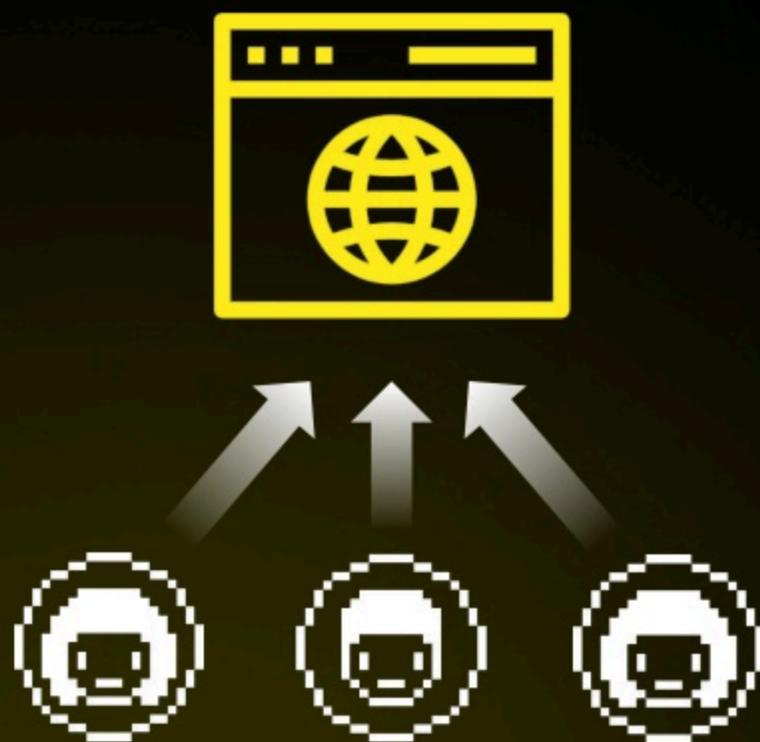
Web5: The Decentralized Web Platform

A new evolution of the Web that enables decentralized apps and protocols.

LET'S GO >

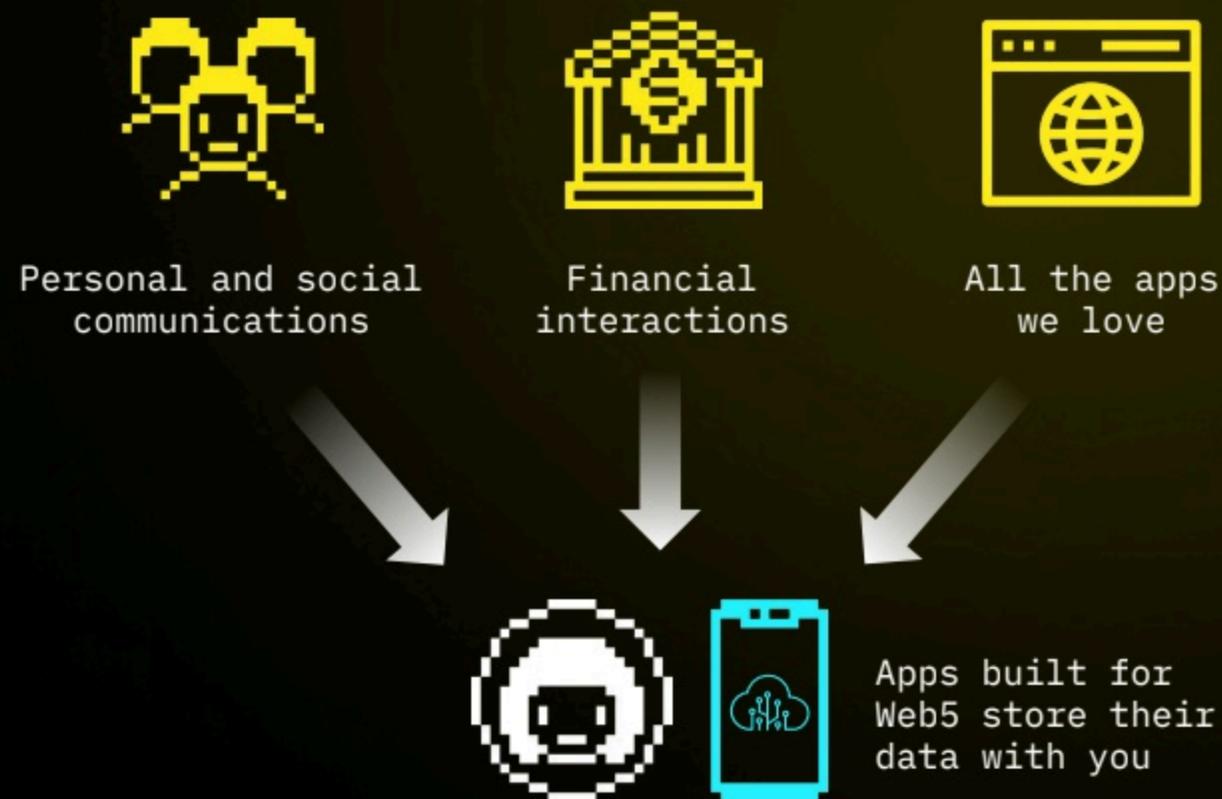
Evolving the Web

Today



In the current Web model, people are users who do not own their data or identity. They are given accounts by companies and their data is held captive in app silos.

The Web We Want



To create a new class of decentralized apps and protocols (e.g. tbDEX) that put individuals at the center, we must empower them with self-owned identity and restore control over their data.



The **Decentralized Web Platform (DWP)** enables developers to write **Decentralized Web Apps (DWAs)** using **Decentralized Identifiers (DIDs)** and **Decentralized Web Nodes (DWNs)**, returning ownership and control over identity and data to individuals <-- We are calling this **Web5**

The Pillars of Web5

Decentralized Identifiers

did://

Self-owned identifiers that enable decentralized identity authentication and routing.

Verifiable Credentials



Data formats and models for cryptographic presentation and verification of claims.

Decentralized Web Nodes



Data storage and message relay nodes that serve as the foundation for decentralized apps and protocols.

Decentralized Identifiers (DIDs)



Bob can discover all DIDs indexed in the network to independently resolve and verify them.



Alice self-generates her DIDs and anchors PKI (key and endpoint) state changes in the network.

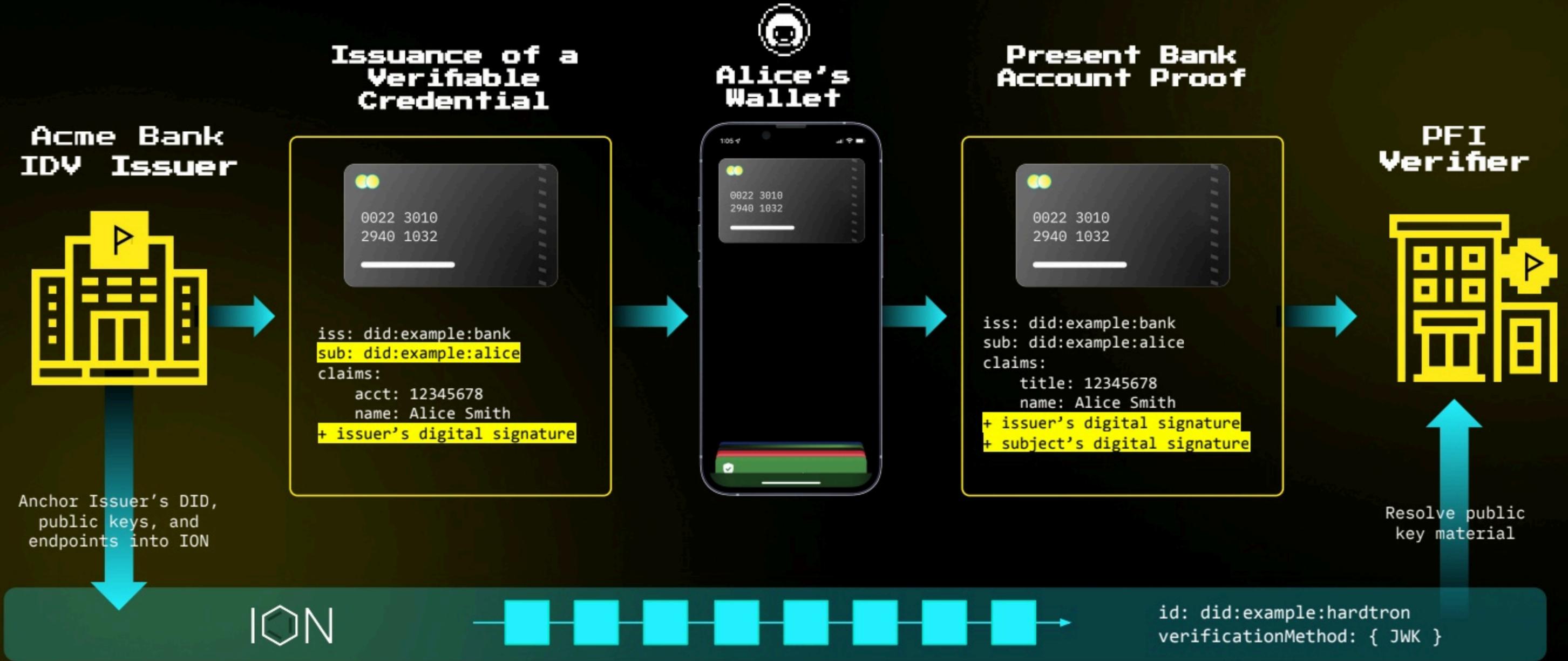
`did:ion:1a2b3c4d...`

$\{...\} + \{...\} = \{...\}$
T0 TN Compiled

- Identifiers are self-generated and self-owned
- No centralized providers or trusted authorities
- No special utility tokens or subjective consensus
- Highly resistant to all forms of interdiction
- IDs can be made universally discoverable



Verifiable Credentials (VC)



Decentralized Web Nodes

Universally Addressable

Crawlable DID-relative addressing of data



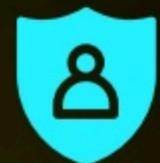
Replicated

Masterless eventually consistent replication of instances across devices and clouds



Secure

Data can be optionally encrypted with an individual's DID keys



Features



Semantic Discovery

Discover any form of published data simply by knowing its semantic type



Async Message Threads

Send and receive messages over a DID-encrypted universal network



Supports any identity type

Designed to support individuals, companies, machines, or any other entity



Decentralized Web Nodes (DWN, DWeb Nodes) is an emerging standard for data storage and relay that enables entities of any type (people, organizations, etc.) to send and store encrypted or public messages and data, enabling a wide variety of decentralized apps and protocols to be built on top.

The Anatomy of an Identity Wallet

Data Management

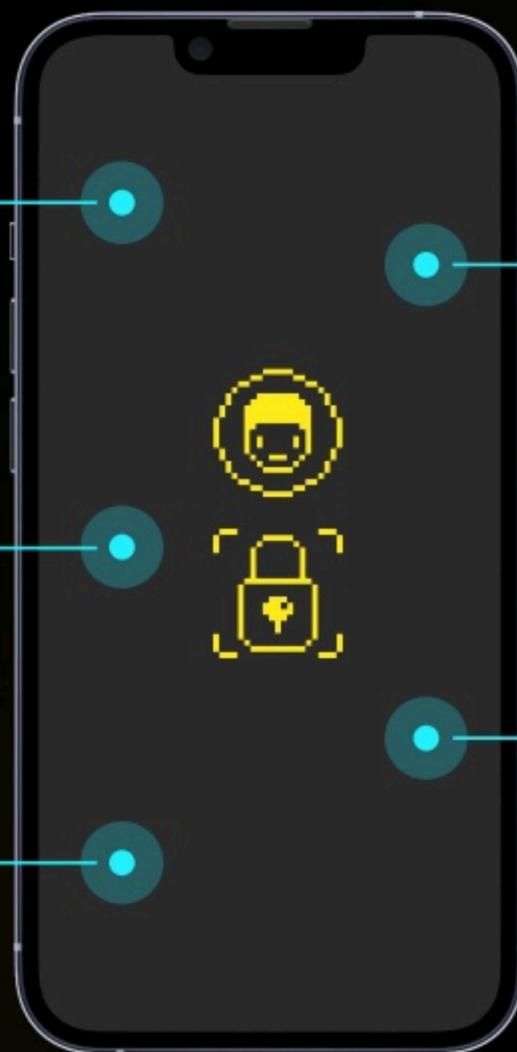
Provide UI and functionality to manage credentials and app data stored in DWNs

Credential Functions

Sign, verify, discover, and present credentials to verifying parties

DID Auth

Perform authentication and manage authorizations (e.g. DWN authz capabilities)



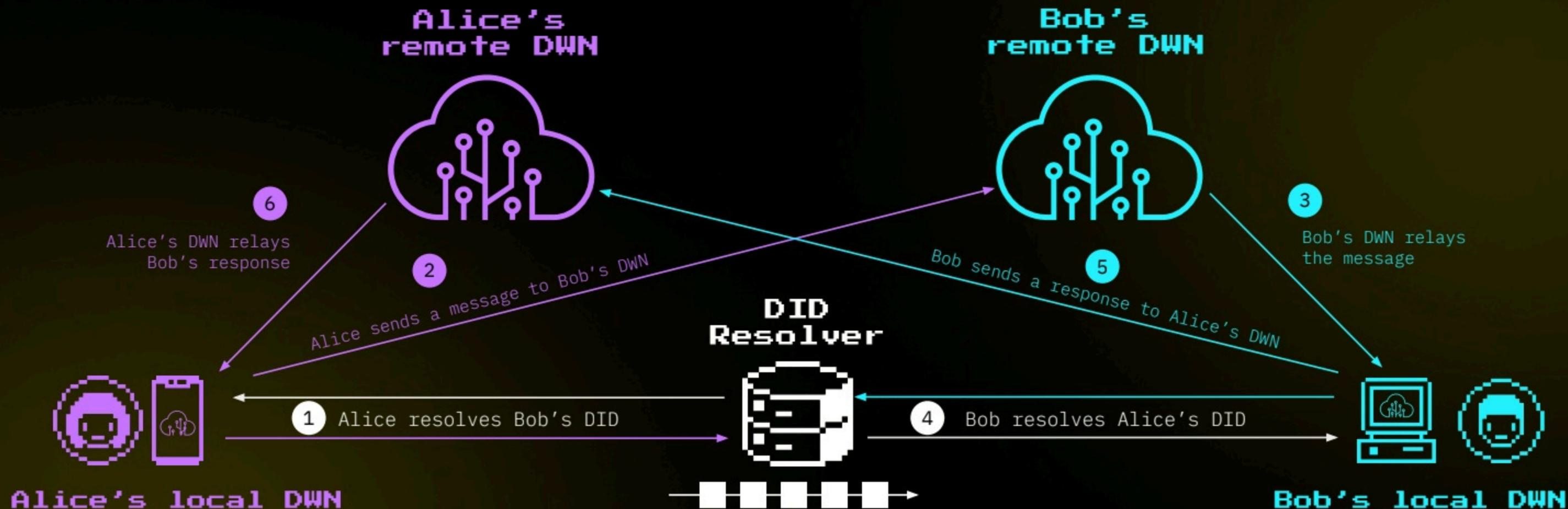
DID Functions

Support create, update, and recovery of DIDs across all supported DID Methods

Context Management

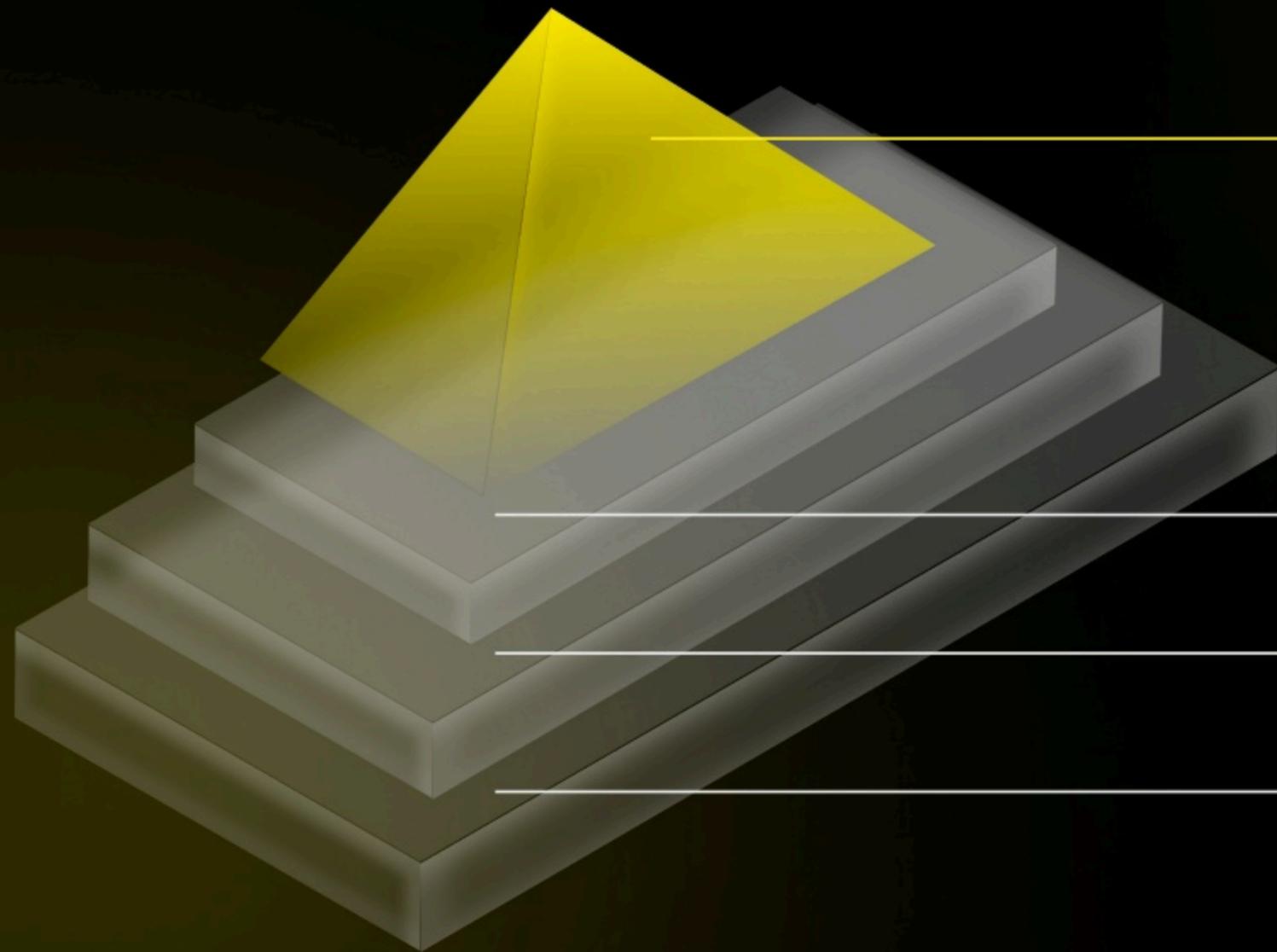
Maintain and enforce which DIDs are used with different people, apps, and services

Web5 Network Topology



The combination of Decentralized Identifiers and Decentralized Web Nodes produces a Web of DID-secured messaging, data sharing, and credential exchange that can replace one-off protocols (encrypted messaging, photo sharing, etc.) with universal standards for all types of semantic data exchange.

Visualizing Web5 and the DWP Stack



DWAs

tbDEX, Other Apps

DWP

DWA Model

Decentralized Web Nodes

Decentralized Identifiers



Progressive



Responsive



Work Offline



App-Like



Fresh

What are PWAs?

PWA stands for **Progressive Web App**, a standard for installable web apps that is implemented in all major browsers today. PWAs are websites that took their vitamins and have special powers.



Safe



Discoverable



Re-engageable



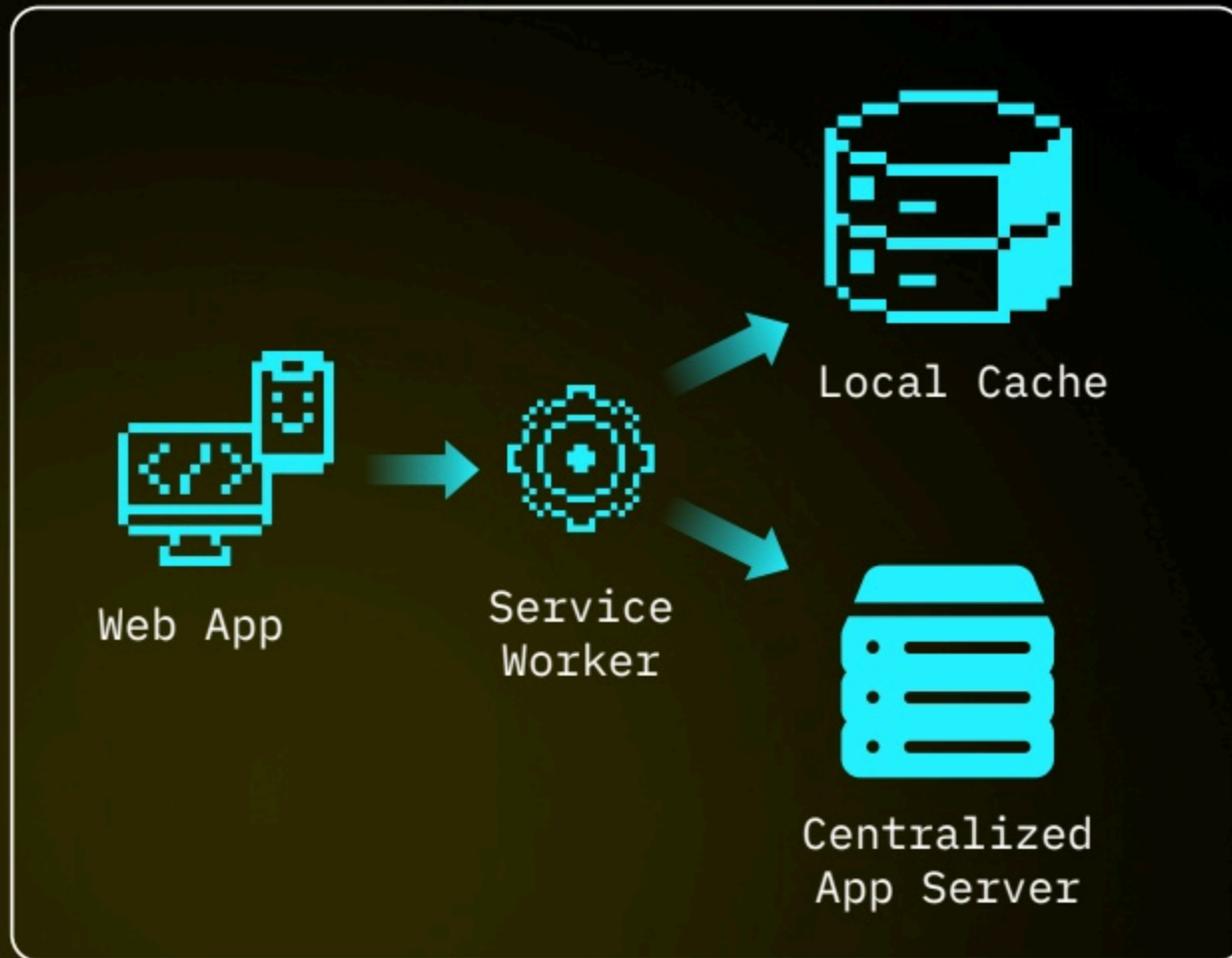
Installable



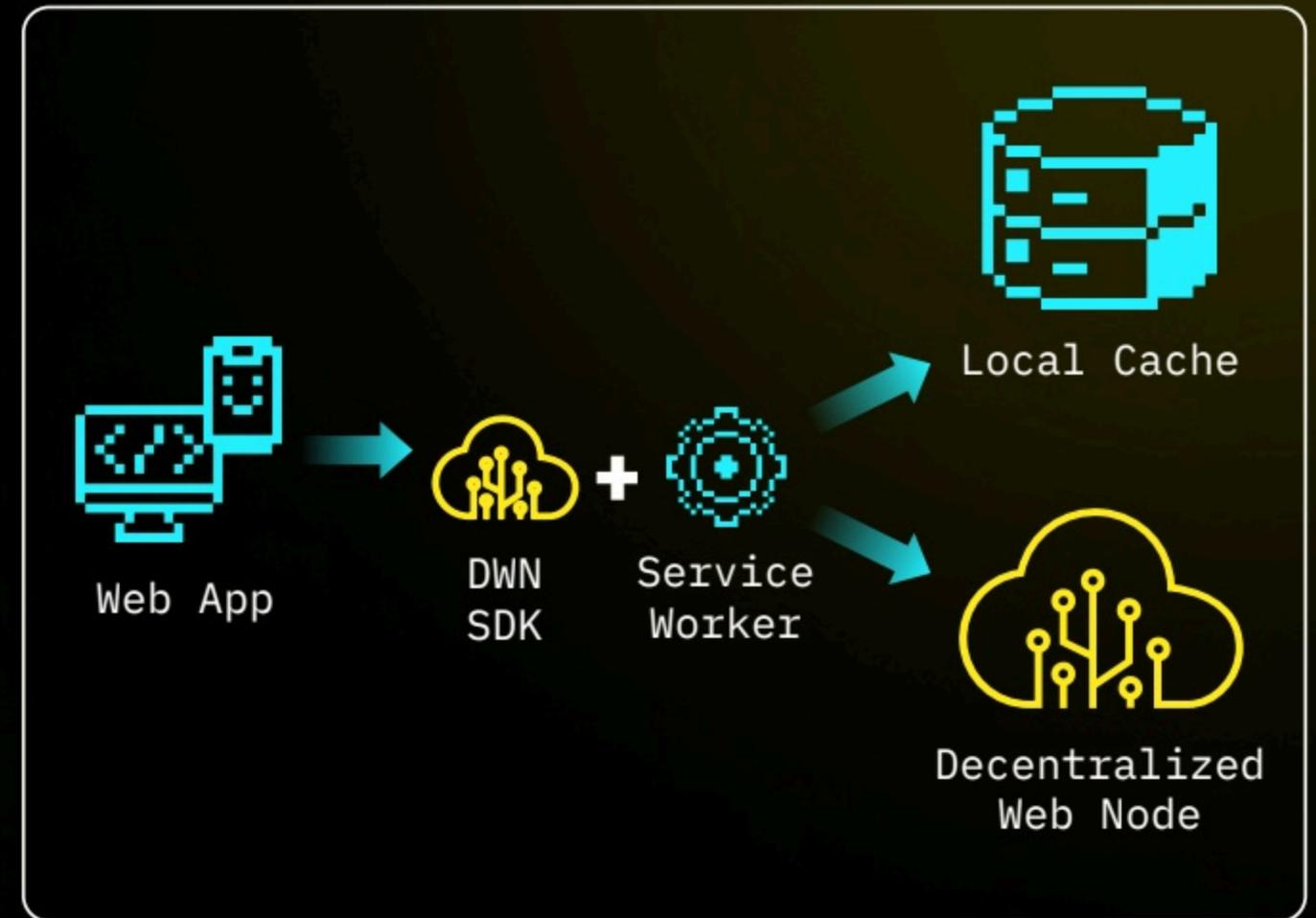
Linkable

From PWAs to DWAs

PWA



DWA



Acme Bank? Is this legit?



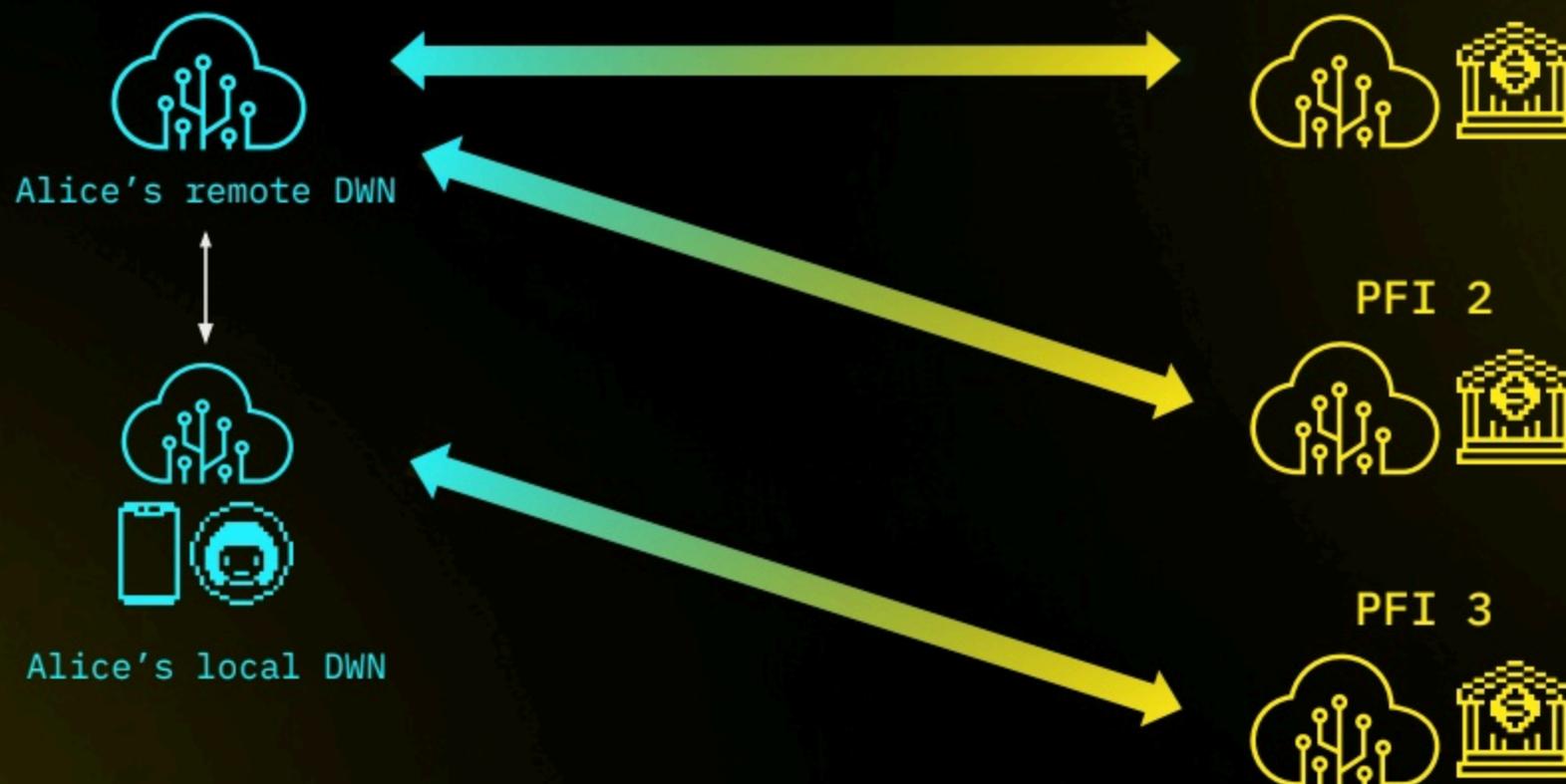
Many activities in our world require the establishment of trust between participants. DIDs + DWeb Nodes allow individuals, organizations, and companies to publish credentials anyone can discover and independently verify.

tbDEX Message Threads

1

Alice's tbDEX-aware app knows the DIDs of various PFIs and sends them Ask messages to initiate an exchange.

```
navigator.did.send({  
  schema: "tbd.website/schemas/ask"  
})
```



2

PFIs respond to Alice's Asks via Bid messages sent back to Alice's DWeb Node.

```
navigator.did.send({  
  schema: "tbd.website/schemas/bid"  
})
```

When viewed from 10,000 feet, tbDEX is a DWN-based threaded messaging and data exchange protocol layer that runs atop the substrate of DIDs and Decentralized Web Nodes.

Music to my ears

Alice's remote DWN

1

Groove secures the ability to write `schema.org/MusicPlaylist` objects to Alice's DWNs, and adds a new entry.

```
navigator.did.store({
  schema: "schema.org/MusicPlaylist",
  data: { ... }
})
```



Groove



2

TIDAL, which previously secured the ability to read Alice's `schema.org/MusicPlaylist` entries, can read the entry Groove added.

```
navigator.did.request({
  schema: "schema.org/MusicPlaylist",
  data: { ... }
})
```



TIDAL

It's not fun to regurgitate your playlists over and over again for different music apps, so let's stop doing that.