



Alongside Crypto Market Index Whitepaper

Version 1.0

Confidential



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Introduction

1.1 Summary

The AMKT Network is pioneering on-chain broad-based indexes for the crypto ecosystem: AMKT, a single asset that tracks and benchmarks the cryptoasset market. This is achieved by creating a fully redeemable ERC-20 token (index token) that is backed with in-kind assets included in the index. Much like wBTC, which is backed with Bitcoin collateral held by a trusted third-party custodian, the Alongside Crypto Market Index (\$AMKT) is fully collateralized by the index's constituents.

1.2 Introduction

Professionals in finance have long tried to sell us the story that they know something we do not. They tell us markets are sophisticated and complex, so we should pay them hefty fees to manage our money for us. They tell us the secret to outperformance requires an army of analysts, mathematicians, alternative data, and millions of dollars of infrastructure to position trades. However, thanks to indexes, getting a high-performance return on your investment does not need to be this complicated.

Building on the concept Batterymarch first introduced to pensions in 1971, Vanguard brought low-cost index products to the masses, democratizing sound long-term investing with no-load funds that track a benchmark. If you were a teacher or a janitor that dollar cost averaged into an index fund that tracked the S&P500 throughout your career, you will have likely outperformed the majority of hedge fund managers.

For decades, broad-based index funds have helped level the playing field for regular investors, offering a simple, passive vehicle enabling exposure to a diversified basket of assets without the hassle of having to actively manage a portfolio. They have saved everyday investors tens of billions in fees and offered a simpler path to managing wealth for millions of people.

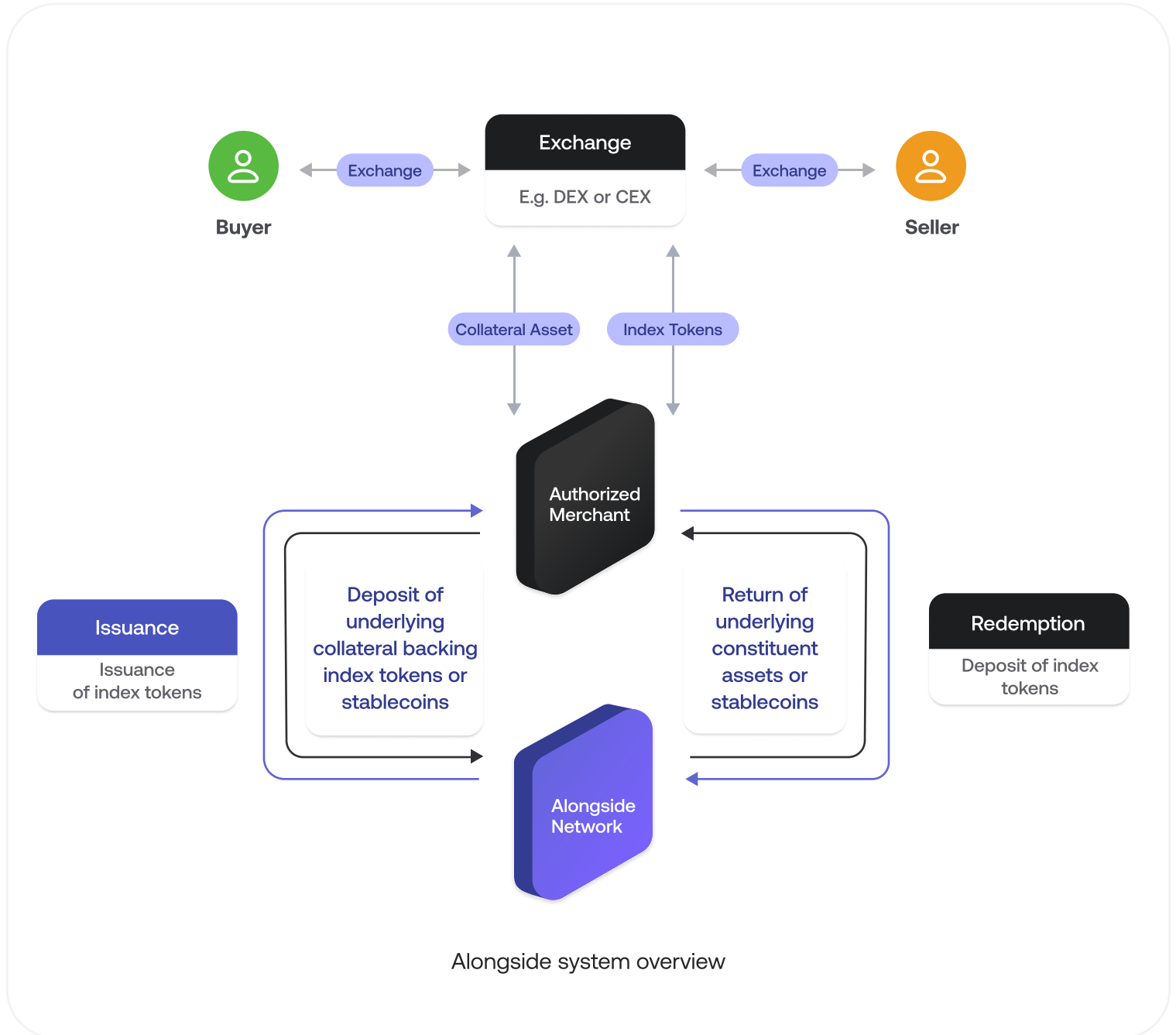
1.3 Objective

The [Alongside Crypto Market Index \(\\$AMKT\)](#) aims to bring this index philosophy to crypto-asset markets - a single token enabling anyone to “buy the market” instead of attempting to trade in and out of assets, read and analyze every whitepaper, sit in every Discord server, and stay on top of every new market trend.

1. **Holders first** – We aim to make our products as capital efficient as possible, enabling you to save on fees.
2. **Accessibility** – Our indexes should be available everywhere at their fair intrinsic value.



Implementation and Technology





2.1 Key Roles

Key roles within the DAO's Decentralized Network:

Custodian: A trusted institution or party who assumes full responsibility for securely storing the private keys that control the various crypto-assets.

Merchant: An institution or party to whom the Network issues index tokens. They have the right to redeem index tokens for the respective underlying digital assets. Each merchant initiates the process of minting and burning index tokens. Merchants behave as core liquidity providers for the token.

User: The index token holders. Users can use the index tokens to transfer, transact, and perform any other activity that requires fungible tokens on the blockchain the token is issued on.

Methodologist: The role of the methodologist is assumed by the DAO which is responsible for publishing the list of assets and their current weightings in the index on a smart contract.

Governance: The party that has authority over changes in the token contracts, including management of whitelists and pausing/resuming issuance and redemption.

2.2 Token Issuance

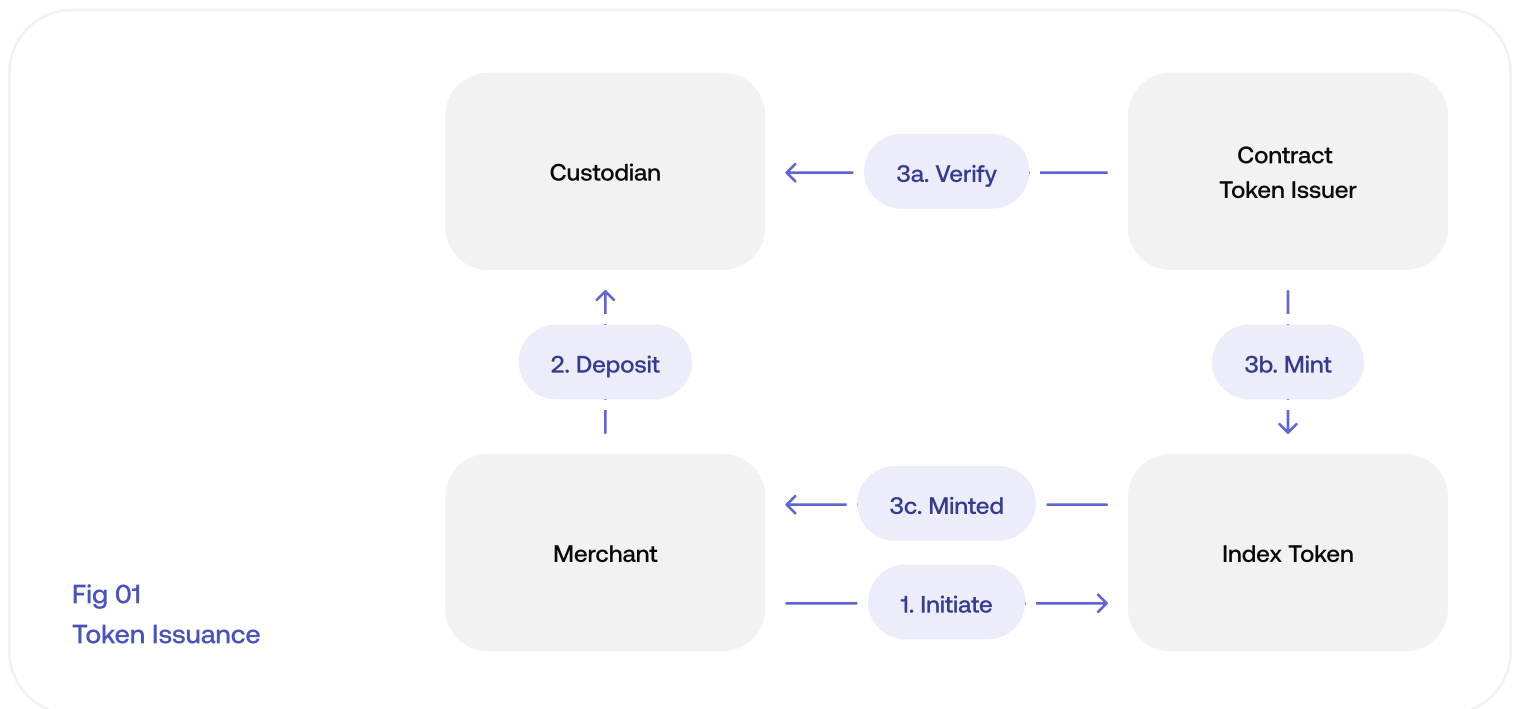


Fig 01
Token Issuance

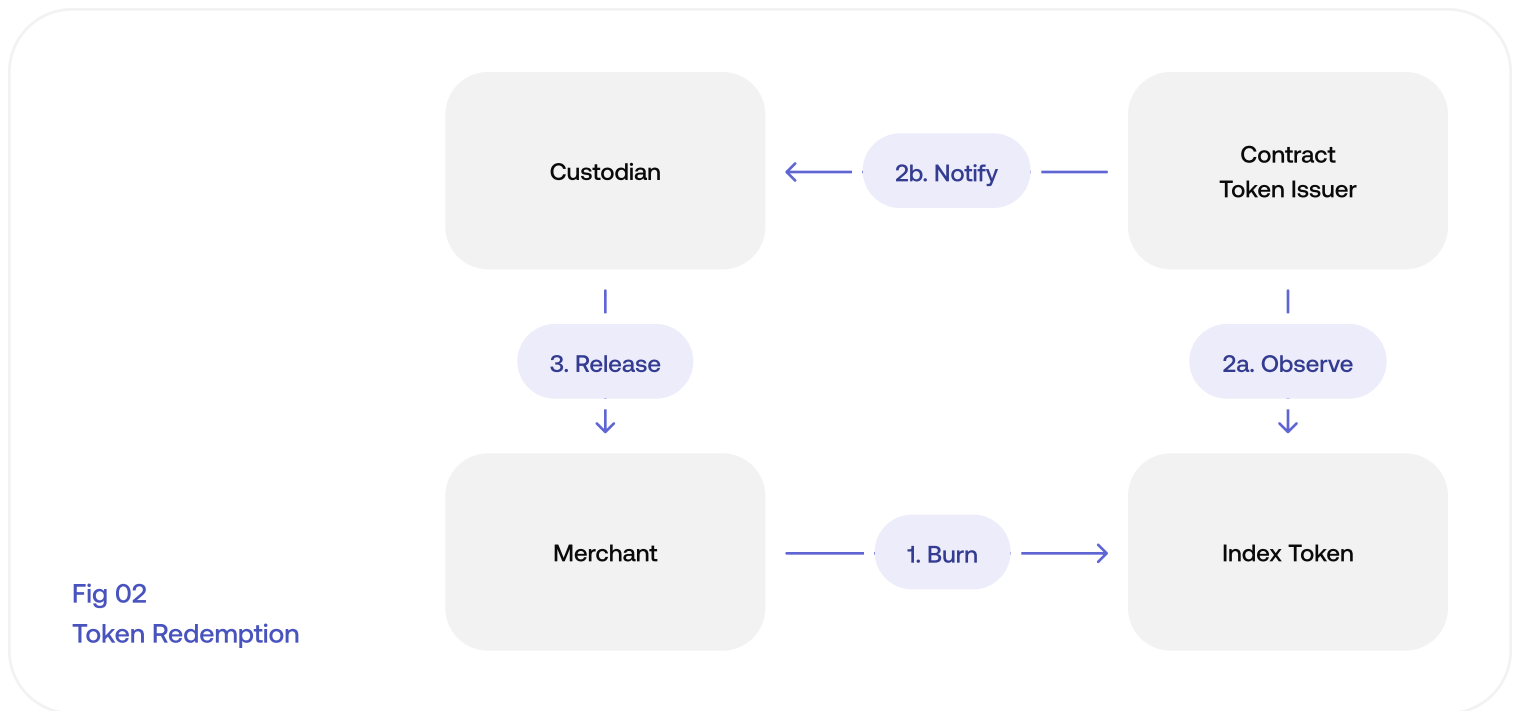


Token issuance refers to the process of increasing the supply of index tokens in circulation through minting. The issuance process is administrated by the network, however, the process can only be initiated by a merchant. Tokens can only be issued to whitelisted destination addresses of Merchants.

Sequences of events for issuance of index tokens

1. Merchant initiates the process by sending a transaction to the index token contract signaling they intend to send the underlying assets for n index tokens and want to receive n index tokens to their address in return.
2. Merchant sends the custodian underlying assets to the value of the index tokens to issue.
3. The network creates a transaction to mint n new index tokens, after verifying that the amount for underlying assets they received is correct.

2.3 Token Redemption



Token redemption refers to the reduction of supply of Index tokens through the action of redeeming index tokens for the underlying assets. Only merchant addresses can initiate redemption index tokens. In order to do so, the 'burn' function is called in the contract with the amount of tokens to be burnt. By doing so, the amount is deducted from the merchant's index token balance (on-chain) and the supply of index token is reduced.

Sequences of events for redemption of index tokens

1. Merchant creates a burn transaction, burning n index tokens.
2. The network observes index tokens burned, and instructs the custodian to release underlying assets to the merchant.
3. Custodian releases matching amounts of underlying assets to the merchant.



2.4 Reconstitution

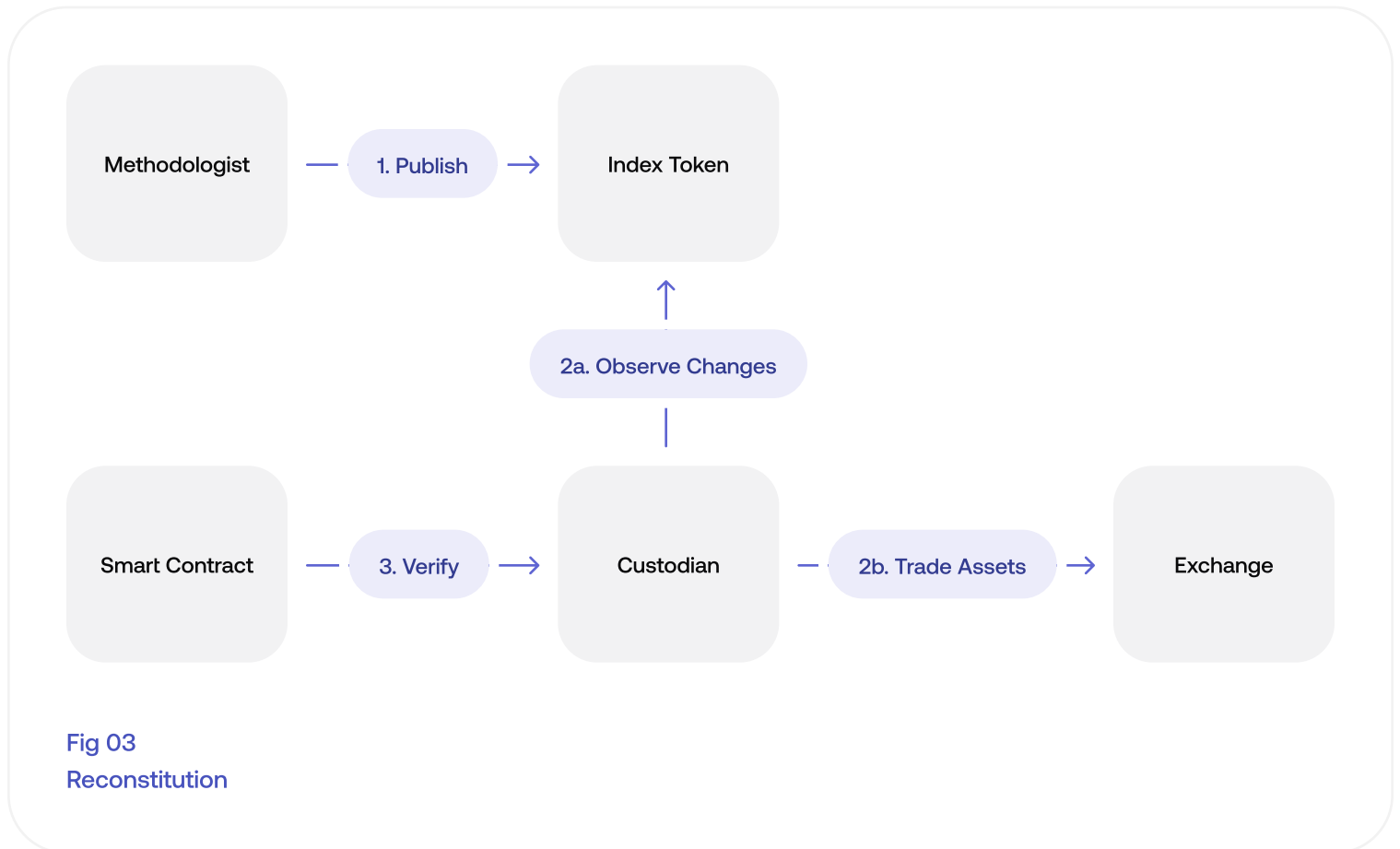


Fig 03
Reconstitution

Reconstitution refers to the action of trading underlying assets to maintain a desired target weighting of each constituent asset. Reconstitution is administrated by the DAO who is expected to publish an updated list of constituents in the index, and the desired weighting of the underlying assets in the index on-chain. The frequency of reconstituting may differ from one index to another, but in the example of Alongside Crypto Market Index, reconstitutions happen every quarter. During a reconstitution event, the new token issuance or redemption events may have to be paused.

Sequences of events for reconstituting an index

1. Methodologist (the DAO) publishes an updated list of underlying assets and new weighting of each asset in the index on-chain.
2. Custodian executes trades of underlying assets to achieve desired weighting.
3. The network verifies that the custodian now holds the correct weighting of underlying assets.



2.5 Token Ownership

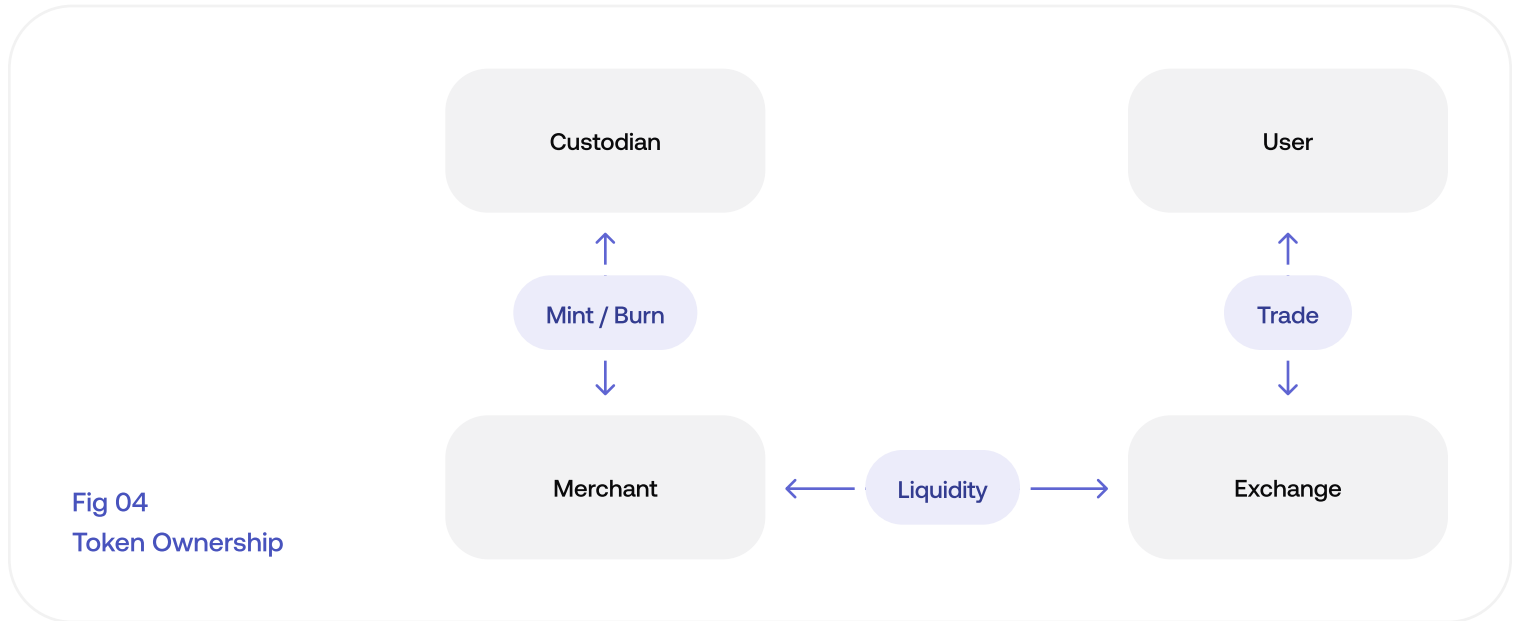


Fig 04
Token Ownership

Index token merchants mint new tokens and supply exchanges (centralized or decentralized) with liquidity. Prospective index token holders acquire Alongside index tokens by buying them from open exchanges. Additionally, token holders can sell their tokens to merchants to be burned.

2.6 Custodian Structure

Custodians are responsible for securely holding the underlying assets which back Alongside Index tokens, as well as playing a role in the reconstitution and rebalancing of indexes via prime brokerage services.

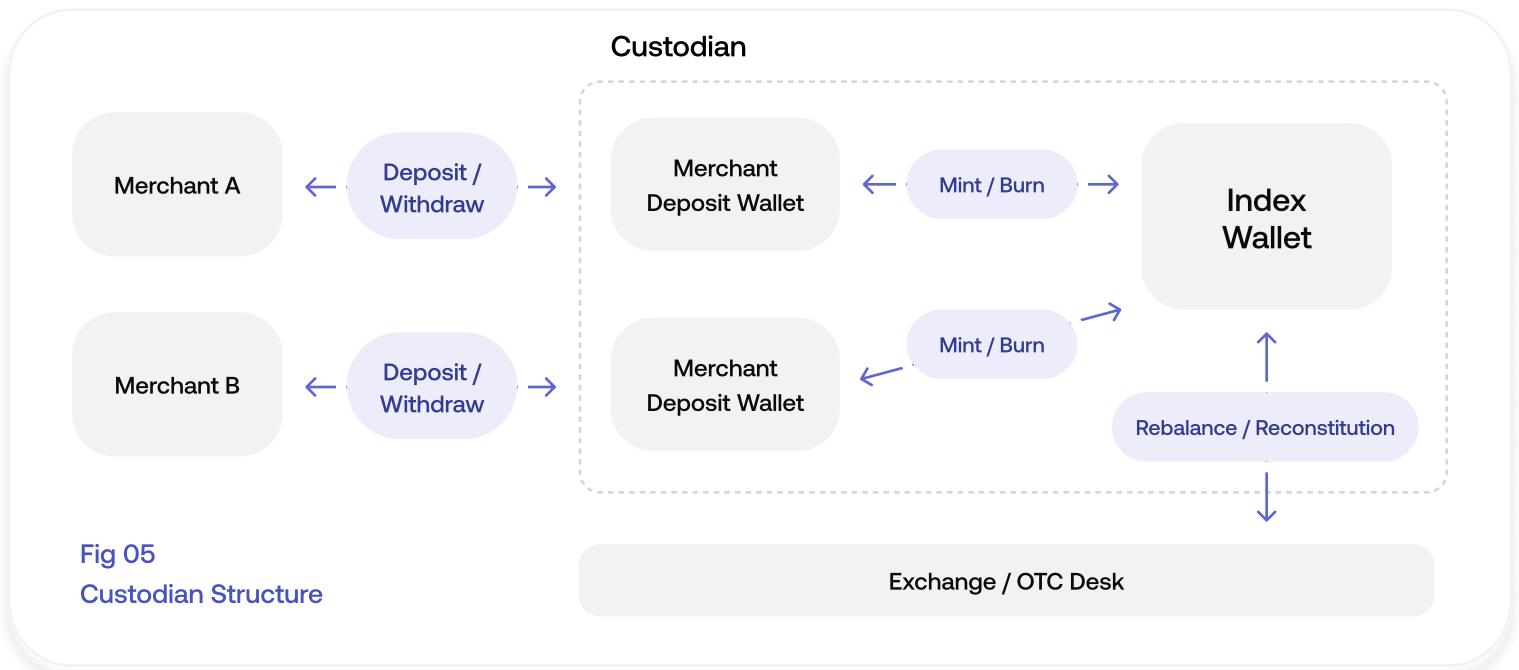


Fig 05
Custodian Structure



Key features of Custody

- Merchants deposit underlying constituents to be used for the minting of Alongside index tokens into their Merchant Deposit Wallets. These are wallets that are set up by the Custodian and administered by the Service Provider.
- Periodically, the index token will be rebalanced or reconstituted. During this procedure, Governance sends instructions to the custodian to exchange Index Wallet assets via an exchange or OTC desk for example.

Index Methodology

3.1 Index Objective

The Alongside Crypto Market indexes are designed to measure the market performance of digital assets available on crypto exchanges. These indexes are composed based on attributes such as supply, availability, and liquidity. The weighting methodologies are based on circulating market capitalization, as detailed in the below sections.

3.2 Indexes

3.2.1 Alongside Crypto Market Index [AMKT] – Measures the performance of the broader crypto market and is composed of 25 constituent tokens designed to reflect a significant portion of the digital asset market and to provide a benchmark for this new and emerging asset class.

3.3 Eligibility Criteria

AMKT is designed to capture the performance of digital assets in globally accessible digital asset markets. Outlined in the section below are the eligibility requirements for inclusion in the Alongside Indexes - only assets which meet these requirements can be added to the Alongside network.

Tokens must meet the following eligibility factors to be considered for inclusion:

- **Custodian Support** – Must have a secure institutional custody solution by a licensed and reputable service provider to facilitate the implementation of the index. Asset maturity on this platform must be >30 days.
This ensures a digital asset selection pool with enough market maturity supported by a custodian's vetting process, generally evaluating both security and legal risks, as well as liquidity depth.
- **Free-Floating Price** – Must not be pegged to the value of any asset. This includes fiat collateral, reserves, algorithmic pegging, and other collateral reserves.
This prevents redundancy and over-representation of certain digital assets (e.g., BTC & WBTC, WETH & ETH, USDC, etc.).



- **Cooperation with Regulators** – Notwithstanding commitments to decentralization, token policy/governance must express willingness to comply and/or adhere with/to relevant regulatory agencies.
This ensures our token holders are not exposed to digital assets at risk to sanctions that can lead to liquidation crisis.
- **Exchange Support** – Must be traded on multiple credible exchange/trading venues. Asset maturity on supported trading venues must be >30 days.
This ensures smooth trading and liquidity during the issuance and redemption of the reserve constituents, which helps facilitate token liquidity.
- **Security and Vulnerabilities** – Must have no known vulnerabilities and must meet the industry standard for security, as determined by Governance.
This ensures token holders are not knowingly exposed to assets containing critical vulnerabilities.

3.4 Asset Supply

AMKT will utilize the circulating supply of a digital asset to calculate free-float market capitalization to determine inclusion and relative weighting. Circulating supply is defined as the supply of available units of a digital asset available to be moved from one deposit to another or available for trading, as defined by the DAO.

Circulating supply will be calculated on the day immediately preceding the relevant rebalance and reconstitution day. This calculation will use the 5-day exponential moving average of the digital asset's circulating supply. Circulating supply of the digital asset remains fixed until the next reconstitution and rebalancing.

Exponential moving average is used to avoid price and market capitalization manipulation during rebalances and reconstitutions.

3.4.1 Market Representation and Selection of Constituents

AMKT will include the top 25 digital assets based on their free float market capitalization. The process for selecting these top 25 digital assets is as follows:

1. Free float market capitalization will be calculated by using the 5-day exponential moving average circulating supply of a digital asset multiplied by its 5-day exponential moving average price.
Exponential moving average is used to avoid price and market capitalization manipulation during rebalances and reconstitutions.
2. The 25 digital assets with the largest free float market capitalization will be selected for inclusion in the AMKT index.
The index selects the top 25 digital assets by free float market capitalization as a way to reflect the broader digital asset market.



3.4.2 Weighting

The selected constituents will be weighted according to their relative free float market capitalizations. These weights are calculated by dividing the free float market capitalization of a digital asset by the total free float market capitalization of all the digital assets at the time of rebalance and reconstitution.

Targeting a fee of 95bps, where AMKT is inflated at the rate of r on a daily basis, the target for daily inflation is as follows:

$$MV_t = \sum_{i \in CS_t} CN_{i,t} * P_{i,t}$$

$$w_{i,t} = \frac{CN_{i,t} * P_{i,t}}{\sum_{i \in CS_t} CC_{i,t} * P_{i,t}}$$

$$w_{i,t} = \frac{CC_{i,t} * P_{i,t}}{\sum_{i \in CS_t} CC_{i,t} * P_{i,t}}$$

$MV_t = \text{Market Value at } t$

$CS_t = \text{Constituent Set at } t$

$CN_{i,t} = \text{Constituent's nominal units at } t$

$CC_{i,t} = \text{Constituent's circulating supply}$

$P_{i,t} = \text{Constituent's price at } t$

$w_{i,t} = \text{Constituent's index weighting/dominance}$

3.5 Index Calendar

3.5.1 Reconstitution Schedule

AMKT reconstitutions will occur on a quarterly schedule, effective on the first day of September, December, March, and June.

Reconstitution frequency is quarterly due to digital asset dominance fluctuating greatly quarter-to-quarter. Less frequent reconstitutions can result in overweighting in digital assets not properly reflecting the ecosystem. More frequent reconstitutions can result in higher fees resulting in tracking inefficiencies.

3.5.2 Rebalancing Schedule

AMKT rebalances will occur on a monthly basis, effective the first day of every month. However, rebalances can take place in exceptional market conditions if decided through an emergency meeting by the DAO.

Rebalance frequency is monthly due to supply fluctuations common with digital assets. More frequent rebalances incur more fees and result in greater tracking error not offset by circulating supply tracking.



AMKT DAO & Organization

4.1 Role

The DAO controls the management of the token hierarchy, including but not limited to:

- Contract changes relating to the DAO tokens or their issuance.
- Whitelisting of custodians and merchants through a Governance-controlled multi-signature contract. Holders of the keys to the multi-sig contract is held by institutions and parties as part of the DAO.
- Index weighting and methodology changes.

The DAO seeks to place the authority to decide on the token index constituents into the index holder's hands, while maintaining the goal of passively tracking the market. Initially, the DAO delegates the responsibility of governance decisions relating to the DAO and protocol to a multi-signature wallet of trusted agents, with the longer-term ambition of diminishing governance responsibilities to a series of delegators voted on by holders of the index tokens.

The role of the DAO multi-sig is to uphold the values laid out in the DAO's constitution. The constitution outlines the roles and responsibilities of the DAO as well as the administrative duties of the decentralized entity. Verified holders of the index token are entitled to vote on new proposals, or propose changes to the DAO, its constitution, or administrative functions.

4.2 Fees

The Alongside Crypto Market Index token charges an expense ratio, this fee is paid out by the DAO through inflation of the token to the service provider. The fee is administered by the smart contract as the inflation of the total supply of index tokens. During the minting or redemption of index tokens, the methodology is updated to account for the inflation of the AMKT supply, as over time the amount of collateral backing each token should fall by the corresponding amount of inflation applied to the index.

Fees provide the DAO with a stable source of capital to maintain the frontends, pay the service provider, and open source code of the Alongside Network. Inflation is paid out to the *feeReceiver* as AMKT tokens.

Targeting a fee of 95bps, where AMKT is inflated at the rate of r on a daily basis, the target for daily inflation is as follows:

$$\frac{\text{supply}_{initial}}{\text{supply}_{initial} * r^{365}} = 1 - 0.0095 = 0.9905$$

$$\frac{1}{r^{365}} = 0.9905$$

$$r^{365} = \frac{1}{0.9905}$$

$$r^{365} \approx 1.00959$$

$$r \approx 1.00002615\dots$$



4.3 Legal

The token issuance and token redemption processes are processes that do not involve the user and are containerized between whitelisted entities inside of the AMKT Network. Merchants are obligated to ensure they hold identity information of users securely in line with their relevant local data protection policies, in addition to required KYC and AML checks.

The AMKT Network is required to perform issuance, redemption, and reconstituting duties in a timely manner. In addition, merchants and custodians are required to complete KYC and AML checks (SDD) in line with local laws and regulations.

Battery Labs Limited performs diligence to ensure that merchants are safe for deposits and administration.

4.4 Trust

The Alongside Crypto Market Token framework aims to minimize trust in a few ways:

- **Bilateral Issuance** – The AMKT Network is not able to issue tokens on its own, but would instead require the initiation of a merchant in order to do so. Hence the creation of new tokens involves both the AMKT Network and the merchant. ‘Air-gapping’ the network from minters reduces the risk that unbacked tokens could be issued.
- **Supply Verification** – Index tokens on the blockchain are verifiably issued and redeemed through smart contracts on a public ledger.
- **Trust Insulation** – The user is insulated from interacting with the custodian through a set of merchant institutions. An individual merchant does not need to be trusted, instead all merchants together would need to be. Likewise, the risks of a rogue merchant or custodian corrupting the network are significantly reduced.
- **Institutional Credibility** – Existing credibility of the institutions involved is at stake for all the institutions involved with the framework.
- **Security** – The DAO has scheduled third-parties to verify the security of on and off-chain code components related to the AMKT Network, including Sigma Prime and Oak Security.

4.5 Transparency

The DAO and service provider endeavor to be as transparent as possible regarding the publication of key information relating (but not limited) to the servicing, attestation, partnerships, wallet addresses, circulation, source-code and transactions of AMKT tokens. All key details related to the AMKT token will be available to all stakeholders.

All Merchant entities are KYB by default, this is administered through a whitelisting system in the Alongside index token contracts managed by the service provider to the DAO. Only Merchants who have passed the Enhanced Due Diligence and KYC can be whitelisted to participate in the Issuance and Redemption of AMKT Index Tokens.



Additional Information

5.1 Glossary

- **AML:** Anti-Money Laundering
- **AMKT:** Alongside Crypto Market Index
- **bps:** Basis Points
- **DAO:** Decentralized Autonomous Organization
- **KYC:** Know Your Customer
- **SDD:** Standard Due-Diligence
- **Synthetics:** Synthetic tokens, collateralised through derivative positions or algorithmically

Disclaimer

This document is for general information purposes only. It does not constitute investment advice or a recommendation or solicitation to buy or sell any investment and should not be used in the evaluation of the merits of making any investment decision. It should not be relied upon for accounting, legal or tax advice or investment recommendations. The opinions reflected herein are subject to change without being updated.

Carefully consider the risk factors, purchase objectives, fees, expenses, and other information associated with the Alongside Crypto Market Index before making a purchase decision regarding any of the Products. All Products that are speculative in nature involve a high degree of risk and uncertainty. There is no guarantee that any token will grow in value.

For the Alongside Crypto Market Index, which is an ERC-20 token available for trading on multiple markets, there can be no assurance that the value of the token, if traded on this secondary market, will reflect the value of the Alongside Crypto Market Index net assets. Tokens of any products traded on such secondary market may trade at a substantial premium over, or a substantial discount to, the value of the network's net assets. While institutions may engage in arbitrage mechanisms to keep the price of the token closely linked to the value of the Network's net assets, and the price of the index token may deviate significantly from the performance of the Net Asset Value per token ("NAV"). There is no guarantee that any token will grow in value.

Certain of the Alongside Network products may be subject to the risks associated with purchasing crypto assets, including cryptocurrencies and crypto tokens. Because crypto-assets are a new technological innovation with a limited history, they are a highly speculative asset. Future regulatory actions or policies may limit the ability to sell, exchange or use a crypto asset. The price of a crypto asset may be impacted by the transactions of a small number of holders of such crypto asset. Crypto assets may decline in popularity, acceptance or use, which may impact their price.

Prior to making any purchase decision in respect of any Product, each prospective user must undertake its own independent examination and investigation of the Product, including the merits and risks involved in a purchase of the Product, and must base its decision, including a determination of whether the Product would be a suitable purchase for the prospective user, on such examination and investigation and must not rely on Alongside Finance, Inc. or the Products in making such decision. Prospective users must not construe the contents of this website as legal, tax, investment, or other advice. Each prospective user is urged to consult with its own advisors with respect to legal, tax, regulatory, financial, accounting and similar consequences of investing in any Product, the suitability of the purchase for such user and other relevant matters concerning a purchase of any Product.

The tokens have not been approved or disapproved by the Securities and Exchange Commission, are not registered under the Securities Act of 1933 (the "Securities Act"), the Investment Company Act of 1940 (the "Investment Company Act"), or any state securities commission or other regulatory body. Alongside is not registered as an Investment Adviser under the Investment Advisers Act of 1940 (the "Advisers Act"), and is not registered as a Commodity Pool Operator or Commodity Trading Adviser under the Commodity Exchange Act (the "Commodity Exchange Act").

Prospective users of any product should very carefully consider such risks prior to making any purchase decision. Tokens may always be redeemed for their underlying net assets upon successful know-your-customer and AML verification by a third-party service provider, by making a request on this website.

Specific references to 'Alongside' refer to the registered organization Alongside Finance, Inc, mentions of the 'Alongside DAO' refer to a separate Decentralized Autonomous Organization. References to a 'network' or 'the network' refer to a decentralized network owned and operated by the Alongside DAO and its members.