GOLD · IØ

GoldPaper v1.0

INTRODUCTION

GOLD.IO is a Decentralized Autonomous Exchange (DEX)[1] based on EOSIO. As a Decentralized Autonomous Community (DAC), GOLD.IO's open democracy is achieved through complete on-chain governance. More specifically, GOLD.IO functions entirely through smart contracts that are independent and goal oriented, created by the people in the system who share similar visions about the future and are willing to adhere to common rules, all distributed across distinct locations around the globe through copies and backups.

Our vision is to create a self-governing market system wherein its participants decide upon those projects that deserve their attention and support. In its inception, GOLD.IO will be an exchange where digital assets related exclusively to GOLD.IO are listed. It is our belief that by utilizing EOSIO's infrastructure and leveraging existing DLT solutions we will create communities that eliminate all principal-agent problems and ultimately create a more efficient GOLD.IO market.

THE ISSUES

Centralized and legacy decentralized exchanges (e.g. Ethereum based) suffer from a number of issues. A summary of these issues is provided below and in the next section a description of how these problems are resolved by GOLD.IO is laid down[2].

Centralized Exchanges

1. Vulnerability to malicious attacks.

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[1] Formerly known as Decentralized Autonomous Corporation and Decentralized Autonomous Organization.

[2] A discussion on the problems of hybrid exchanges (e.g. most often centralized orderbook and matching with decentralized settlement) is avoided for the sake of brevity and in light of GOLD.IO's vision.

2. Ability to obscure critical market information, shut down (in the past often without prior notice), and freeze deposits and withdrawals.

3. Users are required to entrust their wealth to a custodian.

4. Clients have to provide their personal details.

5. Often high trading and withdrawal fees.

6. Ability to list assets for a fee (often exuberant) and delist them at their discretion.

7. Ability of the operator to execute trades on the exchange before their clients (front-running).

8. Ability of the exchange to use their clients' holdings.

Decentralized Exchanges

1. Validation time lag also causing distorted incentives for miners[3].

2. Fixed transaction fee (independent of transaction size).

3. Lack of efficient inter-chain communication.

4. Pairing to fiat is missing.

5. Centralized hosting (e.g. EtherDelta hack).

This is by no means an exhaustive list (regulation is another topic), nonetheless it provides an idea of the myriad of risks and drawbacks inherent to centralized and decentralized exchanges.

GOLD.IO DEX

Solving the Issues of Centralized Exchanges

The distributed nodes framework ensures that hacks are prevented and downtime is brought to zero. The risk of regulatory interference is also eliminated while privacy is ensured as no documents are required participate in the exchange process. Naturally, all custody issues are resolved as the users have full control over their funds, which are

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[3] Placing large orders before those previously confirmed due to long confirmation times.

being kept in their own addresses. Finally, any trade on the exchange is verifiable through the public blockchain.

In the next section, a thesis is laid down of how the DAC design resolves an array of agency issues immanent to centralized exchanges and unresolvable by the traditional setup of decentralized exchanges.

Solving the Issues of Decentralized Exchanges

At GOLD.IO, orderbook, matching, and settlement are entirely on-chain supporting also sophisticated order types beyond market and limit. EOSIO's block confirmation time of about half a second allows for this type of design, of a completely decentralized exchange. EOSIO has no transaction fees effectively setting the default withdrawal and trading costs to zero. These features solve the majority of the issues related to DEXs described in the previous paragraph with the exception of fiat pairs, centralized hosting, and most importantly inter-chain communication.

Interoperability between chains allows for cross-chain transactions usually achieved through atomic swaps and payment channels. Having this interoperability, the listing of stablecoins based on any blockchain is possible effectively solving the problem of lack of fiat pairing to a large extent. In other words, users will be able to use a stablecoin as a "hedge" in times of substantially large market volatility and have the convenience of fiat denomination.

Centralized hosting is naturally avoided by the design of GOLD.IO where the block producers of a sisterchain are geographically dispersed. If a sisterchain ceases to function then the operations of the DEX are temporarily transferred to the EOSIO blockchain or another sisterchain.

Finally, the instantaneity of exchange prevents the possibility of having a trade broadcasted to the chain and unconfirmed while miners take advantage by executing their own trades ahead of the rest. Having these issues resolved will also promote liquidity as the most traded pairs on centralized exchanges are those with a stablecoin or fiat.

THE DAC

The GOLD.IO community will self-manage the majority of the operational aspects of the exchange process through the pre-established smart contract functionality. In other words, to eliminate the agency issues inherent to centralized exchanges voting will take place, among others, initially with regard to:

1. Trading fee (the default as noted are zero) setting is determined by the community with minimum and maximum bounds.

2. Setting up pre-trade risk controls.

3. Designing listing and delisting policies.

4. Deciding on withdrawal and deposit minimum and policies.

5. Fee for "unlocking" airdropped tokens – amount and frequency.

6. Matching engine mechanics.

7. Creating auctions' policies.

8. Locking, unlocking, and creation of order types beyond market and limit.

This self-governance design allows the community to steer the direction the exchange system takes by optimizing the decisions of individual value-maximizing agents. The capital will be used fairly and trustlessly once consensus among the majority of the community members is reached and is believed that that capital is put to its most productive use from community wellbeing standpoint.

Proposals for capital distribution and for voting on decisions of the operating structure of GOLD.IO are put forward by the community. Before mainnet launch, voting for changes occurs every three months and requires the vote of at least 51% of the community to reach consensus, otherwise no changes are made.

The community is responsible for electing the block producers. Initially a total of 5 block producers will be chosen. Every three months the community will vote whether to add more block producers[4].

Arbitrators are elected by the community, and facilitate the processes of dispute resolution such as recovering account/private key when unforeseen circumstances caused the participant in the GOLD.IO ecosystem to lose them. The community will vote on issues such as the number of elected arbitrators[5], the costs one will incur for filing a case with them, and remuneration. If the community fails to cast the vote the block producers will have to vote by the power of 2/3+ consensus rule.

The GOLD.IO Social Code, the GOLD.IO Block Producer Accord, the GOLD.IO Arbitration Committee, and all further documents pertaining to establishing a just and community-focused ecosystem will be published by November 13, 2020. Amendments to the aforementioned will be made only when community consensus or block producer consensus is reached.

SIDECHAINS

Initially, one sisterchain will be established where the full functionality of the DEX will be "hosted". As noted, multiple sisterchains are to be established in the future for the different parts of the exchange - e.g. orderbook updating, matching, settlement - and should the community decide, in the future, each process within the exchange will be transferred on chain.

If one of the sisterchains ceases to operate, its functions will fallback either to the EOSIO blockchain or to another sisterchain. Multiple sisterchains that communicate between each other and EOSIO with similar capacity, and initially governed by congruent social codes (constitutions), should achieve decentralized modularity while preserving security of each sidechain.

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[4] The community will be able to add block producers each three months (each succession) in accordance with the closed form expression for the Fibonacci sequence. In other words, the number of block producers that can be selected during each voting is determined by where φ is the Golden Ratio with initial value of nequal to 5: $BP(n) = (\varphi^n - 1/(-\varphi^n))/\sqrt{5}$

[5] A minimum of 3.

The future multi-sisterchain design promotes inter-chain competition and discourages collusion as well as token concentration within few addresses. Every sisterchain community will be a rival to every other in terms of governance and will strive to the be the most "attractive" one for DApps development. Effectively, a net of similarly functioning and easily substitutable sisterchains that strive to improve their "offering" is expected to emerge. This ecosystem should tend to form a perfectly competitive market for exchange-focused sisterchains, each of which specializing in particular module of an exchange. In turn, an exchange system will be created, where one is able to choose and switch costlessly between the components that operate best together in rivalry with tendency towards decentralization.

REDISTRIBUTION

A portion of the fees generated from the trading activity on the exchange will be re-distributed back to the community in various forms.

1. On quarterly basis 21% of the fees collected every month (from other than the trades against GOLD.IO) will be used to buy back on the open market the airdropped tokens during the funding campaign.

2. Every month another 21% of the fees (from other than the trades against GOLD.IO) will be set aside in a charity fund which on quarterly basis will be utilized to support one or multiple projects listed subject to community voting and approval.

3. The remainder will be apportioned towards the Workers' Proposals fund who put forwards what the community can vote on.

AIRDROP

An airdrop on EOSIO will be made in accordance with the following schedule and dates.

Airdrop Phase	Claim Fee	Airdrop	Tokens Airdropped	EOS	Fee Type	Airdrop Date
Seed	3.236%	20%	429,560,186	4,633,620	Fixed	Feb 13, 2019
I	3.246%	11%	236,258,102	2,556,366	Fixed	Jul 28, 2019
II	3.256%	13%	279,214,121	3,030,467	Voting	Sep 1, 2019
III	3.266%	21%	451,038,195	4,910,405	Voting	Oct 6, 2019
IV	3.276%	22%	472,516,205	5,159,984	Voting	Nov 10, 2019
V	3.286%	13%	279,214,121	3,058,389	Voting	Dec 15, 2019

On each of the addresses for every EOS token three GOLD.IO tokens will be airdropped[6]. During the Seed phase there will be ~3.236% fixed fee for claiming the tokens. The Seed phase is aimed at collecting 4,633,620 EOS. In Phase One the fee for claiming is ~3.246%, this fee is fixed. In the Phases that follow, the fees and the airdrop will be determined based on the voting of the existing community. The first date of voting is September 3, 2019 and all subsequent dates are also subject to vote. In other words, the airdrop phases can be extended indefinitely, their frequency can be set at the discretion of the community, and fees can be set within the defined boundaries[7].

If the GOLD.IO airdrop remains unclaimed between the date of the airdrop and the subsequent airdrop date they are locked and the community will have to vote for their unlocking after the airdrop campaign has done. With every day the tokens remain locked, 0.21% will be burned[8].

Use of Funds

Legal, **1%**

Marketing, **2%**

Team, **10%**

Operations, **34%**

Development, **53%**

The majority of the funding is allocated for development and operations as the

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[6] Excluded addresses include those related to EOSIO and BlockOne (e.g. "b1") and the ones with 10 or less EOS.

[7] The lower boundary is 3.105% and the upper boundary is 3.70642%

[8] It would take 330 days for any balance of GIO to halve given that none of it is claimed in that time.

products' initial development (testnet) deadline ends on August 17, 2019 when a fully functioning exchange system and voting structure are available. The 10% funding retained by the team will be used for talent acquisition, business development, and compensation.

In dependence with the amount of tokens claimed and in dependence with the amount of tokens that the community received during the funding rounds, we will always strive to maintain a ratio of 1 to 10 in terms of team's share of total supply of tokens. In other words, we will burn the total supply of team tokens, if necessary.

CONCLUSION

GOLD.IO benefits the its block producers, developers, and community in a profusion of ways. Block producers are remunerated in a more egalitarian approach than the reward structure that one observes in other blockchains. Planned downtimes for each block producer and frictionless switchover between sisterchains will promote competition and the formation of a system where the efficiency with which resource allocation is made improves over time time. Developers will face a much more competitive market for DApps, however, they will also experience significantly lower costs for development, higher degree of inter-chain compatibility, higher security, and virtually no network interruption due to the costless transition across chains.

The voice of the GOLD.IO community has a much farther reaching impact on the ecosystem due to the fact that one is granted with the power to vote on a myriad of issues apart from selection of block producers and arbitrators. Having the ability to cast one's vote on matters regarding the specifics of each sisterchain (e.g. listings, fees, trade controls, barriers to integration) allow for clear delineation of demands of every community. Ultimately, these disparate groups are able to convey transparently their needs to developers and block producers each of which will strive towards most optimal solutions and will tend to create a perfectly competitive market for DApps in the gold and exchange industries that maximizes the wellbeing of all GOLD.IO token holders.