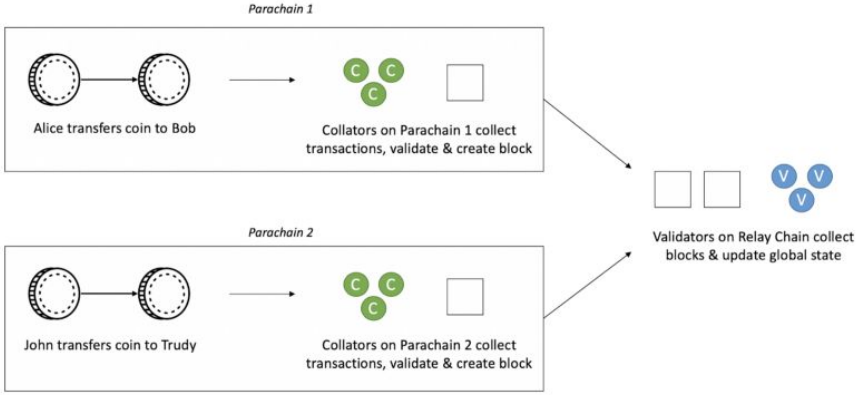
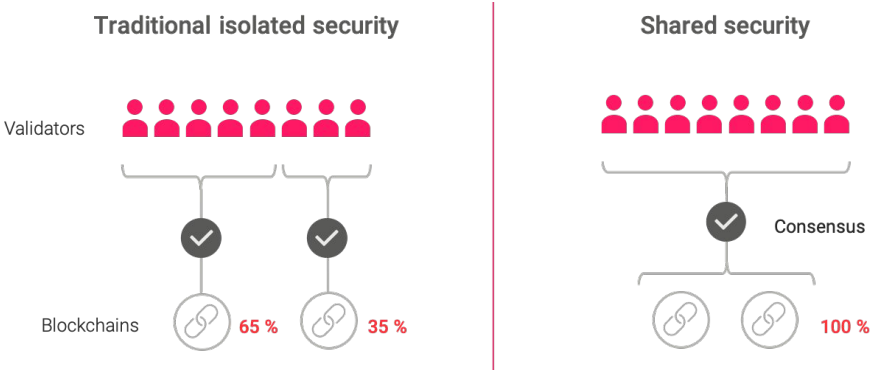
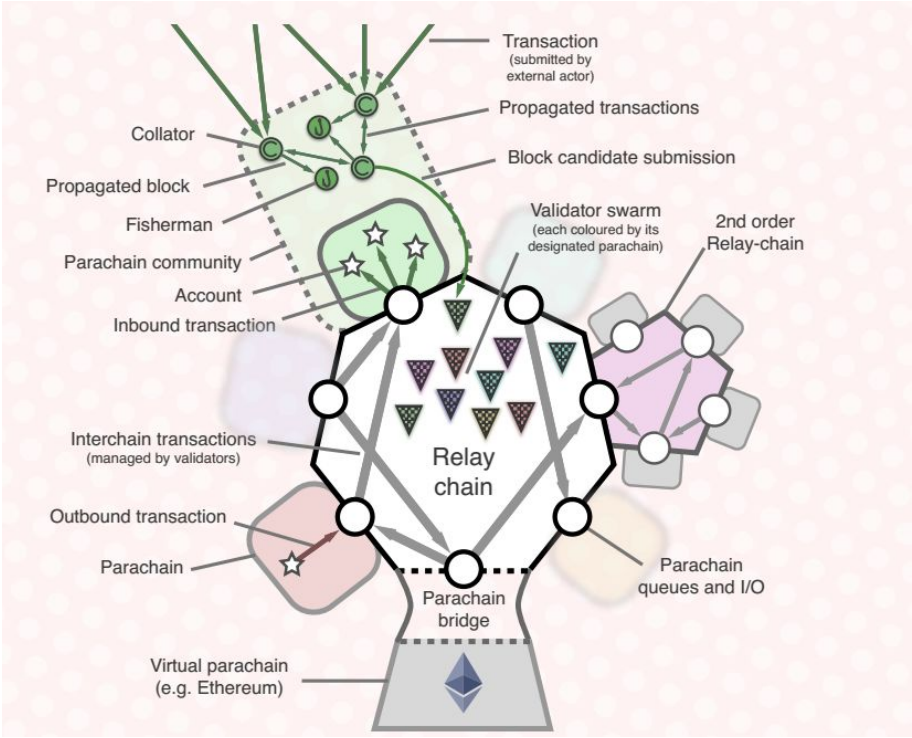
Polkadot shared security model

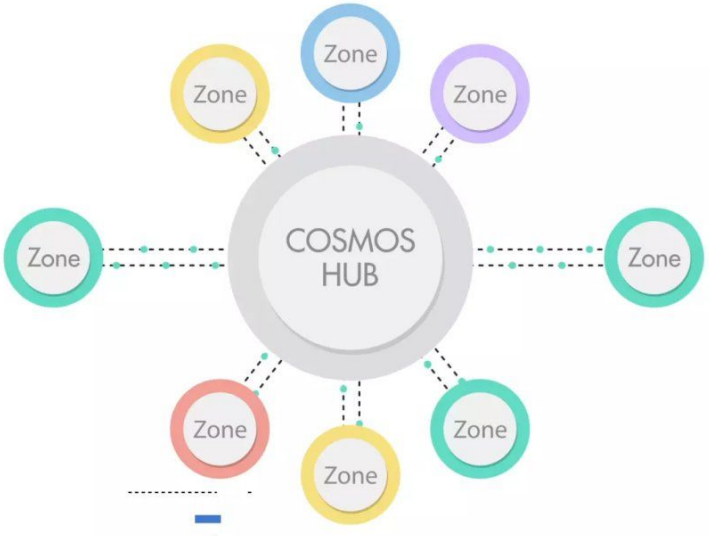






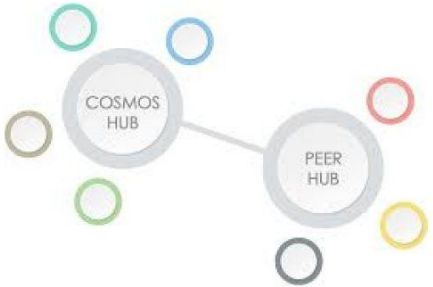
Cosmos shared security model

An internet of connected Blockchains that can communicate and share tokens...



COSMOS
INTERNET OF BLOCKCHAINS

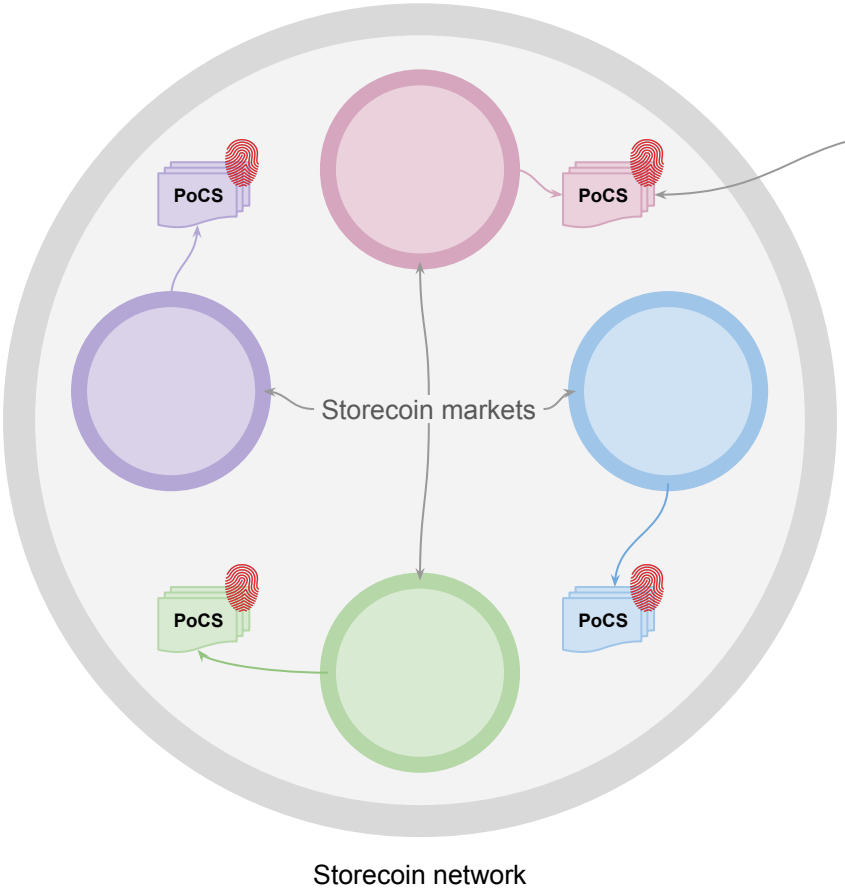
Each Zone can be a different blockchain



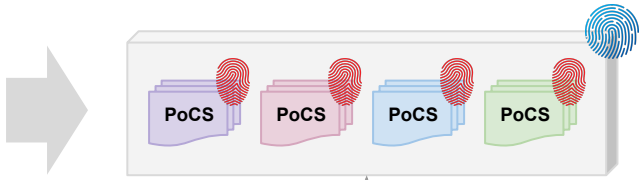
https://cosmos.network/

And the whole system will be scalable and decentralized being able to add more Hubs

Storecoin shared security model



Storecoin markets produce signed proofs-of-computation-and-storage (PoCSs) for tokenized app transactions created in those markets and relay those proofs to the Storecoin network.



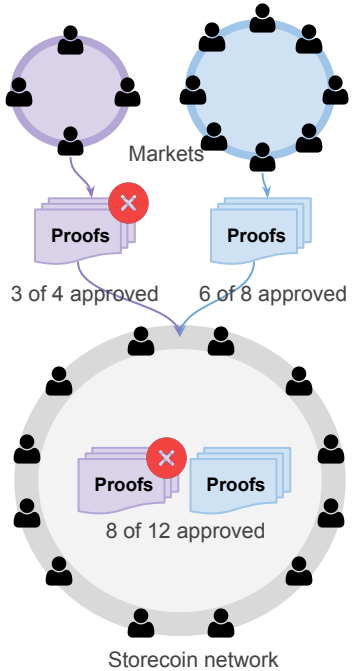
Storecoin network includes the proofs in a block and validates them, thus securing the markets.

Shared security model comparisons

Storecoin	Polkadot	Cosmos
Part-whole model. Storecoin markets are part of Storecoin network.	Hub-spoke model. Relay chain is the hub and Parachains are spokes.	Hub-spoke model. Cosmos Hubs are hub and Cosmos zones are spokes.
dWorkers who secure the Storecoin markets are a subset of dWorkers who secure the Storecoin network.	Parachains have their own independent collators and Relay chains have their own Validators.	Cosmos hubs and zones have their own Validators.
Economic incentives are aligned between Storecoin markets and the network. dWorkers in the Storecoin network get paid with block rewards for validating transactions relayed from the markets.	Unclear.	Unclear.
Same consensus algorithm — BlockFin — secures both Storecoin markets and the network.	Parachains can use consensus algorithms different from that of the Relay chain.	Hubs and zones use Tendermint.
Uses US federal security model.	Uses NATO security model.	Uses NATO security model.

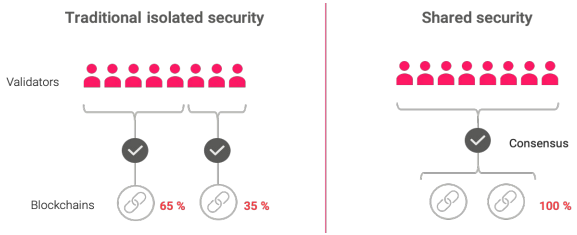
Shared security model comparisons

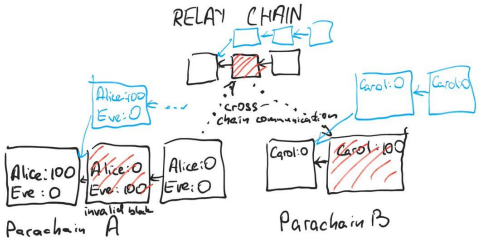
Storecoin



- Network-wide atomicity.
- Proofs are final if more than ⅔ dWorkers in the network sign the proofs in the block.

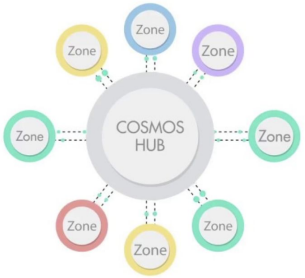
Polkadot

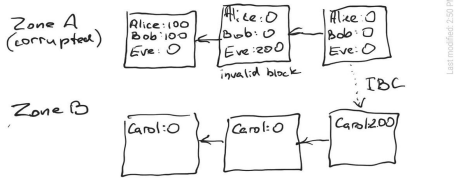




- Network-wide atomicity.
- An invalid block in one parachain may result in a reorg of entire system.

Cosmos

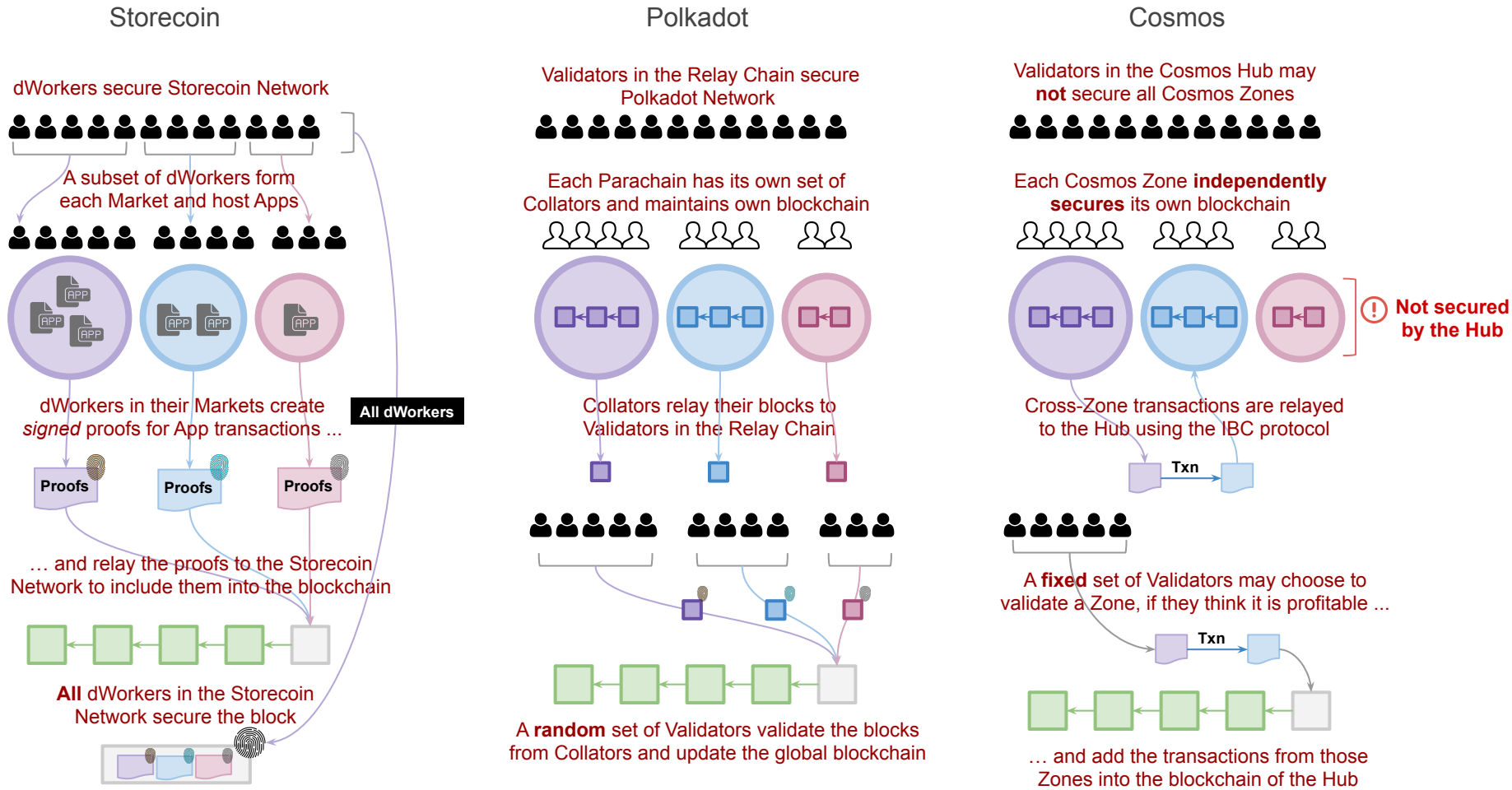




- Assets are final if more than ⅔ Validators in a zone sign the block.
- Loss of atomicity, if other zones are corrupted.

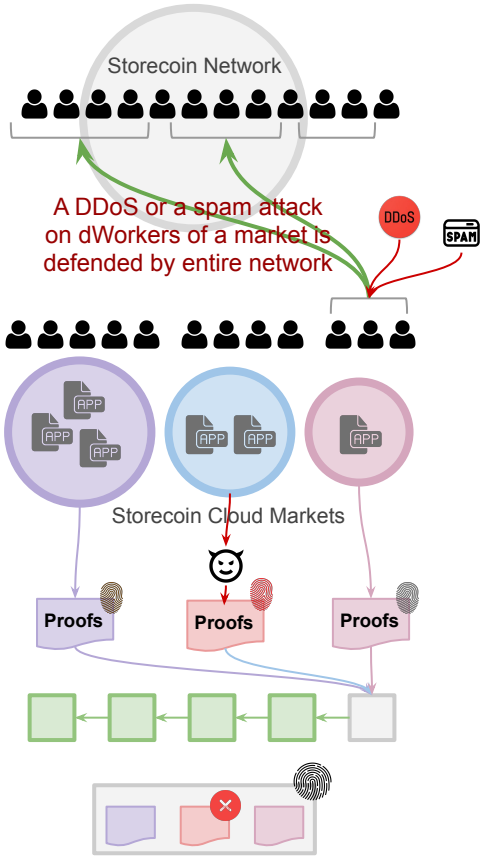
Source: https://twitter.com/AlexSkidanov/status/1129511266660126720?s=03

Shared security model comparisons



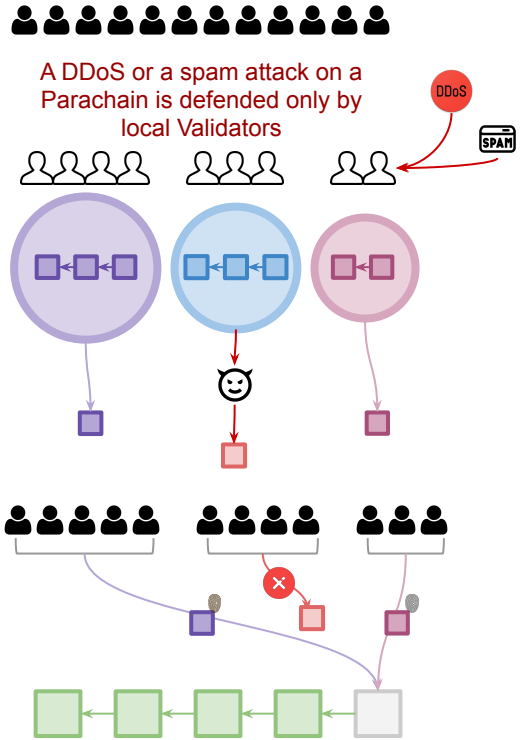
Shared security to defend against attacks

Storecoin



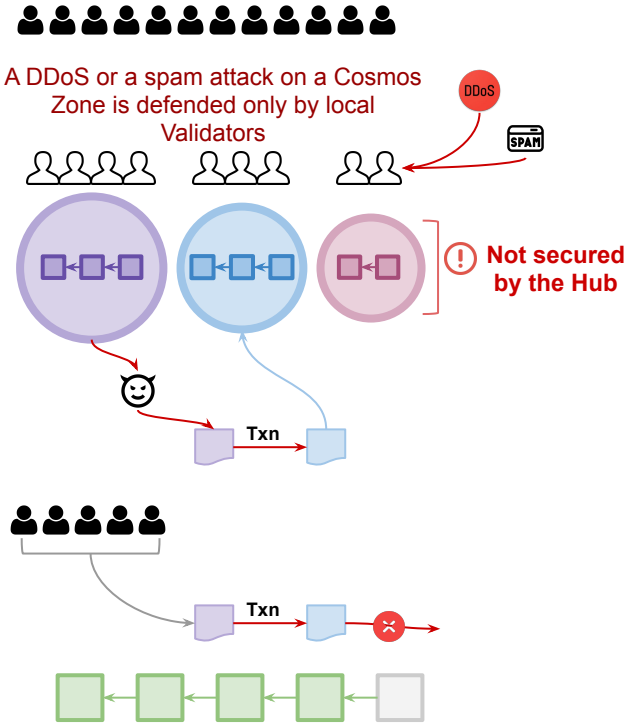
Any malicious proofs from a market are rejected by the **entire network**

Polkadot



Any invalid transactions in a block from a Parachain are rejected by a **subset of Validators** of the Relay Chain

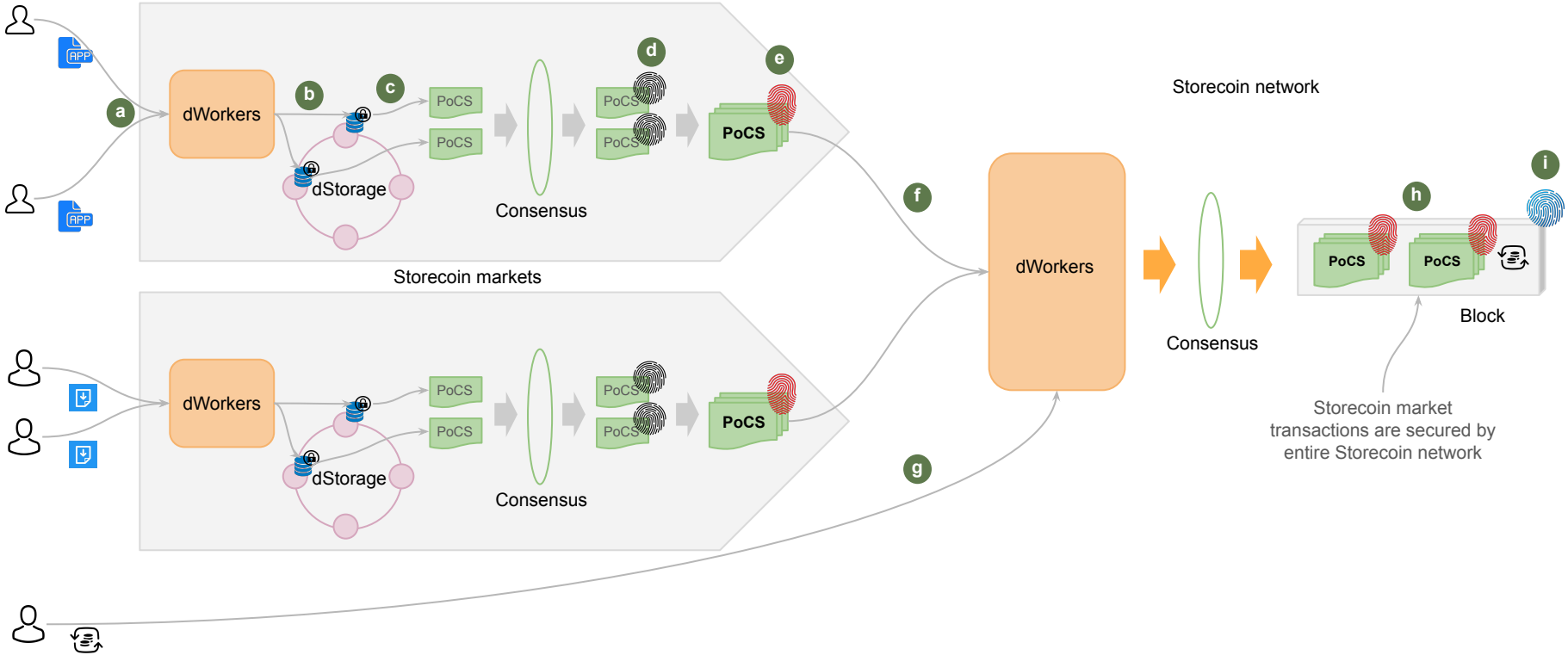
Cosmos



Any invalid cross-Zone transactions are rejected **only if a subset of Validators** in the Cosmos Hub decide to validate the affecting Zones

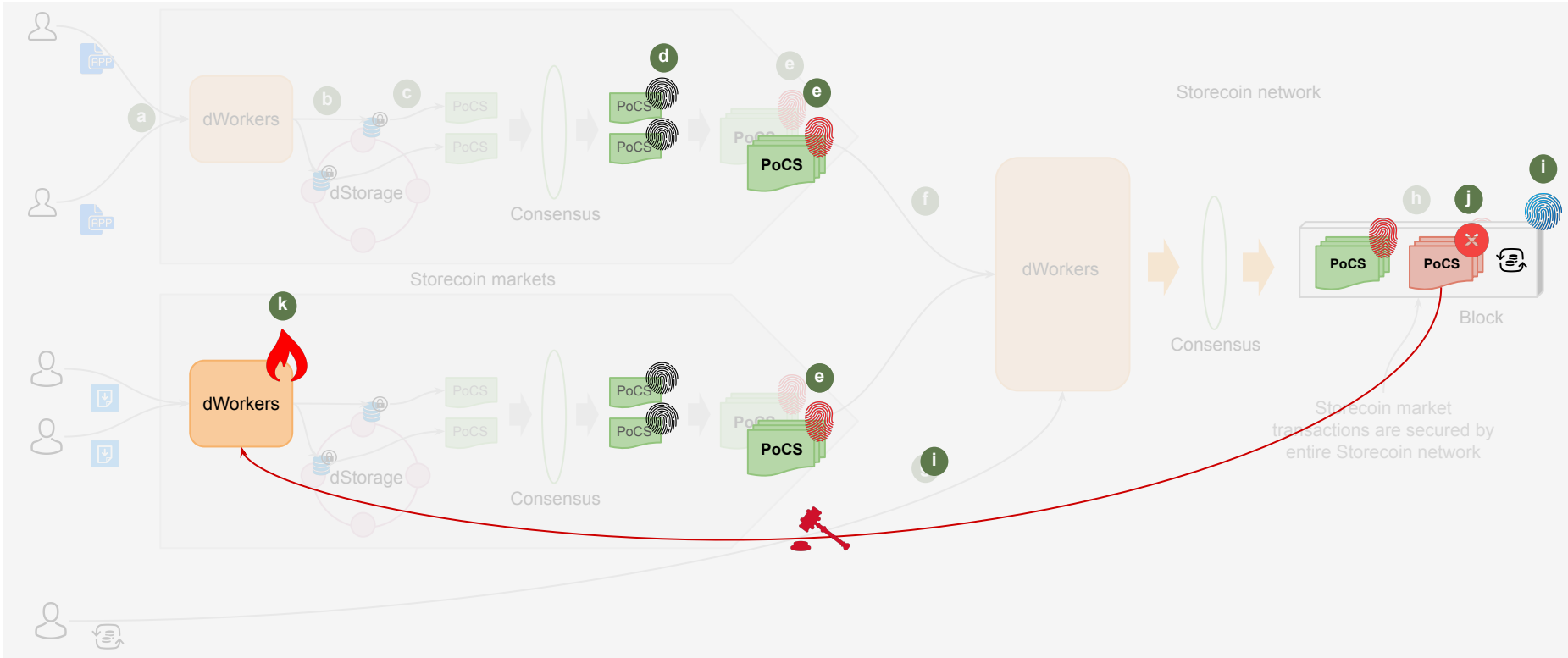
Shared security with shared responsibilities

dWorkers in the Storecoin cloud market **a)** run apps, **b)** store app data, **c)** generate proofs-of-computation-and-storage (PoCS) and **d)** validate them. They **e)** bundle validated PoCSs into a settlement transaction and **f)** relay it to Storecoin network. dWorkers in the Storecoin network assemble these transactions with **g)** other payment transactions into a **h)** block and **i)** validate the block.



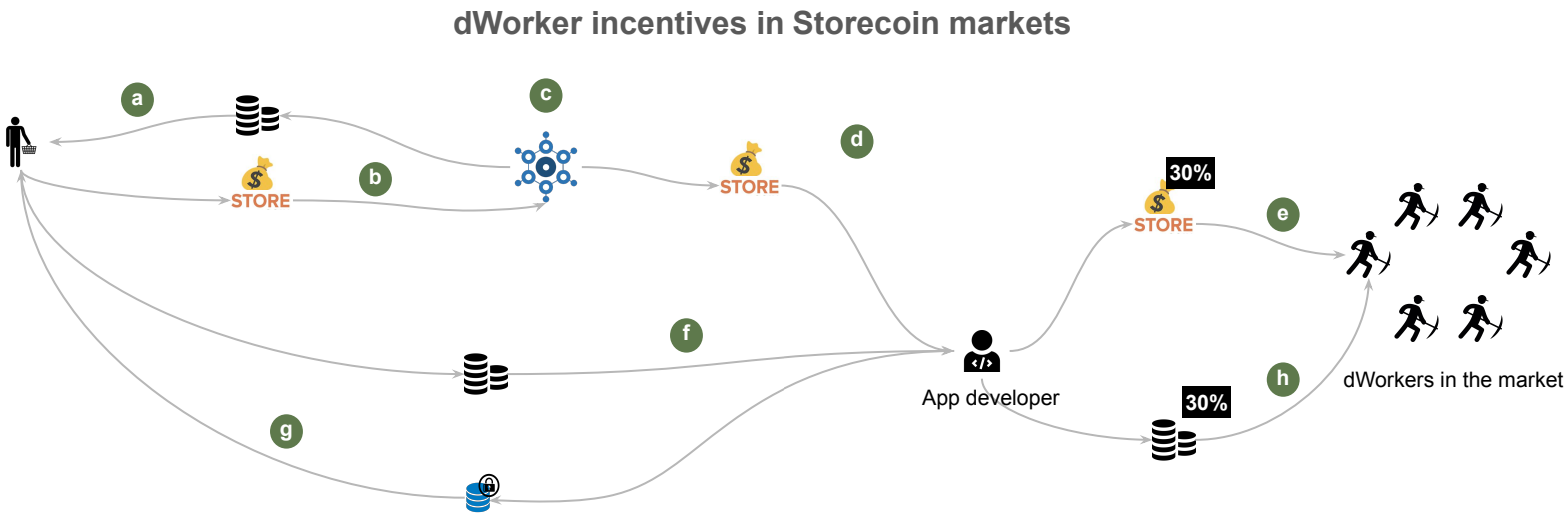
Why dWorkers in both the market and the network validate proofs?

dWorkers in the cloud market verify PoCSs **(d)** before relaying the proofs **(e)** to dWorkers in the Storecoin network. This allows them to prove that they follow the protocol. If network-wide verification **(i)** fails to validate any PoCSs **(j)**, dWorkers in the cloud market are slashed. Their stakes may be burned **(k)**.



Shared security with shared incentives — in the cloud market

Data buyers **a)** buy datacoins with **b)** STORE tokens on a **c)** DEX. Developers **d)** earn STORE tokens in this transaction. dWorkers in that cloud market **e)** earn their share based on the contract with developers. Buyers **f)** pay datacoins to developers to **g)** purchase data. Developers **h)** share a portion of this revenue with dWorkers.



Shared security with shared incentives — in the Storecoin network

Users submit their **a)** settlement transactions to dWorkers in the Storecoin network. dWorkers in the cloud markets submit **b)** PoCS transactions the Storecoin network. dWorkers in the network run **c)** BlockFin consensus algorithm to **d)** assemble the block and **e)** validate it. A low **f)** annual inflation of **g)** STORE tokens pays dWorkers in the form of block rewards.