

DECENTRALIZED FINANCIAL NETWORK BASED ON VERIFICATION OF COLLECTIVE HUMAN EXISTENCE

OR HOW TO FIGHT SYBIL AND VOTER APATHY

*Decentralized governance,
Perm Winter School*



CORE@HUMANODE.IO

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LECTURE PLAN

1. Overview of core infrastructure flaws in traditional finance and public blockchains
2. Humanode approach
3. Solving governance bottlenecks in 1 person - 1 vote Decentralized Autonomous Organization

CORE INFRASTRUCTURE FLAWS IN TRADITIONAL FINANCE AND PUBLIC BLOCKCHAINS

1. Open finance, concentrated ownership of infrastructure
2. Decentralized, not distributed
3. Market-based gas pricing
4. Devaluation of currency holders through disproportional emission

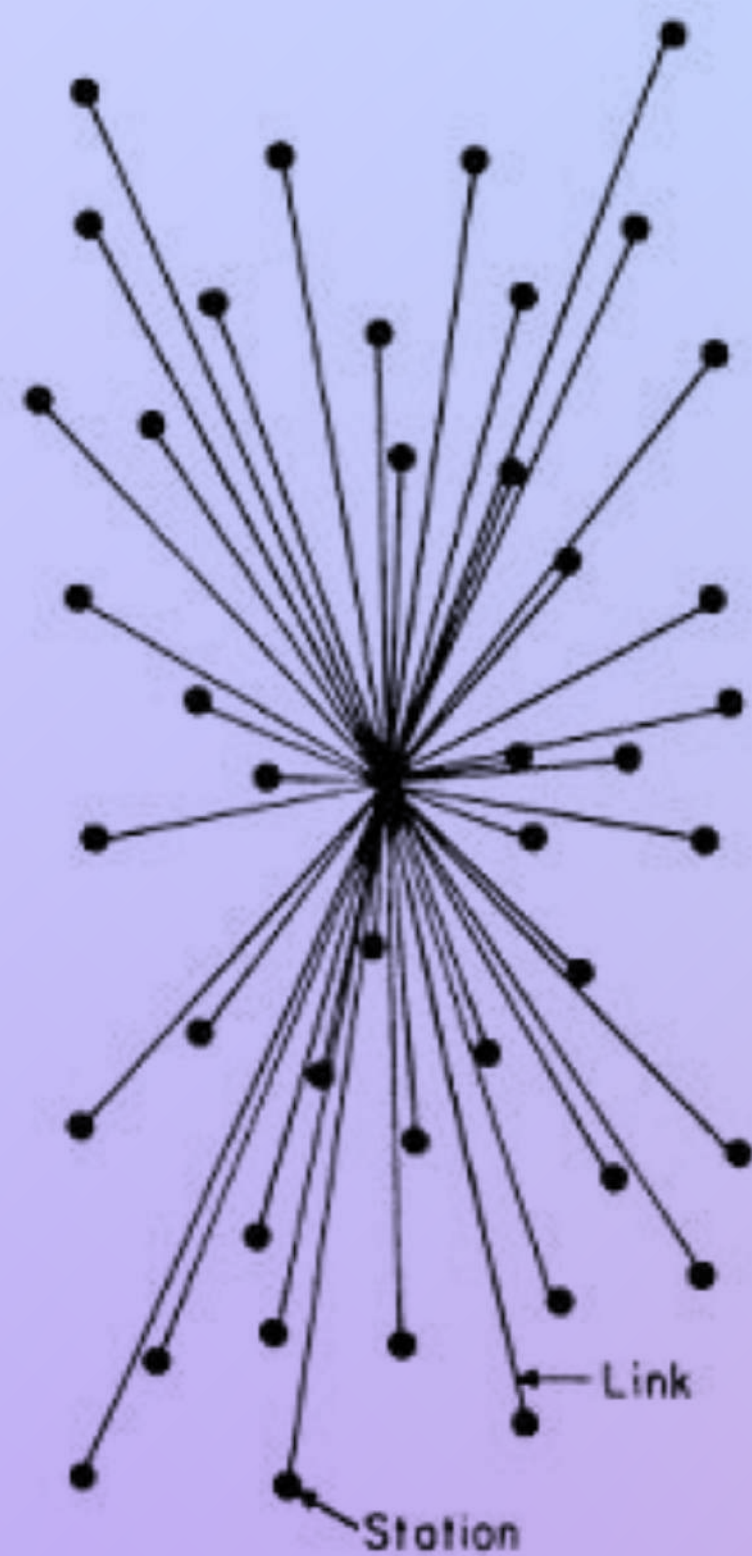


ONCHAIN VOTING IN BITCOIN, TAPROOT PROPOSAL, JANUARY 2021

| MINING POOL | TAPROOT? | ACTIVATION | COINBASE SIGNAL | PROOF OF SUPPORT | GLOBAL HASHRATE % (1 MONTH) |
|--------------|-----------|----------------------------------|-----------------|------------------|-----------------------------|
| Poolin | Yes | BIP9 equivalent, BIP8(false, 1y) | taproot/bip9 | Tweet | 12.60 % |
| Slush Pool | Yes | BIP8 | | Tweet | 3.37 % |
| BTC.com | Yes | Modern Soft Fork Activation | TBD | Github | 11.16 % |
| F2Pool | Yes | BIP8(false, 1y) | No | Pull Request | 16.46 % |
| AntPool | Yes | BIP8 | TBD | | 9.75 % |
| Luxor | Yes | BIP9 equivalent | taproot/bip9 | Tweet | 0.4 % |
| SigmaPool | Undecided | | | | 0.2 % |
| NovaBlock | Yes | BIP9 equivalent, BIP8(false, 1y) | taproot/bip9 | Tweet | 0.63 % |
| ViaBTC | Yes | | | Tweet | 7.5 % |
| Binance Pool | Yes | | | Tweet | 11.99 % |



DECENTRALIZED, NOT DISTRIBUTED



Centralized



Decentralized



Distributed



MARKET-BASED GAS PRICING

Demand - users, developers.

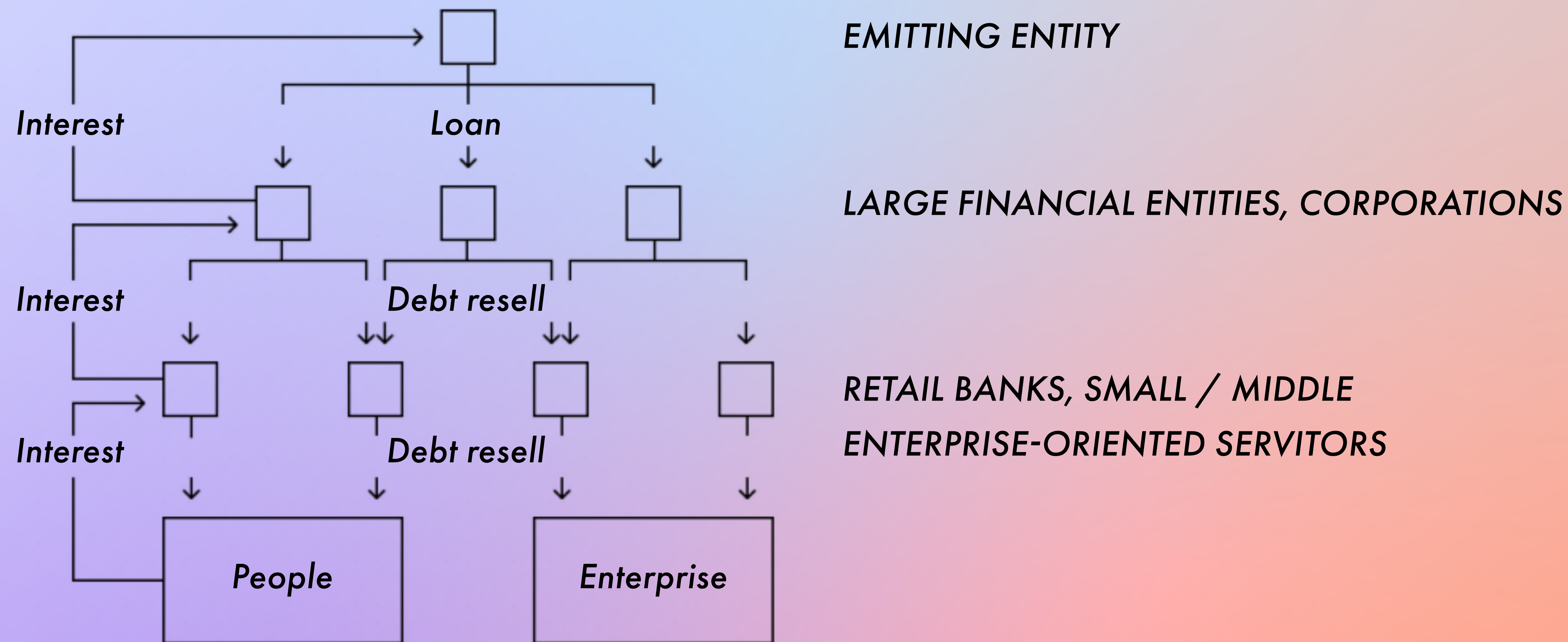
Supply - miners and stakers.

Result - a legitimized soviet type of a queue.

Ethereum Average Transaction Fee, Feb 25, 2021



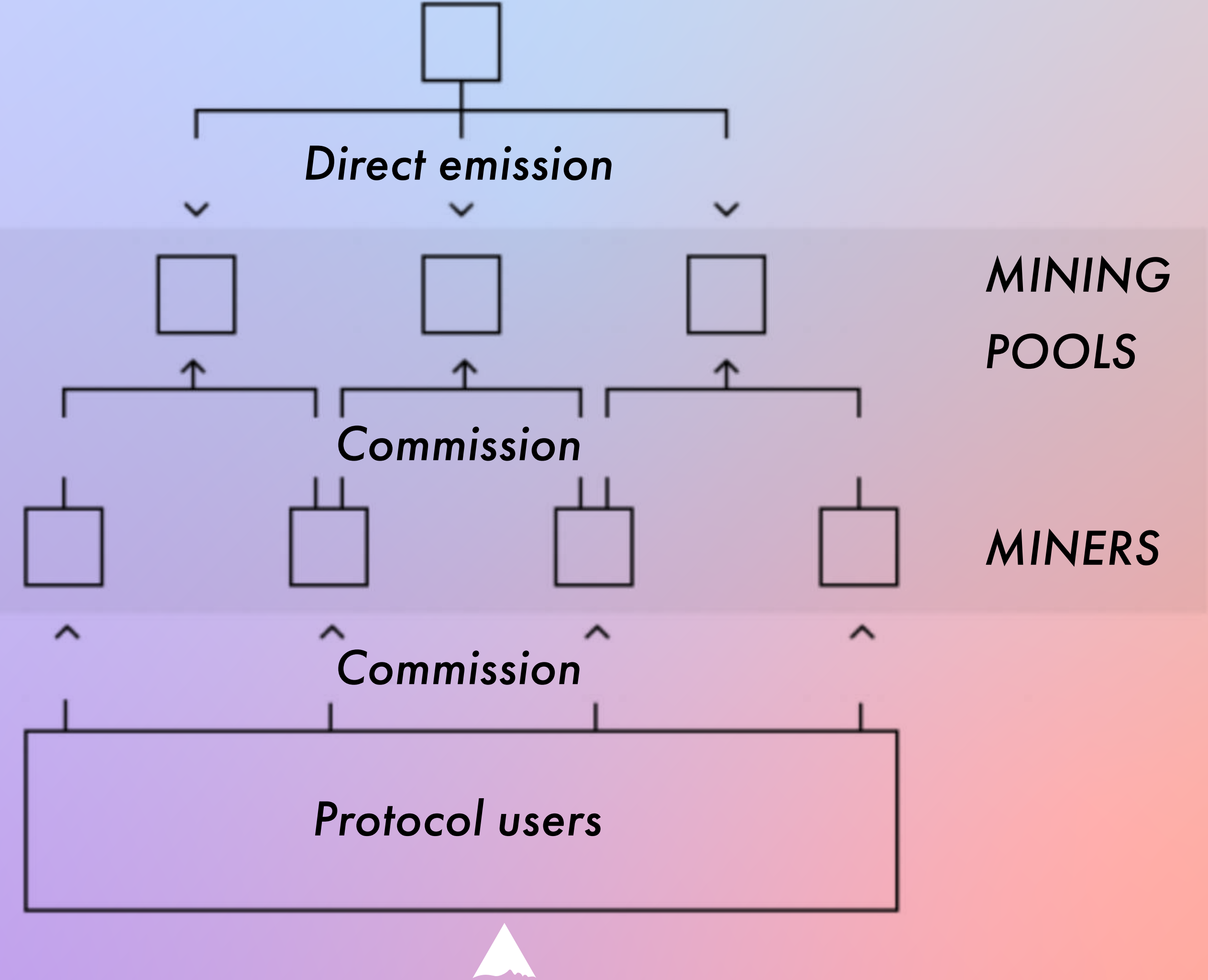
DEVALUATION IN TRADITIONAL FINANCIAL SYSTEM



DEVALUATION IN PROOF-OF WORK

Protocol

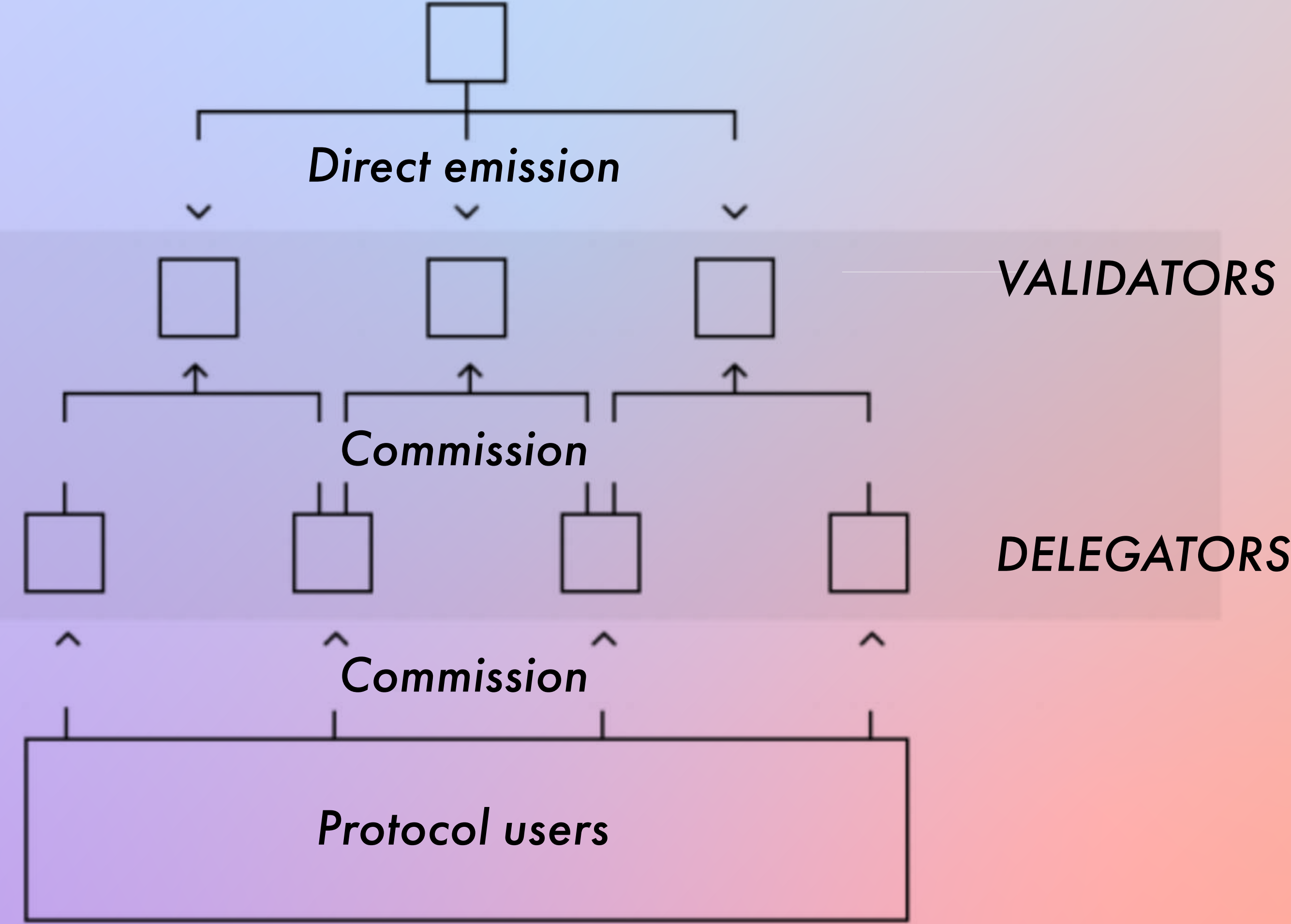
Validators



DEVALUATION IN PROOF-OF-WORK

Protocol

Stakers



CONSEQUENCES FOR GOVERNANCE

1. Oligarchy
2. Plutocracy
3. Populism
4. Voter apathy



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ONE HUMAN – ONE NODE

01

Nodes in Humanode are deployed by submission of encrypted biometrics of real human beings

02

When a person submits his biometrics, he is given a validator key which grants that person an ability to become a node in the Humanode network and verify transactions

03

As our biological traits are unique, we can utilize that uniqueness to make sure that a single person can't deploy more than one node

04

In case of malicious activity, the biometrics of a potential perpetrator are blacklisted, and he loses access to validation while his wallets derived from biometrics are frozen

05

Instead of PoW and PoS, Humanode uses Proof-of-Uniqueness and Proof-of-Existence to create a robust financial network where 1 human = 1 node and all nodes are equal in terms of validation and voting power



SYBIL-RESISTANCE

1. Liveness detection certification
2. Trusted devices
3. Enrollment cost
4. Recurring cost
5. Proof-of-time



STRONG IDENTITY VS PSEUDONYMOUS IDENTITY



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HUMANODE USE CASES

01

Private biometric identity at the very core allows to deploy any layer 2 and layer 3 dapps on top. No paper wallets. Your biometrics become the private key. This finally enables dapps to compete with centralized apps in UX/UI

02

Any existing protocol can integrate 1 human = 1 vote DAO into their protocols making them fairer and more decentralized

03

Stable cost-based system gives an ability to conduct countless computations without the fear of fees skyrocketing. This gives the developers a foundation to build financial applications like never before while enterprises can predict costs of using a public DLT

04

Becoming a validator has never been easier or cheaper as no mining equipment or staking money is required. All one needs is to exist and have a decent device to conduct biometric processing making the whole system much more humane and democratic

05

Fath creates a non-dilutive storage of value. A Fath-based asset allows to store value without the fear of being diluted by issuance

06

CRDTs provide a mechanism that mathematically guarantees that all nodes in the system will converge to the same state. This simple rule makes the whole process of building on top much more developer-friendly than chaotic probabilistic variability in modern blockchains



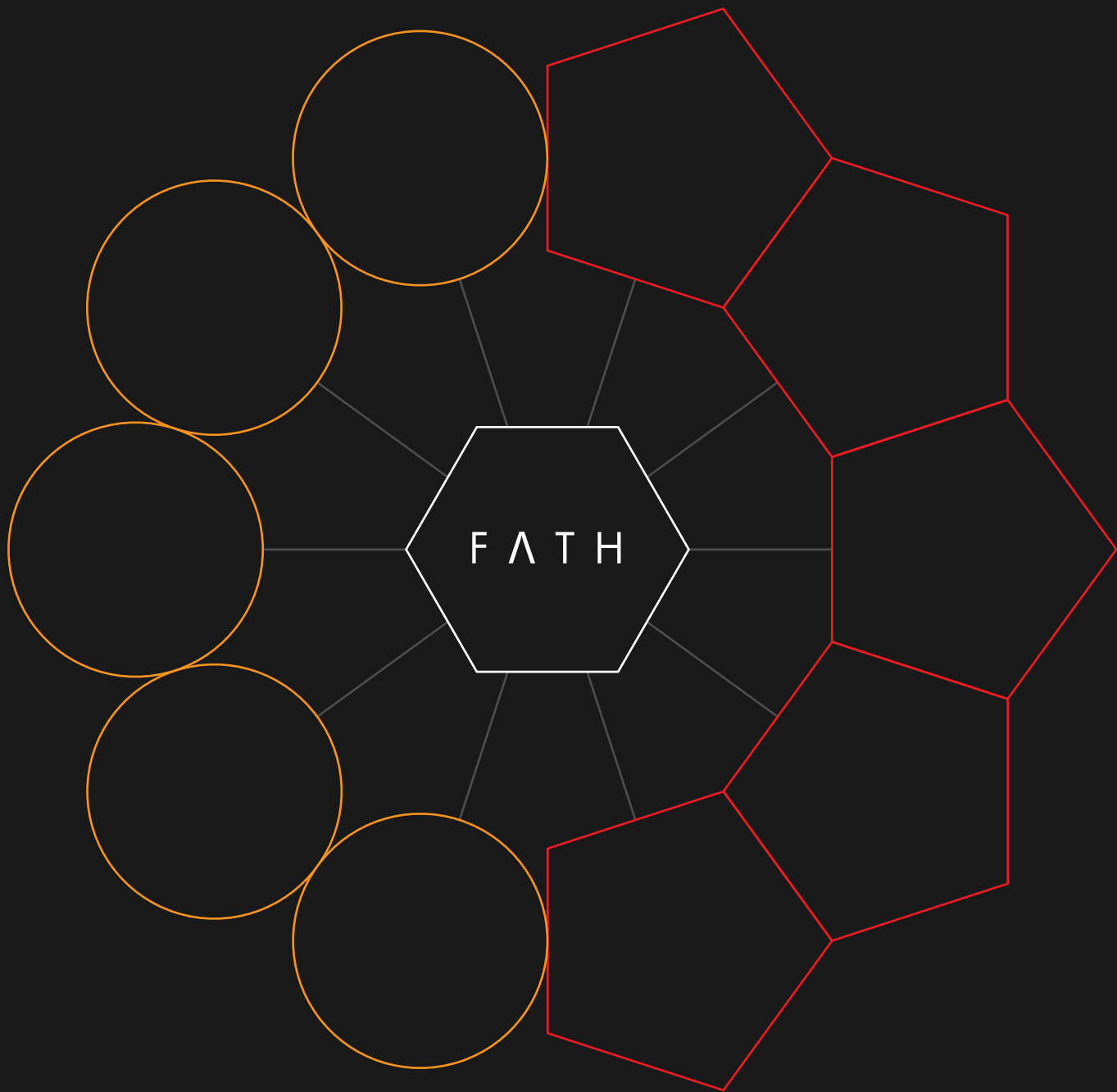
FATH

Token mechanics - elastic supply without devaluation



Protocol Users

Receive direct emission
and pay transaction
fees to the protocol



Human Nodes

Receive direct emission
and transaction fees to
the protocol



POPULIST TIDE AND PROFESSIONAL BACKSLIDE

“23 percent of populists cause significant democratic backsliding, compared with 6 percent of non-populist democratically elected leaders (J. Kyle & Y. Mounk, 2018). In other words, populist governments are about four times more likely than non-populist ones to harm democratic institutions.”



ROLES IN VORTEX



HUMAN NODE

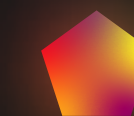
A user who has gone through proper biometric processing and receives network transaction fees but does not participate in governance.

DELEGATOR

A human node who decides to delegate his voting power to a governor.

GOVERNOR

A human node who participates in voting procedures according to governing requirements. If governing requirements are not met, the protocol converts him back to a non-governing human node automatically.



GOVERNORS' REQUIREMENTS

ONE PERSON - ONE VOTE

The governors will have different rights according to their ranks. Ranks are based on Proof-of-Time (PoT) and Proof-of-Devotion (PoD), meaning that devotion in the system is valued more than the riches one has. Ranks do not give any additional voting powers to their holders, instead they are given an ability to make and promote others' proposals on crucial matters.

CITIZEN

Need to govern, years

0

Participate in formation

Not required

Maintain the pin of the full state of the network

Not required

Have one of your proposals approved by Vortex

Not required

SENATOR

Need to govern, years

1

Participate in formation

Not required

Maintain the pin of the full state of the network

Not required

Have one of your proposals approved by Vortex

Not required

LEGATE

Need to govern, years

2

Participate in formation

Required

Maintain the pin of the full state of the network

Required

Have one of your proposals approved by Vortex

Not required

CONSUL

Need to govern, years

4

Participate in formation

Required

Maintain the pin of the full state of the network

Required

Have one of your proposals approved by Vortex

Required



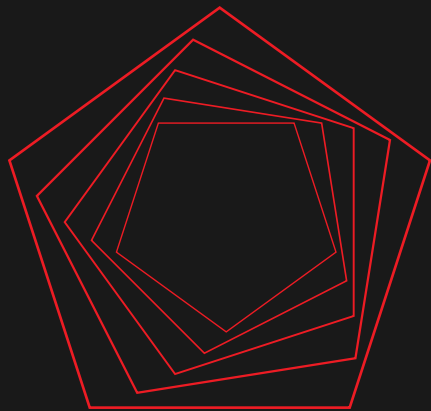
HUMANODE 1 PERSON - 1 VOTE DAO STRUCTURE

1. Proposal pool
2. Voting in Vortex
3. Formation - team assembly, budget management and execution



VORTEX

Those proposals that were upvoted or downvoted by 22% of governors will be voted upon by Vortex



Governor



Upvotes and downvotes

| | | | | | |
|-------------------|---------|----------|----------|----------------|-------------|
| Max voting period | 2 weeks | Month | 2 months | 3 months | 6 months |
| Proposal type | Product | Monetary | Protocol | Administrative | Vortex core |

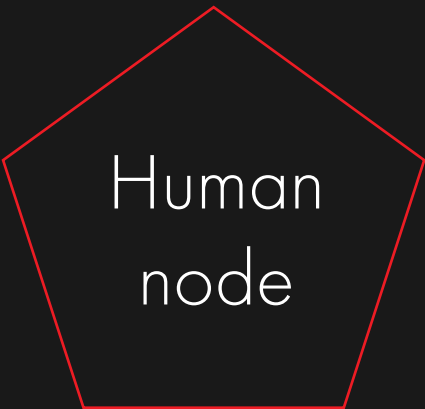
POOL SYSTEM



Makes a proposal based on Tier



HUMANODE



Governors nominate a proposal from a non-human-node based on Tier

Quorum is reached if 33% of governors vote on a proposal. If 66% out of the quorum vote to approve a proposal then Vortex will consider it approved. Meaning that 22% of governors will be enough to approve a proposal.

Governors cast a vote for a desired outcome

Vote from the Governor

Votes from the Delegations

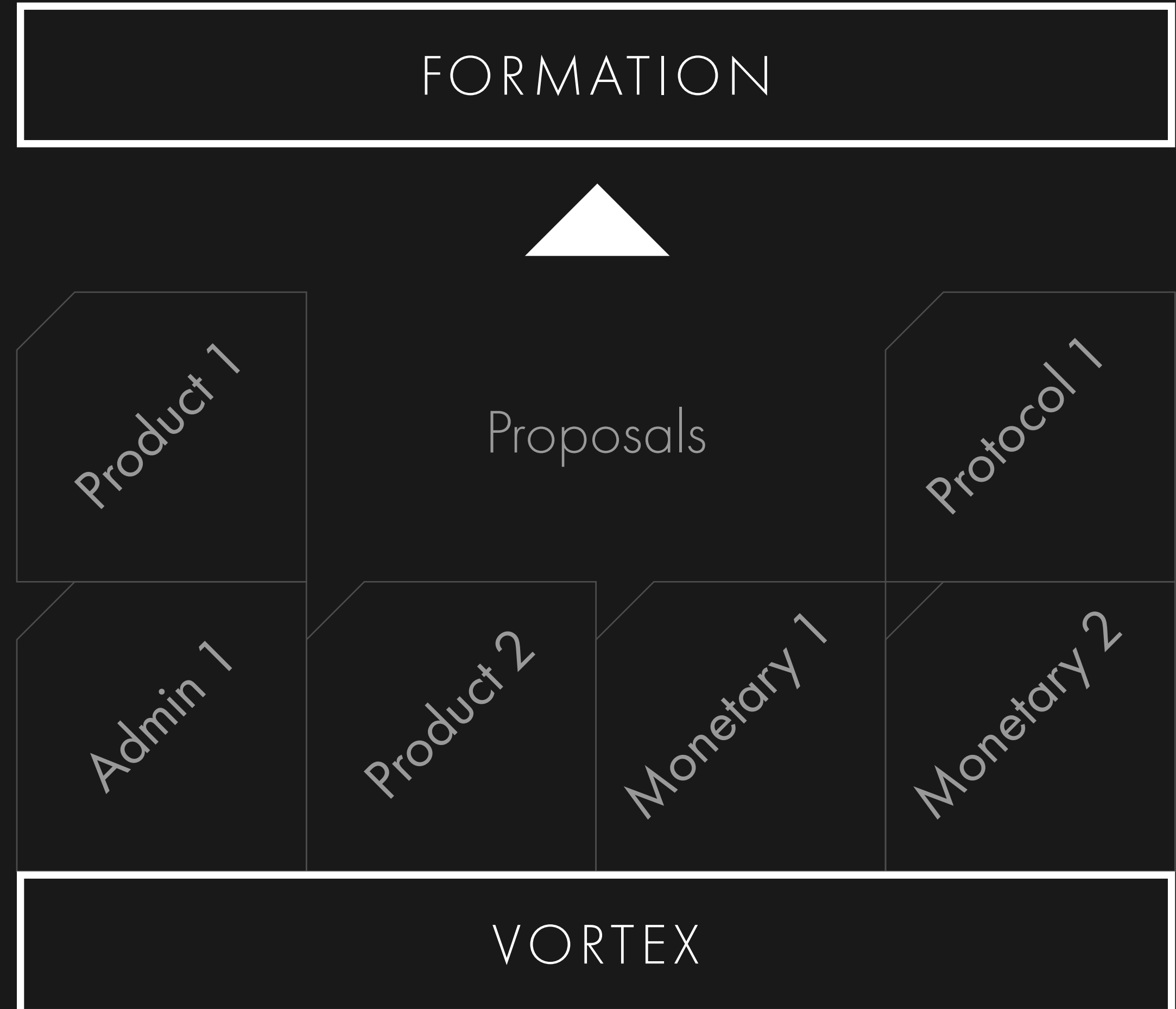
Voting power

Governors

App

Voting

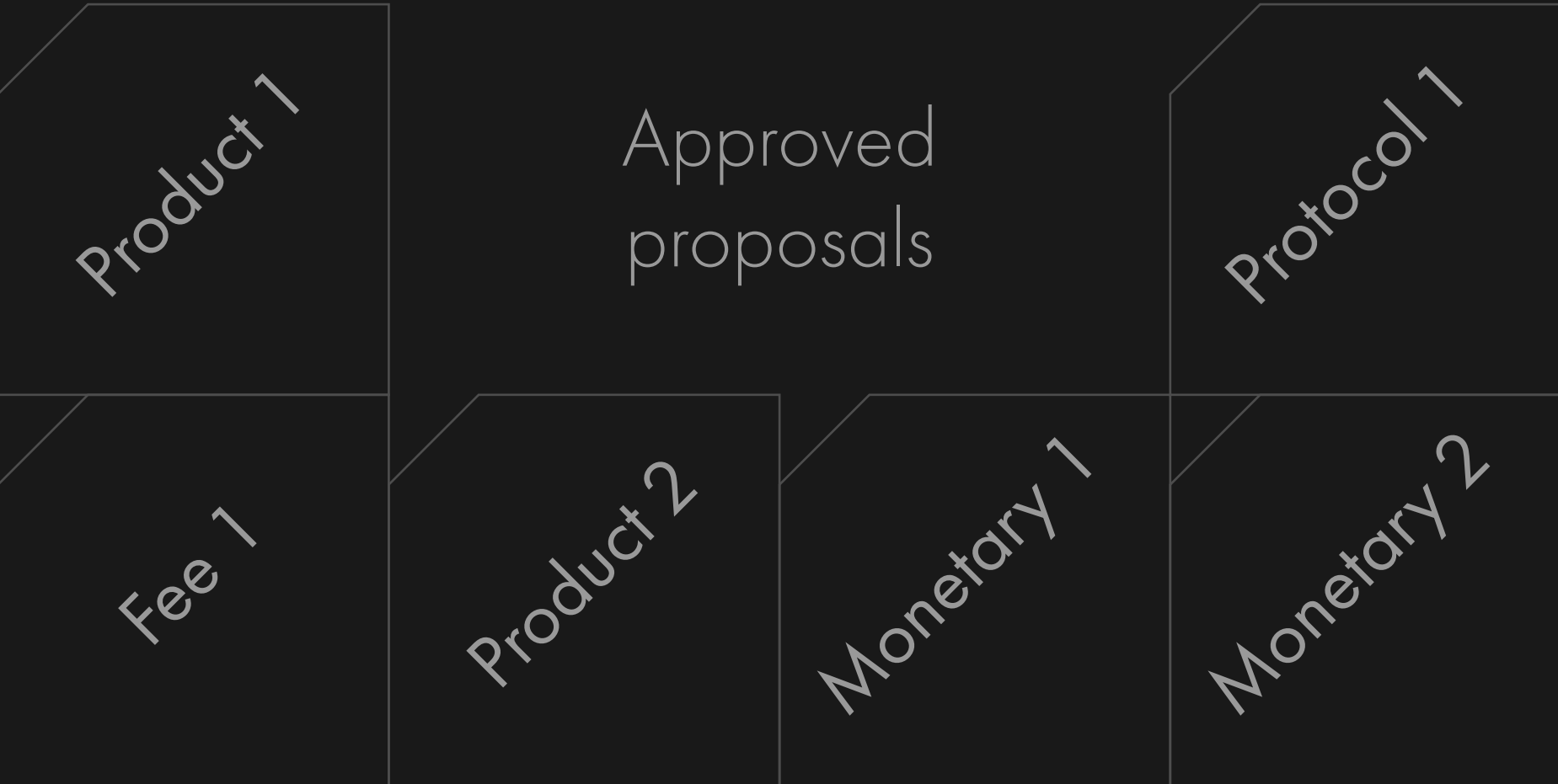
Those proposals that were upvoted or downvoted by 22% of governors will be voted upon by Vortex



DEVELOPMENT



TEAM ASSEMBLY



FORMATION



WE DO NEED YOUR HELP, JOIN HUMANODE CORE

Liveness detection developers (Biometrics, AI)

FHEd biometrics developers

DAO developers (Solidity, Viper)

Protocol developers (Go, Rust)

Website: humanode.io

Humanode 101: <https://blog.humanode.io/humanode-or-stop-worrying-love-the-dlt/>

My telegram: [tech_digger](https://t.me/tech_digger)



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