Stake Capital DAO

A revenue sharing DAO of DeFi services

DRAFT v0.2.2

Julien Bouteloup
julien@stake.capital

Leopold Joy
leo@stake.capital

Abstract

This document serves to outline the Stake Capital DAO, a revenue sharing DAO that will tokenize Stake Capital's DeFi services. The Stake Capital DAO distributes value generated by a basket of DeFi services to stakeholders (e.g. delegators). The DAO functions as a cooperative, whereby stakeholders earn Stake Capital's work token (SCT) for providing collateral and, via a staking mechanism, receive a share of the fee revenues generated by supported DeFi services. The SCT work token effectively encapsulates the intrinsic value of the DeFi services basket. The SCT work token also grants pro-rata governance rights over all operation concerns of the DeFi services' provision. Staking derivatives are also enabled via locked pools on top of the supported DeFi protocols.

Opportunity

An increasingly high proportion of decentralized finance (or "DeFi") platforms require mechanisms whereby collateral is provided in exchange for an interest rate on said collateral. These platforms vary widely in how they employ the provided capital—from DeFi protocols to Proof-of-Stake networks—however all share the common requirement for sufficient collateral to do work, often locked for varying durations.

Each DeFi platform requires specific work, whereby the provided capital is employed in a use-case-specific manner. Participants provide work of varying complexity to the network and are financially rewarded for it. However, to be allowed to work, these participants must often put the provided capital "at stake", whereby said tokens can be taken from them if they are found to misbehave.

Several infrastructure providers across these DeFi platforms already accept capital in exchange for a fee on the realised profit. These are usually companies with little differentiation between them (beyond marketing and platforms supported), and thus no significant rationale exists for choosing one provider over another beyond the charged fees.

Stake Capital aims to deliver community-driven DeFi services and open liquidity derivative token pools, turning its stakeholders into active owners of the Stake Capital DAO. The opportunity, described in greater length throughout this document, is to further align incentives between DeFi service providers and capital holders to ensure all stakeholders benefit from the success of the provision of the supported DeFi services.

Stakeholder Incentives

The typical investor-provider relationship in the DeFi service provider industry (e.g. staking-as-a-service) exists as a buyer-seller-style relationship. Rather than integrate the investor (e.g. delegator) as an essential stakeholder of the service provision, this paradigm separates the investor as an interchangeable or replaceable customer (and the service provider as an interchangeable provider too). As a consequence, such a system cultivates no long-term provider engagement and offers no incentive for investors to refer or drive others to the DeFi staking industry.

Provider Governance

Existing DeFi service providers handle all operation-related decisions within their companies. Currently, if investors do not agree with the decisions (e.g. governance or fee structure) or operations of a provider, their only recourse is to switch provider. Investors have a direct vested interest in the effective and profitable operation of the DeFi services, and ideally would get a voice in these processes, however currently investors have no control over these critical decisions.

Fungible DeFi Liquidity Derivatives

There currently exists no versatile multi-chain fungible liquidity derivative mechanism for collateral locked inside DeFi platforms. Without such liquidity vouchers available, assets cannot be traded or exchanged while

still remaining locked inside DeFi. While a number of derivative, option and bond schemes have been published, none yet address the problem of staked collateral with extended unlocking durations. Existing mechanisms are also fragmented, not enabling support across multiple platforms (e.g. locked ATOM, locked LOOM, or locked Compound collateral all represented by ERC-20 fungible derivative tokens).

Diverse DeFi Exposure

While the burgeoning DeFi space is ripe with new systems, the space remains fragmented, lacking single avenues to gain exposure to multiple popular DeFi systems. Some emerging staking-as-a-service providers offer a plethora of different proof-of-stake networks, however these providers lack support for (non-staking) DeFi platforms, and all burden investors with the cumbersome and technically challenging task of capturing exposure across each individual network.

Vision

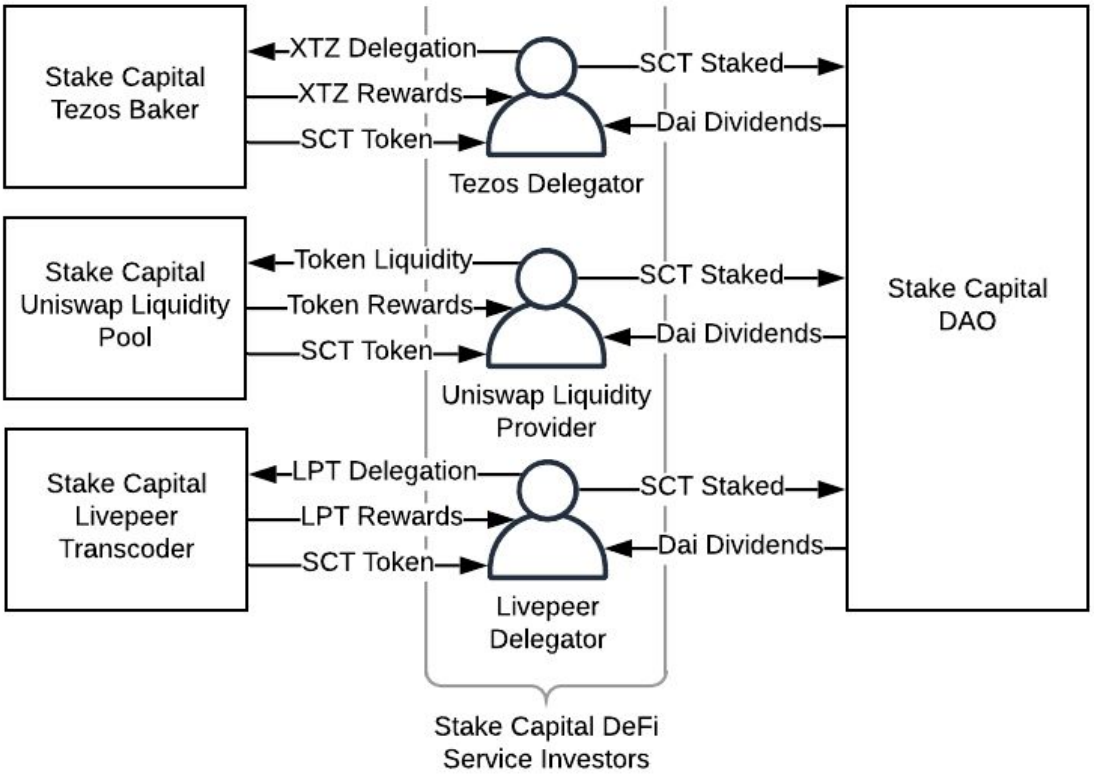
The Stake Capital DAO gradually distributes all value generated via the DeFi services to Stake Capital stakeholders. Instead of directing the fees collected by the supported services to a single traditional company, the Stake Capital DAO sends these rewards (Staking derivatives) to DAO ecosystem stakeholders (e.g. network investors). Stakeholders receive Stake Capital's SCT work token. Subsequently, via a staking mechanism, SCT token holders receive dividends of the fee revenue generated by the Stake Capital DAO. The SCT work token encapsulates the intrinsic value of Stake Capital's DeFi services, defined as the total current revenue generated across all of the DAO's supported services. Additionally, the SCT token provides holders with essential pro-rata governance rights over DAO-related decisions (see the "Governance" section below for more information).

Among other things (e.g. governance), the value of the SCT token will be affected by the value generated from the underlying DeFi systems. Consequently, due to how holders receive cashback dividends from all of the DeFi networks supported by Stake Capital, the SCT token becomes a convenient channel to gain exposure to multiple DeFi platforms.

Our fungible derivative model is applicable across all DeFi networks—each fungible network derivative token represented on Ethereum as an ERC-20 (see the "LToken: Generic Liquidity Derivative Tokens" section for more information).

Architecture

The Stake Capital DAO is a smart contract architecture which incentives DeFi actors to become active stakeholders in, and capture shares of, an entire DeFi services provider (Stake Capital) across a multitude of heterogeneous DeFi platforms and networks.



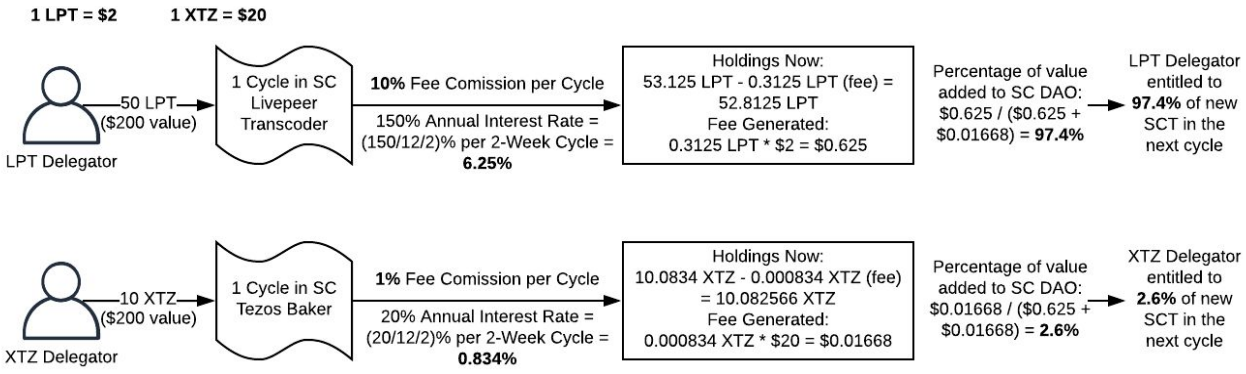
High-level workflow of Stake Capital DAO relationships and stakeholders.

SCT Token Function

Stake Capital currently provides a variety of DeFi services, such as Cosmos, Loom, Tezos, IDEX, IRIS, Terra, Livepeer, etc. Stake Capital actively incentivises its users by granting them SCT pro-rata of the USD-denominated fees that are generated through Stake Capital's DeFi services. Investors and delegators across Stake Capital services will continually receive the SCT token as long as they maintain their investments.

Disbursement of the SCT token will occur on a cyclic basis determined by governance (although initially fixed)—defined as, for example, 2 weeks in duration. At the end of each cycle, staking token price oracle feeds are used to determine the current percentage that each investor has contributed and thereby the amount of SCT due to each (see the example walkthrough below). These network-specific cycle durations may also be controlled by governance constants (see governance section below).

As seen in the below diagram, each cycle, the proportion of fee that each investor contributes to the total of all fees collected is used to determine how much of the cycle's newly minted SCT each investor is entitled to.

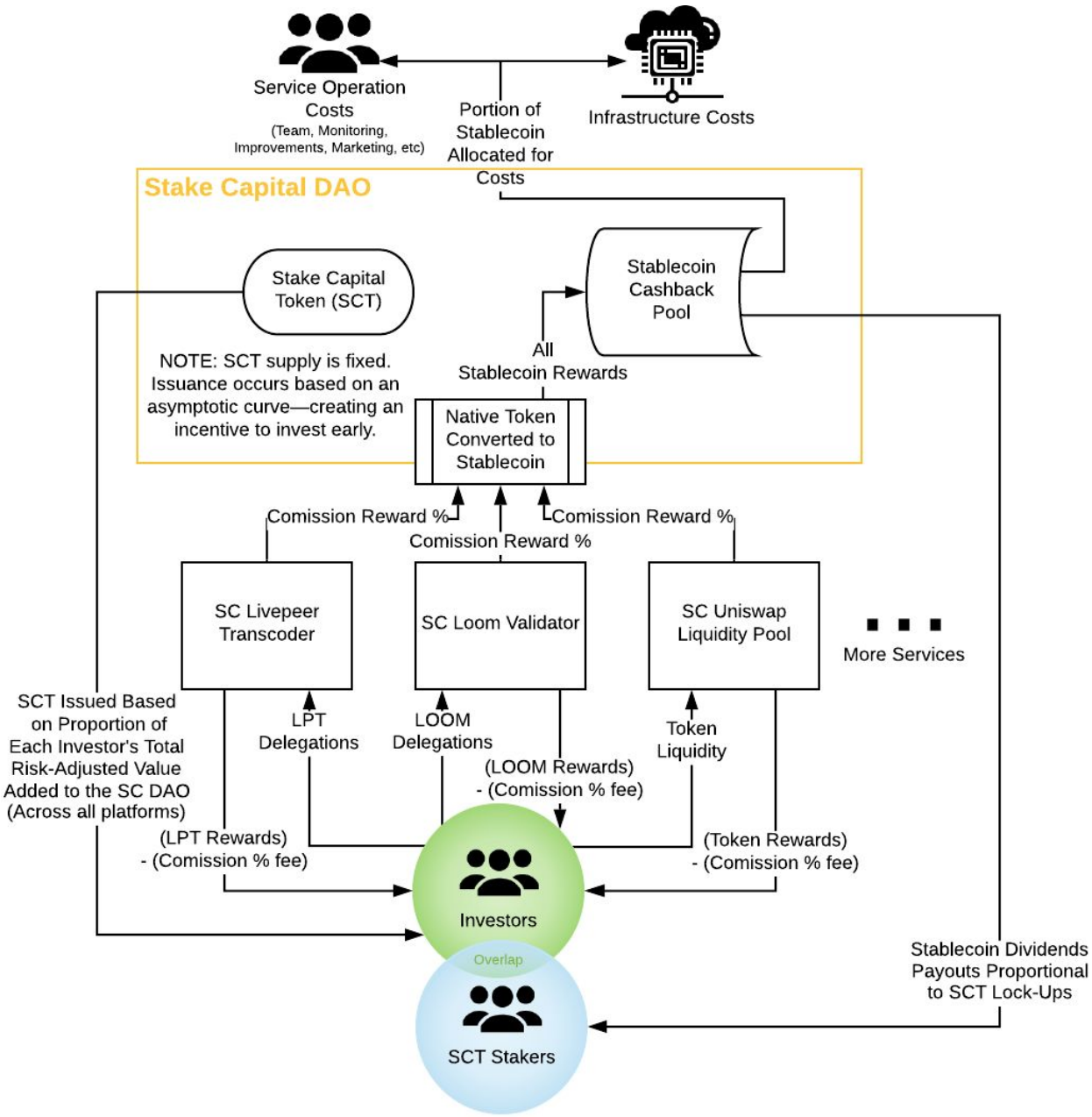


Example walkthrough of the SCT distribution calculations following one complete cycle with two model investors. In this 1-cycle example, 1 LPT = $2 and 1 XTZ = $20. As seen, the example LPT investor will receive 97.4% of this cycle's newly minted SCT, while the example XTZ investor will receive 2.6% of this cycle's newly minted SCT.

All commissions/rewards generated by Stake Capital's DeFi services will be converted to a dollar-pegged stablecoin on a cyclic basis. Holders of the SCT token will then have the option to lock (or "stake") their token into the DAO's smart contract and thereby receive on-going stablecoin dividend payments based on their SCT holdings as a proportion of the current supply of staked SCT. Because these stablecoin dividends will come from DeFi service rewards (see "Stablecoin Cashback Pool" section below)—and thereby indirectly from commissions collected from investors—investors will have a strong incentive to stake their SCT token long-term upon receipt. The SCT token that service investors lock-up indirectly acts as an economic discount against the commission they are charged by the Stake Capital DeFi services they invest in. Additionally, investors have a vested interest in the future success of the Stake Capital DAO as they receive a share of fees generated across all supported DeFi services while they lock their SCT.

Investors may choose to sell their SCT token (e.g. via an exchange) to other investors, who may choose to buy the SCT, looking to receive cashback. Since the *active* supply of SCT token is always increasing (due to investors receiving freshly minted SCT), the share of inactive SCT holders will continually be diluted. Thus, SCT holders have a strong incentive to also become Stake Capital DAO service investors in order to avoid dilution.

The SCT token incentives are such that the overlap of Stake Capital investors (e.g. Loom delegators) with SCT token holders will be naturally maximized (see the overlap in the venn diagram in the workflow below).



More detailed workflow of investor incentives, including SCT token function and stablecoin cashback dividends.

Stablecoin Cashback Pool

A percentage of the reward commission captured by Stake Capital DeFi services is sent to the Stablecoin Cashback Pool which pools fees used to pay cashback dividends to Stake Capital service investors. This pool's funds are disseminated (minus the transaction fees) to SCT token holders—who have locked their token inside the Stake Capital DAO smart contract—on an on-going basis proportional to the size of their locked holdings (see "Token Function" section and diagram above for more information).

Token Issuance

The SCT token will be issued on an on-going basis to current Stake Capital service investors. Token issuance will occur at a continually diminishing rate—creating a strong incentive to be an early Stake Capital service investor. A fixed percentage of the total remaining supply of undispersed SCT token will be sent to service investors, proportional to the fees generated from each of their respective investments.

Infrastructure Costs

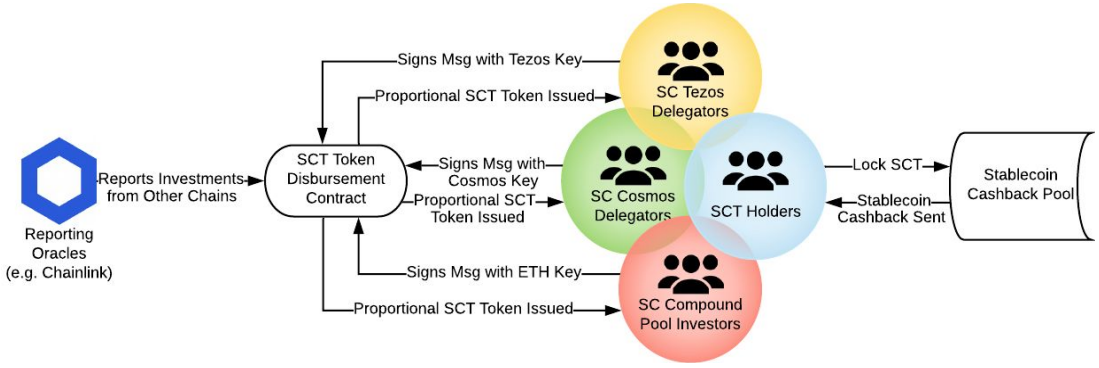
The first infrastructure of the Stake Capital DAO will be the current Stake Capital infrastructure which will continue to run all physical and cloud-based infrastructure associated with the DAO's DeFi services. In the future, other infrastructure providers may also join by providing resources to the Stake Capital DAO (see the "Influence Infrastructure Provision" section below for more information on future changes via Governance).

Cross-Chain Registration of Investment

The Stake Capital DAO will support DeFi networks both connected to Ethereum (e.g. Livepeer or Uniswap) and networks that are completely separate (e.g. Tezos, Polkadot, Tendermint-based systems, etc.). In order to reliably award newly issued SCT token to investors on non-Ethereum connected chains, we use a simple address registration scheme until interoperability mechanisms are available (e.g. Ethermint Bridge: Cosmos <-> Ethereum, etc.). Via this registration process, an investor on another chain maps their token investment to an Ethereum address.

To map a Stake Capital service investment (e.g. a delegation on a Tendermint-based chain), an investor simply signs a message with their private key from the chain where the investment exists (e.g. a Cosmos Ed25519 key) and then sends the signed message to register the investment with the on-chain SCT disbursement contract.

Once each investment is mapped to an Ethereum address, trust-minimized investment-reporting oracles (e.g. via Chainlink) are used to retrospectively determine the contributed value of each registered investment. Each cycle, the newly minted SCT token is sent to each Ethereum address (corresponding to an investment).



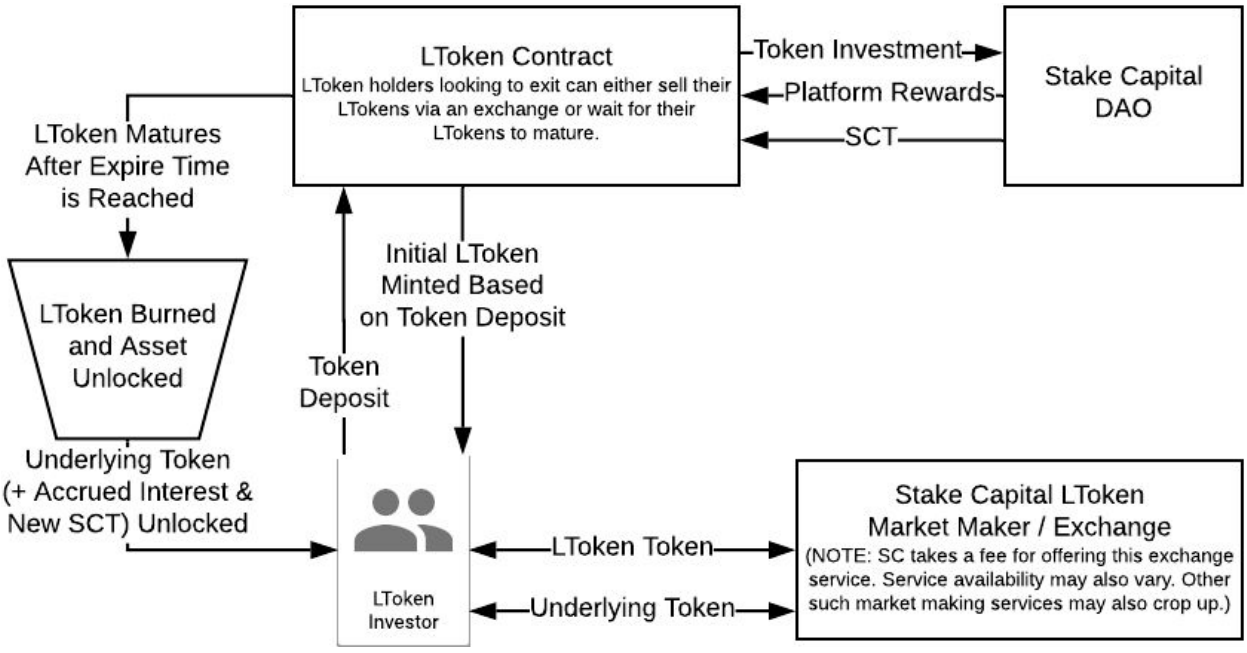
Workflow of cross-chain investment verification for registering to receive SCT.

Token Price Oracles

In order to evaluate the economic value of DeFi service investments on the Stake Capital DAO (see the "SCT Token Function" section and diagram above for more information) the native token price for each supported product must be reliably sourced. Initially these token price oracles will remain centralised (with an average of several trusted APIs), however they will gradually be decentralised, enabling greater long-term reliability—also see the "Price Oracle Selection" governance section.

LToken: Generic Liquidity Derivative Tokens

Each DeFi service provided by the Stake Capital DAO will be capable of supporting an accompanying liquidity derivative token, or "LToken". Each LToken will enable liquid use of a locked DeFi asset, enabling, for example, locked asset transferability. These new fungible pool assets can easily be traded, parked, or leveraged in other DeFi mechanisms by the token holder.



High-level workflow of a bond-style Stake Capital LToken design.

LToken Designs

Each LToken's pool contains locked token, which is invested in Stake Capital's service provider for the specific platform or network (e.g. Stake Capital's Cosmos validator). New LToken is issued for resulting yield rewards, thus the pool achieves a 1-to-1 supply peg with the underlying asset.

Due to the fundamental architectural heterogeneity differences between the supported DeFi services of the Stake Capital DAO, the LToken derivative token design will vary across the different services. Many of the supported DeFi services—such as Loom's Basechain, the Cosmos Hub, Livepeer and others—enforce locking periods as a component of the token unbonding process. Thus, on such DeFi protocols, when token holders want to access liquidity for their tokens they must wait for the duration of the locking period—and may thereby be subjected to radical price volatility during unbonding, without recourse.

Stake Capital LTokens will address the problem of holding, leveraging and transferring staked DeFi assets with long unbonding durations via a bond-style maturity mechanism, inspired by Yield Protocol's[1] bond mechanism. Such LTokens will expire on a specific future date corresponding with the staking asset's unbonding period, at which time the locking asset will become available along with all accumulated interest.

If the unbonding process of an underlying asset does not have a locking period (e.g. a Uniswap pool service) then the asset's Stake Capital LToken need not mature. As such, we will publish protocol-specific implementation details as we release each DeFi service's LToken design.

Staking Outside the Pool

While Stake Capital LTokens will offer a unique opportunity to make locked DeFi tokens transferable fungible derivatives, Stake Capital investors still have the option to simply invest in Stake Capital's DeFi services without using LTokens. Users that simply invest in Stake Capital DeFi service will, as expected, also receive SCT token on the normal pro-rata basis.

Stake Capital DAO Governance

The protocol will initially be centrally governed by Stake Capital's team, however governance will transition to a community and stakeholder controlled model. Below we outline a number of the critical initial Stake Capital DAO governance functions. This list is to function as a preliminary outline, as the set of DAO controls available to stakeholders may grow along with the protocol itself.

New DeFi Service Selection

As new DeFi networks and platforms come online, new opportunities will come online to expand the services provided by the Stake Capital DAO. However, since the addition of new DeFi services may have economic impact on the value of the SCT token, all Stake Capital DAO stakeholders will have a vested interest in the selection process. Thus, SCT token holders will have the opportunity to participate in the selection of new DeFi products.

Token Disbursement Rate

As outlined in the "Token Distribution" section previously, the SCT token has a fixed supply, a portion of which is disbursed at a continually diminishing rate to provide ownership to Stake Capital DAO investors for their contributions. The disbursement rate, for example a value such as 0.05%, will dictate how much of

[1] http://research.paradigm.xyz/Yield.pdf

the remaining (vesting) supply of investor SCT is disbursed per cycle. The ability to govern this rate is given to DAO stakeholders—although adjustments will require a super-majority consensus to protect against radical changes to the economics of the system. While Stake Capital service investors are incentivised to favor a high disbursement rate (due to quicker acquisition of ownership), SCT token holders will favor a lower disbursement rate due to minimize dilution of the SCT supply.

Cycle Duration

While each individual DeFi protocol has its own cycle or round duration defined, the Stake Capital DAO must calculate SCT token allotment on a recurring cyclic basis in order to regularly disburse newly minted SCT token. The cycle duration must be sufficiently long so that the heterogeneity of the cycle/round durations of all of the DAO's support protocols has a negligible effect on the investment contribution calculations—investors on DeFi platforms with both short and long reward cycle durations must both be fairly compensated based on the economic value they bring to the Stake Capital DAO (see the "SCT Token Function" section and diagram above for more information on these calculations).

DeFi Service Rate Adjustment

Each DeFi network supported by the Stake Capital DAO has an individual fee rate set (the commission that is deposited into the DAO's Cashback Pool for SCT staker dividends). The ability to influence the fee rate for each supported protocol could be granted to SCT token holders. A higher fee / commission will concentrate more value in the SCT token, encouraging increased investor engagement in the Stake Capital DAO and token. A lower fee / commission may attract more investors unfamiliar with the Stake Capital DAO (since they will simply see a low fee), which in turn may drive an increased number of delegations (unengaged in the DAO) into the system. Note however that new unengaged investors may soon learn of the DAO and begin claiming and staking the SCT tokens they're entitled to. Thus, there may likely be continual upward pressure on the individual network fee rates from the DAO's stakeholders.

Cross-Chain Delegation Reporting Oracles

At the end of each cycle, in order to disburse SCT token to each registered investor, the current size of each investment on other chains must be effectively reported (see the "Cross-Chain Verification of Investment" section for more information). Since the Stake Capital DAO's token disbursement contract will be running on the Ethereum chain, investments on other chains, for example Cosmos Hub delegations, will be reported via publicly available Cosmos nodes (e.g. via Chainlink). Since the legitimacy of the reported investment amounts is essential to prevent malicious activity on the Stake Capital DAO, the origin of these sources is dictated by the Stake Capital DAO's stakeholders and can be changed if necessary.

Price Oracle Selection

In order to calculate the economic value that each investor contributes to the Stake Capital DAO via there investments, price oracles are required for each supported protocol. Since the value of economic contributions to the DAO are denominated in US Dollars, the current price of each DeFi asset will be continually fed into the DAO via these price oracles. Since these oracles are essential to fairly calculate the

value of investments in the DAO, the ability to influence the source of these oracles will be granted to Stake Capital DAO stakeholders a la Uniswap[2].

Influence Infrastructure Provision

As the Stake Capital DAO develops, new or existing DeFi service providers may join in by providing hardware to the DAO. Although initially all infrastructure will be provided by Stake Capital, in the future, DAO participants may choose to add other providers of infrastructure and services for one or more of the Stake Capital DAO's DeFi products. These alterations can be influenced by DAO stakeholders.

Future Work

As we continue the development of the Stake Capital DAO's architecture implementation we will also share additional details regarding the LToken's liquid pools mechanism designs. As LTokens serve to ease access to liquidity for DeFi investors, we will continually release LToken implementations for the DeFi services that we support as they become available.

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[2] https://uniswap.exchange

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