Zethyr Exchange: By Community, For Community

zethyr.exchange

Version 0.6

Abstract. All the current exchanges, traditional or cryptocurrency, reap huge profits from transaction fees. Consequently, traders pay huge fees to enrich a few. Worse, centralised exchanges have the risk of losing your fund and your personal identity. Lastly, the governance of all the exchanges is not transparent currently. The exchanges can change their transaction fees, terms and conditions at whim for their self-interest. Zethyr solves these issues by distributing 100 percent of transaction fees to Zethyr community, removing asset deposit/withdrawal and enabling users to govern the exchange fully.

1. Motivators

Since the birth of Bitcoin, the number of cryptocurrency exchanges has proliferated. Although there is no official figure, as of December 2018, more than 500 cryptocurrency exchanges (Sedgwick, 2018) were estimated to be active in the market. The biggest 4 exchanges by daily trading volume are Coinall, Binance, Dobi Exchange and DigiFinex (CoinMarketCap, 2019).

a. Enrichment of a Few

Intercontinental Exchange INC, the group behind New York Stock Exchange, earned $6.28 billion of revenue in 2018 (US SEC: Form 10-K Intercontinental Exchange, Inc, 2019). In 2018, Binance earned about $446 million in profit (CNBC, 2019); Changpeng Zhao, Binance's CEO, is currently worth $1.2 billion (Forbes, 2019).

b. Fraud and Loss of Privacy

Cryptocurrency exchanges suffer a litany of frauds, such as those of Mt. Gox, Bitfinex and Tether. Besides, unbeknownst to users are countless internal manipulations and external hacks. Recently, Gerald Cotton, the now deceased co-founder of the once-largest cryptocurrency exchange in Canada, was found to transfer users' funds to his own personal accounts (The Block Crypto, 2019). Your asset is not safe in the hands of exchanges. Know Your Customer (KYC) prevents mass adoption of cryptocurrency and kills anonymity, which is one of the key purposes of cryptocurrencies.

c. Sketchy Governance

Governance of all the exchanges currently is questionable and unclear to users and the public. The exchanges can change their transaction fees, terms and conditions at whim for their self-interest. Users are usually unaware of these changes or forced to accept the changes.

d. Shortcomings of Current Decentralised Exchanges

Most current decentralised exchanges do not support cross-chain trades. Therefore, cross-chain traders need to rely on centralised exchanges. Besides, while most decentralised exchanges have their native exchange tokens, values of these tokens quickly depreciate over time because exchange tokens are mined too quickly and too easily. The increase in circulating supply of tokens is not matched by an increase in the tokens' intrinsic values and demand. This mismatch further depreciates the market value of tokens.

2. Zethyr

a. Architectural Decentralisation

Zethyr is architecturally decentralised. Operated on the TRON blockchain with more than 1,300 nodes, Zethyr will have zero down time and zero single point of failure. Users buy and sell tokens by interacting directly with Zethyr Trust, a TRON smart contract, immutable and untouchable even to the developers themselves.

b. Political Decentralisation

The governance of Zethyr is fully determined by the community via VotingPower. Holders can decide on the pairs to be listed on the exchange, daily free trading quota and next technical improvement among any other decisions.

c. Absolute Asset Security

Managed by TRON smart contract, Zethyr Trust cannot be tampered by anyone including Zethyr developers. Each transaction with Zethyr Trust is recorded on the TRON blockchain, providing absolute transparency to everyone and signed with a unique private key, unbeknownst to everyone, including Zethyr developers. The combination of transparency and unique private key provides every transaction utmost security, safety and transparency.

Except during matching and settlement, your asset is always safe in your wallets. So, there is no point even if any alien intrudes Zethyr.

Each user account is handled by a separate smart contract to prevent a single point of failure and maximise user protection.

d. Zethyr Token (ZTR)

ZTR can only be mined with trades on Zethyr; there is no private or public sales of ZTR. The number of minable ZTR is controlled so that the intrinsic value of ZTR appreciates according to trading volume. Trading on Zethyr rewards users with ZTR, encouraging high transaction volume. The initial use cases of ZTR are explained towards the end of the white paper.

e. Free Trading with TradingPower

Traders can enjoy free daily trading quota by staking their ZTR to TradingPower. Without the free trading quota, the transaction fee is 0.1 percent, one of the most competitive fees out there. The competitive fee encourages more trades on the platform while provides financial incentive for ZTR holders to grow the community.

f. 100 Percent Revenue to the Community

ZTR holders can enjoy daily dividends by converting their ZTR to EcoPower. 100 percent of the exchange revenue is distributed weekly via dividends.

g. Cross-chain Trading

Zethyr will support trading not only on TRON but also on multiple other networks with smart contracts such as Ethereum and EOS.

h. Referral Programme

Users can receive up to 40% of referrals' trading fee in real time with EcoPower.

3. Roadmap

a. On-chain TRON Trades

Estimated delivery: September 2019

This feature is self-explanatory. The technical details of the native liquidity network can be seen below. A Zethyr protocol will be developed so that every TRON developers can integrate Zethyr's liquidity pool to their Dapps. This major development will create a seamless liquidity flow across all the TRON dapps.
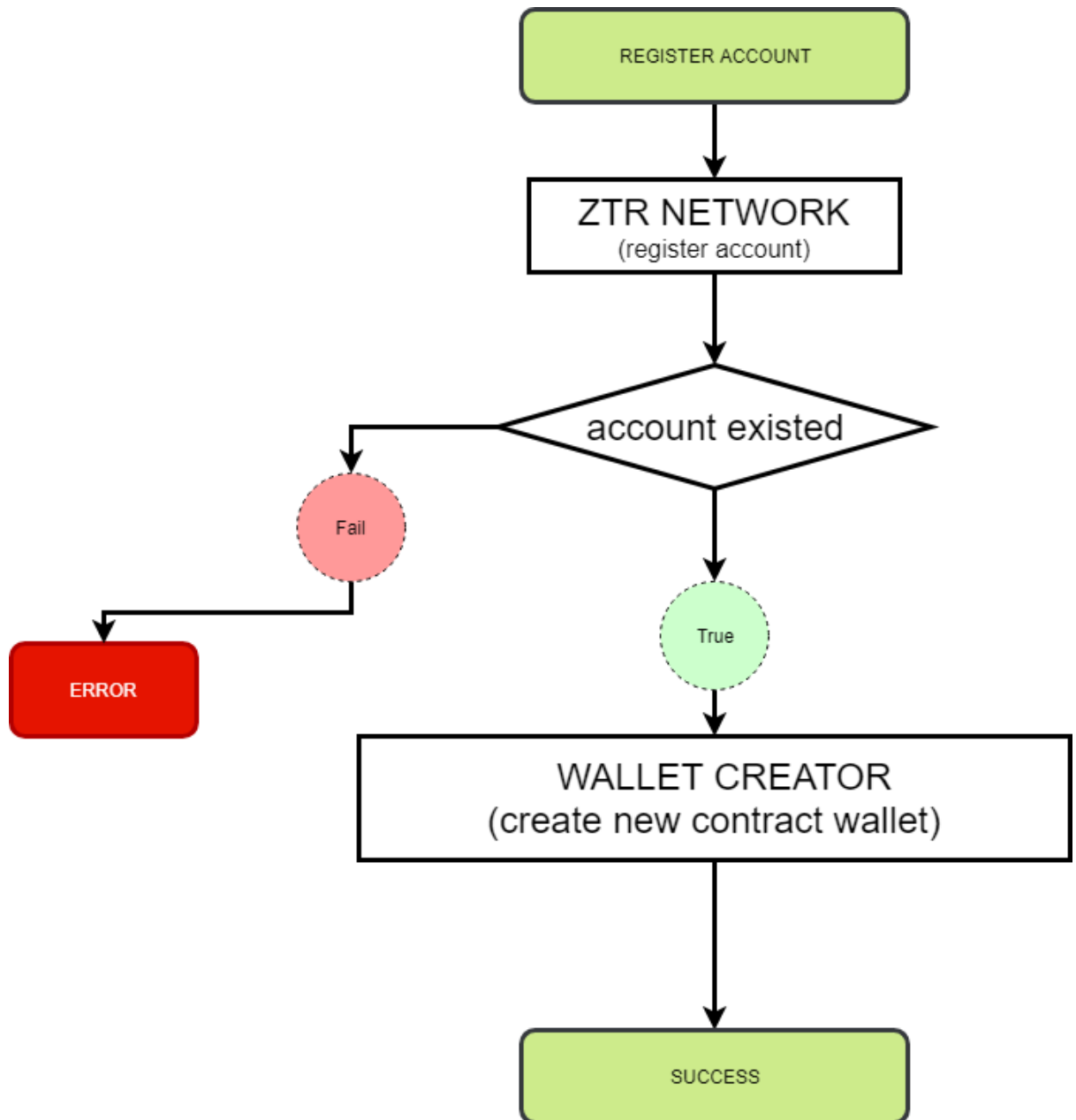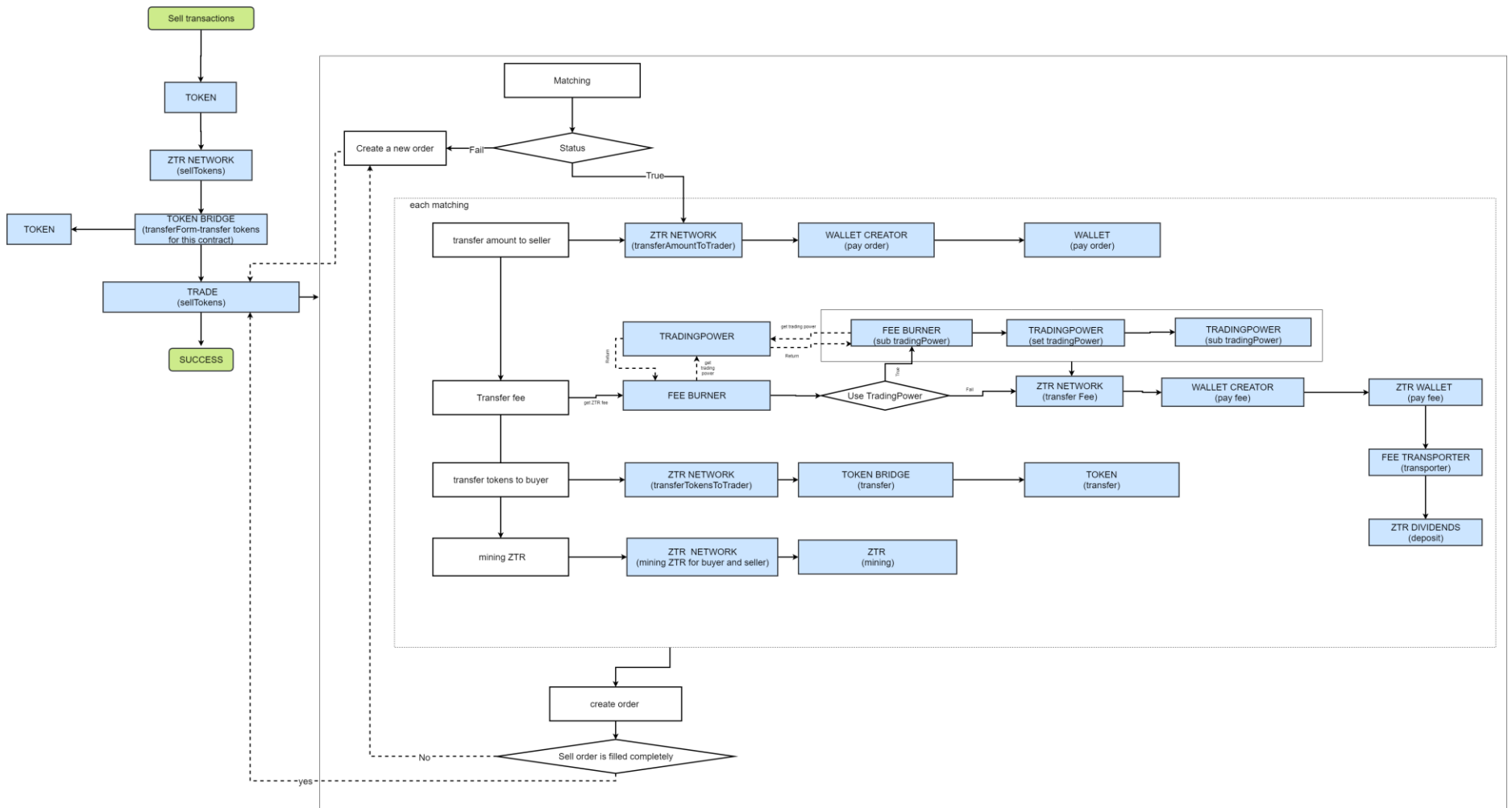

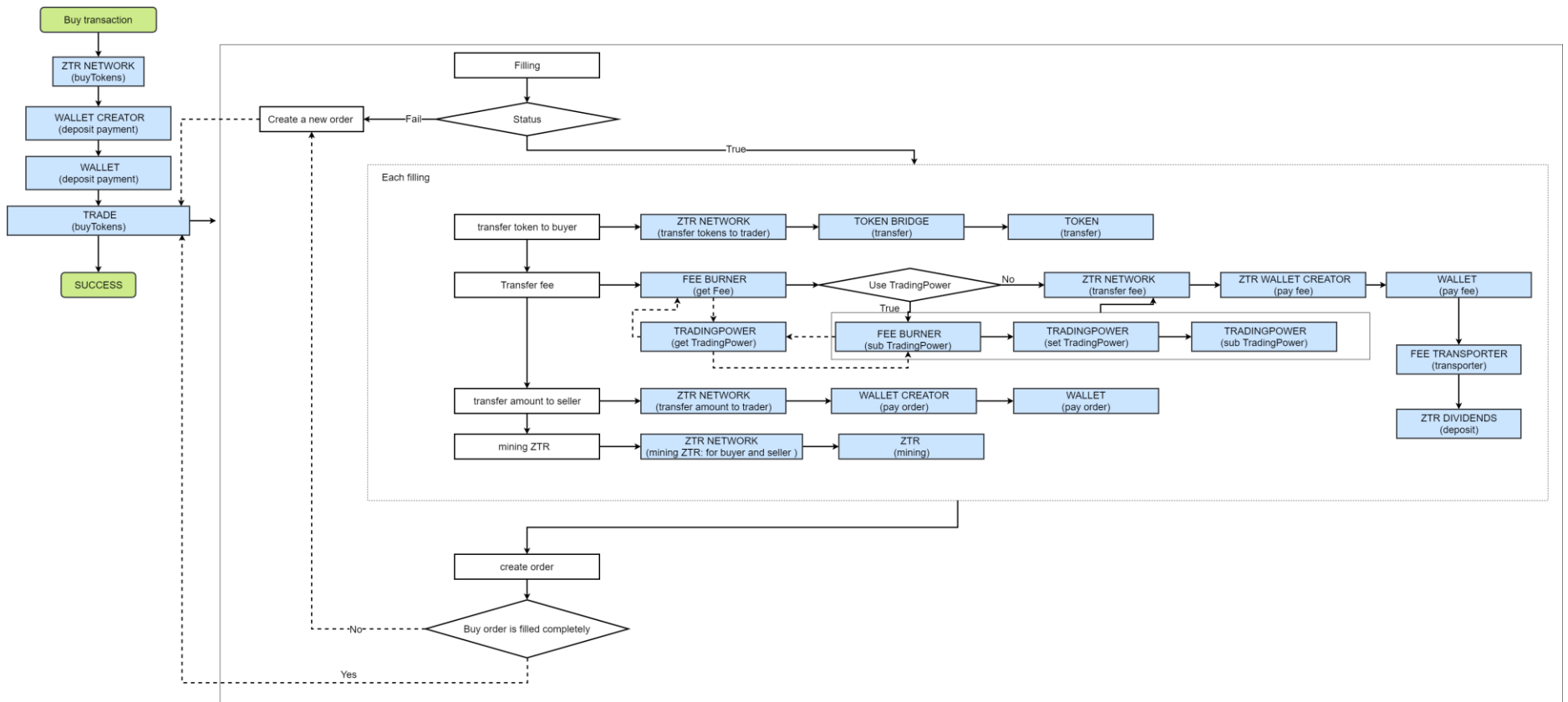*Figure 1: Registration flow*

Figure 2: Sell-token flow

Figure 3: Buy-token flow

b. Cross-chain Trades

Estimated delivery: End of Q4, 2019

Based on the past works of Kyber Network, PeaceRelay and Waterloo, Zethyr envisions an interconnected and decentralised liquidity network across blockchains which supports smart contracts, with the TRON blockchain at its centre.
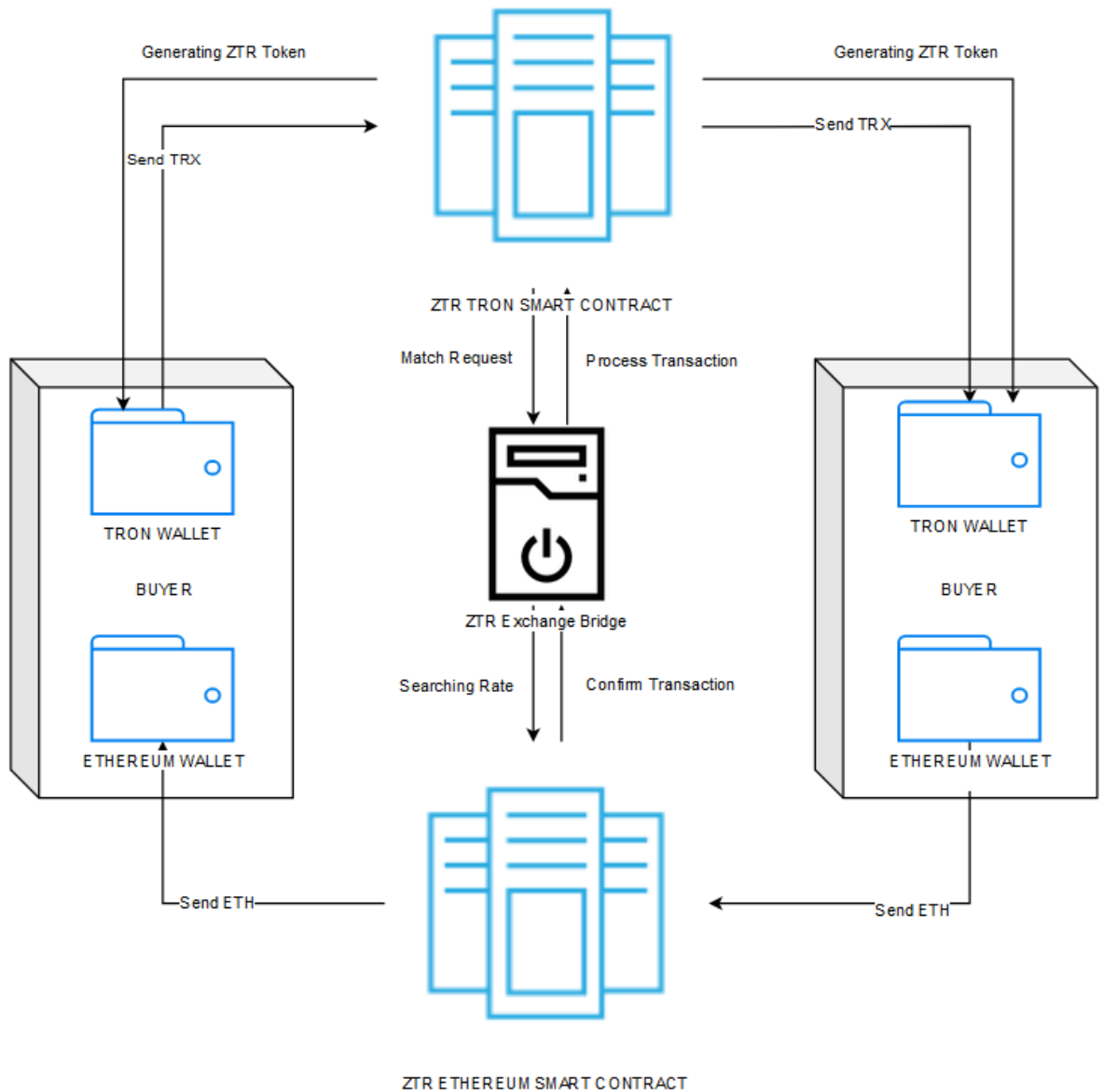

Figure 4: Cross-chain relay architecture between Tron and Ethereum

For each additional blockchain joining the Zethyr liquidity network, we will deploy a native Zethyr liquidity network there first. Then, we will use relays to connect the chains and exchange value across them.

At the same time, we also welcome other decentralised exchanges, Dapp developers or token teams to use our implementation standards to connect to our Zethyr network and enhance their ecosystem's liquidity.

c. Non-fungible Token Trading

Estimated delivery: To be confirmed

One unique feature of Zethyr compared to other exchanges is that it will support trading of TRON non-fungible tokens. Sellers can manage their own stores, set their own prices and get stats and insights of their items. For Dapp developers, Zethyr will support airdrops and loot boxes to gamify your applications. With the Zethyr protocol, TRON Dapp developers can integrate Zethyr's non-fungible token liquidity pool into their Dapps, improving their user experience and token values.

Once cross-chain trades are supported, trading of non-fungible tokens across chain will be available as well.

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4. ZTR

a. Acquisition of ZTR

ZTR is the native token of Zethyr exchange and can only be mined with trades; there is no private of public sales of ZTR. Therefore, the number of circulating ZTR reflects the true trading activities of the exchange and the intrinsic value of ZTR will increase over time.

b. Mathematical Models

The total supply of ZTR is fixed at 100 million. The token generation follows an infinite mathematical sequence:

$$S = 1M * 0.99\,^\wedge\,0 + 1M * 0.99\,^\wedge\,1 + 1M * 0.99\,^\wedge\,2 + 1M * 0.99\,^\wedge\,3 + 1M * 0.99\,^\wedge\,4 + \ldots = 100M$$

Each term in the summation represents the total number of ZTR generated within the same difficulty level. The next mining difficulty is achieved after a predetermined number of ZTR is added to the circulating supply.

$$Number\ of\ ZTR\ in\ difficulty\ level\ n = 1{,}000{,}000 * 0.99^{n-1}$$

$$Mining\ 1\ ZTR\ in\ difficulty\ n\ requires\ trading\ \frac{7{,}300{,}000{,}000}{1{,}000{,}000 * 0.99^{n-1}}\ TRX$$

Therefore,

Difficulty Level	Number of ZTR	TRX Traded/ZTR
1	The first 1 million ZTR	7,300
2	The next 990,000 ZTR	7,374
3	The next 980,100 ZTR	7,448
4	The next 970,299 ZTR	7,523
5	The next 960,596 ZTR	7,599
6	The next 950,990 ZTR	7,676
7	The next 941,480 ZTR	7,754
8	The next 932,065 ZTR	7,832
9	The next 922,744 ZTR	7,911
10	The next 913,517 ZTR	7,991
…		

For every 1 ZTR mined by trading

- 0.2 ZTR is distributed to the development team
- 0.1 ZTR is distributed to marketing fund
- 0.1 ZTR is distributed to the SAFU fund to offer protection to our users and their funds in extreme scenarios

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5. Token Usage & Staking

Depending on the need of each user, he may choose to use his ZTR for different purposes. Users can stake ZTR to gain EcoPower, TradingPower and VotingPower at the ratio of 1 to 1. Once staked, ZTR requires 72 hours before it can be unstaked.
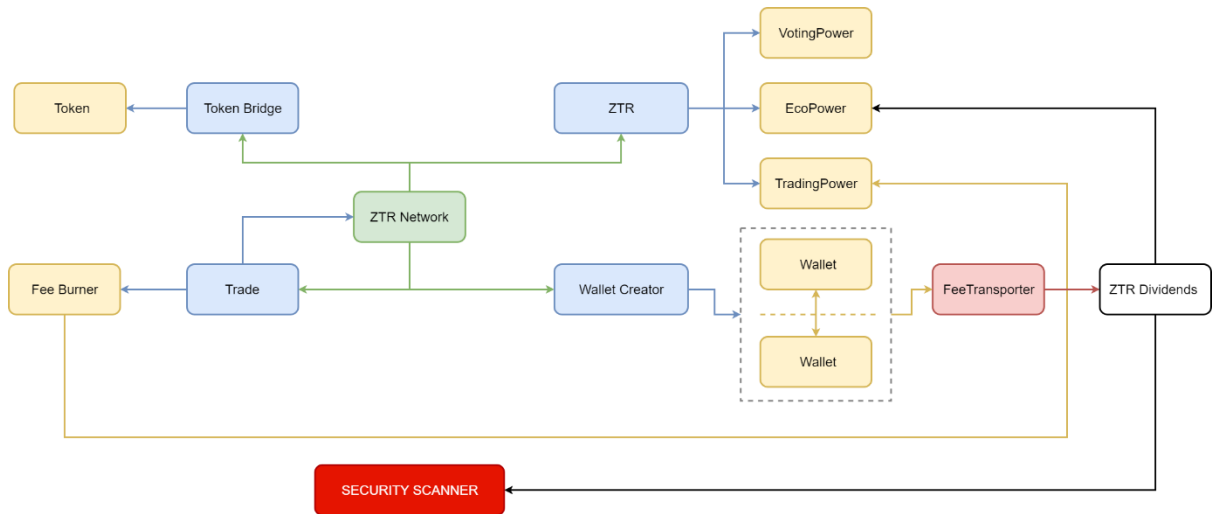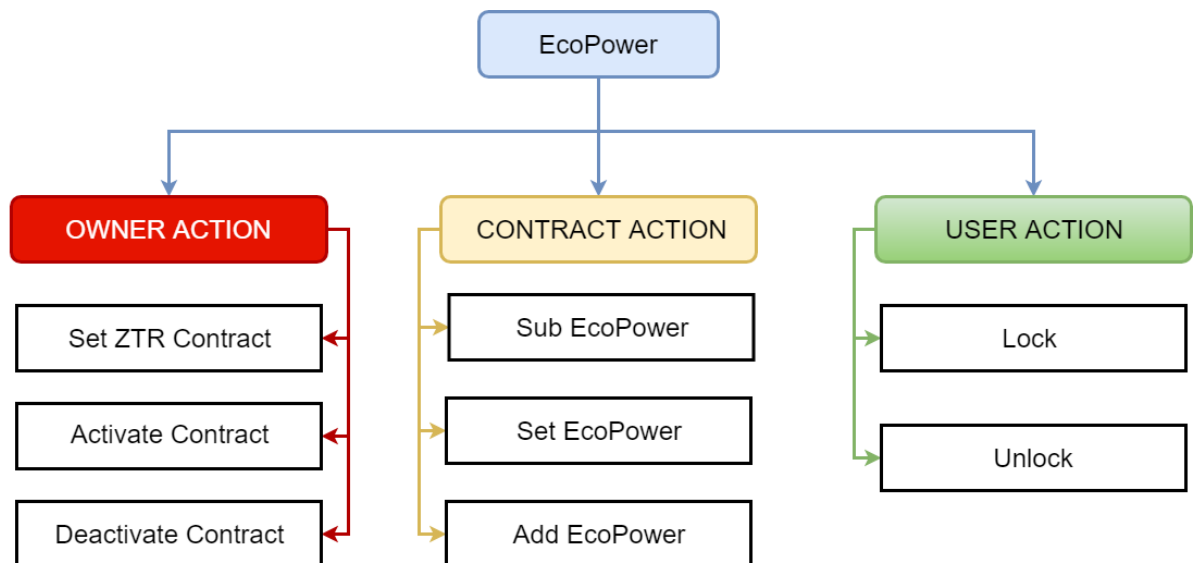

Figure 5: Token usage

a. EcoPower

EcoPower is for token holders who would like to passively enjoy the economic benefits from the exchange. ZTR holders can stake their ZTR to EcoPower at the ratio of 1 to 1.

Note:

1. TradingPower and VotingPower have same action as EcoPower
2. Activate Contract: add contract to list of allowed contracts
3. Deactivate Contract: remove contract from list of allowed contracts

Figure 6: EcoPower usage

The first use case of EcoPower is to give holders weekly dividends. The amount of dividend received by each holder will be proportional to his EcoPower and calculated at the end of every day, Eastern time. The daily dividend is accumulated and claimable by the end of every Sunday, Eastern time. 100 percent of the exchange transaction fee is distributed via dividends. Users can retrieve the original number of ZTR by unstaking their EcoPower. Once ZTR is unstaked, holders will not enjoy any dividend. The amount of dividend is only calculated at the end of every day, Eastern time; therefore, if users unstake their EcoPower before the end of the day, they will not receive any dividends for the day.
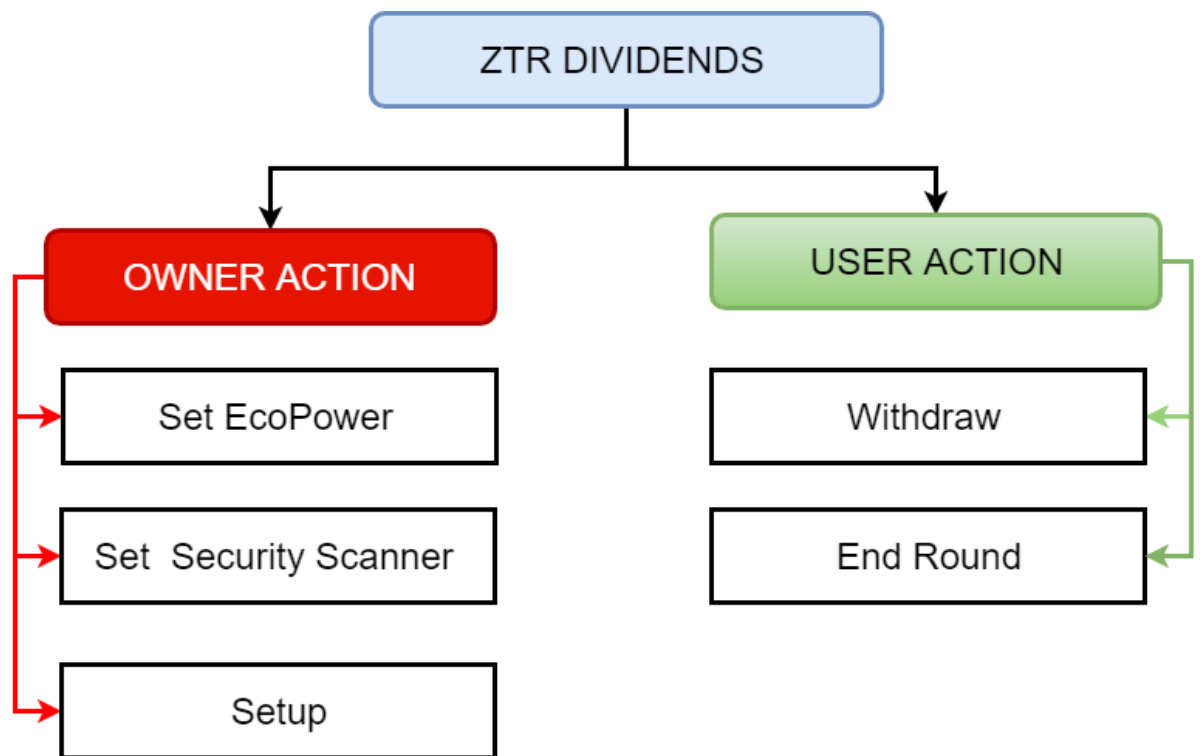

Figure 7: ZTR Dividends

The second use case of EcoPower is to increase referral fee. Without EcoPower, users receive 20% of their referrals' trading fee in real time. If users hold at least 500 EcoPower, they will enjoy 40% of their referrals' trading fee instead.

More use cases for EcoPower will be added in the future.

b. TradingPower

TradingPower is for token holders who would like to enjoy maximum trading benefits from the platform. ZTR holders can stake their ZTR to TradingPower at the ratio of 1 to 1.

Normally, the trading fee is 0.1%. However, if users convert their ZTR to TradingPower, they can enjoy daily quota of free trading. At any given time, the entire exchange handles a fixed quota of free trading, which is determined by VotingPower holders. The ratio of free trading quota of an account to that of an entire exchange is equal to the ratio of the account's TradingPower to the total TradingPower across the exchange at that time.

$$\frac{Your\ TradingPower}{Network\ TradingPower} = \frac{Your\ daily\ quota\ of\ free\ trading}{Network\ daily\ quota\ of\ free\ trading}$$

Therefore, the free trading quota of a given amount of TradingPower may change over time.

c. VotingPower

VotingPower mostly concerns the governance of the exchange. Zethyr holders can stake their Zethyr to VotingPower at the ratio of 1 to 1. With VotingPower, one can vote for the next pair to be listed on the exchange, the fixed quota of free trading, the next technical improvement of the platform, etc.

Voting of each change is conducted via a smart contract. 7 days before the actual voting takes place, Zethyr Exchange will announce the change details. A change is approved if more than half of the network VotingPower at the end of the voting favours the change. Note that the network VotingPower may vary as a voting takes place. Only network VotingPower at the end of the voting counts. Empty votes are considered not in favour of the change. As VotingPower is used for voting, that VotingPower cannot be unstaked until the voting is over. If more than one voting happens concurrently, the same VotingPower used in one voting can be used for another. For example, if you have 100 VotingPower, you use 20 VotingPower for voting A and 10 VotingPower for voting B, you can unstake the remaining 80 VotingPower while the votings are happening.

d. Further Use Cases

More use cases will be added in the future, but they will mainly fall into one of the 3 categories above.

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