

Internet Identity

Lighting the way towards secure,
interoperable, borderless and
sovereign digital identity



DFINITY Foundation, Switzerland

- Emerged from early Ethereum community in 2015
- DFINITY Foundation established October 2016
- Swiss not-for-profit, no corporation is involved
- Research centers in Zurich and San Francisco
- World's largest team cryptographers
- 270+ people globally

1600+

research papers

100 000+

academic citations

250+

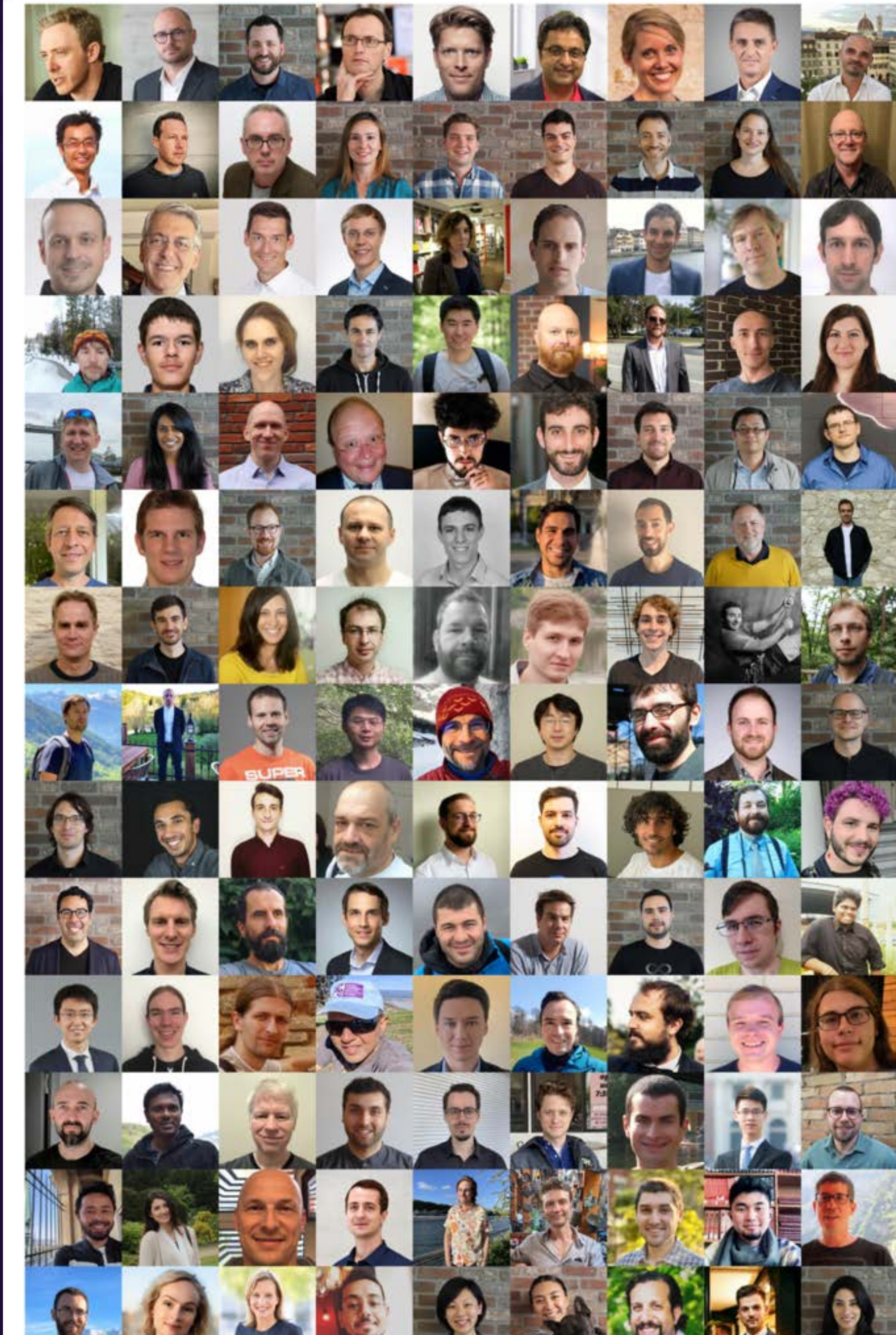
technical patents

Crypto People +

Google

IBM

facebook



DFINITY is led by influential digital identity researchers

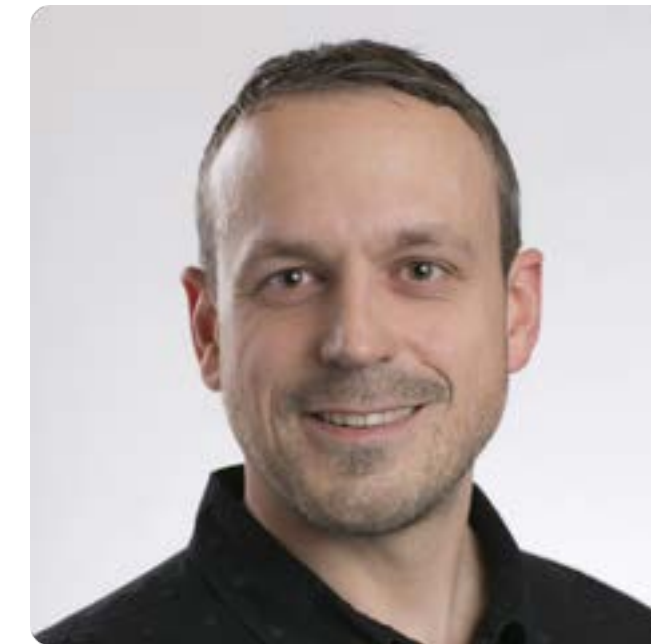
Verifiable Credentials & Attribute Sharing

Privacy-enhancing Authentication

Zero Knowledge Proofs



Jan Camenisch
CTO



Björn Tackmann
Head of Research



Maria Dubovitskaya
Director of Engineering



Jan Camenisch

CTO

- ♦ Worked since 25 years on privacy-preserving identity solution
 - ✓ Led a handful of large European projects on that
 - ✓ Influenced GDPR
- ♦ Camenisch-Lysyanskaya Signature scheme, the basis for efficient private credentials
- ♦ Direct anonymous attestation (privacy preserving authentication for TPM)
 - ✓ Direct Anonymous Attestation
 - ✓ ISO ISO/IEC 20008-2:2013
 - ✓ FIDO
- ♦ Identity Mixer: privacy-preserving attributes sharing
 - ✓ Implemented as identity solution on hyperledger block chain
 - ✓ And hyperledger indy
 - ✓ And sovrin foundation (where Jan is on the technical governance board)
 - ✓ Involved in W3C verifiable credentials effort



Identity theft is a problem

\$43B lost in 2022

More than 1 in 10 people impacted in the US.

the burden falls disproportionately on the economically disadvantaged.



The future of global digital identity?



“I use
Google for
everything”



A top YouTuber is publicly sparring with the platform after he says 'hundreds' of his fans unfairly lost access to their Google accounts

[businessinsider.com](https://www.businessinsider.com)



Depend on corporations?

Europe and the World needs tamperproof *open* solutions





Better online identity

magical technical ingredients

Use your device
to sign in



TPM



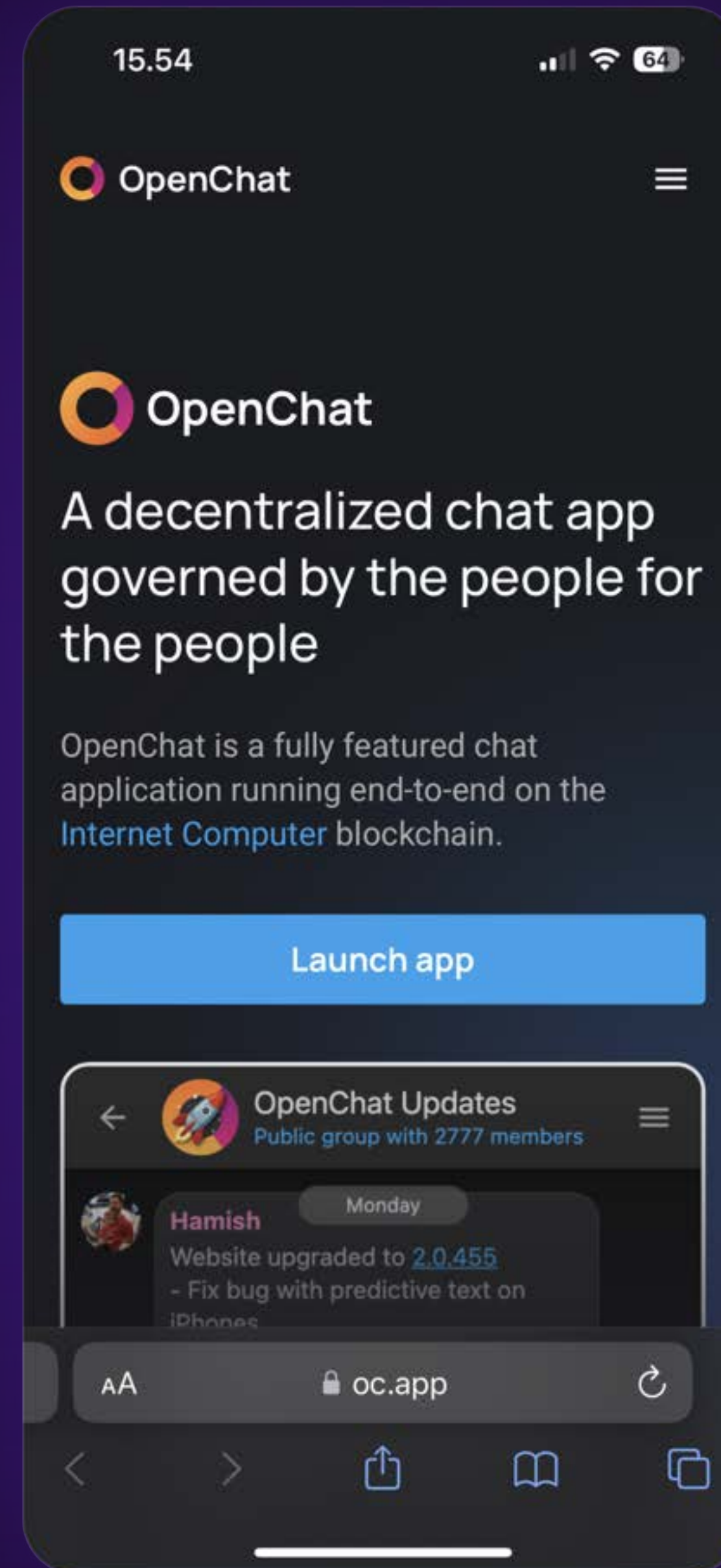
WebAuthn (+ FIDO)



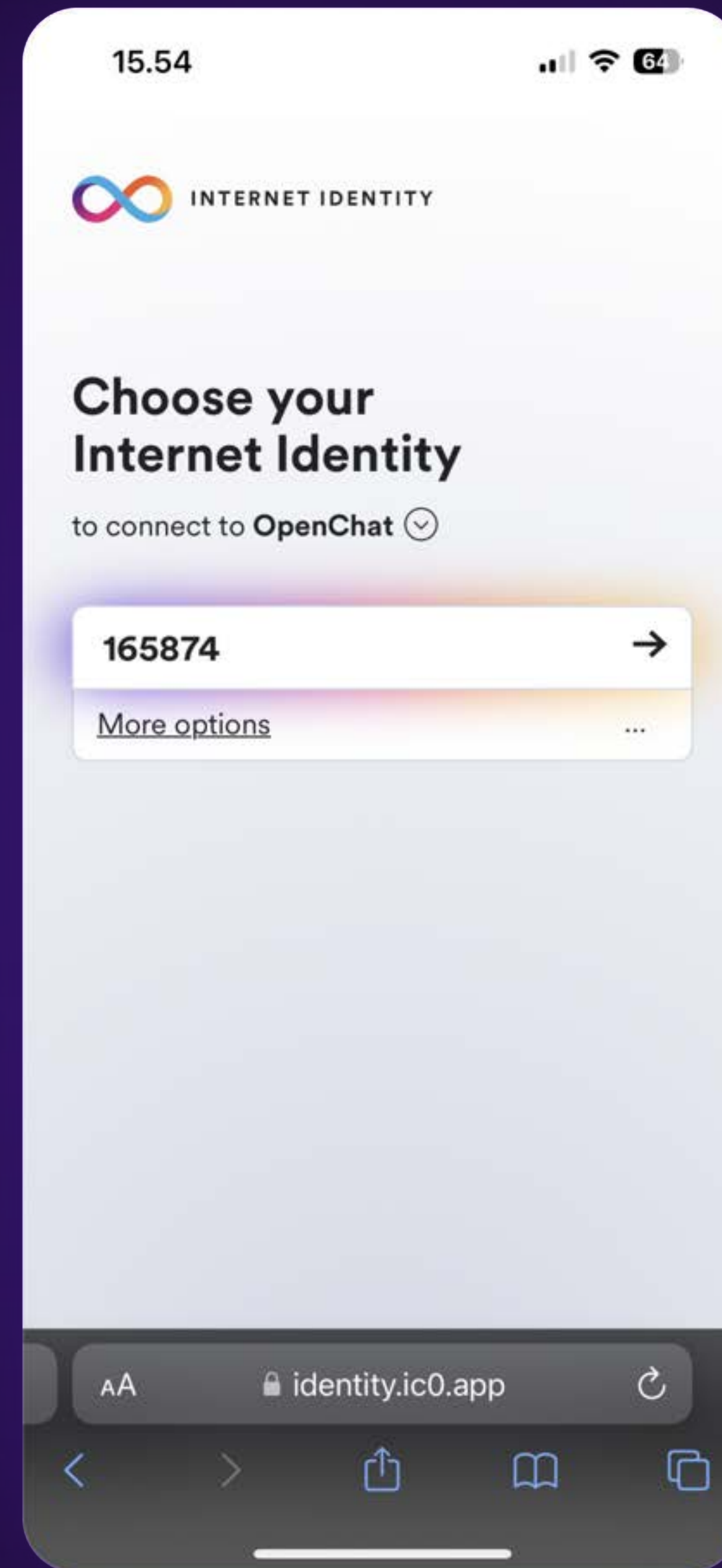
Internet Computer



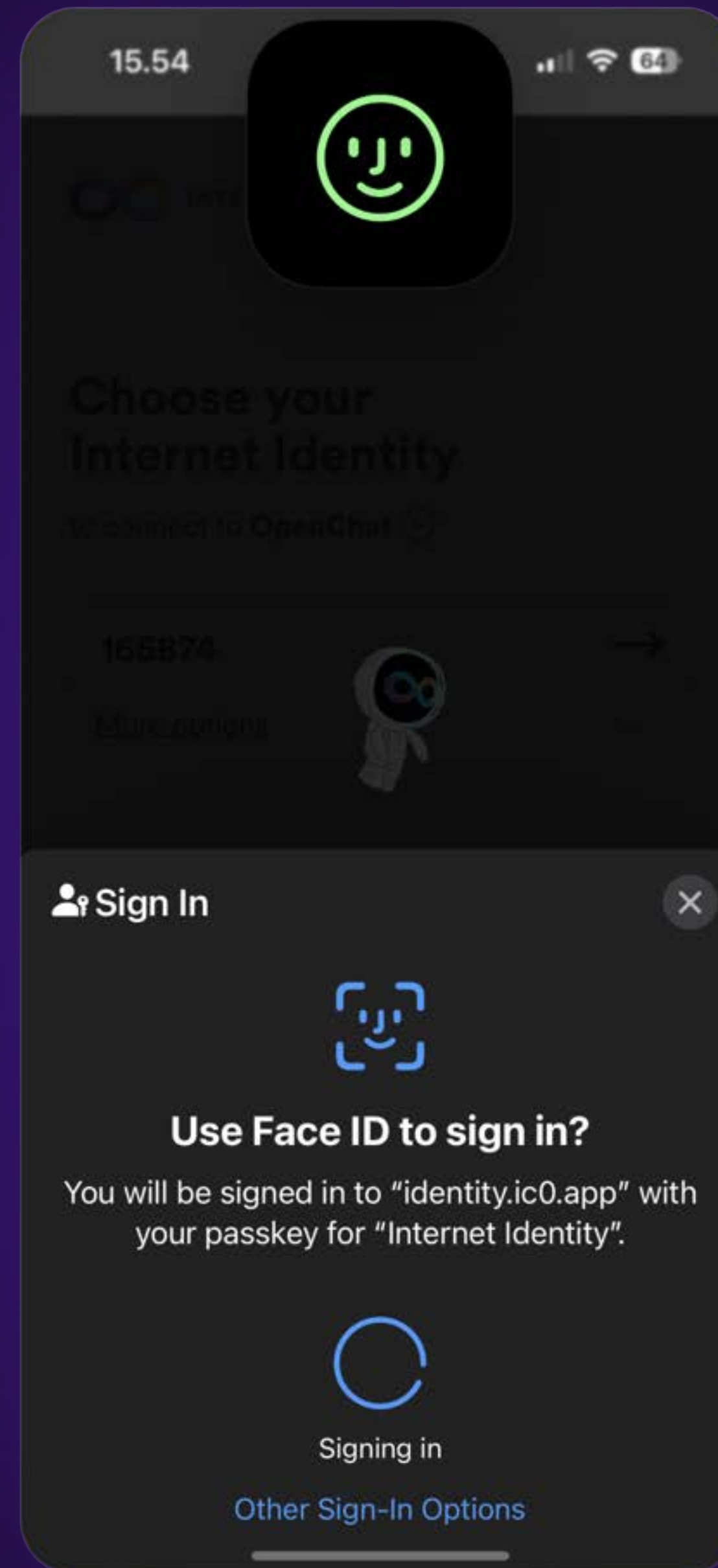
browse to online service...



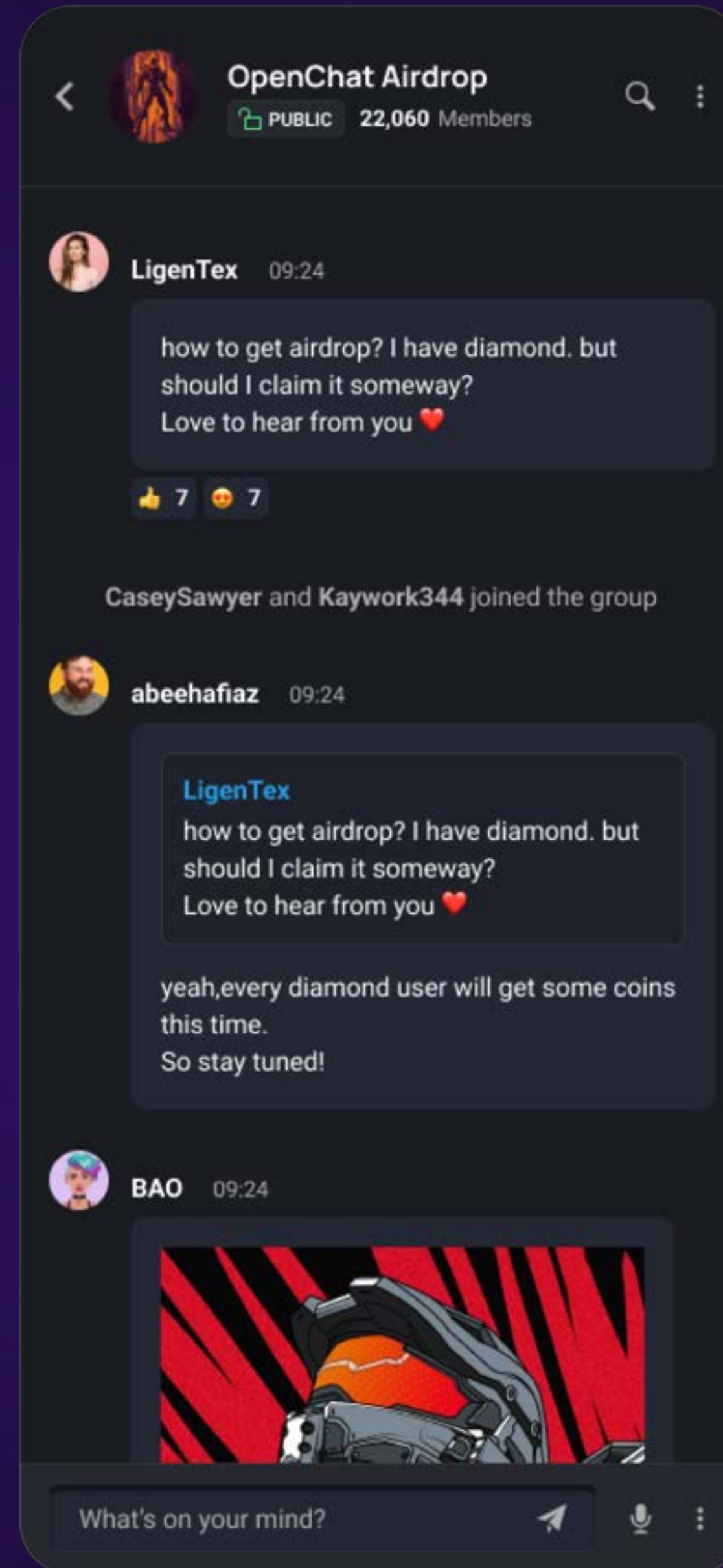
select
Internet
Identity



authorize
session using
device passkey



instant secure
interaction
enabled



**What is the
Internet Computer?**

Tamperproof software began with Ethereum



2015 smart contracts

tamperproof

no firewall or security team necessary

tokenization

hold, process & transmit value like data

unstoppable

nuke proof, no servers or failing over

composable

trustless dynamic collaborative building

autonomous

can remove human control & backdoors

borderless

code/services have no geography



The Internet Computer evolves this paradigm



2021 canister **smart contracts**

add powerful capabilities that enable tamperproof cloud...

multi-chain

code natively interacts with other chains

low cost

compute costs approach trad. IT

scalable

can service millions of users

Speed

run at web speed not blockchain speed

efficient

reduce IT carbon footprints

Web

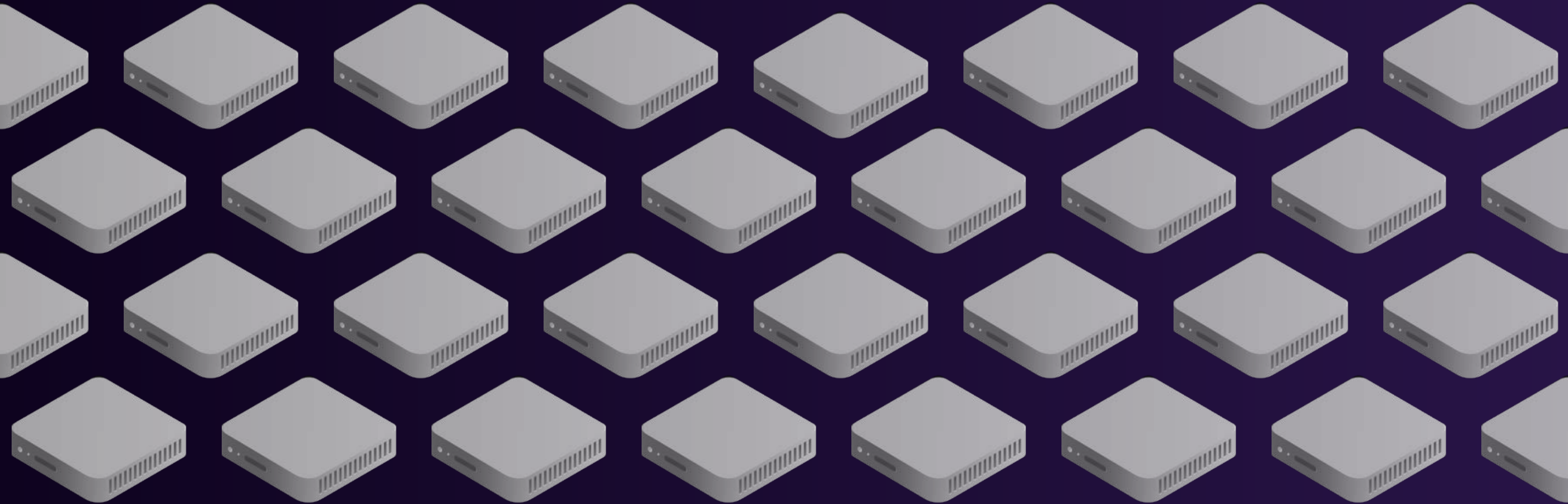
crypto speaks web (http) directly



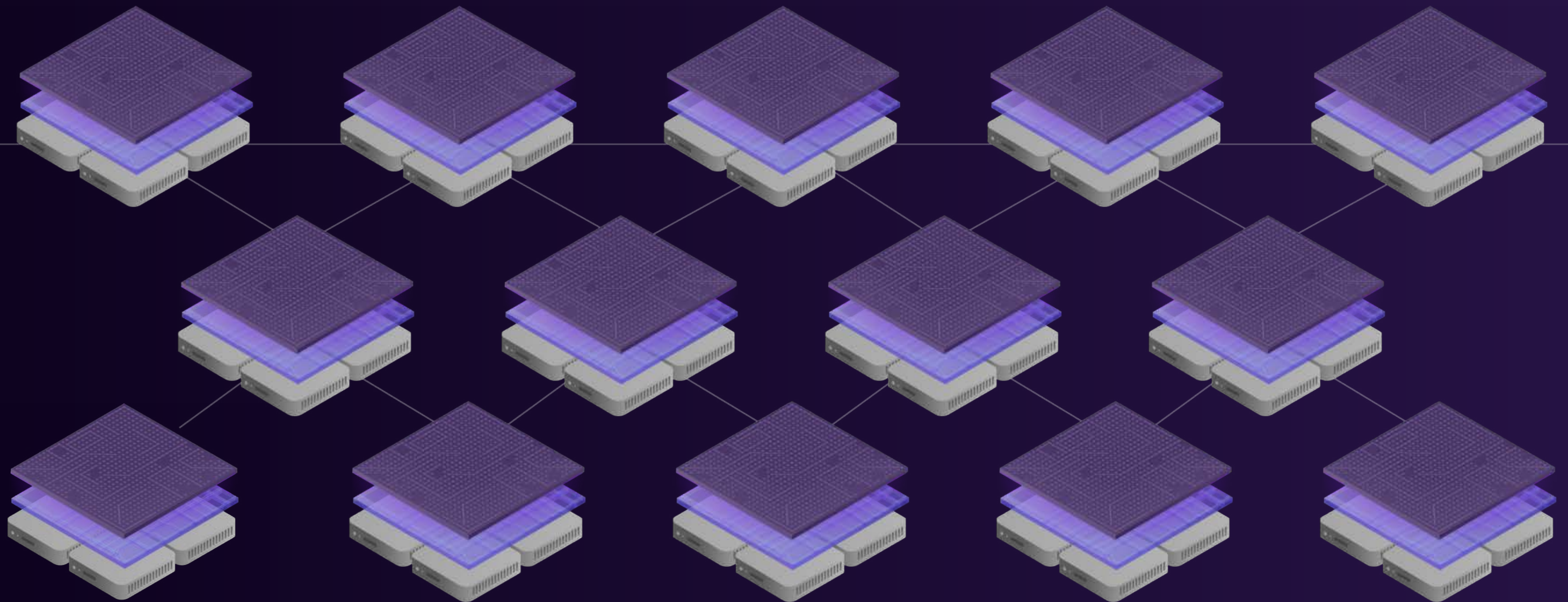
the **Internet Computer** advances the internet from being a network that connects everyone and everything, to also being a tamperproof public cloud that the world builds on...



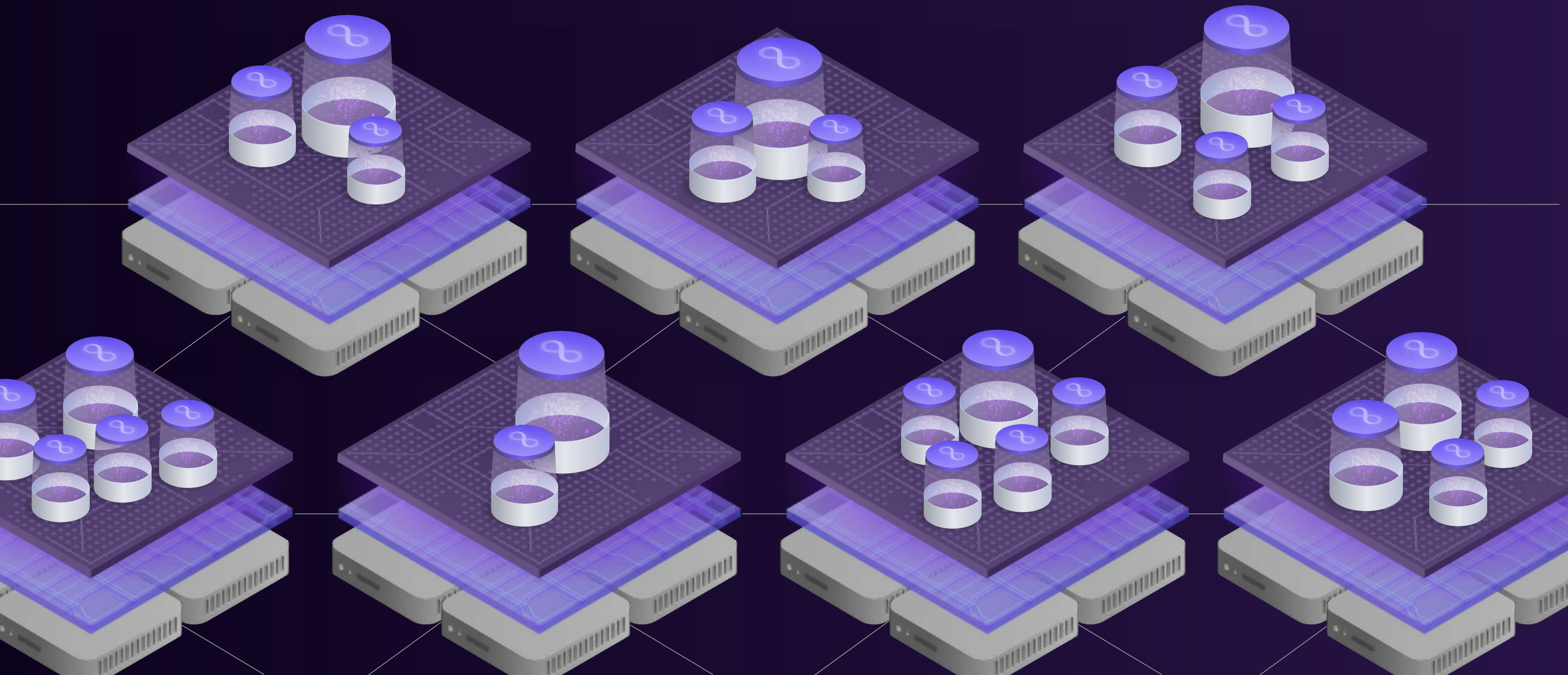
Internet Computer Protocol is a crypto protocol that combines
node machine devices run by *independent node providers*



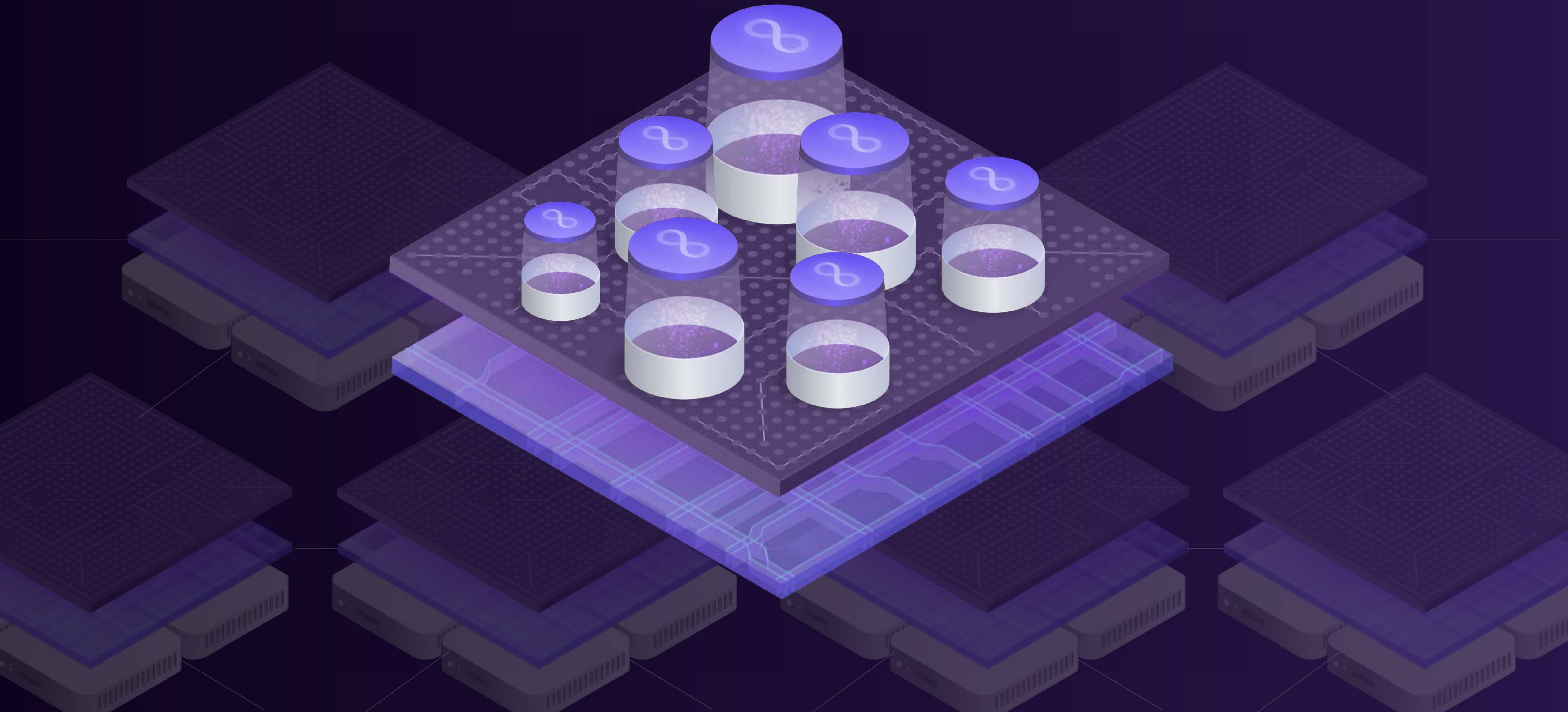
nodes are combined to create *subnet blockchains* ...



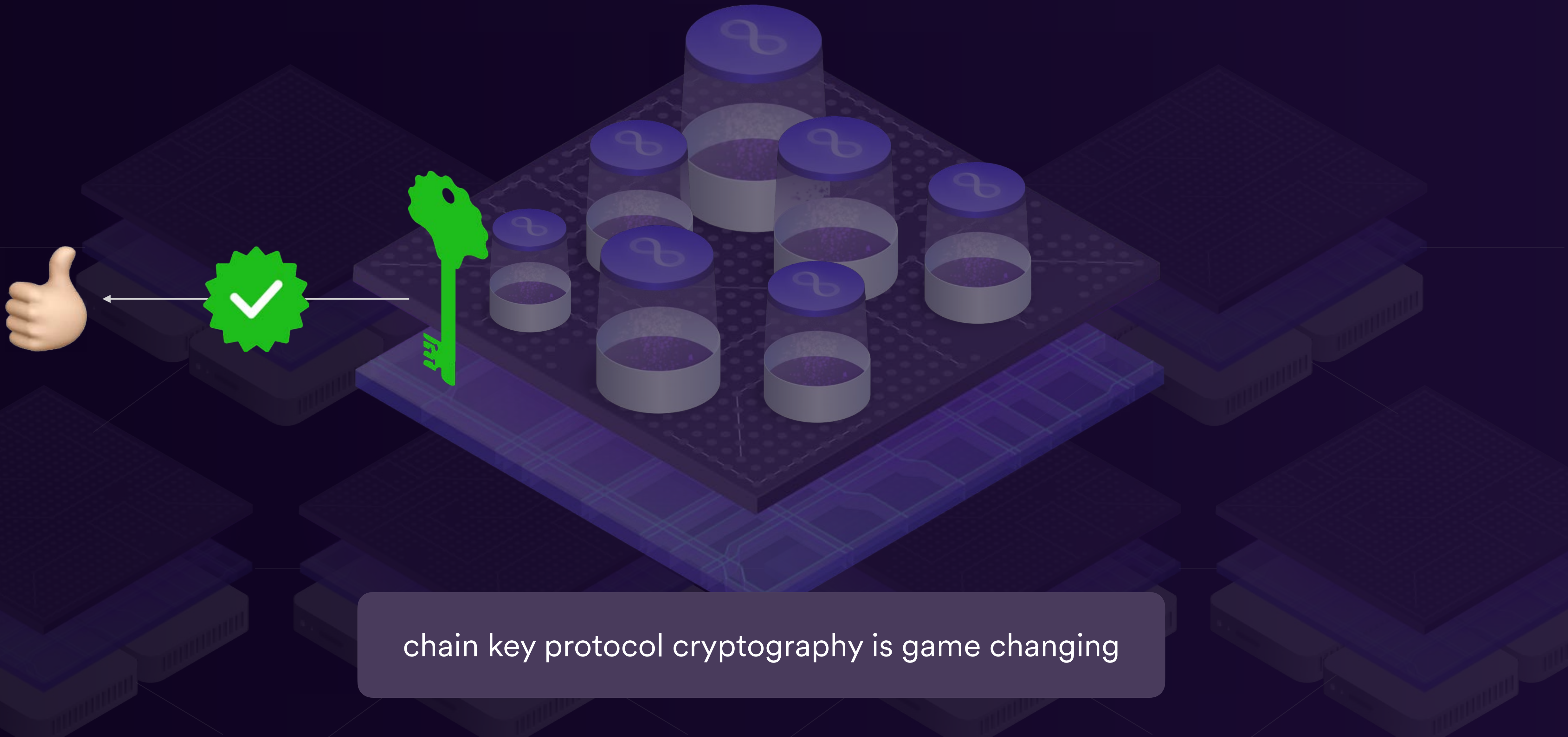
... subnets replicate and run *canister* smart contracts ...



... that together form a planet-scale *virtual super computer* ...

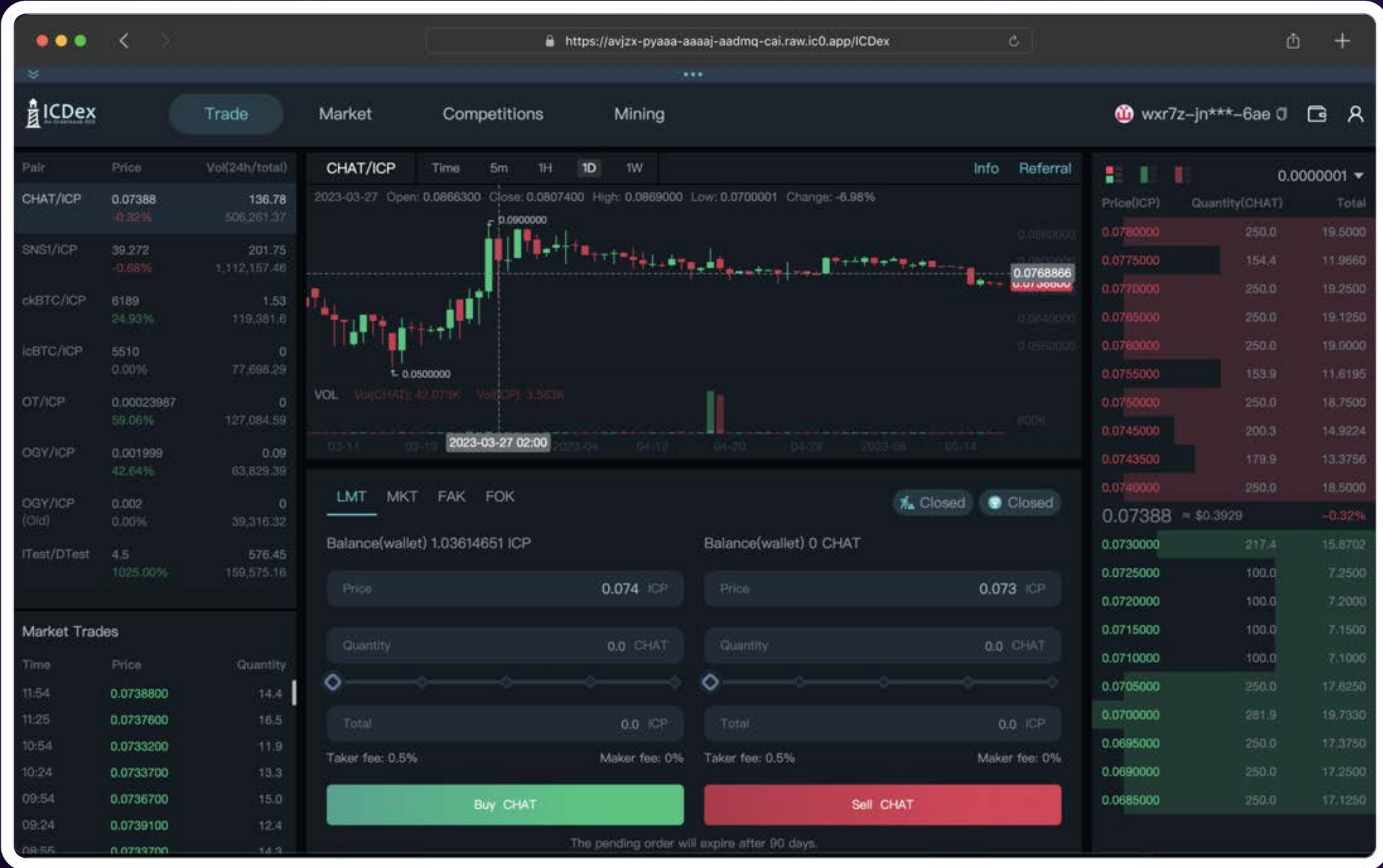


... interactions verifiable using the network's master chain key

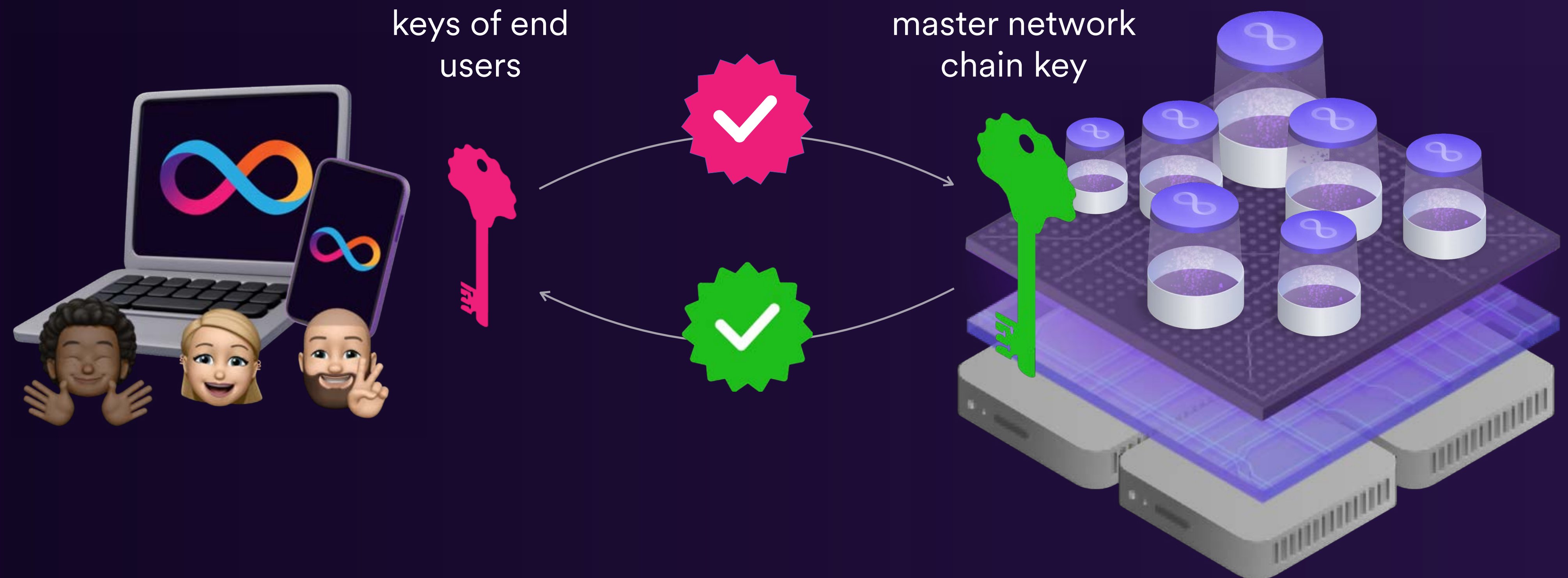


chain key protocol cryptography is game changing

Build absolutely anything directly on the internet



web browser cryptography transparently verifies interactions



services are tamperproof, and Internet Identity makes sessions secure too

Internet Identity

The Internet Computer's identity layer



Easy to use



Self-sovereign



Interoperable



Highly secure



Open source



No tracking



Where we are now

2.2M+

identities created

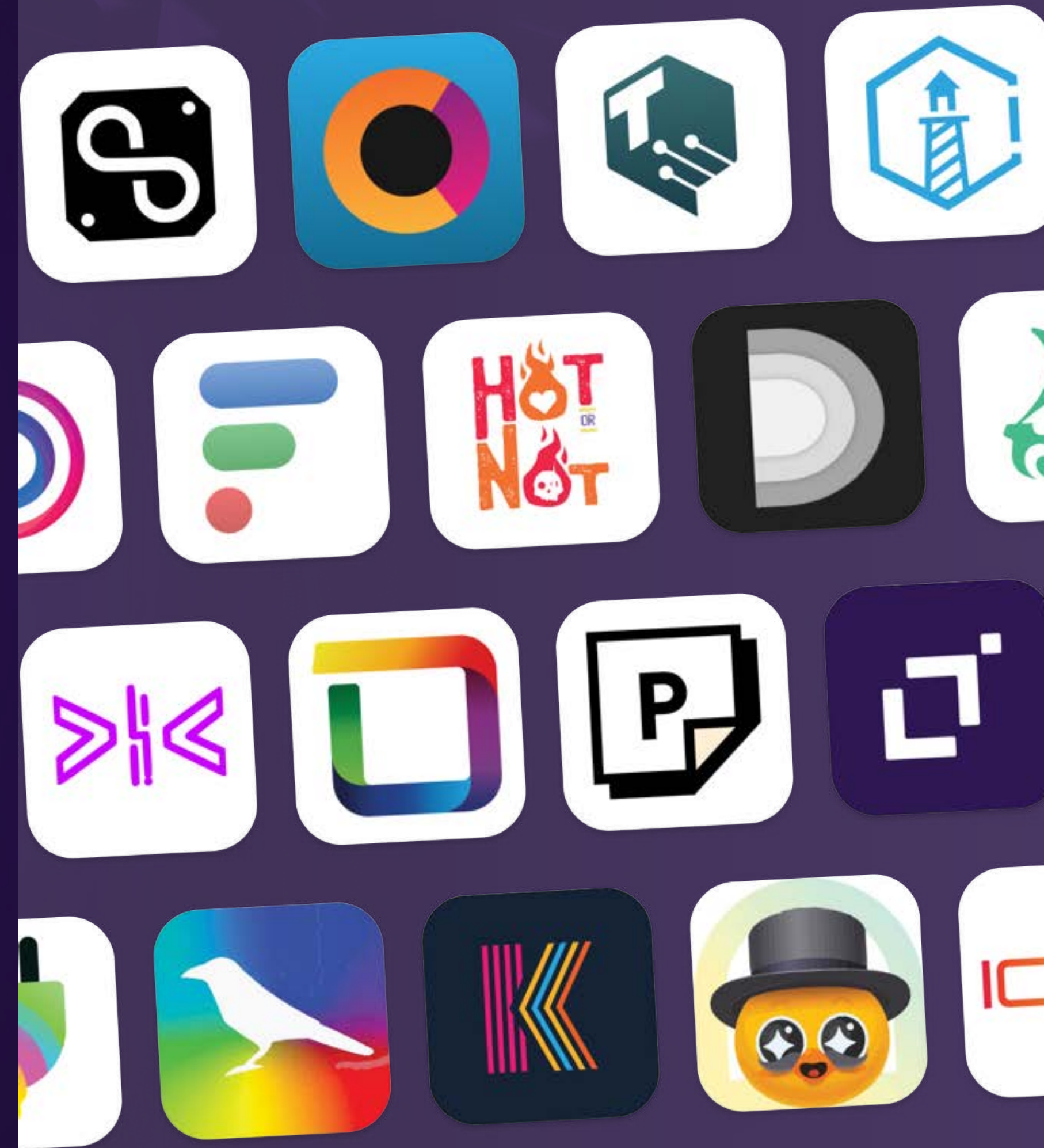
50K+

monthly authentications

100+

dapps using II for authentication

Support for relying parties and
identity providers coming in 2023...





next phase: identity properties



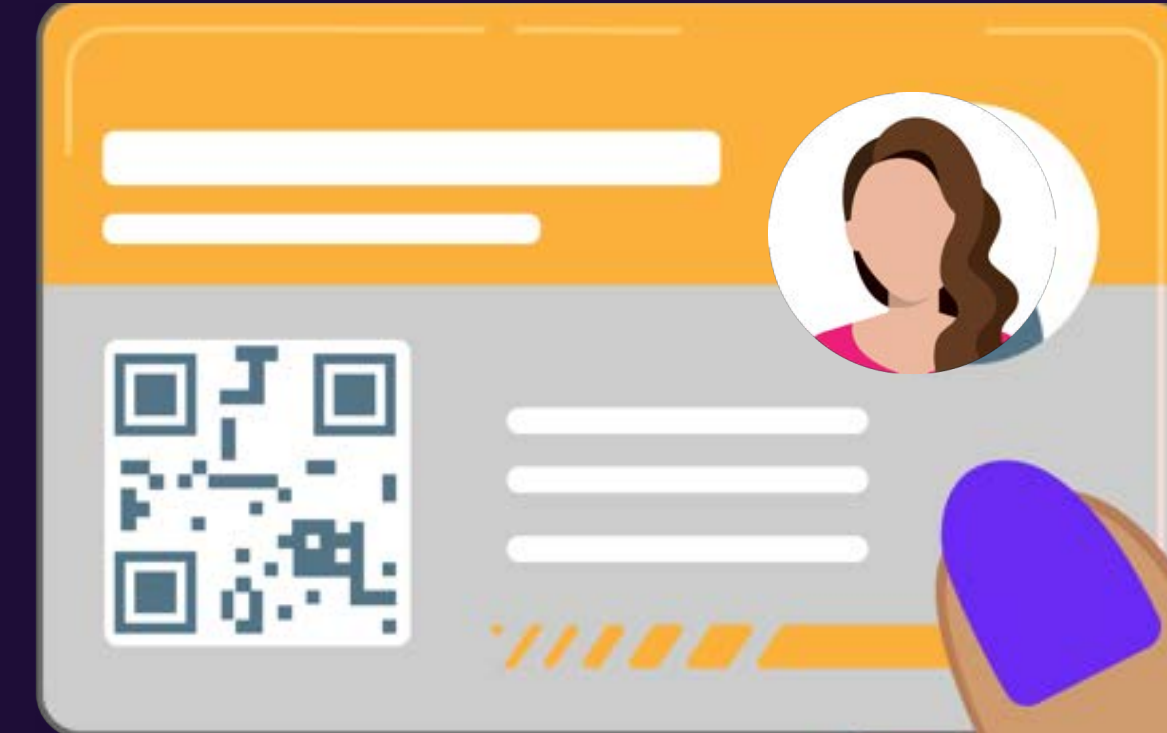
The problem – the bouncer gets the girl's PII



Prove you're 18, darling!

Sure...

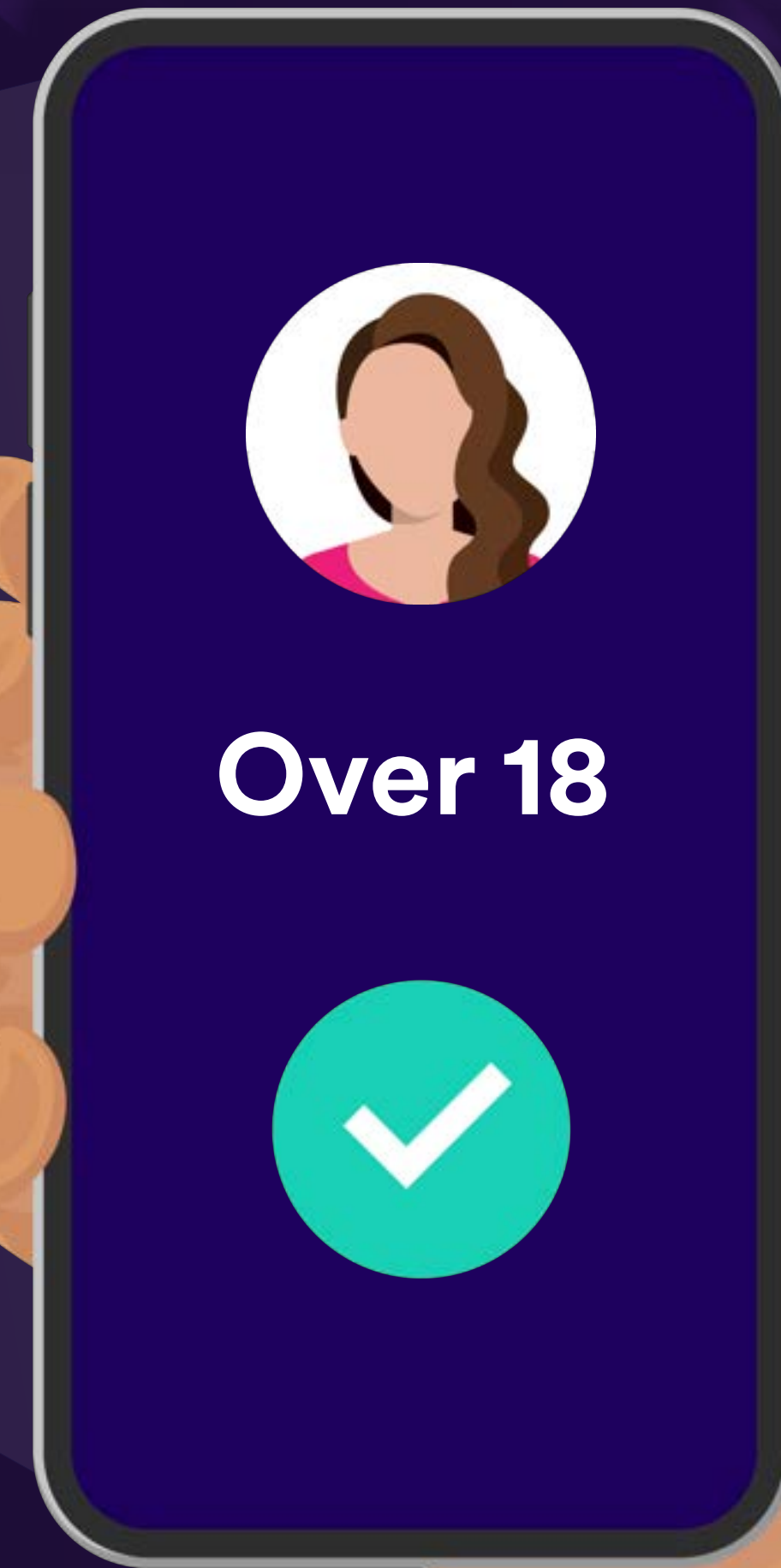
But what about my name, address,
and other info that they see on ID?



The solution – courtesy of zero knowledge proofs

Welcome to the party!

Over 18



Did we miss anything?

**Tell us about your
problems that you are
looking to solve**



Try it now!

Create your first Internet Identity



Let's collaborate!



Save a contact for future reference
comms@dfinity.org

