Alongside Crypto Market Index

Whitepaper

AMKT V2

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Introduction

1.1 Summary

AMKT is a single asset that tracks and serves as a benchmark for the cryptoasset market. AMKT is fully collateralized by the top 15 assets in crypto weighted by market cap, with quarterly rebalancing and reconstitution.

1.2 Introduction

For decades, broad-based index products 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.

In equity markets, they've saved millions of people tens of billions in fees by offering a simpler path to getting exposure to the market. They serve as tools for hedging market exposure, taking short positions against the market, or our favorite, simply buying the market and doing nothing.

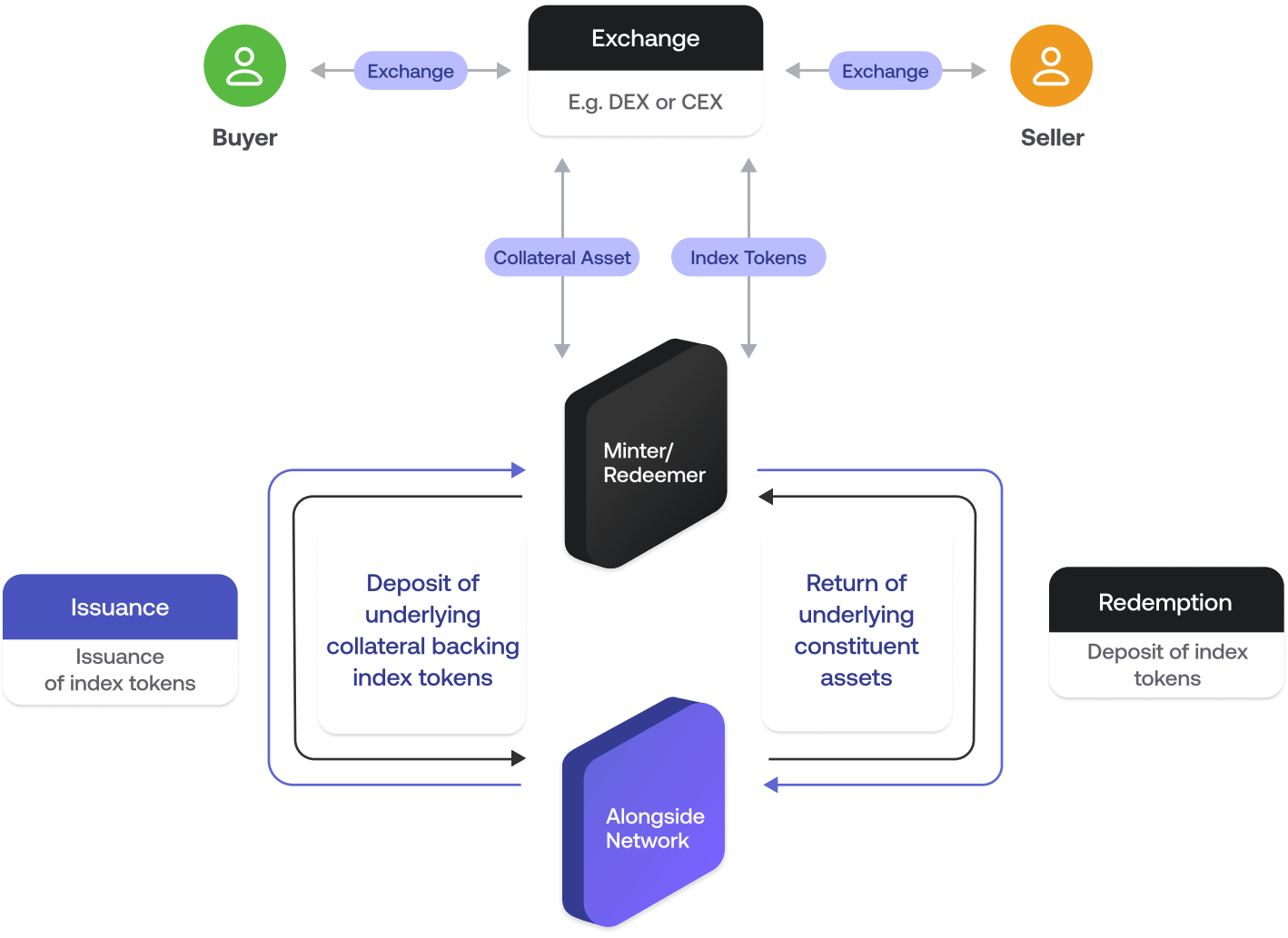
AMKT brings the indexing concept to cryptoasset markets and proposes a fundamentally new architecture for how index products can be built utilizing smart contract protocols to remove intermediaries, lower costs, and enjoy 24/7, global access.

1.3 Objective

The Alongside Crypto Market Index ($AMKT) aims to bring this index philosophy to cryptoasset 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. Mirror The Market – AMKT aims to track the cryptoasset market as efficiently as possible, making AMKT the best way to get exposure to the broader cryptoasset market.
2. Low Cost – AMKT seeks to remove the dozens of intermediaries involved in the administration of an index and replace them with smart contract code, allowing the network room to offer AMKT at the lowest possible cost.
3. 24/7 Accessibility – AMKT should be available everywhere at their fair intrinsic value.

Implementation and Technology



AMKT System Overview

2.1 Key Roles

Minter/Redeemer: Anyone who calls the Network to mint/redeem index tokens. They have the right to redeem index tokens for the respective underlying assets.

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 minted on.

Methodologist: The role of the methodologist is assumed by the DAO which is responsible for proposing and voting on the list of in-kind assets and their units/weights in the index.

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

2.2 Token Issuance

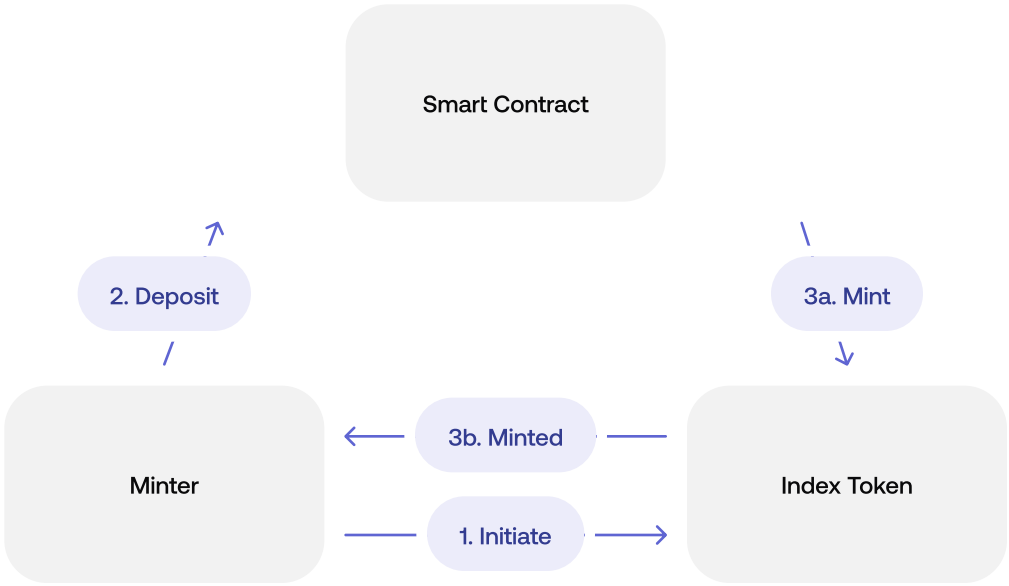


Fig 01
Token Issuance

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 minter.

Sequences of events for issuance of index tokens

1. User Initiation: User initiates the issuance process by sending underlying assets to the issuance token contract, signaling their intention to exchange the assets for n AMKT tokens.
2. Token Minting: Upon verifying the correct amount of underlying assets received, the index system creates a transaction to mint n AMKT tokens.
3. User Receives Tokens: User is credited with n AMKT tokens in their designated address.

2.3 Token Redemption

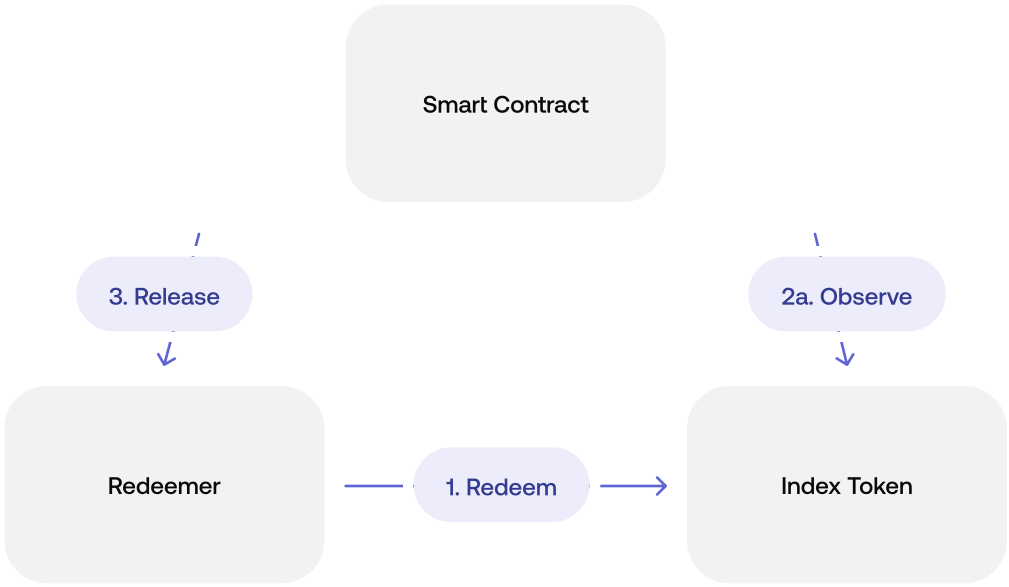


Fig 02
Token Redemption

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

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2.4 Reconstitution

Reconstitution and rebalancing is the process that involves sorting, adding, and removing assets to ensure the index reflects up-to-date tracking with respect to the methodology. Reconstitution uses a bounty system to incentivize network participation.

A bounty is a commitment posted on-chain by a trusted party, reflecting the list of new tokens and their corresponding nominals backing the index. Once a bounty is posted on-chain, anyone can step in and fulfill the bounty.

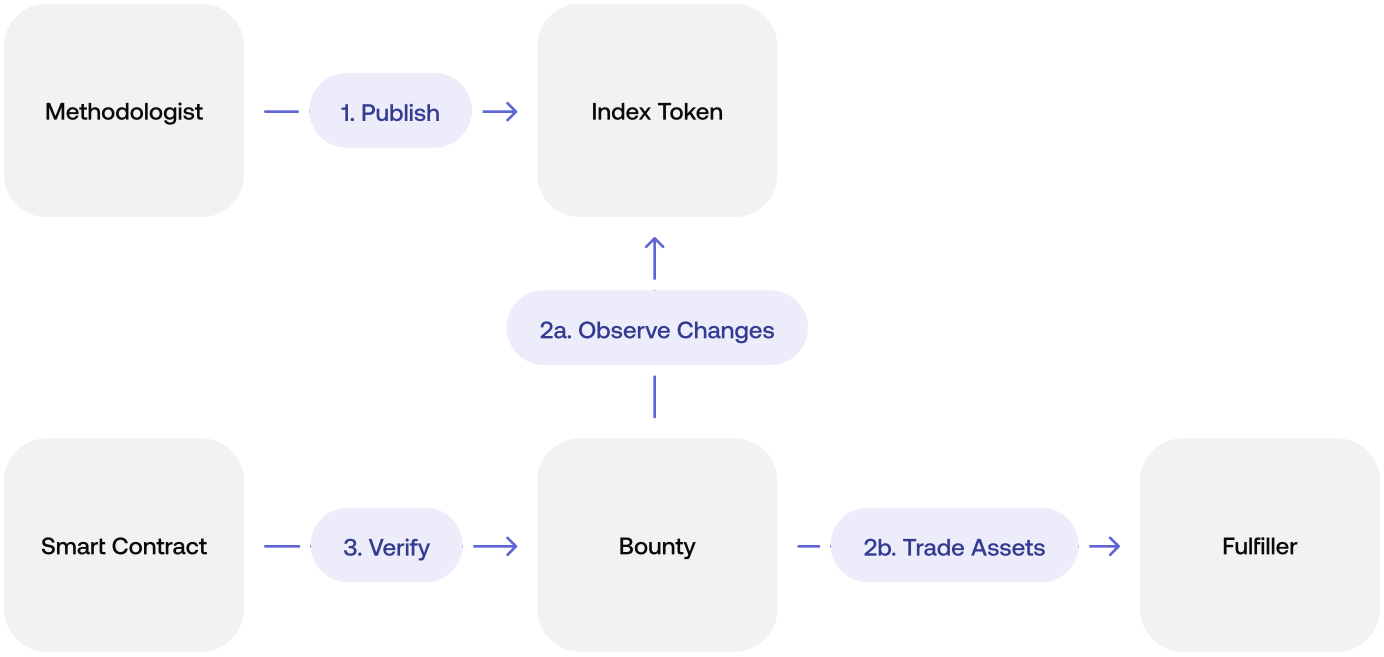

Fig 03
Reconstitution

Bounty

1. In order to facilitate rebalances, AMKT utilizes a bounty system. A trusted party (governance) determines the assets to be included, the respective weights of those assets, and the proposed fulfiller as part of the rebalance. The rebalance proposal containing these details is published and voted upon by AMKT holders.
2. If approved, the governance multi-sig confirms with the fulfiller the nominals of the rebalance, to ensure those values adequately reflect market pricing at the time the rebalance is to be completed.
3. A bounty is computed as nominal (wei) token per 1e18 AMKT (divide the on-chain total supply by 1e18, then divide the nominal token by that). It represents an entry in the next list of underlying assets for a given asset.
4. A bounty is hashed and stored in an ActiveBounty contract, which keeps track of the next allowed bounty.

Fullfillers

- A fulfiller can be an externally owned account (EOA) or a smart contract. In the former, the EOA will need to have the tokens pre-approved for spending by the bounty contract. In the latter, the smart contract can request a callback where it can do its own custom logic for routing.
- When one fulfills a bounty, the smart contracts actually "release" the outgoing tokens to the fulfiller upfront to allow the fulfiller to make trades with them if needed. In practice the outgoing and incoming amounts should have the same value.
- The smart contracts atomically enforce the incoming amounts. Failure to return the new tokens will also take back the tokens released to the fulfiller (in the style of a flashloan).

2.5 Token Ownership

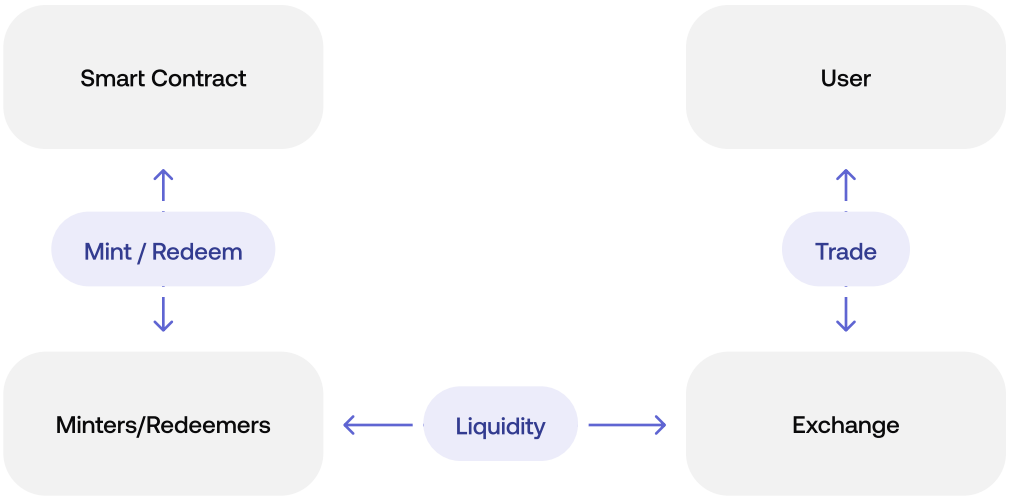

Fig 04
Token Ownership

Once minted, new tokens can be used to provide exchanges (centralized and/or decentralized) with liquidity. Prospective index token holders can acquire AMKT tokens by buying them from open exchanges.

Index Methodology

3.1 Index Objective

Alongside Crypto Market Index [AMKT] – Measures the performance of the broader crypto market and is meant to serve as a benchmark for this new and emerging asset class.

3.2 Eligibility Criteria

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

1. Exchange Support - Must be traded on multiple credible exchanges and 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 constituents, which helps facilitate token liquidity.

2. 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 assets (e.g., BTC & WBTC, WETH & ETH, USDC, etc.).This ensures our token holders are not exposed to assets at risk of a liquidity crisis.

3. Security and Vulnerabilities - Must have no known vulnerabilities and must meet the industry standard for security, as determined by the DAO. This ensures token holders are not knowingly exposed to critical bugs that could lead to loss of funds.

4. Legal Considerations – An asset cannot be found to be in violation of law following a judicial or other final government proceeding, either in the jurisdiction in which the asset was issued, or a jurisdiction where a relevant party in the AMKT network is located.

3.3 Asset Supply

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

3.3.1 Market Representation and Selection of Constituents

AMKT will include the top cryptoassets based on their free float market capitalization. The process for selecting these representative constituents is as follows:

1. Free float market capitalization will be calculated by using the 5-day exponential moving average circulating supply of an 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 representative constituents with the largest free float market capitalization will be selected for inclusion in the AMKT index.
   a. Constituent's relative circulating market capitalization needs a minimum of .01% allocation to be considered for inclusion in the AMKT index.
   b. There is a limit of 15 constituents for AMKT, with the ability for the DAO to vote to increase the number of assets provided they meet the above criteria.

3.3.2 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 an asset by the total free float market capitalization of all the assets at the time of rebalance and reconstitution.

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

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

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

$$MV_t = Market\ Value\ at\ t$$
$$CS_t = Constituent\ Set\ at\ t$$
$$CN_{i,t} = Constituent's\ nominal\ units\ at\ t$$
$$CC_{i,t} = Constituent's\ circulating\ supply$$
$$P_{i,t} = Consitituent's\ price\ at\ t$$
$$w_{i,t} = Constituent's\ index\ weighting/dominance$$

3.4 Index Calendar

3.4.1 Reconstitution Schedule

AMKT reconstitutions will occur on a quarterly schedule, effective on the first day of January, April, July, and October.

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

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.
- 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. 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. The fee is administered by the smart contract through the inflation of the total supply of index tokens.

AMKT tokens are inflated at a rate of 95bps per annum. These fees are sent to the FeeReciever, an address set through governance. Fees are denominated in AMKT; AMKT inflated new units of the token are sent to the fee receiver but the value of collateral in the vault remains the same.

Inflation occurs when explicitly called by the fee recipient. The smart contract calculates the amount to be minted based on the time since the last mint. The quantity of tokens sent to the fee recipient is determined by multiplying the number of seconds passed since last mint by the per second inflation rate:

$$\mathbf{r} = \frac{\left(\frac{1}{1-\{0.0095\}} - 1\right)}{\{60 * 60 * 24 * 365\}}$$

Additional Information

5.1 Glossary

- AMKT: Alongside Crypto Market Index
- bps: Basis Points
- DAO: Decentralized Autonomous Organization
- Synthetics: Synthetic tokens, collateralized through derivative positions or algorithmically