

Contract Exchange White Paper

Build a diversified international financial ecosystem for the circulation of digital assets

Glaytos Digital Assets Inc

We will build a diversified international financial ecosystem



Summarize

As the underlying technology of blockchain rapidly develops and traditional financial institutions continue to enter the market, the acceptance and public awareness of related concepts are steadily increasing. The rise of DEFI has further promoted the integration of blockchain decentralization with innovative financial models, enhancing the liquidity of digital assets. With a significant increase in market value, digital asset trading has become extremely popular worldwide. In early 2017, the global average daily trading volume of digital assets was less than \$200 million, but this figure surpassed the \$300 billion mark in 2021. As of now, according to data from non-trivial accounts, the total market capitalization of global digital assets exceeds \$2 trillion, with a total transaction volume exceeding \$330 billion. The total lock-up amount for DEFI is close to \$50 billion, and the holdings of Grayscale Funds exceed \$40 billion. These figures all highlight the enormous potential for development in the digital asset market.

As the blockchain market rapidly expands, more investors will participate in digital asset trading, leaving significant room for growth in trading platforms. At the same time, with the increasing activity in the digital asset trading market, there is a growing demand for fair pricing of digital assets, exchange transactions between different types of digital assets, as well as related customer service, regulatory compliance, and even derivatives trading. However, existing exchanges also face certain issues that need to be addressed urgently.

We believe that digital asset trading platforms should have the capability and responsibility to lead this transformation. They should also continuously upgrade their technology and optimize their business models from within. Therefore, under the leadership of the Glaytos Foundation, we have established the Glaytos Contract Exchange. Our goal is to build a community self-governing organization with high ownership attributes through the establishment of a digital asset derivatives exchange platform, to construct an Glaytos digital asset trading service ecosystem and drive global change.





The emergence of digital currencies like Bitcoin, Ethereum, and USDT is shaking the traditional monetary and financial systems with a sweeping force. Although blockchain technology is still in its early stages of development, its more transparent and open concepts and mechanisms have already demonstrated incredible vitality. This will drive changes in corporate governance and regulatory structures in the future. We believe that this transformation will see companies evolving into communities and regulation aligning with technology. Digital asset trading platforms themselves possess both the capability and responsibility to lead this change.



The digital asset trading platform itself possesses the capability and responsibility to lead this transformation. Based on this, Glaytos Exchange, drawing on the strengths of various platforms, has issued the Glaytos platform coin, redefining traditional concepts such as assets, currency, investment, and trading. At the same time, users can leverage the ecosystem established by Glaytos Exchange to achieve highly trusted value transfer and exchange through a comprehensive set of centralized and decentralized mechanisms built on the chain using Glaytos.



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Chapter 1 Analysis of the current situation of industry development

In just a few years since the advent of Bitcoin in 2009, blockchain and digital currencies have seen rapid development. Digital currency exchanges, which provide liquidity for digital currency assets and the need for matchmaking, have also grown. More and more people are flocking to the digital currency market, pushing up the price of Bitcoin. Meanwhile, the number of digital currency exchanges is increasing and they are getting larger and larger, becoming an important force supporting the market's market value of hundreds of billions and exerting a huge influence.

As one of the most important circulation links in the entire cryptocurrency market ecosystem, exchange platforms have an irreplaceable and significant position. The most important role of an exchange is to deliver the value of the project's crypto to all investors, which are closely connected to each other.

1.1 Types of existing exchanges

Conceptually, a digital currency exchange is a platform that allows traders to buy, sell, exchange digital currencies and provides liquidity services for them. Initially, exchanges were centralized exchanges, but as the digital currency market grew in capacity and the demand for exchanges increased, the form of exchanges gradually evolved. According to the degree of centralization, exchanges can be divided into two forms: centralized exchanges and decentralized exchanges.





- Centralized exchange: When users buy or sell digital currencies, they need to deposit the digital currency or fiat currency into the exchange, which will hold the users' funds, provide liquidity supply for the digital currency, and carry out matching transactions, settlement and clearing processes. The exchange also provides channels for depositing and withdrawing fiat currency, as well as investment and financing services.
- Decentralized exchange: Users' funds are kept in their personal wallets, the exchange is only responsible for providing digital currency liquidity, the matching of transactions is done by smart contracts, and the final settlement, clearing, etc. are carried out through (or partially through) the on-chain network, ensuring the openness and transparency of transactions.

1.2 Contract exchange market competition landscape

What is a contract? A contract is a derivative of a digital asset. Users can take advantage of the rise/fall of the digital asset's price by judging whether it goes up or down and choosing to buy long or sell short contracts. Contracts use a spread settlement model. When the contract expires, all open positions are closed at the arithmetic average of the index price in the last hour instead of being physically settled.

- Based on the judgment of future market conditions, transfer into margin of open position;
- Agree under what conditions to execute a buy or sell operation;
- When market conditions are met, the execution is triggered and profits are made immediately.

Since the bull market broke out in 2017, the digital asset market has gradually developed a clear head effect, and the futures contract market is no exception. Binance, Huobi, and OKEx account for half of the market's trading volume. As of



now, against the backdrop of BTC breaking record highs, the leading positions of the three exchanges have remained unchanged.

However, it cannot be ignored that a large number of medium-sized derivatives exchanges are also experiencing explosive growth. Compared with the giants, medium-sized exchanges are focusing more on building their own vertical and marketing advantages, especially on competing in the contract market, and are gradually changing the market landscape.

Innovative derivatives trading models, or the expansion of the types of derivatives they operate, or the diversity of their business models, have gradually given rise to a variety of medium-sized derivatives exchanges in the market, and several exchanges have focused on developing the market and successfully broken through the shackles to become "new giants" in the contract market. Trading data can even rival those of the big three exchanges.



1) Overview of the contract market

Contract volume in 2021 is expected to exceed 10 times the total volume for the entire year of 2020, with all indicators hitting new highs. As of early April 2021, the trading volume of contracts on the 50 exchanges we tracked through data in the digital asset derivatives market in 2021 reached \$13.4 trillion, with perpetual contract trading volume alone surpassing the total derivatives trading volume for the entire year of last year (\$12.314 trillion), driven by the bull market frenzy. On April 18 alone, BTC plunged by \$10,000, and the trading volume of contracts reached a new high of \$300 billion.

Meanwhile, in such a bull market environment, there is an interesting statistic: according to statistics, the number of contract users exceeded that of spot users in April 2021. This indicates that a significant portion of users first entered the industry through contract trading. The popularity of contract education and the acquisition of customers by pure derivatives exchanges have reached an



unprecedented level.

2) The competitive landscape of exchanges

In terms of volume, the top three exchanges (Binance Futures, Huobi Futures, OKEX) accounted for 53.79% in the first quarter of 2021, while medium-sized exchanges combined accounted for 34.54% of the market's total volume. For the remaining small and medium-sized exchanges and decentralized exchanges, Platform stability is a cause for concern.

It is notable that among the contract exchanges in the first quarter of 2020, mid-sized exchanges developed and followed the Big Three. In 2021, mid-sized exchanges all had quarterly trading volumes of over \$800 billion, having already surpassed mid-sized and met the conditions to become large exchanges. Given the rapid development and iteration of the derivatives market, mid-sized exchanges have the potential to break through in the future.

There are various strategies for medium-sized derivatives exchanges to achieve scale breakthroughs, which can currently be classified into three categories: innovative derivatives trading models, expanding the types of derivatives they operate, or diversifying their business models. For mid-sized derivatives exchanges, focusing on the experience of mainstream trading pairs is relatively effective for expanding their trading volume. The possible reason is that the depth and price credibility of mainstream trading pairs are the basis for all types of acceptance and also a barometer of industry trends. Although mainstream digital asset trading pairs are relatively mature, for exchanges, whether it is clearing, matching, trading or risk control, doing well in mainstream currency contract trading is still a demonstration of the exchange's basic technology and capabilities.



1.3 Drawbacks of the mainstream market model

At present, centralized exchanges remain the main force in the cryptocurrency trading market, especially the leading exchanges, which have formed an oligopoly and attracted the vast majority of traders, project parties, and funds in the crypto circle. According to statistics, the top 20 exchanges account for 40-60 percent of the total trading volume of the digital currency market. The reason for this is that centralized exchanges offer a good trading experience for users, providing efficient trading speed, good trading depth, the number of currencies and market activity, and providing sufficient trading liquidity for the market. But there are also some significant risks and problems with existing centralized exchanges, which are mainly manifested as follows:



- Asset security issues: On some exchanges, users' funds are all held within the exchange, making them vulnerable to security incidents such as hacker attacks or theft by internal personnel, which can lead to the theft of cryptocurrencies. Additionally, some security vulnerabilities in token smart contracts can be exploited, resulting in financial losses. In recent years, exchange security incidents have occurred frequently. Mt.Gox, Poloniex, Bitstamp, Bitfinex, Bithumb and others have all suffered security problems, which are significant losses for both trading platforms and ordinary users.
- Lack of trust and transparency: In theory, trading platforms cannot avoid various platform security issues such as hacking and coin theft. They can only avoid security issues as much as possible by strengthening security protection and technical means, through a high-intensity risk control system,



to protect users' accounts and assets. At the same time, transaction costs and processes are opaque, making it very easy for false trading volume, malicious market manipulation, arbitrary modification of trading rules and other behaviors to occur, seriously damaging the legitimate rights and interests of traders.

- High listing fees: Project parties usually need to pay listing fees when listing on the exchange after crowdfunding is completed. Previously, the listing fees for the first few issues of Huobi were as high as tens of millions of RMB, equivalent to 1/10 to 1/5 of the funds raised by the project team, and the listing fees would eventually be passed on to the traders through token transactions.
- Government regulation: As the digital currency market heats up, countries have stepped up regulation of the digital currency market, and exchanges are facing issues of legality and legal risks. On the one hand, exchanges are vying for market share, and on the other hand, they are applying for legal licenses from various countries.

1.4 The birth of Glaytos

In response to the existing drawbacks of exchanges in the contract market, Glaytos exchange has gradually come into the public eye because of its excellent pain point resolution and the advantages of being secure, stable and efficient. On Glaytos, users have absolute control over their assets, the exchange is only responsible for providing digital currency liquidity, the matching of transactions is done by smart contracts, and the final settlement and clearing are carried out through the on-chain network, ensuring the openness and transparency of transactions and significantly reducing the trust cost for users in the exchange.





Chapter 2 Overview of the Glaytos Exchange

2.1 Introduction to Glaytos Exchange

Glaytos Exchange was initiated by the Glaytos Foundation and built on the DYN chain as a contract trading platform. Its experience includes free trading of digital currencies, coin-to-coin trading, fiat trading, cycle contracts, leveraged contracts, perpetual contracts, financial investment and wealth management, deposit lending, leasing, sales of various mining machines, etc. It is traded by Global Finance International 518 contract. Chengdu Jutu Computing Power Effective Company, Chain Capital, Code Finance, jointly created by Chinese and foreign partners, is committed to becoming a first-class international financial asset service and DEFI value ecosystem.

The birth of Glaytos exchange will enable the complementarity of advantages among multiple system models under the existing exchange form, thereby creating an autonomous, secure and compliant blockchain digital asset derivatives trading platform, providing users with a perfect trading experience, allowing institutional and individual investors to trade at any size and any frequency with confidence. There is no need to worry about the fairness and security of the trading platform, the privacy of user data, the transparency of platform rules, the stability and reliability of trading systems.

Glaytos creates the most convenient one-stop service for global digital asset trading users in terms of management, trading, investment, etc. Under the guidance and training of professional teachers, it forms a value loop of the contract trading ecosystem including cyclical contracts, perpetual contracts, leveraged contracts, DEFI, etc. In addition, Glaytos is based on the power of the community and the interests of users, gradually transitioning to a fully autonomous global community blockchain digital asset financing ecosystem, sharing, co-owning, and co-governing with the community and users.

In terms of trading system construction, Glaytos has adopted an advanced distributed cluster architecture and microservice development approach,



integrating futures contract system, bidding matching system, security and risk control system, C2C cash flow system, multi-chain wallet system, marketing system, work order and customer service system, OTC over-the-counter trading system, and multi-trading system from the very beginning of its launch. At the same time, Glaytos exchange supports security-level advanced algorithms, supports a variety of professional trading instructions, provides professional quantitative support for institutional and individual investors, can handle up to 5 million concurrent transactions per second, and the actual matching speed at launch will reach 130,000 transactions per second. The exchange also has more than 100 security and risk control measures, achieving efficiency and security beyond the financial level through a system service with strict standards and multiple risk controls.

2.2 Vision for Development

Our vision is to provide a fair, transparent, compliant, trustworthy and fully circulating value discovery platform for high-quality global blockchain digital assets, a secure, stable, considerate and trustworthy trading platform for global digital asset enthusiasts, and to build a world-class blockchain digital asset integration ecosystem without national or racial barriers. At the same time, we will continue to explore the application of the ecosystem to create a new generation of digital asset contract trading business landscape.

Our mission is to give full play to our technological advantages and operational strength, by providing a trading platform for the full integration of blockchain digital assets, to provide a fair, open and free working environment and competitive stage for the global blockchain industry, to promote the rapid development of blockchain technology, to link the value of digital assets, to integrate blockchain technology into life, and ultimately to build a high-value financial landscape.

2.3 The technical pursuit of Glaytos

As a contract trading system for multiple applications. Glaytos exchange will develop blockchain underlying apis for more access parties, enabling multi-scenario integration and digital asset overlay, and building a bridge-like application platform that can connect to more digital assets. To this end, Glaytos'



technological pursuits include the following aspects:

1) Increase trading speed

By optimizing key aspects such as signature algorithms, ledger structures, data manipulation, serialization, consensus mechanisms, and message diffusion, Glaytos will enable transaction verification in seconds. To meet the user experience of the vast majority of blockchain application scenarios.

2) Increase data storage

The double-entry accounting model of blockchain, as the system is constantly applied, accumulates a large amount of data, causing the running speed to decline. Glaytos will implement the mechanism of separate storage and table splitting storage to achieve massive data storage.

3) High throughput

The essence of blockchain is a distributed shared ledger technology, and its distributed feature is mainly reflected in distributed consistency rather than distributed concurrent processing. To ensure data consistency and prevent the Byzantine Generals problem, certain specific links can only be executed serially and not in parallel. Through long-term testing and optimization practices, the processing capabilities of Glaytos will further significantly increase transaction throughput.

4) Fast synchronization of node data

Glaytos will develop a mirroring mechanism that can regularly create images of local ledgers to achieve a convenient rollback mechanism. Under a unified consensus, image tags can be specified for rollback. At the same time, it will shorten the cycle for new nodes to join and operate, allowing them to integrate into the network and participate in consensus verification by only synchronizing the latest image and a small set of recent transactions.

5) Increase scalability

Glaytos' blockchain architecture will meet the needs of different business areas, enhancing the system's scalability and maintenance efficiency. It can be used for marking assets and asset transfers, providing immutable multi-dimensional event



records, and for traceability to track the circulation process of items.

6) Permission control policies

Glaytos will provide two types of permission control policies for writing and reading data information. Data write permission, set multiple users under the same account, and set corresponding permissions for different operations to meet the usage scenarios of multi-party signature control. Data read permissions, users can grant and withdraw operation permissions for data to a single user or user group, and user groups can be flexibly configured by users. Data includes user account information, transaction information, etc. The granularity can be refined down to each attribute field of the transaction or account.

2.4 Platform Service system

From the very beginning of its design, Glaytos Exchange has taken into account the comprehensive needs of users in contract trading. Therefore, it has integrated five systems including the bidding matching system, the security and risk control system, the C2C cash flow system, the multi-chain wallet system, the work order and customer service system, as well as the OTC over-the-counter trading system, the futures contract system, and the multi-trading system.

1) The bidding matching system

Glaytos exchange uses an advanced distributed cluster architecture and microservice development approach, which is highly scalable and can support smooth and stable trading for up to hundreds of millions of concurrent online users. The exchange 's self-developed matching trading engine, with a distributed architecture, enables each trading pair to be deployed on different servers for matching, thus achieving the ability of linear scaling, capable of handling up to 5 million concurrent transactions per second. The exchange's matching engine is used to support coin-to-coin and fiat trading pairs, and future futures contract trading, including delivery contracts and perpetual contracts, will also be based on the matching engine for competitive matching.

2) Security and risk control systems

Glaytos Exchange has developed more than 30 security and risk control measures. At the same time, in collaboration with top international technical teams



and others, Glaytos has more than 100 security and risk control measures in total, providing professional, secure and stable digital asset trading to the world through a system service with strict standards and multiple risk controls. In the future, the exchange will continue to upgrade its security and introduce more security and risk control measures. The exchange system adopts a distributed architecture, with a three-layer security system. Web front-end WAF, database firewall, and encrypted storage data ensure system security throughout the process. 7x24h intelligent monitoring and situation awareness are used to conduct real-time vulnerability scanning, asset anomaly alerts, and intelligent blocking, providing emergency response and risk assessment at all times.

Cold and hot wallet isolation and multi-signature protection are adopted to fully ensure the security of users' funds; SSL encryption is used for data transmission to ensure data transmission security; The account system uses multiple verifications such as password verification, email verification, SMS verification, and Google verification to protect user information and assets; In addition, the system also supports brute force cracking and database collision, activity anti-flooding, and provides crawler risk management and URL protection.

In addition, the exchange, in collaboration with third parties, provides security protections such as DDoS defense, traffic cleaning, CC protection, and intrusion prevention. At the operational level, the exchange has a number of financial product experts and technical security experts, and is equipped with an international-level risk control team that provides services such as due diligence, project rating, smart contract auditing, and risk assessment for digital assets, offering multi-dimensional security and risk control guarantees.

3) C2C cash flow system

Glaytos exchange provides a C2C (Customer to Customer) cash flow system to address fiat currency deposit issues, supporting C2C deposit and withdrawal for RMB, US dollar, etc. Subsequently, channels for deposit and withdrawal for Japanese yen, South Korean won, Australian dollar, Hong Kong dollar, US dollar, Malaysian ringgit, etc. will be opened successively. The C2C cash flow system gives Glaytos an obvious advantage and competitiveness in converting new global users.



4) Multi-chain wallet system

At the currency level, the wallet system of Glaytos exchange is a multi-chain wallet system. Besides supporting regular currencies such as Bitcoin, Litecoin, Ethereum and ERC20, it will also support other mainchain currencies. This gives Glaytos the ability to support the storage and trading of all currencies worldwide.

At the form level, Glaytos' wallet system isolates cold and hot wallets, automatically aggregating digital assets to cold wallets for offline storage when they reach the risk control margin. The practice of separating hot and cold wallets ensures the exchange's needs for instant deposit and withdrawal and circulation, while also guaranteeing the security of the vast majority of digital assets. The proportion of digital assets stored in the cold and hot wallets can be adjusted at any time according to business needs. The wallet system of Glaytos exchange has functions such as query, storage, transfer and transaction, and uses multi-signature protection in the payment link of digital assets. If the public key of a digital asset is generated by a multi-signature method, then even if one of the private keys is stolen, the thief cannot transfer the corresponding digital asset, which gives Glaytos exchange a natural trust in the security of funds.

5) Ticketing and customer service systems

Glaytos Exchange provides a quick response work order and customer service system for global users, which can promptly address market demands and answer users' questions. Based on the current market background of inconsistent policies and volatile market conditions, Glaytos exchange will also introduce trading guidance, training, and psychological massage services, aiming to provide professional operation and stress relief, emotional massage, and psychological counseling services for global digital currency trading users. The continuous improvement of service quality and level is the unremitting pursuit of Glaytos Exchange. In the future, Glaytos Exchange will introduce more considerate services.



Chapter 3 Basic Functional Modules and Diverse Support

3.1 Asset Registration

Asset registration is one of the basic functions of the Glaytos exchange, and the asset registration process is usually carried out by a gateway or a gateway agent. All assets registered by the gateway or registered by the agent require the trust of the asset owner, and only trusted parties can trade the same asset.

Registered assets are mainly classified as:

1) Currency type assets

Currency type assets are mainly used for the gateway to connect with other digital currency and digital asset platforms. For example, the gateway can register the asset code of BTC, and any account with BTC can trust the gateway and recharge BTC assets to the gateway account. There is no limit to currency-type assets. The gateway can register as many asset symbols as it has actual currency assets.

2) Physical type assets

It mainly refers to the digitalization of assets, which are generally registered by enterprises or institutions and sold by gateways. Such assets usually have a certain quota. Once the registration is completed, the registration party will be restricted from issuing additional assets through the operation permission threshold suicide method.





3.2 Blockchain wallet trading system

For the convenience of ordinary users to use the wallet, Glaytos Exchange wallet adopts the SPV method, that is, access the wallet via the Web. The wallet uses SSL protocol and supports Symantec CA certificates.

Wallet transactions

Wallets are suitable for small, fast transaction scenarios. Hot wallet keys are hosted. When a user registers a wallet account, the generated private key is encrypted locally on the user's computer using the user's payment password via 3DES, and the encrypted result is hosted in the wallet cloud via SSL protocol. That is, the hot wallet key information transmitted over the network and stored in the cloud is the encrypted data of the user, and no one except the wallet user can access the original content of the private key. When a user needs to sign a transaction, the hosted private key will be obtained from the wallet's cloud server, and the user will enter the payment password to decrypt the content on the user's local computer. Once the decryption is successful, the wallet's local program will sign the transaction information with the private key and submit it to the global network of smart trading centers for the transaction.

The Glaytos exchange wallet contains two types of assets: native assets and registered assets, which are similar in nature to the RMB and various cards in real life wallets. Native assets can be used without any trust, while gateway registered assets require trust in the corresponding assets for value exchange.

3.3 Quantitative trading system

When a user buys Glaytos or any other currency on the platform, the platform automatically matches the exchange with the lowest current price for the purchased currency to make the purchase. When selling, the platform matches the exchange with the highest global price to sell. And all of this is done based on the



Glaytos exchange protocol and the Glaytos token.

The dealmaker service uses a distributed load and storage architecture to avoid service outages due to server failures; It can support hundreds of thousands of matching requests per second, and the service supports horizontal scaling, which can be rapidly expanded as business grows; The service invocation uses the https protocol and incorporates mechanisms such as authentication and tamper-proofing to enhance security.

3.4 Operation Management system

Use the development language: php

- Network isolation via VPC, VPN access mechanism for enhanced security;
- Use https protocol in conjunction with high defense and WAF to enhance attack resistance;
- Introduce financial-grade risk control mechanisms at the business level to enhance user security.

3.5 Diversified support

Based on Glaytos Exchange 'strong system ecosystem and the need to serve different types of customers worldwide, the platform will provide support including trading currencies, high performance, security and stability, liquidity, multilingualism, multi-client, and derivatives.





1) Support for trading currencies

Glaytos exchange's deposit and withdrawal support both fiat and digital assets. Fiat deposit and withdrawal are resolved through the C2C cash flow system. Trading pairs support both fiat and coin-to-coin trading pairs, and at the same time, the radar spark resonance mode is enabled. In terms of trading varieties, the exchange focuses on mainstream digital currencies and premium digital assets, and supports dozens of mainstream digital currencies; Digital assets need to go through rigorous due diligence, project rating, smart contract auditing, risk assessment and other processes to be confirmed as quality digital assets before they can be traded on the exchange.

2) High performance support

Glaytos Exchange 'self-developed matching trading engine, advanced distributed cluster architecture and microservice development approach enable each trading pair to be deployed on different servers for matching, thus achieving the ability of linear scaling, capable of handling up to 5 million concurrent transactions per second. Supports securities-grade advanced algorithms, providing professional quantitative support for institutional and individual investors; Matching efficiency is at the 100,000 TPS level, with the highest measured matching speed reaching 130,000 transactions per second, smooth trading without lag or delay.

3) Security and stability support

The exchange has adopted an advanced multi-layer and multi-cluster system



architecture. The development approach of the multi-layer architecture and microservices has significantly enhanced the performance, security, stability and scalability of the system. Function deployment and version updates can be carried out without downtime, maximizing the operational experience of end users.

In addition to the technical security and stability support mentioned above, at the operational level, the exchange has a number of financial product experts and technical security experts, and is equipped with an international-level risk control team to provide services such as due diligence, project rating, smart contract audit, and risk assessment for digital assets, providing multi-dimensional security and risk control guarantees.

4) Liquidity support

The exchange fully leverages the team's advantages in technology, operation and resources, and makes multi-dimensional efforts to provide sufficient liquidity for the platform and offer users a good trading experience. The main measures are as follows:

- The exchange has abundant resources and a large number of partners within the industry, actively engaging and collaborating with outstanding mining farms, investment funds, quantitative teams, and major traders worldwide to provide liquidity support.
- Through innovative business models such as cyclical contracts, perpetual contracts, and leveraged contracts, the exchange realizes the value fission of commercial contract trading, increases the number of users and activity of the platform, and fundamentally enhances the liquidity of the platform.
- Through the cloud exchange strategy, the exchange, on the one hand, develops its own sites in compliant markets, and on the other hand, provides technical support for teams with advantages in resources, traffic and capital worldwide to open cloud exchanges. This multi-center exchange alliance model enables deep sharing of transactions, and orders placed between different countries and sites can be executed. It can provide sufficient liquidity support for various sites including Glaytos exchange.
- Exchanges not only provide API (Application Programming Interface) externally for third-party calls such as quantitative programs, wallets, DApps,



etc., but also deeply share trading with other exchanges through technical means to provide more liquidity.

5) Multilingual support

The initial version of the transaction supports languages such as English, Simplified Chinese, Traditional Chinese, Japanese, etc. Subsequent versions will support languages including Korean, Russian, Arabic, French, Spanish, Portuguese, German, etc. In the future, the exchange will support common languages in more than 100 countries and regions, clearing the language barrier for building a world-class blockchain digital asset trading platform.

6) Multi-client support

The exchange has a PC version, as well as IOS and Android versions of the APP, and supports multi-terminal browsing such as Mac and Windows. The H5 mobile version is under development and will soon support mobile web access and use as well. In addition, the exchange opens up various forms of API interfaces for third parties such as quantitative programs, wallets, and DApps.

7) Derivatives support

The online version of the exchange supports spot trading and C2C trading models. OTC over-the-counter trading will be launched soon. Later, leveraged trading and futures trading will be launched as needed by the market. Futures trading will support delivery contracts and perpetual contracts. When the platform's liquidity reaches a certain level, the exchange will introduce an anonymous trading feature similar to ShapeShift and provide sufficient liquidity.





Chapter 4 Glaytos Technical Architecture

4.1 Overview of the Technical Architecture

Blockchain technology is more like a technical architecture that integrates different technologies. In a broad sense, blockchain technology architecture can be roughly divided into three levels:

- Protocol layer: At this level, it represents the core of the blockchain. That is
 what is now generally referred to in the market as the underlying technology.
 It includes the structure of data storage, consensus algorithms, encryption
 mechanisms, network communication protocols, etc. All of this is wrapped in
 this layer to operate, and made available to the upper layer in the form of
 apis or services.
- Extension layer: The extension layer is more like the V layer in the traditional MVC architecture, handling part of the business logic. Smart contracts are built on top of this layer. So at this layer, we can extend blockchain technology to a variety of different scenarios through smart contracts, such as AI, VR/AR, Internet of Things (IOT), ERP/MES, big data (Bigdata), Cloud platform (Cloud), all can be implemented here.
- Application Layer: The application layer is for end users, and for those who have been exposed to digital currencies, various "electronic wallets" belong to this layer. However, in practical applications, due to the limitations of blockchain technology itself. In addition to meeting the needs of users, the development of the application layer also needs to take into account the logical and technical requirements of the extension layer and the protocol layer. This leads to a blockchain development project that will require more complex team collaboration.

Glaytos is based on public chain technology and is generally characterized by being open, transparent, verifiable, or at least to a certain extent. In terms of effect,



it is immutable and untraceable. The project will choose a more open public chain architecture because it demands high privacy from all parties and has a strong need for process transparency.

Glaytos uses a revolutionary design with multiple innovations. Unlike other similar products, Glaytos is a complete platform service, not a collection of packages or wrapped apis. It is an on-chain data solution that combines blockchain and big data technologies. Open Chain Access Protocol (cross-chain technology), Glaytos introduces the "Open Chain Access Protocol", which enables applications to connect to a variety of different blockchain protocols through it. Developers will once again have the freedom to conveniently evaluate different blockchain protocols and even switch between them with ease. Make sure that applications can evolve with the new blockchain technology as the technology itself evolves. The "Development Chain Access Protocol" eliminates the "platform lock-in" risk of existing blockchain technologies and enables some blockchain applications to be built across chains, significantly enhancing the experience for developers and consumer users.

Another revolutionary design of Glaytos is that it incorporates the latest Microservice architecture and Serverless Computing. Glaytos is a high-level application protocol that can be implemented in any language on any platform, which enables it to take full advantage of the native features of the platform and language for the best performance and development experience far superior to virtual machine operation.

With the "Development Chain Access Protocol" described earlier, Glaytos can communicate with the blockchain, not just connect to the blockchain protocol, but also access any external data source, so it can perform both on-chain and off-chain computations and link them together. As a result, Glaytos will be a high-performance, user-friendly, cost-effective digital asset trading application service platform that is not locked by existing specific blockchain protocols. We believe that the design concept of Glaytos represents the next generation of blockchain.



4.2 Consensus Mechanism

Glaytos' modular design enables the replacement and plugging of all core functional modules, including the consensus mechanism. The Glaytos main chain uses the credit consensus mechanism POC(Proof-Of-Credit) by default. Anyone can participate in the blockchain network, every device can be a node, and each node is allowed to obtain a complete copy of the database. Nodes maintain the entire blockchain through competing computations based on a set of consensus mechanisms. If one node fails, the rest of the nodes still work properly.

Consensus mechanism is a core issue in blockchain technology, which determines how blocks are generated in the blockchain, ensuring the honesty of each node, the fault tolerance of the ledger, and the robustness of the system. Based on the different application scenarios of blockchain technology and the characteristics of various consensus mechanisms, they can be evaluated and compared mainly from several aspects such as performance efficiency, resource consumption, fault tolerance, and regulatory level. The Glaytos consensus mechanism functional components have the following functions:

- Support multiple nodes participating in consensus and confirmation;
- Support independent nodes in verifying the validity of relevant information submitted to the blockchain network;
- Prevent any independent consensus node from recording or modifying information in the blockchain system without confirmation from other consensus nodes;
- Have a certain degree of fault tolerance, including non-malicious errors in physical or network failures of nodes, malicious errors in illegal control of nodes, and uncontrollable errors in uncertain behavior of nodes.



4.3 Technical Services Module

- Client: The client provides users with management and query functions for accounts, blocks, nodes and wallets, such as creating new accounts, sending transactions, generating random seeds, obtaining block information, obtaining wallet status, etc. All transactions are sent to the blockchain after being signed and encrypted through the client.
- RPC modules: Provide RPC interfaces to clients, which operate on the blockchain through RPC interfaces, such as creating accounts, querying accounts, sending transactions, querying transactions, querying block information, etc.
- Mempool module: Transaction cache pool. mempool stores transactions from the RPC interface and those from P2P. The implementation of Mempool is mainly to address the issue that the consensus module is slower than the RPC module.
- Consensus module: Pluggable consensus module design. There are two public chain consensus algorithms, one is a pure POS algorithm that supports tens of thousands of people to mine together for consensus. One is a strongly consistent Byzantine consensus algorithm and introduces the concept of DPOS voting rights, that is, each node can have different voting rights.
- Executor Module: The executor is the logical processing center of the blockchain. The executor reads the state through a read-only database and performs virtually, and the execution results only affect memory and not disk. The input of the executor is a transaction, and there are various types of transactions, and different transactions correspond to different executors to execute.
- P2P module: The P2P module connects various nodes and broadcasts transactions and block-related information throughout the network.
- Blockchain module: The Blockchain module is primarily responsible for receiving blocks from the consensus module and storing them on the local



hard drive.

• Encrypted signature module: Responsible for the signature and encryption of transactions. The signature ensures that transactions can be traced back, and the encryption ensures the security of transaction information.

4.4 Operation Process

- The client receives the transaction, signs it, encrypts it, and then sends it to the Mempool module cache of the node via the RPC module. Transactions received by different nodes are broadcast within the network via P2P modules to ensure that the messages in the Mempool of all nodes are consistent.
- The consensus module judges conditions such as time or the number of transactions and pulls the list of transactions into the mempool. After excluding duplicate transactions, the consensus module packs the transaction list into a block and then starts the consensus.
- Once the consensus is completed, the consensus module sends the block to the executor module for pre-execution without writing to the local database.
 Different transaction types go to different executors, for example, coins transactions go to coins executors. After the pre-execution is completed, the consensus module sends the block to the blockchain module.
- The Blockchain module broadcasts the block to other nodes via a P2P network, and then all nodes store the block in their local database.







4.5 Super Nodes

Many developers and project parties in the market expect to use the DPOS (Proof of Stake) consensus to improve the performance of the blockchain, that is, to select several super nodes on the chain that provide computing power and broadband support, these super nodes must package transaction information into blocks, broadcast the block information to other nodes, and store the transaction information on the blocks. To play the role of a community of co-governance.

One of the key measures of an ecosystem's success is the number of nodes on its chain. The super node mechanism can help Glaytos quickly build an on-chain ecosystem, and through the operation and maintenance of each super node, make the public chain ecosystem more prosperous and achieve a more stable, powerful and efficient blockchain system. At the same time, the project team promotes the initiative and enthusiasm of the super nodes through various token incentive mechanisms and operational means of the foundation, and promotes the healthy and sustainable development of Glaytos through token repurchase, transaction fees, etc.

4.6 Privacy Support

The immutable and distributed nature of blockchain technology can indeed prevent users' privacy from being held by centralized institutions, which could lead to trafficking, hacking, etc. But the open and transparent ledger allows massive user data to be exposed on the chain, and the privacy problem remains like an attic in the air, not fundamentally solved. To put it another way, when shopping on Taobao, now it's decentralized, with no transactions through Taobao, and the two parties mail directly. Although Taobao doesn't have access to the data of these two transactions, their transaction data is recorded on the blockchain network and can be viewed by anyone.

Based on the hybrid model of accounts and UTXO, Glaytos has implemented a blockchain privacy transaction system. While using the UTXO system, it retains the account system, incorporates ring signatures and one-time addresses, allowing accounts to flow freely between privacy and public, while also featuring untraceability and unconnectivity.



4.7 Support for C2C

The traditional centralized trading method, which relied on the platform's credit endorsement to ensure the authenticity and reliability of transactions, also exposed the risk of personal privacy and asset theft. Individuals have no access to their own information, but in a blockchain network, personal transaction information is distributed and stored across all nodes, and anyone can publicly review it, forming a multi-centralized data storage model. Skipping the centralized platform and conducting transactions directly between individuals is more efficient. In the system of blockchain, each node has the characteristic of high autonomy. Any node can be a phased center, but it does not have mandatory central control functions. Nodes will form nonlinear causal relationships with each other through the network to achieve a decentralized, open, flat, and equal system.

Compared with centralized transactions, supervising client funds requires compliance with regulatory rules, which involves overcoming many obstacles. Users who trade in this way must comply with the various rules of the centralized trading service provider and pay the corresponding fees. Glaytos' trading rules can address this issue, enabling convenient and secure trading.

4.8 Support for MVCCKVDB storage

Glaytos implements MVCCKVDB (multi-version KV data storage). Traditional blockchains store data in the form of merkle trees or MPT trees, and each time the data changes, the tree undergoes a reconfiguration, which is less efficient. For example, for a 20-level Merkle tree, it takes 20 read operations to query the data of a leaf node, resulting in a data query efficiency that is only 1/20 of that of a regular database. For a system capable of 100,000 read operations per second, it can only read 5,000 transactions per second, significantly limiting the system's reading performance. When writing data, it also requires loading data from multiple nodes on the tree branch and eventually writing it to disk after the update, which also



consumes a lot of operations.

Glaytos drew on the MVCC concept (Multi-Version Concurrency Control) in database design to create Glaytos' KVMVCC data storage format to improve the inefficiencies in MAVL or MPT structures. To better meet the requirement of maintaining high data read and write performance when blockchain data grows to a certain scale. KVMVCC's data storage format is as follows:



1) Hash calculation

statehash=hash (prevstatehash, KVSet, height), contains the state Hash information of the previous block, the state data KVSet information of the current block, and the height information of the current block (that is, the version information).

The following correspondences will be stored in each node's database:

```
hash->height(version)
```

height(version)->hash

key:height(version)->value

lastest:key->value

```
2) Data query
```

According to statehash, the corresponding height (version) can be found, and



according to height, the value corresponding to the specific key value when the corresponding height can be found.

3) Data verification

For a KVSet with a specific height, hash operations can be performed based on the Hash values of the previous block prevstatehash, KVSet, and height. If the hash values match, the data has not been tampered with; otherwise, the data has been modified or the data is incorrect (height is incorrect, or the KVSet data is incorrect).

4) Maintenance of the latest version of the data

In particular, when storing the key and value of the latest block, keep (add the key) or update (the key already has a historical version) the mapping relationship of key: latest->value stored in the local key-value database. When the latest batch data is needed, the latest data can be queried in batches based on the latest prefix (which can be customized). Since the usual key-value database can support prefixes matching queries well, the query efficiency is much higher than that of Merkle tree storage structures.





Chapter 5 Smart Contract Systems

5.1 Overview of Glaytos Smart Contracts

The concept of Smart Contract was first proposed by Nick Szabo in 1996 and has been widely used in blockchain, giving birth to many blockchains such as Ethereum, Quantum Chain, and EOS that support Turing-complete smart contracts. To sum up, smart contracts have the following characteristics:

- A smart contract must be a contract, an agreement between equal parties to perform the agreed contents. Smart contracts differ from traditional contracts in that they are in digital form and are read and executed by a computer.
- Smart contracts are partially or fully self-executing or self-enforcing.
- Smart contracts need a secure operating environment. The contract environment must be secure and reliable, and the execution results can be agreed upon among multiple parties.
- Only smart contracts can modify ledger data.

Due to the characteristics of smart contracts, contract security, and considerations in multi-language and multi-platform smart contracts, Glaytos defaults to using Docker containerization technology to implement smart contracts. In the industry, Docker has been used as a virtual machine for smart contracts in HyperLedger Fabric and has been proven by a large number of enterprises and projects.



5.2 Support for multilingual smart contracts

The system provides different runtime Docker images for different programming languages, and also provides SDKS for corresponding languages to help contract developers develop smart contracts quickly and conveniently. After the contract developers compile the contract program locally based on the SDK, they only need to publish the compiled file in Glaytos, and the published contract program is called a contract template. When a user creates a contract based on the template, the contract execution node (juror) selects the corresponding runtime image based on the language of the contract, builds a new contract template image, and eventually instantiates the contract container.

5.3 Contract security

The contract program runs in a sandbox environment provided by Docker, which isolates the host's environment and network access and only provides limited resources such as CPU, memory, and hard disk, avoiding the possibility of malicious contract attacks on the host. Ethereum uses a Gas mechanism to avoid attacks on the host by having a large number of computations or dead loops in the contract, and Glaytos uses a similar penalty mechanism. Unlike Ethereum, Glaytos does not calculate in detail how much Gas each instruction consumes because that would seriously affect the performance of the contract, and the pricing of each instruction is also a matter of dispute. In Glaytos, users need to specify the amount of memory consumed throughout the contract lifecycle, execution timeouts, and fees (the number of Glaytos tokens) they are willing to pay when running a contract. If the contract is not executed within the specified time, the juror will terminate the execution of the contract and collect the Token paid by the user.



5.4 Development of the template

A contract template is an executable program based on the Glaytos contract SDK that conforms to the Glaytos contract specification. Smart contract developers write and compile contract template programs locally using the languages they are familiar with (Glaytos initially provides support for C++/Go and Java, and later adds support for more languages such as NodeJS and C#), and for the convenience of development and debugging, Later on, Glaytos will provide a simulation run of the Glaytos network on a single machine.





5.5 Deployment of the template

Smart contract developers do not need to publish the source code to the Glaytos network; they only need to deploy the compiled program to the Glaytos network. The deployment steps are as follows:

- Contract developers sign template programs using their own private keys.
- The contract developer combines the Template program, the template configuration file (including interface description, usage fee, signature, etc.) and the Glaytos Token to be paid for deploying the template into a template Deploy Request (TDR: Template Deploy Request) and sends it to the Glaytos network.
- The Mediator in Glaytos, upon receiving the TDR of the template deployment request, checks whether the template program matches the template interface description and conforms to the policy of the Glaytos template.
- When the Glaytos mediator checks and approves, it generates the template ID, signs it, and records the template program and configuration in the distributed storage.

5.6 Contract creation/initialization

Once the smart contract template is deployed to the Glaytos network, all users can use the smart contract. In Glaytos, contract templates are like apps in the App Store, where developers can publish paid contract templates or free contract templates. For paid contract templates, users need to pay a certain amount of tokens to the developer when initializing (instantiating) the contract, and the amount of Glaytos tokens is determined by the developer.

The user creates the contract through the following steps:

1) The user initiates a Contract Creation Request (CCR: Contract Creation Request) on the client side to the Glaytos network. This request includes: Contract template ID, initialization parameters (which vary depending on the contract



template), transaction fee Glaytos Token, template usage fee Glaytos Token, signature, etc., and the hash value of CCR, which is the contract ID.

2) The mediation mediator in Glaytos, upon receiving the contract initialization request CCR, queries the configuration parameters related to the contract template in the distributed storage based on the template ID and determines the jury generation mode based on the configuration parameters.

- If it is a locked jury mode, then select a specified number of juror nodes to form the jury, associate the contract ID with the jurors, and record it in the distributed storage.
- In non-locked jury mode, record a list of jurors larger than the specified number and record it in distributed storage.

3) The Mediator forwards the CCR to the jury.

4) Each juror of the jury, based on the CCR received, queries the contract program and configuration in the distributed storage, looks for the corresponding image and container instance according to the contract template ID, and performs steps 5 and 6 if not found.

5) Jurors find the corresponding Docker base image based on the contract template programming language and create a new contract image in combination with the contract program obtained from the distributed storage.

6) Jurors create Docker container instances based on the newly created contract image.

7) The juror executes the initialization function in the contract and writes the result returned by the initialization function to the distributed storage.



5.7 Contract invocations

The user queries the distributed storage based on the contract ID to see if the contract has been initialized, which jurors have been assigned to the contract, and other information. According to the configuration note of the contract template, the user can see all the calling interfaces of the contract. When a user invoxes a Contract, they need to create a contract Invoke Request (CIR: Contract Invoke Request) that contains the following information: contract ID, the name of the function being invoked, a list of parameters, transaction fee, signature, etc.

For juries locked contracts, the user can query the distributed storage to obtain the list of jurors corresponding to the contract, and then send the CIR to all jurors of the jury. After obtaining the CIR, jurors communicate with each other, randomly elect the Leader, each juror checks the preconditions for contract invocation (the preconditions for each contract method are defined in the contract template) and gives feedback to the leader, and the leader finally, based on the juror's feedback and the strategy for contract execution, Decide whether the contract call is actually executed.

5.8 Contract upgrades

Ethereum's smart contracts are no longer allowed to be upgraded after being released, making it impossible to fix Dapps even if they have bugs. Glaytos introduced a contract upgrade mechanism, allowing contracts to initiate upgrade requests when necessary, which are then voted for by contract users.

The contract upgrade process is as follows:

• The contract Template developer modifies the contract code, compiles it, and then initiates a contract template Upgrade Request (TUR: Template Upgrade Request) to the Glaytos network. The request includes: the original contract template ID, the program of the new contract, the interface description of the



new contract, the upgrade description, the contract instance upgrade policy (forced upgrade, optional upgrade, no upgrade), the upgrade fee Glaytos Token, and the signature.

- After receiving the TUR, the Mediator verifies whether the template program matches the template interface description and whether it complies with the policy of the Glaytos template.
- When the Glaytos Mediator checks and approves, it generates a template ID, signs it, and records the template program and configuration in the distributed storage.
- Users who are using an old version of the template will receive a new version prompt during subsequent contract usage. If it is a forced upgrade, users are not allowed to continue using the old version. If it is an optional upgrade, users can vote whether to upgrade or not.
- After the jury receives the user's upgrade confirmation or vote, it retrieves the TUR from the distributed storage to upgrade the local contract template image and contract container.

5.9 Termination of the contract

After the performance of the contract has been completed, or for some reason the parties to the contract have reached an agreement and wish to terminate the contract, an application for termination may be initiated. The process of contract termination is as follows:

- Initiate a Contract Termination Request (CTR: Contract Termination Request) to Glaytos. The CTR contains the following information: contract ID, contract termination parameters, signature.
- After the jury receives the CTR, it performs the contract termination check. If the termination condition is met, the lead juror modifies the contract status to termination and records it in the distributed storage.



Chapter 6 Glaytos Exchange Application

6.1 The application of Glaytos in DEFI

Glaytos tokens, as high-value assets that Glaytos exchanges can circulate in the DeFi ecosystem, can seize the high ground of global DeFi through various advantageous mechanisms and by taking advantage of market gaps. Glaytos will also enable high-value circulation within the platform's ecosystem scenarios, such as news, auditing, index, DEX data visualization, staking, new share subscription, repo, machine gun pool, asset mapping, and derivatives contract trading.

Glaytos' ultimate vision is to maximize the value of payment, communication, trading, staking and other aspects, break through the key technologies of the value transmission network, and build a global DeFi value Internet.

With the technical support of the public chain, generate corresponding tokens through the Glaytos ecosystem model and mining mechanism, and achieve incentives and circulation within this value system;

Introduce the token mechanism at the incentive layer to achieve the goal of a flexible consensus mechanism for the public chain ecosystem, and create network effects for Glaytos by incentivating the community to maintain the public chain and develop DApp applications on the chain.

In the future, Glaytos will be used in the Glaytos application ecosystem for:

 Incentivizing a wide range of users to engage in asset transactions within the Glaytos network, obtain transaction fees and notarization fees, and jointly maintain the security of the Glaytos network; Reward transaction nodes and notary nodes to support mining;

As a measure of equity, it supports various consensuses in the early stage to achieve the unique consensus system of Glaytos.

• Support the Glaytos ecosystem in implementing advanced smart contracts, avoiding the degradation of network performance by the execution of "logic



bomb" contracts, and providing anti-fraud mechanisms;

- Leverage the base currency function of the Glaytos ecosystem to provide the Token characteristics and asset liquidity basis of the DApp sub-currency of the public chain;
- Manage Glaytos DApp products as a custodial asset to enhance the DApp's visibility and exposure.

6.2 Contract derivatives trading based on Glaytos

The core of Glaytos exchange is a one-stop contract trading service. Therefore, Glaytos will play the role of a link for perpetual contracts, leveraged contracts, copy trading, cyclical contracts, and coin-to-coin and C2C trading on the platform.

1) Perpetual contracts

The biggest difference between perpetual contracts and traditional futures is that they have no delivery date. In fact, perpetual contracts can be regarded as an "upgraded version" of spot trading. Compared with spot trading, perpetual contracts can be opened both long and short, offering more flexibility in trading. Advantages of Glaytos perpetual contracts: Glaytos perpetual contracts offer broader profit margins for aggressive investors; Glaytos has top-tier servers in the industry and is equipped with a fiber-optic network. Meanwhile, the first five contracts have a depth of millions, allowing traders to trade quickly, steadily and without spreads. Trading perpetual contracts on Glaytos also allows for timely adjustment and summary of trading strategies through powerful features such as take-profit and stop-loss, market price addition, reverse opening, and record summary to increase contract win rates, and the operation interface and process are extremely user-friendly.



We will build a diversified international financial ecosystem



2) Leveraged contracts

Glaytos will introduce a 100 times leverage contract trading model, under which traders can use 100 times leverage to trade contracts such as BTC and ETH. Glaytos 100 times leverage contracts advantage: Compared with some trading platforms that support high leverage, Glaytos contracts have the highest opening volume across the entire network, with a maximum of 100 BTC and 30 ETH; At the same time, the margin rate for Glaytos contracts is 0.05%, compared to 0.5% for most regular contracts. With the same position size, Glaytos contracts are less likely to be wiped out. When the market volatility is flat, traders can use a hundredfold leverage to capture and amplify momentary profit opportunities.

3) Coin-to-coin trading with C2C trading

Coin-to-coin trading is mainly for transactions between virtual currencies, and the rule is to complete matching transactions in order of price priority and time priority, directly achieving the exchange between digital assets. For example, BTC/USDT refers to the transaction exchange between USDT and BTC. C2C supports USDT trading, allowing users to transfer the same amount of USDT to sellers themselves through online banking, mobile banking, wechat, or Alipay.

4) Second contract trading

Glaytos has created a trading system that settles in seconds, a digital currency second contract trading system. The system supports market and limit trading: users can buy call and put options with small capital investment, low threshold, short settlement cycle, and self-configured options. The system has a strict risk control system that sets high and low price limits. If the limit is exceeded, the odds will automatically reset to zero. At present, it can handle millions of orders per second. Given the current market size of the coin market, it can achieve a smooth transition even in extreme conditions.



6.3 Equity and profit/loss calculation model

1) Contract account equity

The equity of a contract account refers to the total equity of the contract account in that currency.

Contract account equity = Account balance + realized profit or loss for the week + unrealized profit or loss for the week

2) Account balance

Account balance refers to the number of coins a user holds in a contract account, that is, the number of coins transferred from a coin-to-coin account to a contract account. When clearing, the realized gains and losses generated by the user's transactions will increase or decrease on this item.

3) Unrealized profits and losses

Unrealized profit or loss is the profit or loss of the position currently held by the user, and unrealized profit or loss will change with the latest transaction price.

Unrealized profit or loss for a long position = (1/ average position price - 1/ latest transaction price) * Number of long positions * contract face value

Unrealized profit or loss from an open position = (1/ latest transaction price - 1/ average open position price) * Number of open position contracts * contract face value

4) Realized profit or loss

Realized profit or loss is the profit or loss resulting from the closed positions of the user and the transaction fees, and the profit or loss in the account balance has not yet been calculated through liquidation. Realized gains and losses cannot be transferred out of the contract account before the contract settlement/delivery.

Realized profit or loss for each closed position:



Realized profit/loss for long positions = (1/ average price of open positions - 1/ average price of closed positions) * Number of closed long positions * contract face value

Realized profit or loss from short positions = (1/ average closing price - 1/ average open position) * Number of closed short positions * contract face value

The comparison between realized profit and unrealized profit is the profit and loss that has been closed and settled, so the difference in the calculation formula is the difference in calculation based on the latest price and the average closing price.

5) Allocation mechanism

When the market fluctuates greatly and users force their positions to close, they cannot trade at the forced liquidation price, resulting in a loss range larger than the risk reserve. The platform adopts an "apportionment" system, sharing losses from margin calls on each account that made a profit this week in proportion to the profit.

Full-account apportionment system: All margin call losses resulting from forced liquidation are consolidated and apportionment is based on all gains of the profitable accounts of the three contract types (i.e. weekly, next-week, quarterly contracts).

The apportionment coefficient is equal to the margin loss/the sum of the gains of all profitable users

6) Contract price limit mechanism

To prevent malicious market manipulation, the opening and closing prices of different types of contracts are restricted.

For example, a BTC quarterly contract limit within 10 minutes of contract generation (when there is no basis limit) :

Highest price = Spot index (1 + 0.5%);

Lowest price = Spot index (1-0.7%);



Ten minutes after the contract was generated (when there is a basis limit price) :

- If (average basis over the last 10 minutes + Spot index) > Spot index * (1 + 3%), then the basis benchmark = Spot index * (1 + 3%);
- If (average basis over the last 10 minutes + Spot index) < Spot index * (1-4%), then the basis = Spot index * (1-4%);
- If [Spot Index * (1 + 3%)]> (average basis of the last 10 minutes + Spot Index) > Spot index * (1-4%), then the basis = average basis of the last 10 minutes + Spot index

Highest price = min (Basis benchmark * (1+2.5%), Spot index * (1+ 3%))

Lowest = max (basis * (1-3.5%), Spot * (1-4%))

7) Zero Knowledge Proof

Given the massive data interaction volume of ELS, we adopt an authentication scheme whose security is based on the difficulty of computing discrete logarithms, which can perform pre-computation to reduce the amount of real-time computation and the amount of data that needs to be transmitted is also greatly reduced. To generate the key pair, the parameters of the system need to be selected first: the prime p and the prime q, where q is the prime factor of p - 1. $p \approx 21024$, q > 2160, element g is an q-order element, $l \leq g \leq p - 1$. Let a be the generator of GF(p), then $g = a(p - 1)/q \mod q$. The system parameters (p, q, g) and the verification function (i.e., T's public key) are distributed to each user by a trusted third party T, which verifies T's signature on the message. Given A unique identity I for each user, user A selects the secret key s, $0 \leq s \leq q - 1$, and computes $v = g - s \mod p$; A reliably sends IA and v to T and obtains the certificate from T, CA = (IA, v, ST (IA, v)). The protocol is as follows:

- Select a random number r, $1 \le r \le q 1$, and calculate $x = g r \mod p$, which is a preprocessing step that can be completed before B appears;
- A sends (CA, x) to B;
- B decomposes ST (IA, v) with the public key of T, authenticates A's identity IA



and public key v, and sends A random number e between 0 and 2 t - 1 to A;

A verifies that $1 \le e \le 2t$, calculates $y = (s e + r) \mod q$, and sends y to B;

- B verify that x = gy ve mod p, and if this equation holds, the identity of A is recognized as valid. Security is based on the parameter t, which is chosen to be large enough for the probability of guessing e correctly 2 t is large enough. It is recommended that t be 72 bits, p be approximately 512 bits, and q be 140 bits. This protocol is a zero-knowledge proof of s, and no useful information about s is exposed during the authentication process.
- 8) Key generation

In the ELS system design, the encryption public key is h(x), and the decryption private key is f(x) and fp(x), and the selection method is as follows

The following polynomial f(x), g(x) is selected to satisfy:

- $f(x) \cdot g(x) = 0 \mod q.$
- $f(x) \cdot fq(x) = 1 \mod q$.
- h(x) = fq(x) + 1.

The public key is (h(x), g(x)) and the private key is (f(x), fp(x)).

9) The encryption process

In the ELS system design, when encrypting, the random error polynomial $e(x) \in \Psi \alpha$, where $\Psi \alpha$ is a Gaussian distribution with parameter α , is referenced to convert the plaintext to the polynomial m(x), and calculate the ciphertext as: $c(x) = h(x) \cdot m(x) + g(x) \cdot e(x)$.

10) Decryption process

The received ciphertext is c(x), Using the private key f (x) and fp (x) to decrypt the cipher text for the steps as follows: alpha (x) = f (x), c (x) = f (x), h (x), m (x) + f (x), g (x), e (x) = [the fq (x) f (x) + f (x)] m. (x) + f (x), g (x), e (x) modq = f (x), m (x) (1)



Chapter 7 The Glaytos Team

Glaytos Exchange UK team brings together experts from around the world in various fields such as computer science, information security, communication, mathematics, finance, web development and high-frequency algorithmic trading. The team has market and practical experience in blockchain underlying architecture, distributed databases, cryptographic algorithms, application layer construction, etc.

Steve Wong is a capital markets expert with extensive operational experience in banking, investment and public companies. A leading figure in blockchain and digital currency in the UK. In-depth research and funding for industries such as the Internet and blockchain.

Edward Li served as a bank censor in the UK for eight years and then worked as a representative of anti-money laundering organizations at financial companies for five years. He has extensive experience in legal advice, contract review, anti-money laundering, etc.

Gavin, Chief Technology Officer of Glaytos Exchange, has 17 years of experience in the Internet industry, is proficient in multiple computer languages, excels in designing long-volume high-concurrency available architectures, and has extensive experience in R&D management.

Roice Morrison, General Counsel of Glaytos Exchange, previously worked as a lawyer at Deloitte and has a multi-national advisory team of lawyers. With extensive legal experience in the blockchain industry and strong team organization and execution capabilities.

Joseph has been active in the financial market for many years and has many years of practical experience in asset management, trading system operation and risk management. He is also a Certified Public Accountant and a Certified Financial Risk Manager in the United States.

Marks, who graduated from Yale's Computer Science Department with a Ph.D. in computer science and big data, is an architect, database expert, and chief technology expert for exchange construction. He has long been engaged in



database applications, data warehouses, big data, and blockchain development in the trading industry and has extensive experience in blockchain project development.

Randall has 15 years of experience in technology development and holds authoritative influence in the development of blockchain's underlying technologies. Throughout his career, he has covered both academic and business fields and is a research scholar, engineer and leader. He has held several engineering management positions at Google and Amazon.

Chapter 8 The Glaytos Foundation

8.1 Introduction to the Foundation

Glaytos Digital Assets Inc. (hereinafter referred to as "the Foundation"), headquartered in London, UK, focuses on token economy, digital asset trading, etc. It is an international digital asset financial service and a large blockchain project incubation base. Committed to creating a transparent, open, secure and efficient trading environment for global digital asset users, supporting secure and reliable blockchain digital asset trading platforms, and effectively protecting the rights and interests of investors.

The Foundation, the highest governing body of the Glaytos exchange, is committed to the development and construction of the Glaytos project and the advocacy and promotion of governance transparency, as well as the safe and harmonious development of the open source ecosystem community. To ensure the openness and transparency of Glaytos Exchange projects, the Foundation is managed through the establishment of the highest decision-making body - the Decision Committee.



8.2 The Foundation's organizational structure

The Decision Committee of the Foundation will consist of the Business Committee, the Technical Committee, the General Affairs Committee and the Community Development Committee. The management body will be composed of the Developers and the Competence Committee. The term of each decision committee is two years. The first decision committee consists of core team members, well-known figures in the blockchain industry, legal experts and early investors, and some members of subsequent decision committees are elected by the community.

The functions of the decision Committee include hiring and dismissing executive leaders and heads of various functional departments, making important decisions, and convening emergency meetings, etc. The term of each decision committee member is two years.

The first Glaytos project decision committee members have extensive industry experience in the blockchain field or global digital asset trading field, as briefly introduced below:

1) The Decision Committee

At the end of the term of the Decision Committee, all coin-holding members of the community vote based on the number of Glaytos held and the age of the coins to select no more than 9 odd-numbered core members of the Decision Committee. The selected core members will make important and urgent decisions on behalf of the Glaytos community and will be subject to credit investigation and have their compensation disclosed during their tenure.

2) Executive officer

The executive director is elected by the decision committee and is responsible for the day-to-day operation and management of the Glaytos community, the coordination of the work of the subordinate committees, and the chairing of the decision committee meetings, etc. The executive director reports progress to the decision committee on a regular basis.



3) Business committees

The business committee is responsible for the overall design and planning of the community.

4) Technical committee

The technical committee is composed of core developers and is responsible for the development and review of underlying technologies, product development and review, etc. The technical committee holds regular project tracking meetings to communicate requirements and project progress. Members of the Technical committee need to be informed of community dynamics and hotspots, communicate with business participants and Glaytos holders within the community, and hold technical exchange meetings irregularly.

5) Comprehensive Affairs Committee

The Comprehensive Affairs Committee is responsible for the use and review of funds raised for the project, the management of developer compensation, the expenditure and review of daily operating expenses, etc.

6) Community Development Committee

The goal of the Community Development Committee is to serve the community, and it is responsible for promoting the Glaytos project, promoting and publicizing the open source project, etc. The committee is responsible for the publication of all community announcements and media cooperation.

7) Financial management

The Glaytos Project Decision Committee has committed to using all raised digital assets for community development and construction.

8) Audit of the Glaytos project

Due to the particularity of Glaytos, the existing various forms of companies and institutions are in fact difficult to be regulated under the existing system. To ensure the transparency of the governance of the Glaytos project and the use of digital assets, the Glaytos Project Decision Committee will hire a professional auditing firm to conduct an audit.



Chapter 9 Disclaimer

This document is intended for informational purposes only and does not constitute any opinion or investment advice regarding the future purchase or sale of native digital assets, nor is it any form of contract or commitment. By participating in the private placement and sale, investors understand and accept the risks of the project and are willing to bear all corresponding results or consequences. The platform expressly disclaims any direct or indirect losses resulting from participation in the platform project.

The native digital assets involved in this project are an encrypted digital code used on the platform and do not represent equity, debt, income rights or control rights of the platform project.

At the same time, the platform expressly disacknowledges and refuses to assume the following responsibilities:

(1) No person may violate any country's anti-money laundering, anti-terrorist financing or other regulatory requirements when exchanging Glaytos;

(2) No person purchasing Glaytos shall violate any representations, warranties, obligations, commitments or other requirements set forth in this white paper, as well as the resulting inability to use or withdraw the digital asset Glaytos;

(3) The swap program of Glaytos is waived for any reason;

(4) The development failure or abandonment of Glaytos, as well as the resulting inability to deliver or use Glaytos;

(5) Delays or postponements in Glaytos development, and as a result, failure to meet the previously disclosed schedule;

(6) Errors, flaws, defects or other issues in the Glaytos source code;

(7) Glaytos failure, crash, paralysis, rollback, or hard fork;

(8) Glaytos fails to achieve any particular functionality or is not suitable for any



particular purpose;

(9) Failure to disclose information about Glaytos development in a timely and complete manner;

(10) Any participant discloses, loses or damages the private key of Glaytos wallet;

(11) Breach of contract, violation of regulations, infringement, crash, paralysis, termination or suspension of service, fraud, misoperation, misconduct, error, negligence, bankruptcy, liquidation, dissolution or cessation of business of the third-party distribution platform;

(12) Any agreement between any person and a third-party distribution platform that is inconsistent, conflicting or contradictory with the contents of this white paper;

(13) Any transaction or speculation by any person on Glaytos;

(14) The listing, suspension or delisting of Glaytos on any trading platform;

(15) Glaytos is classified by any government, quasi-government agency, competent authority or public body as or regarded as a currency, security, commercial paper, negotiable instrument, investment product or other thing to the extent that it is prohibited, regulated or legally restricted;

(16) Any risk factors disclosed in this white paper, as well as any damage, loss, claim, liability, penalty, cost or other negative impact related to, resulting from or accompanying such risk factors.