Synbit



# Synthesize a New World

# Contents

01

# Abstract

# Abstract

With the further development of DeFi (Decentralized Finance), users increasingly need more flexible financial instruments - synthetic assets. Synthetic assets can meet more financial needs of people and have more financial attributes than the original assets, providing users with extensive transaction space. It is a new format formed after the gradual maturity of the HECO and DeFi ecosystem. The existing synthetic asset platform still has great room for improvement in security assurance, risk control, issuing mechanism, transaction experience, reward mechanism, etc.

Synbit is a decentralized synthetic asset issuance protocol running on HECO. Anyone can use this protocol to re-synthesize traditional financial products and new financial derivatives, and participate in transactions. Synbit provides traders with a wide range of the derivatives trading for both digital and traditional assets, aiming to create a safer, more convenient and more efficient synthetic asset trading platform.

Users can issue synthetic assets on Synbit through a variety of pledge methods, such as HT, stablecoins and SYN. Synthetic assets can be exchanged directly with other synthetic assets by purchasing synthetic assets. In this process, double rewards can be received by users: ①gain from transaction ②gain from providing fluidity for the platform. In addition, Synbit adopts a unique debt pool model and the transaction model, effectively solving the problems of liquidity insufficiency and transaction slippage often faced by DEX (decentralized exchange).

# Collateral

- Value support of synthetic assets
- Why do you hold SYN
- Casting, destruction and mortgage
- Providers and traders of liquidity

02

# Collateral

## Value support of synthetic assets

The value of all synthetic assets shall be supported by their mortgage assets. The mortgage rate of each kind of asset is different according to its price stability. In the future, the mortgage rate can be increased or reduced through community governance mechanism. The mortgagor will generate debts when creating synthetic assets. The debt must be paid before unlocking the mortgage assets.

## Why do you hold SYN

In order to attract users to participate in the Synbit ecosystem and ensure the smooth launch and sustainable development of the Synbit platform, the platform has formulated a targeted reward plan for eco-participants such as mortgagors, traders, and token holders.

## Source of funds

The incentive funds mainly come from two aspects:

Issuance of platform coins

Transaction fee

# Casting, destruction and mortgage

## Mortgageable assets

The mortgageable assets are preset to HT、ETH, DAI, SYN, USDT, USDC, and can be increased by community voting in the future.

## Mortgage rate

Mortgage rate = Value of mortgage assets (USD) / Value of debt (USD)

**Reward mortgage rate**

It refers to the minimum mortgage rate that users need to meet when issuing (casting) synthetic assets. Due to the different volatility of different assets, different mortgage assets have different reward mortgage rates. The mortgagor maintains the mortgage rate at a level higher than the reward mortgage rate to receive the reward.

- ETH initial mortgage rate = 200%
- DAI initial mortgage rate = 120%
- SYN initial mortgage rate = 600%

### Liquidation of mortgage rate

When the user's mortgage rate reaches or is lower than the liquidation mortgage rate, the liquidation will be triggered. During liquidation, mortgage assets of users will be sold to reduce the mortgage rate of users, making it greater than the liquidation mortgage rate.

- ETH liquidation mortgage rate = 150%
- DAI liquidation mortgage rate = 105%
- SYN liquidation mortgage rate = 200%

## Adjustment of mortgage rate

Users can increase the mortgage rate by adding mortgage assets or destroying debts; when the mortgage rate of users is higher than the reward mortgage rate, the mortgage rate can also be reduced by issuing synthetic assets.

# Providers and traders of liquidity

Users of Synbit can be divided into three categories:

## Staker

Staker refers to the person who mortgages digital assets on the platform, and issues (casts) synthetic assets to add liquid assets into the platform.

## (Liquidity Provider)LP

LP refers to the person who provides Synbit-related synthetic asset traffic on a third-party DEX platform to facilitate external traders to purchase Synbit synthetic assets.

## Trader

Trader refers to the person who deals with synthetic assets on the platform. The trader can be either LP or the person who obtains the synthetic assets of the platform through the external exchange, so as to enter into Synbit for trading.

03

# SYNBIT Synthetic Asset Trading Platform

- Why do you deal with synthetic assets
- Synbit Synthetic Asset Trading Platform
- Current synthetic assets

# Synbit Synthetic Asset Trading Platform

## Why do you deal with synthetic assets

Due to the trustless and anti-censorship characteristics of smart contracts, synthetic assets have expanded the reach of traditional financial assets, which makes it easy for anyone to trade any kind of financial asset.

For example, when users are optimistic about an asset in some specific situations, they are not willing to exchange the assets they hold and also want to seize the opportunity of the asset appreciation. Synthetic assets can meet this kind of need: the specific assets can be traded without actually holding.

Synthetic assets cover a wider range of financial products, enabling traders to switch between assets of different categories at will, thereby reducing trading friction.

## Advantages of Synbit synthetic asset trading platform

### Natural characteristics of the DeFi products:

## Characteristics of synthetic asset products:

① Expand the transaction category

② Reduce the trade friction

③ Eliminate the trading slippage

④ Deepen the trading depth

## Unique characteristics of innovative products:

① Mortgage methods are more flexible (HT/platform coins)

② The platform is more secure and stable (liquidation system/security fund/insurance)

③ Token issuance is fairer (no pre-mining/trading mining/coin-holding mining)

④ User experience is better (low rate/low Gas fee/short transaction path/real-time price)

# Current synthetic assets

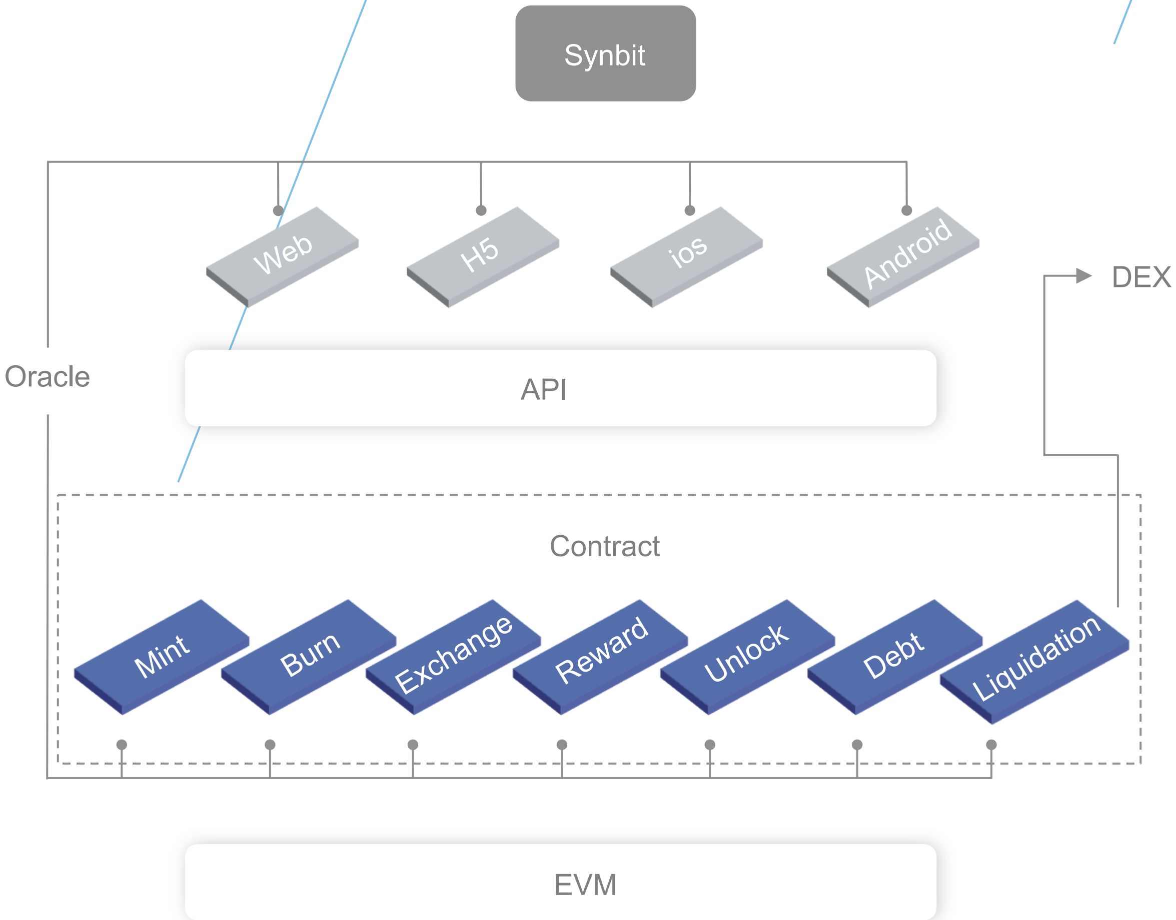
Currently, there are four types of Synths available: legal tender, bulk commodity, encrypted currency and reverse encrypted currency. As for our legal tender, Synths include yUSD, yEUR, yKRW, etc. As for bulk commodity, Synths include synthetic gold and synthetic silver, both in ounces. As for encrypted currency, Synths include yBTC and yETH. More types will be added in the future. Negative Synths, on the other hand, tracks the price of encrypted currency in reverse, meaning that when the price of BTC goes down, the price of nBTC will rise.

- Casting
- Transaction
- Reward
- Destruction
- Debt pool
- Prophecy machine

# System Architecture

04

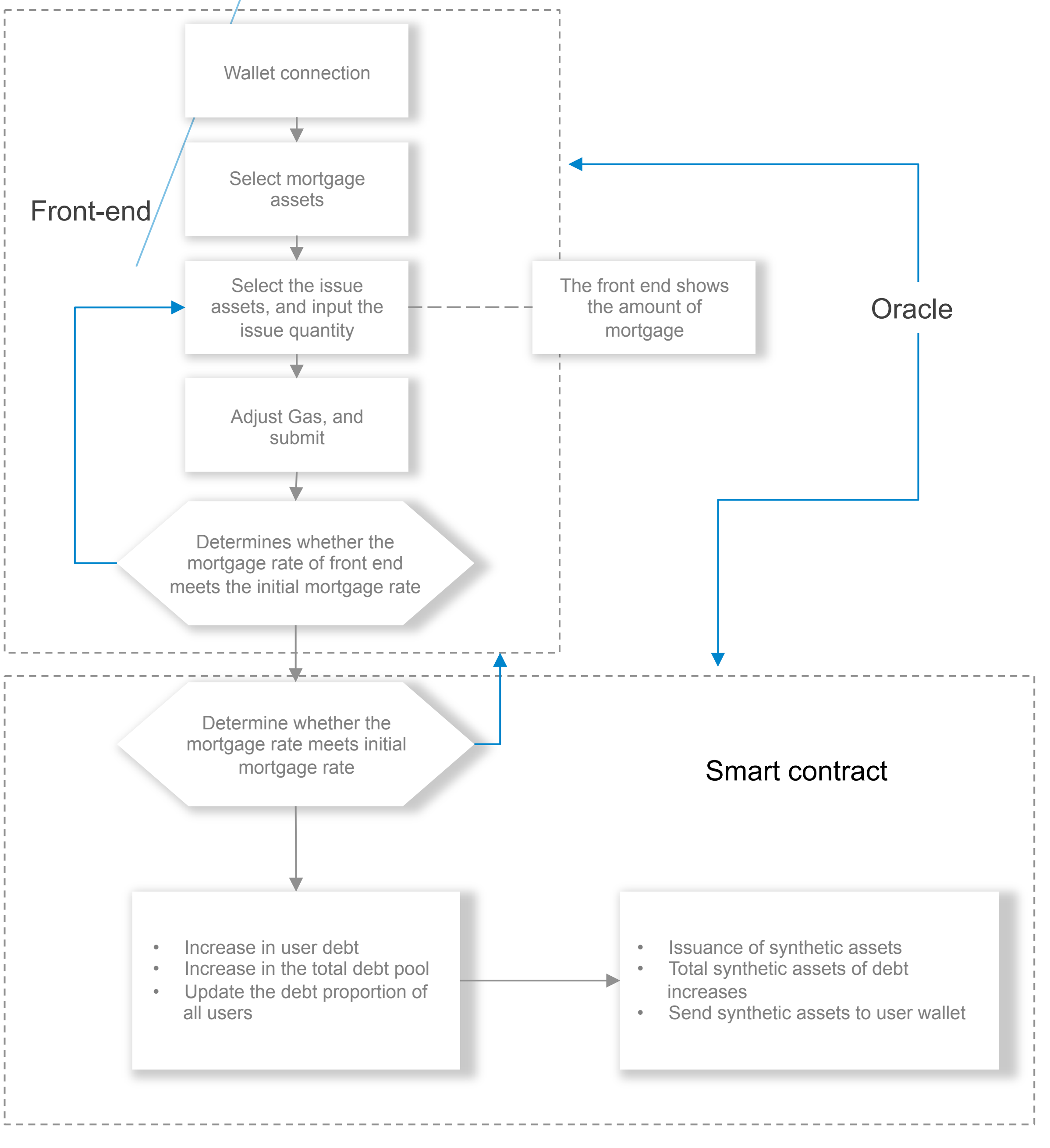
## System architecture




Synbit System Architecture

# Casting

① The user selects the assets to be mortgaged and the number of synthetic assets to be issued, and entrusts them to the smart contract.
② The contract determines whether the mortgage rate is satisfied, and locks the mortgage assets.
③ The contract updates the debt of users and debt pools, issuing corresponding synthetic assets.
④ For assets that have been mortgaged, it will be locked or unlocked in the contract according to the mortgage rate.
⑤ The user can adjust the mortgage rate by adding assets or destroying debts.

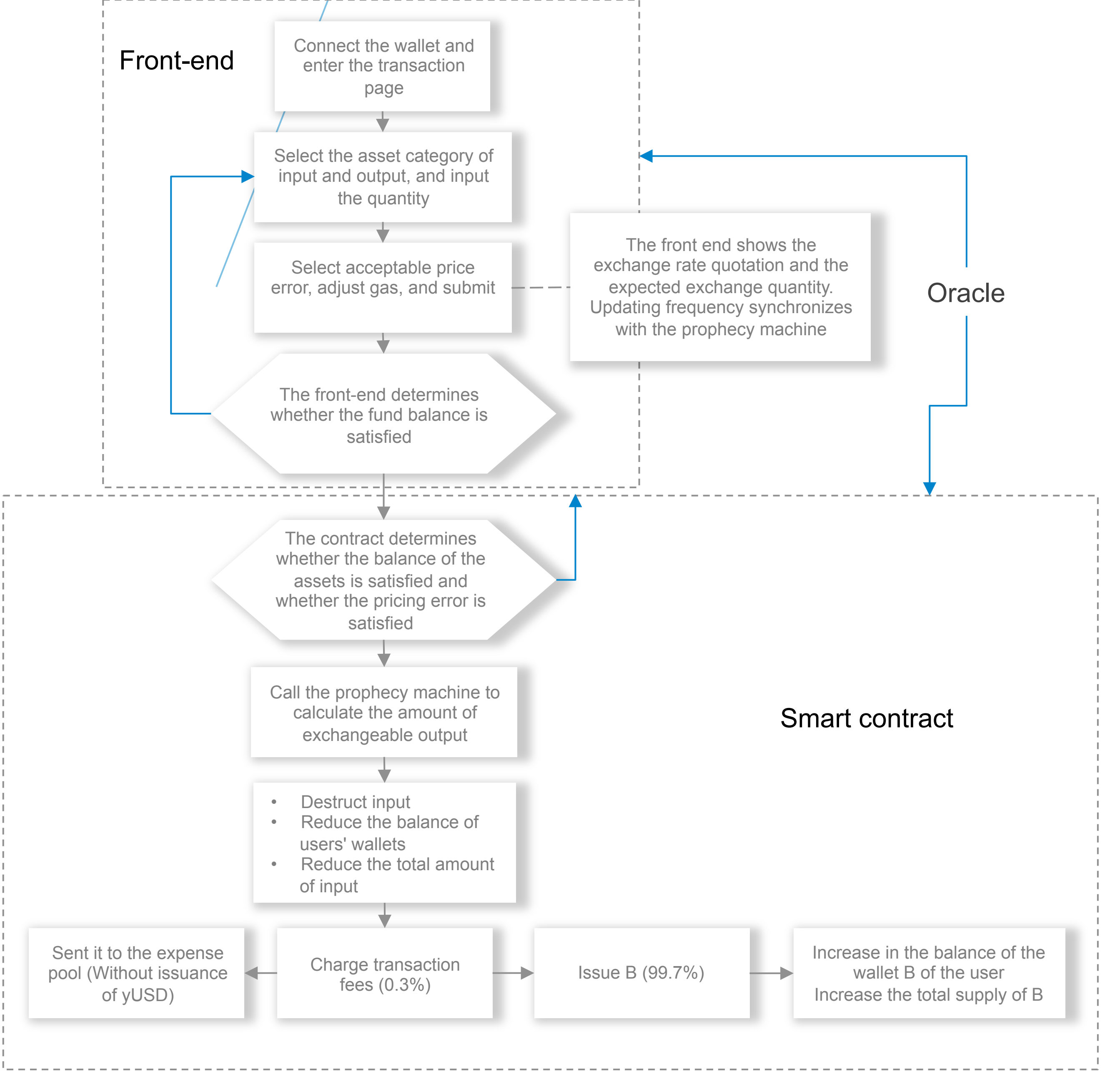


# Transaction

① The user selects the synthetic assets to be sold and exchanged, specifies the exchange amount, and submits a transaction application to the contract.

② The contract determines the amount of exchangeable assets in accordance with the price quoted by the prophecy machine. The contract destroys input assets and issues output assets (99.7%).

③ The contract deducts 0.3% of the value (debt) as handling charge, then sent it to the expense pool.



# Reward

① The contract randomly takes a time point every day to take a snapshot of the user's debt ratio and mortgage rate.

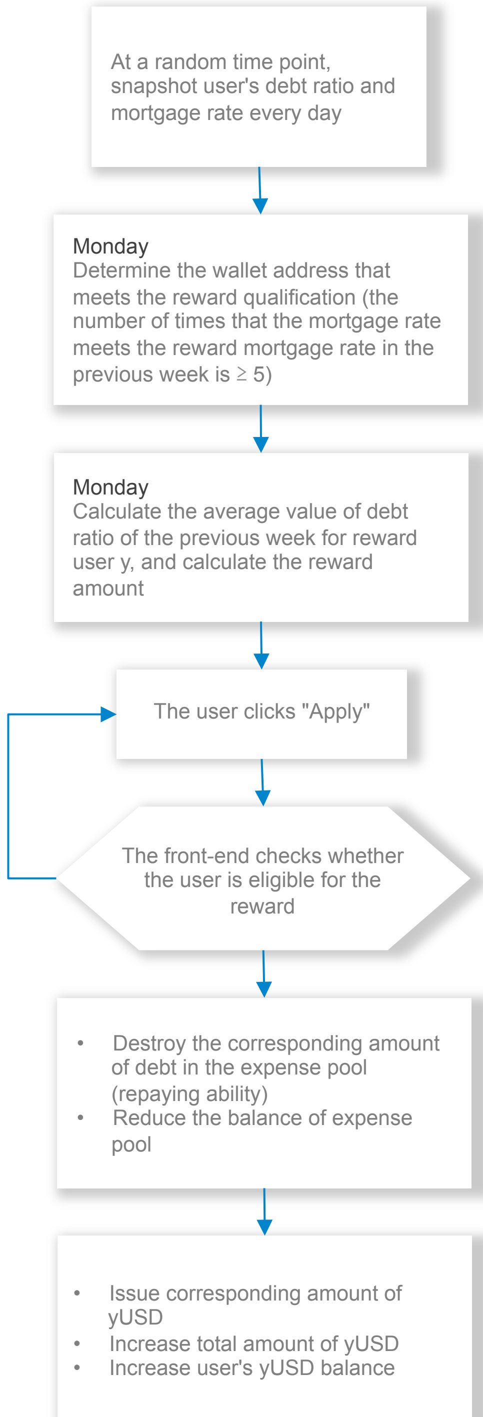
② Monday Determine the wallet address that meets the reward qualification (the number of times that the mortgage rate meets the reward mortgage rate in the previous week is ≥ 5).

③ Monday Calculate the average value of debt ratio of the previous week for reward user, and calculate the reward amount.

④ The user submits the application to the contract. The contract determines whether the user is qualified to apply.

⑤ The contract distributes the rewards in expense pool and the SYN rewards to eligible users in proportion.

LPFee Reward



# Destruction

① The user specifies the number of synthetic assets to be destroyed, and submits the destruction request to the contract.

② The contract determines whether the balance of the user's assets is satisfied. Call the prophecy machine to obtain the exchange rate and determine the user's current debt.

③ The contract updates the total amount of debt pool and the amount of user's debt (minus corresponding debts).

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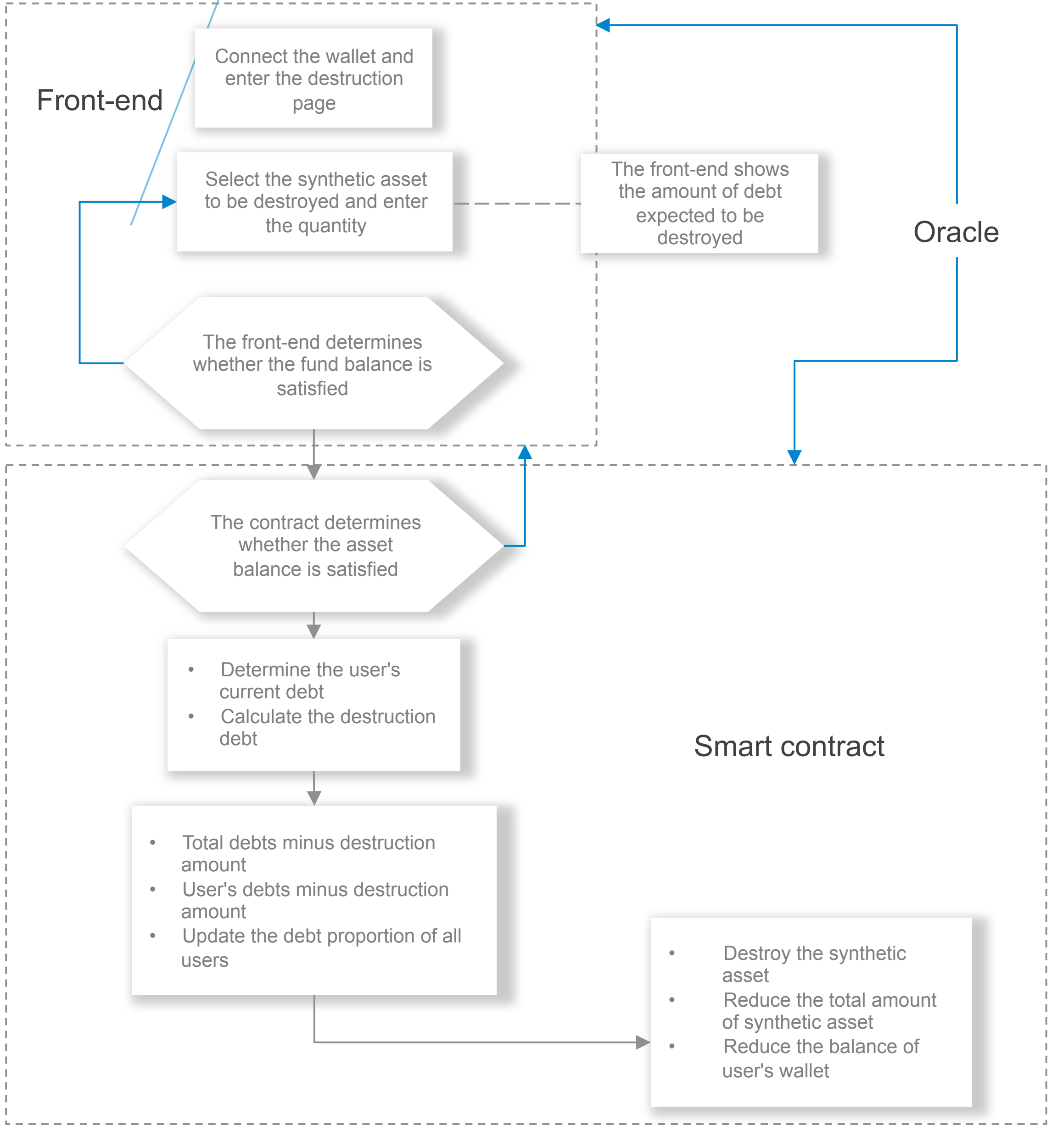

# Debt pool

Through mortgage assets, LP should be regarded as a liability to Synbit when the Synnbt issues synthetic asset, and the sum of LP debts constitutes a debt pool.

- Total Debt = ∑ Synth (i) * Current Exchange Rate (i) (Unit: usd)
- Personal Debt = Total Debt * Proportion of Personal Debt

The total amount of debt in the pool varies with the change of price of synthetic asset. The proportion of personal debt will be updated when casting or destroying synthetic assets, so the personal debt of LP is not fixed.

## Debt renewal on asset issuance

- Updated Personal Debt = Current Personal Debt + New Personal Debt
- New  Personal Debt = Number of Destroyed Assets * Exchange Rate of Assets (to USD)
- Total Updated Debt = Total Current Debt + New Personal Debt

## Debt renewal on asset destruction

- Updated Personal Debt = Current Personal Debt + Destroyed Personal Debt
- Destroyed Personal Debt = Number of Destroyed Assets * Exchange Rate of Assets (to USD)
- Total Updated Debt = Total Current Debt - Destroyed Personal Debt

# Prophecy machine

The price of synthetic assets on Syndit platform comes from the decentralized prophecy machine in HECO ecosystem. The Syndit platform will select one or more prophecy machines with excellent security, accuracy, and stability within the ecosystem to provide prices for the platform.

- Liquidation system

# Risk control

05

# Risk control

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# Liquidation system

To ensure that all synthetic assets in Syndit platform have sufficient value support, the risk control system of Synbit monitors the mortgage rate of LP in real time. When the mortgage rate is less than or equal to the liquidation mortgage rate, the liquidation process will be triggered.

## Liquidation quota

The liquidation quota shall be calculated according to the following formula:

(Mortgage Quota - Liquidation Quota - Mortgage Quota * Penalty Coefficient) * Exchange Rate/(Original Debt - Liquidation Quota * Exchange Rate) = Liquidation Mortgage Rate * Safety Coefficient

The safety factor is greater than 1, which determines the degree of safety redundancy of the mortgage rate after liquidation.

# Liquidation process

① The part to be liquidated (liquidation quota + penalty) is proposed from the user's mortgage assets and converted it into Synbit synthetic asset (yUSD) through DEX.

② Destroy the yUSD corresponding to the liquidation quota and reduce the user's debt at the same time.

③ yUSD corresponding to the penalty shall be transferred to the Platform Security Fund.

④ Confirm whether the user's mortgage rate is higher than the liquidation mortgage rate, and if so, the liquidation will be stopped. If not, confirm whether the user still has mortgage assets, and if the user's mortgage assets are greater than 0, the liquidation will be continued. If the user's mortgage assets is 0, the security fund is used to destroy the user's debt.

# Liquidation penalty

During liquidation, the user shall be charged a liquidation penalty.

Liquidation Penalty = Mortgage Quota * Penalty Coefficient

# Liquidation penalty

When the user's mortgage quota is fully liquidated and is still insufficient to repay the debt, the security fund shall be used to repay the debt.

The security fund is pooled through liquidation penalty and is used to pay for two things: liquidate Gas, and repay the liquidation debt.

The security fund is set with upper and lower limits, which will be used to buy back and destroy platform coins when the upper limit is exceeded, and the platform coins will be issued and converted into yUSD when it is lower than the lower limit.

# Disclaimer

06

# Disclaimer

Synbit has built one of the most complex and useful protocols on HECO to date. The mechanism is further improved on the basis of the development of the existing synthetic asset field and upgraded with new functions, which greatly increases the practicality of the platform. At the same time, the governance process evolving to decentralization will reduce systemic risk and improve the long-term feasibility of the project. This document briefly describes the technical route, technical advantages and operation mode of the Synbit. However, the potential of synthetic asset resistant to review is still largely undeveloped, and the team is unable to make complete commitments due to the force majeure.

In the future, with the continuous improvement and innovation of technology, the platform may be updated during the development process, including but not limited to the platform architecture, governance mode and its mechanism. Some contents of the document may be accordingly adjusted in the new white paper with the project progress. The team will publicize the updated contents by releasing announcements or the new white paper on the website. Participants are requested to obtain the latest white paper in time and timely adjust their decisions according to the updated contents. Synbit hereby makes it clear that it will not be liable for any loss caused by participants' dependence on this document content, inaccurate text information, or any behavior caused by this document.

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# SYNBIT

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