SFT Protocol DAO Whitepaper (II)

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1. Abstract

In this paper we design a DApp to capture the value of the many different types of hardware and data into a single DAO[1]. Using an innovative auction system we will ensure the network can grow continuously and organically. The network will be designed to integrate an increasingly diverse array of hardware, in an increasingly distributed network as it develops. With each auction, the protocol purchases liquidity from users, increasing both capacity of the network, expanding potential revenue streams, and creating a healthy market environment. We plan to be able to support:

- Liquid Staking Derivatives for long locking periods on various full node hardware

- Wrapped coins from integrated chains along with liquidity

- Full node RPC services

- Decentralized storage, bandwidth, and computing

- AI computing services

- Public & private GPU rendering

- Encrypted and validatable data collection and exchange from IoT and other sources

2. Introduction

The original innovation of Bitcoin was the creation of the first autonomously orchestrated decentralized network of computers. By aligning incentives and ensuring that participants had more to gain by being honest than by attacking the network[2], bitcoin has created the largest distributed network of computational resources the world has ever seen.

The current computational resources available globally are not adequate to meet the needs of new and emerging technologies. LLMs and the proliferation of AI are driving unprecedented demand for GPU compute hardware[3]. IoT networks are struggling to secure storage and verification resources for the massive amounts of data generated by their networks[4]. At the same time, mass adoption in crypto is driving demand for Proof of Work and Staking Hardware as well as RPC services unlike anything we have seen before[5]. Finally the ever growing demand for high speed online content delivery requires local deployment of CDN servers worldwide[6]. To meet this rising demand for computational resources will take either the creation of massive centralized organizations to invest unprecedented amounts of capital into technological infrastructure with minimal oversight or accountability and potentially politically motivated incentives. Alternatively this could be handled by the creation of a large-scale distributed network of hardware collectively owned and operated by the participants. In this paper we propose a system to implement the latter alternative.

By building upon the original innovation of bitcoin and by integrating concepts from Web3 such as DAOs and Liquidity Pools[7], we propose to create a globally Decentralized Physical Infrastructure Network (DePIN) governed by a DAO which efficiently connects hardware directly to users through a Web3 interface. Such a network has the potential to democratize access to hardware and return the internet to its original vision of a free and open Internet that can keep up with the growth of computing.

3. An Open Integration Framework: Our Vision & Values

The DAO is, at its core, a framework for integrating any type of hardware or data service in a sustainable way. By creating an open flexible model for integration, the project will be able to meet rapidly growing and changing demands in the DePIN hardware marketplace by not being fixed to any specific form or type of hardware like other projects. The DAO is a first step to establish a firm foundation of liquidity and infrastructure from which to launch a full application chain that can integrate and validate hardware activity directly.

During the DAO phase, we will bootstrap hardware in datacenters and build liquidity for both integrated chains and the DAO itself. Members can present market research and vote on the most appropriate use of Treasury funds. The auction system can be applied to any type of integration and ensures a large amount of liquidity is always available.

Liquidity lowers transactional friction, naturally drawing users and activity. We aim to be the largest and most liquid hardware marketplace in the space.

This is the organizing vision for the project.

4. Core Concepts

The DAO is designed to serve as an organizing entity that enables users to participate in the deployment of, and investment in, a distributed network of various physical infrastructure located all around the world. To accomplish this, we will deploy several interconnected components:

- DAO Smart Contract with Staking & Governance
  - ✧ Owns Treasury and Receives Proceeds
  - ✧ Votes on new Projects, Partners, Integrations, and Proceed Distribution

- Liquid Staking Derivatives and Wrapped Coins
  - ✧ LSD Tokens for Integrated Staking Networks like Filecoin
  - ✧ Wrapped Tokens from other Blockchains like Bitcoin

- Liquidity Bond Auctions from Hardware Proceeds
  - ✧ DAO Auctions some Hardware Proceeds in exchange for LP
  - ✧ DAO-Owned LP provides healthy organic growth of the protocol and facilitates LSD, Wrapped, and DAO Token functionality

- Decentralized Hardware Ownership
  - ✧ Integrated Decentralized Partner Networks
  - ✧ Direct Legal Partnerships with Hardware Providers & Colocation Facilities

- Public Service Deployment
  - ✧ Paid digital services made available to the general public using hardware
  - ✧ Facilitate transactions and verification of service fulfillment

5. DAO Staking & Governance

The DAO will be the owner of the protocol, treasury, liquidity and all of its equipment. DAO members will vote on proposals for:

- Approving new potential partnerships for the protocol
  - ◇ Partnerships accelerate development by using existing projects' functionalities to synergize with the protocol, as well as bring additional attention

- Deciding on hardware, blockchains, or services to integrate into the protocol
  - ◇ Adaptively steering the project towards the most beneficial and profitable integrations for the project

- Deploying Treasury Capital into new Projects
  - ◇ Treasury can be used to buy new hardware for colocation and even build full datacenters based on DAO voting

- Proceed Distribution Adjustments
  - ◇ Adjusting the split between stakers, liquidity and other items (see Revenue Stream Distribution)

6. Staking

DAO Token holders will be able to stake their DAO Tokens to receive their proportional amount of the revenue allocated to stakers.

Receiving staking revenue can be done in one of two ways when staking:

- Receive payouts from any fee source in USDC

- Use payouts to automatically compound your DAO Tokens into more DAO Tokens

Stakers are required to vote to receive revenues from DAO payouts, but may delegate their voting activity to another member. To have been considered an active voting member, either a member or their delegate must have voted either on the most recent proposal, or on any proposal within the past 7 days, whichever is longer.

There is no unlock period to exit the staking pool.

7. Voting

Stakers may choose to vote on DAO governance proposals to shape the future of the protocol, voting on new partners or projects, output distribution, and other items.

Minimum token value for proposal (after tokenomics)

7.1 Delegation

Users can delegate their voting rights to another member of the DAO. As long as the delegate votes, delegating voting rights to another user will count as having voted with regards to receiving rewards. If the delegate doesn't vote it will not count.

7.2 Quorum

At least 25% of the staked DAO Tokens must participate in a vote in order for quorum to be met and the vote considered valid. The lowest amount of staked tokens during an active vote will be used when qualifying quorum.

8. Liquid Staking Derivatives and Wrapped Coins

Liquid Staking Derivatives like SFT[8] and other coins which require the coin to be staked in order to produce it will operate on LSD mining contracts. Each will have a contract which will allow users to mint LSD tokens by locking the coin required for production (FIL in the case of SFT) and then minting the LSD Token version of it (SFT). LSD tokens will be redeemable 1:1 for the original coin. Depending on the chain, there may or may not be associated lockups. See the associated documentation for the integration for details.

Users staking the LSD token will receive revenue from the associated hardware. The revenue can vary depending upon selected available lockup periods (including no lockup), see individual integration documentation for details.

For integrated networks that utilize Proof of Work or other generation of coins that do not require staking, wrapped versions of the coin will be created from the output of associated hardware, such as a Bitcoin ASIC. These wrapped tokens will be auctioned off by the DAO for revenue, with the DAO remaining custodian of the underlying asset in a 1:1 ratio. Custodial addresses will be made available for public verification of funds. See individual integration documentation for details.

9. Revenue Streams and Explanation
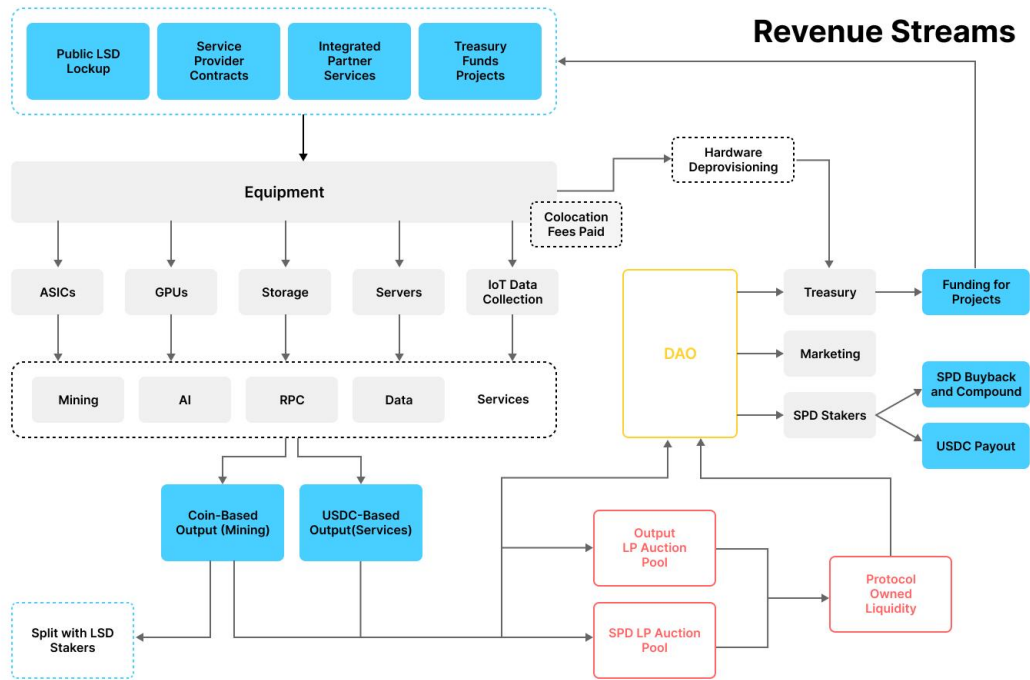
In this model, we illustrate the various sources of equipment available to the DAO, the services they provide, and the pathway their output takes. Services can either output in raw coins, or in USDC for paid services. In either case, the proceeds are split in a similar manner to the below Example Revenue Split: with a portion going to DAO stakers, Marketing, and the treasury; another portion going to the LP Auction system.

Bidders in the LP Auctions will be bidding on either discounted USDC or wrapped raw coins. One auction contract will accept LP Tokens for USDC+SPD, the other for the LP pairing of the output (LSD or Wrapped Coin) + USDC.

10. Example Revenue Split

Imagine we have a Bitcoin mine generating $12,000/day and that the DAO has secured a Service Provider Contract to colocate at the datacenter for $0.08/kWh, which is roughly $5000/day taken out of the revenue of the mine. Then the remainder of the $7000/day worth of Bitcoin mined will be wrapped and turned into wrappedBTC then distributed in the following amounts:

- 30% goes to all staked SPD (See Staking)

- 20% to treasury with (See Treasury and Hardware)
    - With 16% for marketing
    - 4% for equipment

- 37.5% is auctioned off for SPD+USDC Liquidity on public auction from users (See LP auctions)

- 12.5% is auctioned off for SFT+USDC Liquidity

Note that if the coin is all percentages can be modified by DAO voting.

In integrations that have a staking or lockup component, a portion determined by the DAO (defaulting at 50%) of the initial profits will be split with LSD Stakers.

11. LP Auctions & Bonding

LP Bonding has proven a more effective, sustainable method for projects as an alternative to LP Farms[9]. We combine the concept of Protocol Owned Liquidity with external revenue generation from services and hardware to create an innovative, sustainable DeFi mechanism that is at the heart of our framework.

A portion of the proceeds of any activity the DAO votes on to capture value, such as mining or running AI, is posted at a bond auction for bidders to receive at a discount to their market value. These proceeds may take the form of LSD tokens, wrapped coins, or even USDC. Bids will be accepted on batches of these proceeds every 8 hours and follow the below process:

- Bidders select one of two reward pools to bid on, one accepting DAO Token + USDC LP, and one accepting LP Tokens for USDC + the associated LSD Token or Wrapped Coin.

- Bidders will enter the minimum discount they are willing to accept and post a value of LP Tokens that they are willing to exchange for the discounted proceeds.

- At the end of the bidding window, the smallest discount is selected as the winner and they are given the value of their LP Tokens worth of reward pool, exchanged at the discounted price. If multiple bidders win at the same price, they are given an amount in proportion to their posted LP.

- If all of the winning bidders are sold rewards and have not taken the entire reward pool, the system proceeds to the next smallest discount and repeats until all of the reward pool is sold.

The bonded LP Tokens purchased go to the DAO Treasury.

Effect of Bond Auctions on Liquidity Floor

The liquidity floor of SPD L at auction n:

$$\mathbf{L(n)} = S + \frac{Tn}{2} + \sum LP(1, 2, ..., n)$$

Where**:**

LPn= The amount of bonded liquidity purchased at auction n
Tn= Total amount of bonded LP used by all participants in Auction n
S = Initial USDC locked

Emergency Liquidity Backstop

In the case that there is a run on the liquidity for any LSD token, the DAO will be able to vote to unlock wrapped/LSD bonded LP to backstop runs on the token. "The vote will automatically be triggered when the price of the wrapped token is trading at more than a 10% discount to the original token for longer than 24 hours.

12. Treasury and Hardware

A certain amount of funds generated by the hardware will be distributed to the DAO Treasury with a portion of them set aside for investing into new hardware and a certain percentage earmarked for marketing. Given that the replacement rates of different hardware can vary dramatically the exact amount will have to be determined on an asset by asset basis and adjusted over time through governance votes.

12.1 Legal Entity

In order to facilitate enforceable contracts with datacenters and service providers, the DAO is planning to incorporate as a legal entity in the state of Wyoming, USA[10].

12.2 Decentralized Hardware Ownership

The DAO will own hardware under three models: Direct, Distributed, and Decentralized.

- Direct Model
    - Uses Service Provider Contracts for operation of colocated equipment in existing datacenters
    - At appropriate scale, DAO can build and operate its own datacenters if desired

- Distributed Model
    - Integrated Partner Services will provide networks and hardware
    - DAO participates in these networks as a large scale partner

- Decentralized Model
    - The DAO will own the initial nodes and launch its own Layer 1
    - Direct integration and validation of hardware services on-chain

12.3 Service Provider Contracts

DAO Token holders can bid on vetted proposals from vetted datacenter and hardware service providers. These contracts must include the type and cost of the machines, the operating costs and exact power usage, an insurance provision ensuring the performance of the machines at certain targets as well as insuring the hardware itself, and a provision allowing for the operating costs of the machines to be deducted from the revenue of the machines. This model can be applied to any kind of service such as AI, 3D Rendering, or even PoW Mining.

For example, a Bitcoin mining contract might be something like:

- Whatsminer M53 costing $5,500 each

- To be run at $0.07/kWh at 6670 watts to be deducted from the earnings of the machine

- Guaranteed minimum performance of 218.5TH/s average per day

- Fully insured for 80% of its market price

[As of 3:24 ET on 4/22/2024 this would equate to a net profit of $4.86/day]

12.4 Integrated Partner Services

Participating in existing decentralized projects for hardware services or blockchain networks may be proposed, either as a normal participant or in arrangement with the decentralized project's team. Partnerships can be approved by DAO voting.

12.5 Public Service Deployment

Some services may be deployed by the DAO directly. This will mostly be post launch of a Layer 1 Application chain, though some opportunities may arise earlier.

12.6 Hardware Deprovisioning

It may become necessary to liquidate old equipment that is broken or no longer profitable. Such actions will be authorized by a DAO vote, or determined in advance by their contract or original proposal. It is necessary for funds recovered in this way to go directly to the treasury in order to re-deploy new equipment via new proposals.

13. Transition to DAO from Current Project State

Presently, the project has deployed its first LSD Token SFT, as well as integrated several partners, deployed farms and methods of earning rSPD, the pre-launch DAO token- all managed by the project. These will continue to run until they run out of rSPD. rSPD will be convertible to SPD at a 1:1 ratio.

14. Roadmap

We have divided the roadmap into four tracks namely; Infrastructure Development, DAO Development, Service Development, and L1 Development.

Infrastructure Development Track:

- Integrated Decentralized Partner Networks
- Stake Integrated Hardware (PoS/DPoS/etc)
- Partner Datacenters/Service Contracts
- PoW/PoST/etc Mining
- Bring Integrated Decentralized Partner Networks into DAO
- Open Datacenter Bidding

DAO Development Track:

- Farms & Initial rSPD emissions
- Bridge to Solana
- Documentation Overhaul
- DAO Release w/ rSPD Exchange
- LP Auctions Begin
- Revenue Allocation Tuning
- Voting
- Open Proposals
- Datacenter/Facility Reputation System

Services Development Track:

- System Statistics
- Liquid Staking Derivatives
- Lending Contract moved to Solana
- Wrapped Coins
- Paid & Free RPC Services
- Storage Network
- IoT Data Collection
- AI Computation
- Encrypted Data Marketplace

Device Tokenization Track:

- Construct a device resource pool
- Allow users to add their devices to the pool
- Tokenization of devices in the resource pool
- Complete construction of the Device Resource Pool DAO

Development Track:

- Whitepaper
- DAO Owned PoA Testnet
- Block Explorer
- Specialized Services Wallet
- DAO Owned PoA Mainnet
- Migration to Proof of Stake

15. Future Plans and Transition to Application Chain

After the DAO is established firmly to provide a strong hardware and liquidity foundation, the Project will launch a Layer 1 chain to begin directly integrating hardware and services for use and data exchange. It will be able to validate encrypted data from hardware directly and confirm its authenticity without having direct access to it using ZK-Proofs. This will allow users and enterprises to exchange data and computation at scale. The DAO will continue to own the original deployment of nodes for the L1 chain and benefit from the collection of gas and processing fees.

Details, full whitepaper and roadmap for the L1 will be released at a later date.

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17. Attachment

SFT Chain:

https://sft-img.b-cdn.net/SFTProtocol_Whitepaper_v2.pdf