KeyFi

Data-Driven, A.I.-Enabled **DeFi Aggregator**

Powered by the KEYFI Governance Token

Identity components powered by 

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Motivation: DeFi is complicated!

Currently, much of the developed world operates in an environment in which bank depositors can expect near-zero, or even negative interest on their current accounts at regulated financial institutions.

However, outside the traditional financial industry lives an alternative, decentralised financial market - called DeFi. When a traditional bank might struggle to pay a maximum of 1% on deposits - DeFi and crypto lending platforms (some of which are regulated, some of which are not) will sometimes offer 8-12% APY or even more, expected on stablecoin deposits.

Despite the huge rewards that it offers, DeFi is not short of complexity and risks. Many users will attempt to hedge risk by interacting with the DeFi ecosystem through multiple platforms.

However, setting up, tracking and closing positions to attempt to maximize yields and minimize risk is not an easy task for any user. Rebalancing asset portfolios, avoiding multiple risk vectors, managing gas prices, platform fees, slippage, impermanent loss, and many other factors collectively make it sometimes difficult for even advanced users to use and consistently realize yields from DeFi.

Moreover, much of DeFi is designed to prioritize and secure user privacy and, although regulators have not yet acted publicly against DeFi projects, it is foreseeable that may change in the future. We feel there is an imminent need for identity and credential solutions that enable regulatory compliance across the financial landscape of decentralised networks. However, regulation at the expense of user privacy is not the best solution.

Hence, for the future success of DeFi, we feel that the community needs to push the evolution of DeFi towards a regulatory-compliant ecosystem that still manages to respect user privacy.

Overview: Simplifying DeFi Aggregation

KeyFi.com aims to provide users with a convenient interface that aggregates multiple DeFi platforms such as Compound, Aave, and Uniswap, while also providing asset rebalancing functions powered by AI. An aggregation of external data sources and statistical analysis allows users to easily determine their best choices and rebalancing strategies.

Additionally, KeyFi.com integrates with SelfKey Credentials to reward users with KEYFI tokens for using the platform. The integration of SelfKey Credentials can essentially prepare the DeFi platform for regulatory compliance, minimizing the sharing of personal data.

It's also possible these DeFi credentials could be re-used on other platforms, creating wider adoption of a self-sovereign based identity used across multiple DeFi platforms.

KeyFi.com: Maximize Yields, Minimize Risks

Feature overview

- DeFi tools for aggregating multiple DeFi platforms along with data and analytics into a simple dashboard.
- Configure risk tolerance and automated rebalancing via predictive interest rate maximization assisted by AI, trained on large historical datasets.
- Calculate rate slippage, platform liquidity, gas costs, and receive alerts based on an array of data points.
- Earn usage rewards and contribute to decision-making with KEYFI governance tokens.

Portfolio Rebalancer

KeyFi relies on a set of *proxy smart contracts* that allow batching of multiple transactions, allowing the user to perform complex asset management operations without having to perform each transaction separately. These proxy contracts could enable specific asset management strategies implemented by users, without holding any funds on behalf of the asset owners.

Additionally, multiple data sources are aggregated in order to provide valuable information to assist users in their decisions for their own asset management strategies.

In summary:

- Data API displays a comparison of the highest yielding platforms with the best rates.
- Rates are organized by assets and platforms with the option to filter stablecoins.
- The user has manual control over rebalancing.
- A.I. provides predictive splits for future rates.
- Automatically estimate the gas cost for the rebalance transactions.
- Estimate potential rate slippage (especially for large deposits).

Rewards

KEYFI tokens provide a mechanism for the decentralized governance of the KeyFi.com platform. Eligible users, holding SelfKey Credentials, are rewarded KEYFI tokens when they contribute to the KeyFi platform by providing liquidity or by staking.

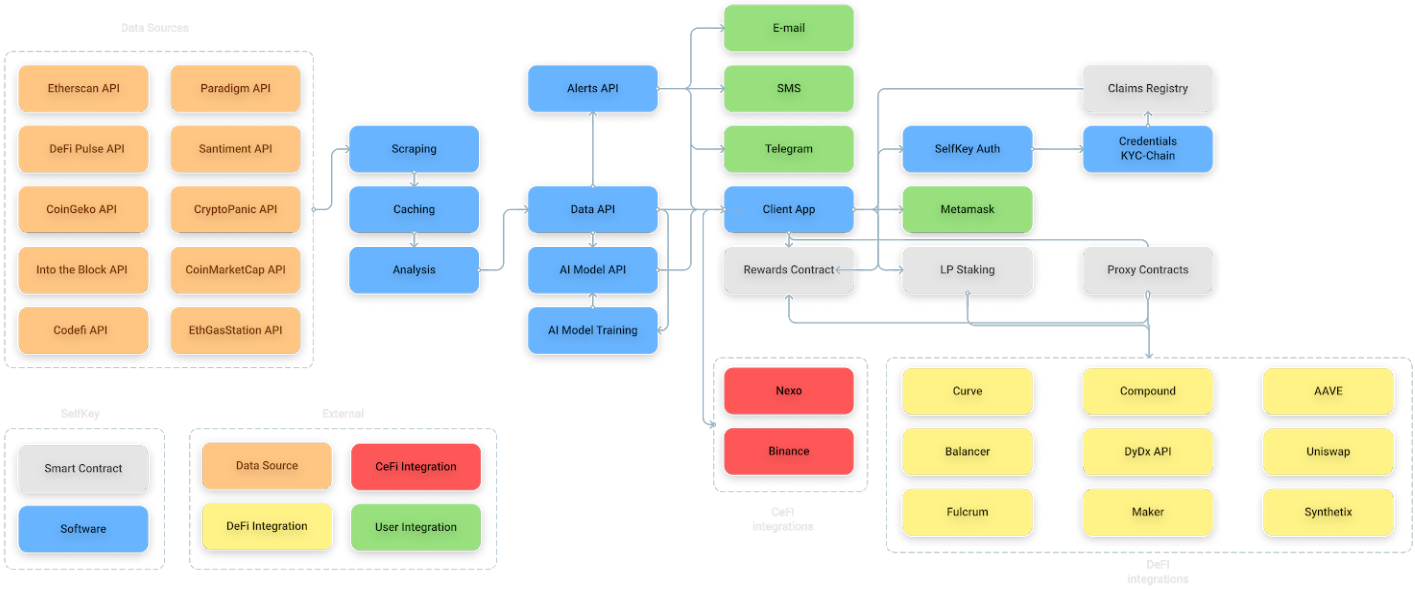
Pro Account

In addition to the basic functions offered by the free account, a Pro account tier is available for users to gain access to extended data and advanced analytics, plus unlimited alerts. Pro accounts may use on-chain subscription credentials to restrict access.

Credentials Required

In order to access certain parts of the app, a valid SelfKey Credential will be required. This includes access to proxy contracts and any KEYFI token rewards contracts.

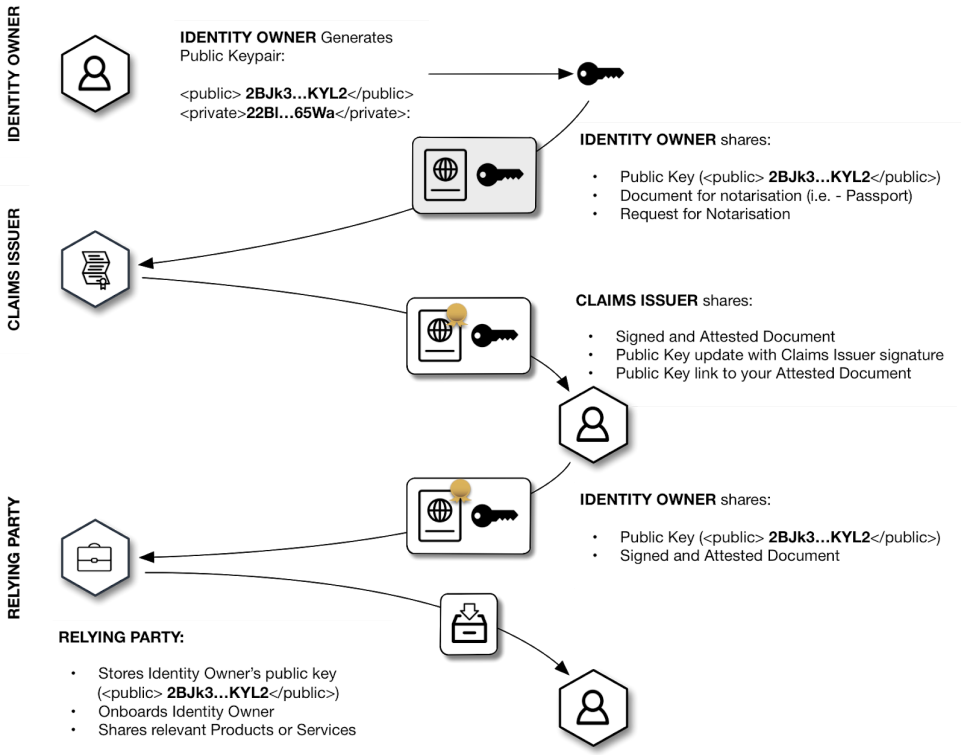
General Component Architecture



SelfKey Credentials Integration

In order to provide a framework for regulatory compliance while preserving user privacy and self-sovereignty, KeyFi is integrating with the SelfKey platform. Using SelfKey, users will be able to apply for and receive verifiable SelfKey Credentials from trusted certifiers on the SelfKey platform.

SelfKey credential platform provides a framework for verifiable credentials with selective disclosure and smart contract proofs without revealing unintended user information to companies or organizations that want to verify a user's credential. These companies or organizations are called "relying parties."



Credential issuance and exchange flow

KeyFi as a relying party in the SelfKey ecosystem will trust SelfKey's network of certifiers and its identity protocol.

If specific data needs to be verified at some point in the future (for example, during arbitration or dispute), the integrity of the data and its relation with the identity owner can be cryptographically verified.

The KEYFI Token

As a means to incentivize platform utilization and provide a basis for decentralised governance, and users who satisfy the following conditions may be eligible for KEYFI tokens:

- Have a valid SelfKey Credential, and either
- Provide liquidity on selected token pairs, or
- Stake other authorized tokens on the KeyFi Reward Pool contract.

Token features

KEYFI token is an ERC20 token with voting capabilities over the KeyFi platform. Through decentralized governance, KEYFI holders will also be able to set a minter address in order to enable reward mechanisms. New tokens can't be minted before a two-year period has elapsed.

Initial Distribution

A pool of 10,000,000 KEYFI will be initially minted and automatically allocated as follows:

- 1,000,000 → **Treasury** (vested over 2 years) to fund expenses on an ongoing basis.
- 1,000,000 → **Team** (vested over 2 years) to incentivize core team members.
- 8,000,000 → **Rewards** for users of the platform (Approximate distribution period of rewards is currently calculated as 2 years).
    - Token Staking & Liquidity Pool Incentives - Initially, the KEY token staking and KeyFi liquidity pool mining would only be the two incentivized activities on the platform. The percentage of reward pool split among these two will be:
      Liquidity Mining - 50% of the total reward pool.
      KEY token staking - 20% of the total reward pool.
    - Proxy Contracts - Proxy contracts are another proposed reward source for users. When introduced, users may utilize proxy contracts to send multiple transactions as a batch. 20% of the total reward pool may be allocated for facilitating proxy contract usage rewards. This pool and any pool can also be used for Airdrops on specific platforms / use cases.
    - Governance Rewards - KEYFI token holders can suggest and vote on core parameters regarding the project. Users will also be rewarded for participating in the governance voting. 10% of the total reward pool may be allocated to reward users participating in the decentralized voting.

There may be a bonus period on the Reward Pool contract with a multiplier for the initial months.

Token rewards

The majority of the initial supply will be allocated to a Reward Pool contract, which will distribute a set amount of tokens per block to stakeholders in proportion to their contribution to different incentivized activities on the platform like:

- Liquidity Mining
- KEY Token Staking
- Utilization of proxy contracts
- Participation in governance voting

The set of allowed tokens and the distribution rates are parameters modifiable through decentralised governance.

After the 3 year initial reward period, during which the protocol has a fixed supply, the reward pool contract may begin minting new tokens at a configurable inflation rate (initially set at 2%) in order to keep incentivizing the different liquidity pools. Community governance, however, can decide to either disable the additional minting of tokens, define a different inflation rate or even migrate to a new reward contract with a different distribution logic.

Decentralised Governance

Core parameters for the functioning of the platform will be changeable via token-voting. One of the major utilities of the KEYFI token is that it grants token holders with voting rights over crucial decisions and development proposals related to KeyFi.

To this end, we intend that a governance contract will act as the owner of all KeyFi's ownable contracts and will be able to transact on these contracts via a voting process.

Some of the key features regarding governance are:

- Voting power will be calculated directly from the KEYFI wallets.
- Governance contract has the power to do the following:

    - Minting tokens on the KEYFI contract - Minter address can even be set to 0 if so decided by the community
    - Set RewardPool contract parameters
        - Reward rate (allocated tokens per block)
        - Allowed liquidity pools/pairs and staking tokens
        - Allocation weights for each allowed staking token

Other KeyFi-specific governance features

We believe in a complete decentralisation of our services for our community so that our users will have the ultimate control over the features and offerings of KeyFi. Thus KEYFI token holders will be able to allow the following actions on the KeyFi app:

- Add/remove asset
- Add/remove platform
- Add/remove data integration
- Add/remove wallet integration
- Propose other new features (e.g., liquidation dashboard, arbitrage monitor, etc.)

Decentralisation roadmap

Decentralisation will be achieved on a series of milestones or phases. In Phase 1 the KEYFI token holder community will be able to vote on matters related to the KEYFI token and the KeyFi app, and phase 2 will involve on-chain enforceable community decisions.

Phase 1:

- For transparency: Pre-mint distribution will be handled by a smart contract that will deploy the token contract, mint and allocate the tokens, and immediately transfer admin key to a *multisig timelock* contract
- For the Reward pool contract, the admin key will be held directly by our team during development, after which transfer will be made to the multisig timelock on the launch date.

- Snapshot will be set up at the start so that token holders can make proposals and vote, although the dev team (through admin key) needs to enforce the changes on-chain.

Phase 2

For phase 2, we expect an upgradable governance (DAO) contract (Gnosis proxy) with a simple voting module will be deployed to substitute the timelock multisig contract, effectively gaining fully decentralised control over the governable contracts.

Gnosis Safe architecture is designed to be upgradable in time, therefore the governance contract can upgrade itself, implementing new governance capabilities now unforeseen, or advanced voting mechanisms (e.g. liquid democracy, quadratic voting, etc.).

Phase 3

Still in the process of being designed, Phase 3 will cover the decentralisation of the main components that make up the KeyFi platform (e.g., data APIs, A.I. strategies, proxy contracts, etc.), as well as decentralising the development process itself, so that KeyFi remains as one of many actors in the network, giving full control of the platform to the community. The KEYFI token will play a fundamental role in enabling this final step.

Summary

KeyFi is both familiar and unique when compared to alternative DeFi platforms. Familiarly, it provides a decentralised governance incentive mechanism through a native token, rewarded by providing liquidity to certain pairings. Uniquelly, unlike other platforms, KeyFi.com may have a pathway to regulatory compliance, whilst preserving privacy and leveraging self sovereign digital identity credentials. Finally, the data and A.I. engine is unique and could provide an advantage to smaller users who wouldn't normally have this type of data or machine learning at their disposal. This is just the beginning - the KeyFi platform may continue to grow in both functionality and decentralization with the support of DeFi users around the world.