

G R O U P C H A I N

Group Chain Whitepaper

Born for Better Groups



UNIVERSAL GROUP TOKEN

G R O U P C H A I N

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- Legal Terms
- Disclaimer



PREFACE

Hongmen has more than 10 million brothers distributions all over the world. The identity of these 10 million brothers are very different. Hongmen needs a network connection platform to make the commucations between the Hongmen brothers closer; the overseas Hongmen brothers are closely connected with the motherland; when the motherland needs them, the Hongmen brothers can get together and form a force that can help the development of the motherland.

——Liu Peixun, President of International Hongmen World Group

BACKGROUND OF THE PROJECT

1.1 History and Social Significance of Group Development

Human beings are spontaneous or forced to form various organizational societies since the formation of the social system. Modern civil rights theory regards freedom of group as a basic human right and is a outcome of historical development to a certain stage. The reason for the formation of the society is closely linked with the community consciousness and instinct generated by human beings as a group animal. Its formation is based on the social needs of human beings. The nature of human gregariousness and the limited nature of individual life and property are the fundamental reasons for the groups. China's group activities started in the pre-Qin period, and have continued from the ancient times to the modern society. Although there have been ups and downs during the period, the group activities never stopped.

The function of the group is to satisfy the needs and seek the benefits for the members in the group. It can be said that the existence of the group has greatly promoted the development of society and the harmony between people. First of all, groupal life meets the spiritual needs of members. Whether it is geography or religious group, the existence of the community greatly enhances the emotional satisfaction of the members; secondly, the combination of groups helps the members resist the survival dilemma and improve their viability. Such as the whole family powers are used to resist natural disasters in the traditional society, the party groups with the purpose of financing funds, the support groups with the purpose of mutual assistance, and the defensive group with the nature of protecting personal safety and property security. Moreover, the group is helpful for the development of the individual. In the group, some people's potential interests and talents can be fully displayed and developed, and the leaders can be found and cultivated among the members. Most of the groups provides the direct support for the members, such as the "same year organization" under the imperial examination system, and the countryman organization for the people lives far away from their home. Finally, the group also has the social integration function, the group links the society into an organism that depends on each other and interacts with each other. The existence of groups provides a carrier for the connection between individuals and individuals, individuals and organizations, organizations and organizations. Especially in cities, the integration function of groups is very significant, such as the Hankou guild organization in the middle and late Qing Dynasty had played a great role in economic development.



1.2 Development Problems of Groups in the New Era

In the new era, new technologies and equipment such as the Internet has reduced the communication and operating costs among the members. At the same time, many different kinds of groups start to emerge, and all these various distinctive groups have greatly enriched the social life of human beings. However, it also brings the new challenges to the traditional operation and management mode at the same time.

The first challenge is the information flooding and information security. With the development of new Internet technologies, the degree of social informatization is improving, and information resources are increasingly abundant. Inevitably, with the great convenience of human daily life, the development accompanied by the serious information flooding and security problems. The release of useless and false information severely disrupts the normal operating procedures of the group, reduces overall productivity, and even seriously affects the good reputation of the group. At the same time, for a mature group, the composition of the members is the core competitive advantage that makes it grow and develop. Therefore, the information security of the members is related to the stability and future development of the entire organization. A group will generate a large amount of private relevant information; however, many illegal organizations or individuals will steal other people's information for the interest motivation. Protecting the individual information security and privacy has become a key issue to maintain the sustainable development of the group.

Secondly, the connections among members are not tight enough and the liquidity is increasing. The group takes each member as a point and connects them to form a huge organization, any changes will affect the whole group. Therefore, the connection has become an important part of maintaining the stability of the group. The traditional groups increase the interaction and communication among members by organizing various activities. However, various social groups have emerged under the current social situation, any new group is the temptation and the loss of members has become a problem that cannot be ignored. How to stand out among so many groups and increase the sense of belonging of members is the problem that every group must face and solve. Whether the loyalty of members can be improved, especially the long-term loyalty and stability of the core members determines the success or failure of a group.

Thirdly, the trust mechanism is difficult to establish. The group is like a small society, and the various interests of the members are complicated. Therefore, the distribution of benefits will lead to a crisis of trust within the group. The relationship between the members of the group and the division of cooperation mostly depend on the trust between members. Therefore, the earliest group organization originated from the family with blood relationship, and with the development of society and the division of labor, it formed various social organizations such as gangs, political parties, fellow villagers, classmates, and industry groups that maintain community stability with common goals or objectives. At the same time, due to the different resources occupied by various levels of groups, the cooperation needs of cross-groups are often difficult to meet because of the immature trust mechanism. For the group organizations, the core factor for the stability and development is the trust system established in the deep inside heart of each members.

1.3 Blockchain has Great Effects on the Innovation of Groups

Essentially, the blockchain is a decentralized distributed ledger database. Its value lies in the construction of a self-organizing network and the use of a cryptographic correlation algorithm to generate a series of data blocks, each data block contains information that has been effectively confirmed by multiple transactions, and the time order cannot be tampered with. Finally, the distributed consensus mechanism is established to achieve a decentralized trust system. In short, it is a database storage system. Compared with traditional databases or data centers, blockchain storage systems are distributed around the world and can work together, which is called decentralization. The "blockchain" technology allows anyone with the ability to set up a server to participate, and can be a node in a distributed database storage system. These nodes are equal and can read and write to any node in the system. And all nodes are synchronized to keep the data consistent. Therefore, "decentralization" is open and autonomous, and the information of the database will not be easily falsified, and both parties have certain anonymity.

The operation of group organizations relies on the trust mechanism among internal members and the different levels of information transfer. Blockchain technology will inject new technology genes into the development of groups. The first is to provide a more reliable and more extensive trust system for human beings. The underlying intelligent contract mechanism of blockchain technology enables the situation to execute automatically according to the agreed contract, which cannot be changed or cancelled unilaterally. At the same time, the blockchain technology can clearly retain the information of all parties involved in the cooperation, even the historical background of the individual, and cannot be changed. The cost of default for each individual has been greatly increased, which in turn has promoted the establishment of a comprehensive trust system in the group. Secondly, information traceability eliminates fraud. Blockchain technology can retain historical data for each generated data block. Therefore, it is easy to find the source of information in some key information that needs to be traced, thus eliminating false information and fraudulent information. At the same time, it can ensure the objective and fairness of data recording, and the longest chain mechanism of the blockchain ensures that the relevant information recorded must be the information recognized by the most of members. The social scenes and organizational forms of the group are perfectly matched with the application scenarios of blockchain technology. The advantages of blockchain technology can bring new development momentum to the group organizations, and new changes to the management, forms of user cooperation, social behavior preferences and assets trading instruments.



THE INTRODUCTION OF THE PROJECT

2.1 Introduction of the Universal Group Token

The Universal Group Token aims to build the first public chain of the global community (Following referred to as Group Chain), using the decentralization, distributed ledger, and non-tamperable features of blockchain technology, to create a full-scale community ecological service platform and reconstruct the production and social relationships between communities. Application scenarios of Group Chain include community management, social networking, identity verification, task publishing, cross-border payment, and public property management. Group Chain Integrates the underlying technologies of the blockchain, including the smart contract mechanism, Participatory Decision Making algorithm ,Peer to Peer protocol and zero-knowledge proof authentication.

2.2 The advantages of Universal Group Token

2.2.1 International Hongmen Federation Support

The Group Chain has won the support of the International Hongmen Federation. The International Hongmen Federation will participate in the project as a cornerstone investor and will be the first to apply the Group Chain to the global Hongmen's affiliated groups and organizations, as the main management system that covers the daily management of the group including information management, data storage, task release , user authentication and online voting system. Group Chain will become a social, economic, information exchange and management platform for the number of Hongmen comrades all over the world.

For more than 300 years, the Hongmen organization has helped to protect the Chinese nation against the foreign aggression and contributed a lot to China. It has many public and hidden branches, including the Heaven and Earth Society, the Triad Society, the Red Flower Club, the Masonic Association, the ZhiGongTang, the ZhiGong Party, etc. Mr. Sun Yat-sen, the great forerunner of the modern democratic revolution in China, was once a man of Hongmen. The great patriot, the founder of the Chinese ZhiGong Party, Mr. Situ Meitang, was also a leader in Hongmen. In October 1925 he reorganized the American ZhiGongTang to the Chinese ZhiGong Party, which played a role in launching overseas Chinese to support the Chinese revolution and resisting Japan. After the founding of the Republic of China, Chinese ZhiGong Party became one of the democratic parties.

On July 28, 1992, the World Hongmen General Federation was established in Honolulu, USA, which is a international organization for global Hongmen comrades gathering. In 2004, Mr. Liu Peixun , the premier of the world Hongmen General Federation, put forward the five major tasks of Hongmen: to promote the spirit of Hongmen, to promote Chinese traditional culture, to promote economic and cultural exchanges between mainland China and Taiwan, to promote China's peaceful reunification, and to realize the great rejuvenation of the Chinese nation. Today, there are more than 10 million people in Hongmen, and there are more than a thousand enterprises behind the Hongmen, such as hospitals, schools, casinos and hotels. The resources behind Hongmen will become an important support for the development of the Universal Group Token.

2.2.2 Naturally Matching between the Organization form of the Community and Block Chain Technology

The application scenario and organization form of the community are naturally matched with the block chain technology. Because the original intention of human association is derived from consensus, which is the same as the core of block chain technology lies in the consensus mechanism. The DPOS mechanism of block chain technology and the organization form of the traditional community are also highly matched. Each community can be said to be a node, and the community who possesses the most token GTOKEN will be a super node. The branch and the head office of a group are more like the multi-level delegate mechanism of DPOS nodes. The core of the group is the people, while the core of the block chain platform is the number of users. The decentralization, trust mechanism, authentication system, and unalterable characteristics of block chain technology are highly matched with the ecological needs of communities.

2.2.3 Support From IT Giant Companies and Block Chain Tech Companies

The Universal Group Token is willing to invest heavily in technology cooperation with IT giant companies, block chain technology companies such as Elastos, IBM, Microsoft and so on. The cloud services, code auditing, application modules of the group chain will be procured, outsourced and consulted from the above companies. In order to ensure the reliability and stability of group chain on launching of application scenarios, customers' experiences and interface humanization.



2.2.4 Clear Token Economical Model

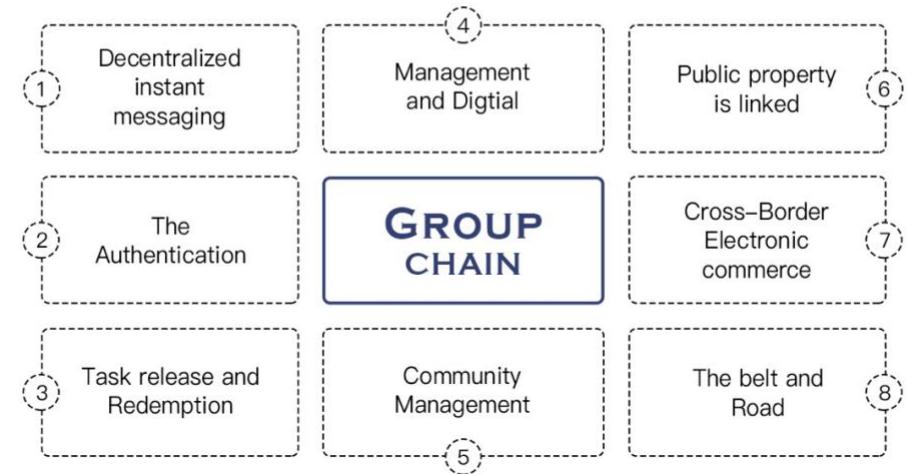
DPOS mechanism will be used to select the real-time dynamic super-node according to the GTOKEN (a token issued by Group Chain) holdings and effective addresses of the nodes. Let more members of the community (community that is node) use the Group Chain, join the Universal Group Token ecology, share the GTOKEN dividend. Clear incentive model will promote traditional community to use GTOKEN instead of legal currency for wage payment, trade transactions, project fundraising, donations and so on. Let more members of the community holding more TOKEN to support the their group winning in the super node election.

2.2.5 Eight Application Scenarios Which Can Bring Positive Cash Flow

The Universal Group Token has supported eight application scenarios, namely, decentralization of instant messaging, zero knowledge proof authentication, task release and redemption, asset management and digital payment, community management, public property is linked, cross-border electronic commerce, and The belt and road, which can form positive cash flow. The above scenarios, which are all society required and resource dependent, are easy to implement and highly matched with the community ecology. The key resources of the Group Chain are the universal integration of the global community, which can import the mass flow of people to the platform, the application scenarios that can produce positive cash flow, 10 million basic users of the Hongmen, and the powerful technical and ecological partners. In addition, through DPOS voting mechanism, the association data linked to chain and open voting process, to extremely ensure the fairness of the community consensus.



2.3 The Universal Group Token Application Scenarios



2.3.1 Decentralized instant messaging

Communication information is often related to the community's superior resources and core secrets, so communication information security is an important factor in the stable development of the community. Decentralized instant messaging tools are an important application scenario for the Group Chain. Blockchain technology will make the public data unhidden, and the hidden information cannot be disclosed, so the overall relationship and trust-basement between people can be improved. Group Chain will provide a P2P-based instant messaging social tool for all social organizations and community members in the public chain, without limiting the country and region, to protect the information security of community organizations and individuals as well as prevent information leakage.

Users can directly import friend contacts from other social tools such as mobile phone contacts, WhatsApp, Wechat, etc., and can communicate in the form of group chats. They can also realize peer-to-peer anonymous social communication through decentralized instant messaging tools on the public chain, which also supports message ephemeral.. In addition, the public chain also supports text, pictures, emoticons, voices, documents, free video and other forms of communication, and provides real-time language translation service for business customers, making multinational communications obstacle-free and easy.

2.3.2 The Authentication

In the information age, authentication is very important to protect personal information security and property security. Once identity information is fraudulently used, it will cause serious social and economic losses. Especially in the case of some confidential community activities as well as communication, authentication is a necessary process. In the history of Hongmen, there were many kinds of code words and gestures to confirm each other. The development of blockchain technology will simplify the process of authentication and improve the accuracy of verification, ensuring the security of information and property. The blockchain technology can record the user's information truthfully and distribute it in various server nodes. Any node with accounting rights can view the corresponding information. Due to the longest chain mechanism of the blockchain technology, any modification of the information that has been entered into the chain will leave a record, and it has the characteristics of being non-tamperable and preventing forgery. The application of blockchain technology to manage, store and verify user information can ensure the accuracy and authenticity of relevant information, thereby enhancing the trust between users. Blockchain technology will precipitate the information of each member's transaction records, credits, areas of expertise, ratings, etc. Users of Group Chain can utilize this information to quickly and directly find their future cooperators.

The Group Chain will develop an authentication system based on zero-knowledge proof protocol that one of the underlying technologies of the blockchain. The participants of the Group Chain, such as community organizations, community members, and public property, will apply the authentication system to protect their Information and property security. The Group Chain adopts the self-certification public key and zero-knowledge authentication scheme, including public key registration, mutual authentication and key negotiation.



2.3.3 Task release and redemption

The group collective activities will be delivered to the members in the form of task releasing. However, members are becoming less responsive to the group activities in the modern society. In addition to the fact that there are more and more choices and temptations, the lack of incentive mechanism and communication channels also have a great influence on members' enthusiasm. For cross-group cooperation, the cooperation between groups often depends on the relationship between the decision-making levels because of the lack of trust endorsement, and cannot form a normal mechanism based on task release and exchange. The application of blockchain technology will promote cooperation and exchange of the group with different resources.

The Universal Group Token will provide a global tasks release and exchange platform within the public chain, with the advantage of the trust mechanism to promote the cooperation between different groups. In particular, a group organization is a representative of social resources, different resources will exchange with others on this platform such as cross-border legal services, studying abroad services, overseas properties consulting, overseas security services based on the personal-level needs. On the other hand, the platform also provides corporate-level and company-level services, such as a company's strategic consulting services and the needs of certain political resources or economic resources, the groups can send help to the other members on the task release system of the public chain.

2.3.4 Asset Management and Digital Payment

By digitally assigning the individual assets of group members through the blockchain technology, it's clear to grasp the trend of public assets and prevent the loss of collective assets. In addition, the asset management platform also provides personal asset management services to members of the group, with the decentralized nature of the blockchain technology, the bookkeeping function will eliminate the trust problems in the past centralized accounting system. At the same time, through the digital currency issued by the platform, the group members can enjoy the benefits such as receiving the dividends of the group and exercise the rights such as voting, participate in decision-making, etc. In this way, it's helpful to further enhancing the cohesiveness of members and reducing the intermediate links of distributed transaction system.

The GTOKEN will issue a digital wallet that can be connected to different public digital currencies to transfer the assets on different public chains and make itself a comprehensive digital asset management platform. Digital wallet will support multi-assets, including BTC, ETH, QBT and other cross-chain multi-currency, and extend to social communication, currency transaction, payment, market, consultation and other functions related to digital currency. In the process of transferring, we will use our zero-knowledge identity authentication system to fully protect the security of users' assets. It also supports many mainstream payment platform operations. For example, the users can issue digital currency red packets in peer-to-peer and point-to-group chats. In the future, it will support various mainstream currencies including Bitcoin and Litecoin, users can freely select the kind and the amount.

2.3.5 Community Management

The digitization of information can increase the management level of the group. Firstly, the blockchain has multiple node servers. In theory, the system will never crash and the data will never be lost. Secondly, the blockchain technology has the non-modified feature to ensure the absolute truth of the data. Thirdly, is the secret key mechanism of the blockchain technology will ensures security and prevents important information from being lost. The characteristics of the blockchain can promote the flow of information timely within the group, and make sure the decision of the group to be implemented timely. Moreover, due to the longest chain mechanism and data identity of the blockchain technology, it will ensure the realness unless the most of the data nodes are modified. At the same time, data informatization can be combined with cloud computing and artificial intelligence to further improve the management level and efficiency of the group.

The GTOKN platform will reconstruct the group ecosystem and user social relationships. The technology platform will be used to provide daily community management services including membership fees, accounts, voting, compensation, attendance, OA and other management functions. It also uses the social score system to unite more users to strengthen the organizational cohesion. The platform will evaluate the daily activities participation of each group, such as charitable donations, disaster relief, daily management, and assignment. Users can get the points incentives by actively participating in the activities. The points will become the weight for users to execute their rights such as voting. In addition, the points can also become the consumer tokens of the public property. For example, the gaming institutions, hospital, hotels in the Hongmen system, and the points can be secondly rewarded at the same time.



2.3.6 Public property chain

The GTOKN Token platform will allow all legal groups to put their public property on the chain, such as the gambling agencies, hotels, hospitals and other public property of Hongmen, which will give the liquidity value to these real estate through this way. It's more convenient for users and also as a credential for users to enjoy the development of the group. By setting the rebate points, point consumption will promote the frequency of consumption of the user and it will strengthen the user's cohesiveness to the group.

2.3.7 Cross-border e-commerce

Cross-border e-commerce means the blockchain technology agreements will replace commercial intermediaries, connecting suppliers, consumers and other various roles through the Internet services, and allocates the transaction service costs to the corresponding contributors directly. The group chain will use blockchain technology to upgrade cross-border business, create new cross-border payment methods, and promote cross-border business development. The current traditional cross-border payment method needs a long liquidation time, high commission fees, and sometimes payment fraud brings capital risk. Using the blockchain technology to create a peer-to-peer payment method, eliminating the intermediate links of third-party financial institutions, it can be paid 24 hours, instant arrival, easy withdrawal and no hidden costs. On the other hand, it's helpful to reduce the risk of cross-border e-commerce and satisfy the convenience needs of payment services.

2.3.8 One Belt and One Road Infrastructure Construction

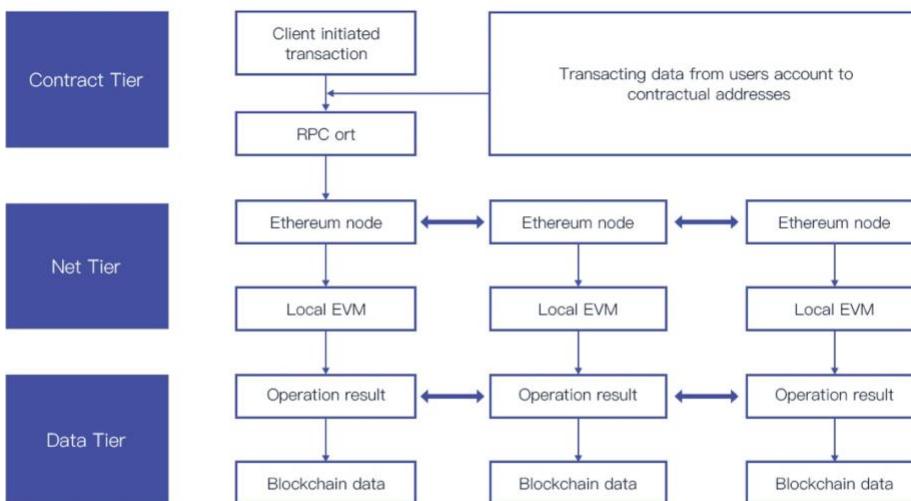
The One Belt and Road is the top decision of China's development in the 21st century and the key battle of the nation rejuvenation. As the largest overseas Chinese group, Hongmen will actively responds to the "One Belt, One Road" policy and promotes cross-strait reunification and the great rejuvenation of the Chinese nation. The GTOKEN Token will use the vast Hongmen overseas resources to support the infrastructure development of the One Belt and Road.

The GTOKEN Token platform will become the only fundraising channel for Hongmen's infrastructure projects along the Belt and Road. The blockchain technology will be used to upgrade contract project management. As the bidding platform of infrastructure project along the Belt and Road, Chinese cultural output projects and livelihood welfare project, it's used to exchanges overseas policy information and project bidding information. At the same time, the traceability characteristics of the blockchain technology can guarantee the quality, safety and supervision responsibility of the project implementation process.

FUNCTION MODULES AND KEY TECHNOLOGIES

3.1 General Integral Technology Framework of Universal

The Universal Group Token are based on the 3.0 blockchain technology, which is supported by the Elastos technology. The typical features include smart contracts, DAPP (distributed applications) and virtual machines, and support multiple consensus algorithms such as POW, POS and DPOS. The basic technical framework of project is shown as below:



The underlying technical framework of the Group chain includes four aspects: peer-to-peer network design, encryption technology application, implementation of distributed algorithms, and use of data storage technology. In terms of architectural design, the group chain can be roughly divided into three levels: protocol layer, extension layer and application layer. The protocol layer can be further divided into a storage layer (also referred to as a data layer) and a network layer, which are independent but inseparable.

The protocol layer refers to the lowest technology and a complete blockchain product, which provides APIs for invocation. A client-side will provide these functions such as creating address, verifying signatures, transferring payments and viewing balances. The technologies used in the protocol layer mainly include network programming, distributed algorithms, cryptographic signatures, and data storage, and the network programming mainly considers high concurrency issues. The protocol layer is the foundation product of the entire group chain platform. It builds the network environment, the trading channel and establishes the node reward rules.

The extension layer, which is equivalent to the server in the B/S architecture product, mainly includes two aspects, one is to establish an intelligent trading market, and the other is the application development based on the concept of "smart contract". The "smart contract" is a "programmable contract" or "intelligent contract", it means the contract will be automatically executed if reaches a certain condition, such as automatic asset transfer, automatic payment, etc. The main technologies involved in the extension layer include distributed storage, machine learning, VR, Internet of Things and big data.

The application is the outermost layer, mainly for users, responsible for assisting users to build their own distributed applications. Users can use the public chain to set up their own private chain, which means all the Hongmen members and other legal groups around the world can set up a proprietary private chain to become a peer-to-peer communication platform based on the higher alliance chain. In addition, developers can develop their decentralized applications based on the service layer's visual development environment or open API interface, which is simple and efficient. It is equivalent to the browser in the B/S architecture. At the application level, the group chain will provide various services for members, including service software for each platform and intelligent management client side.



3.2 Participants of Universal Group Token

The participants in the Universal Group Token can be divided into four parts: group organizations, members, group public assets and non-group members. Each blockchain participant has the right to set the rules. The blockchain governance rules are divided into two levels: First is the technical rules, including software, protocols, procedures, algorithms, supporting facilities and other technical elements. The second is the external rules and regulatory rules, including the regulatory frameworks, provisions and industry policies. At this platform, we will consider these two rules to protect the interests of all participants and promote to carry out the business application scenarios based on blockchain technology. Finally, we will build a complete business system involving all participants.

3.2.1 Group Organizations

The Universal Group Token platform is the alliance mode, which is organized by many groups to promote the development of the Group Chain. Each group organization has a certain access standard. It needs to review the group's identity, qualifications, level of investment and the number of Tokens. On the other hand, there will be different division of labor according to the different advantages of each group organization. The organizations with strong technical strength will be the provider of blockchain technology services, and the larger group organizations will have the priority to develop the commercial services.

3.2.2 Group members

Each group organization is composed of members. The members form their own circle of friends through the decentralized group chain. The group chain is based on the voting mechanism of the accountant, allows each member to participate in the registration and accounting of the private chain, and gives members the certain rewards and incentives. In this way, the group chain is able to achieve the decentralization of equity, accounting and transactions. Simultaneously, it will support the instantaneous and low-cost chain asset transfer to improve the transaction efficiency.

3.2.3 Public Group Assets

The public assets of the group include casinos, hotels, tourist attractions, infrastructure, private hospitals and schools that are controlled or invested by the groups. These public properties are given the certain liquidity value by the way of putting these transaction and daily management data on the group chain. The blockchain technology will be applied to manage these public assets transparently. The public assets of each society will allow the global groups to use the GTOKEN to purchase its services and use it as its consumption certificate. It will use the blockchain technology to establish a customer data management system, combining the blockchain and big data technologies to provide users with targeted recommend services. According to the user's grade value in the database, Group Chain will give corresponding GTOKEN rebate, targeted preferential activities and other incentives to users. Thus, it not only promotes the user's consumption in the organization, but also can be used as a group welfare feedback to the user, increasing the user's cohesiveness to the group. It provides the possibility for future public assets lending, mortgage, crowdfunding, circulation, rating, etc.

3.2.4 Non-group member

The platform provides decentralized IM tools. After participating in the Group Chain, group members can invite their friends or other non-group members to participate in the project or activities through IM tools. These non-group members can also become a member of the group after passing the platform review. At the mean time, The platform will give certain rewards to them. Non-group members can directly search for the project name or smart contract address through the search engine published in the Group Chain, and select the project or activity they are interested in to participate. Non-group members can still participate in DPOS voting, task releasing and redemption, cross-border e-commerce, project crowdfunding, charitable donations activities and more.

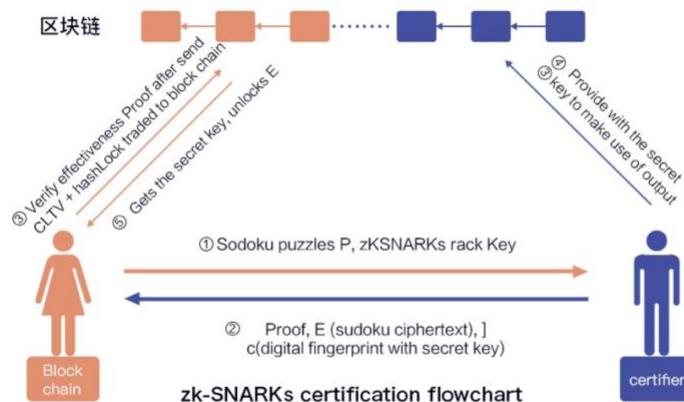


3.3 Global Community General Integral System Module

The technology architecture of Group Chain is based on the blockchain 3.0 technical framework to build a customized Group Chain system. Group Chain has 7-system module and the 2 public service systems. They are the zero-knowledge identity authentication system, the account management system, the information data storage system, the asset management system and the digital payment, the decentralized instant messaging tool, the underlying smart contract engine, the anonymous payment system, member token rewarding system and task cooperation system, in order to protect the quality of customer service.

3.3.1 Zero Knowledge Authentication System

The authentication system adopts a decentralized authentication system. The user's identity information and credentials are not owned by any organization, and are completely in the hands of the users themselves. By using the zero-knowledge proof algorithm zk-SNARKs (zero-knowledge succinct non-interactive arguments of knowledge), the authenticity and consistency between digital identity and real individuals can be ensured. Zero-knowledge proof means that one party (certifier) proves that a statement is correct to the other party (verifier) without revealing any information other than that statement is correct. The zk-SNARKs algorithm can be used to generate zero knowledge evidence messages to a minimum. There is almost no interaction throughout the authentication process except that the prover simply sends a message to the verifier. Currently almost no certifier has enough computing power to create fake zero-knowledge evidence to deceive the verifier. Therefore, it is impossible for a certifier to construct an effective zero-knowledge evidence without knowing the specific proof, thus ensuring that the certifier's digital identity is consistent with the real individual.

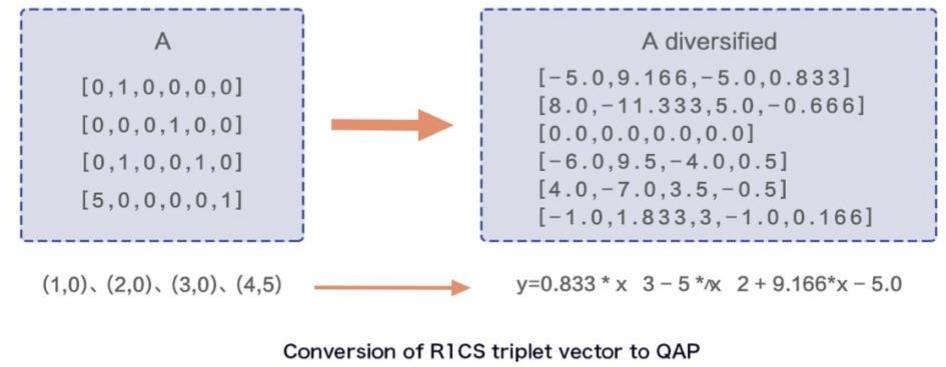


A	B	C
1 5	1 1	1 0
3 0	3 0	3 0
35 0	35 0	35 0
9 0	9 0	9 1
27 0	27 0	27 0
30 1	30 0	30 0

$$35 * 1 * 35 = 0$$

$$\text{~out} = \text{sym_2} + 5$$

The zk-SNARK algorithm is currently available for all NP problems. What we have to do is to determine the rule in the certification process. In the Group Chain, the question of whether a transaction is valid is the NP problem. The certification rule is mainly whether the input amount is greater than or equal to the output amount, and whether the transaction has a suitable signature, whether the input belongs to UTXO, etc. The conversion of the certification rule to the R1CS form is a key step of the zk-SNARK algorithm. The so-called R1CS (rank-1 constraint system) is a series of triplet vectors (a, b, c), satisfying the solution s of R1CS, $S_a * s_b - s_c = 0$, which is a mathematical representation of the certification rules.



3.3.2 Group Chain Account Management System

The Group Chain uses a decentralized account management system. The decentralized account management system carries out the user's identity information and authentication process in the blockchain network, and is dispersed in the globally equivalent blockchain node. There is no authoritative node to ensure the security of the system. As a fair "centralized service provider", the smart contract replaces the traditional centralized service provider, realizes the open and self-governing decentralization organization, and evades the users' information being leaked and tampered with.

The accounts of the Group Chain include two types: externalized account and contract account. Externalized account is controlled by a private key. The contract account is controlled by the contract code. An externalized account has no code, it can send a message by creating and signing a transaction; in a contracted account, once it receives a message that its code is activated, it will be allowed to read, write, send other messages and create a contract in turn and so on.

The Group Chain will assign each participant a fixed address. This function does not require participants to have any foundation. Everyone can participate quickly and easily. Each account has a 20-byte address and contains four fields:

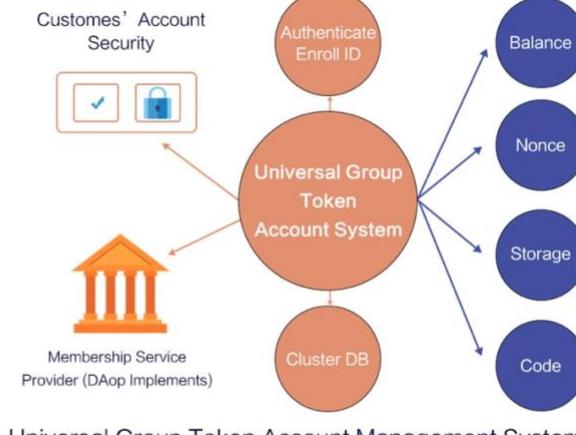
(1)Nonce : A counter used to ensure that each transaction can only be processed once. In the externalized account, nonce represents the number of transactions sent from the account address, which will appear in the field of the transaction, to prevent double spend attack. In the contract account, it represents the number of contracts created by the account;

(2) Current GTOKEN (Token issued by the Group Chain) balance of the account

(3) Contract code of the account: If there is a smart contract in the account, there is a corresponding contract code hash value. When the account address receives a contract execution request, the contract code will be automatically executed. Under the control of smart contracts, there is no mediation involved in the whole process of user authentication and asset transfer verification.

(4) Account storage: Contains the encoding of the storage belonging to the account (a mapping between 256-bit integer values), which is empty by default.

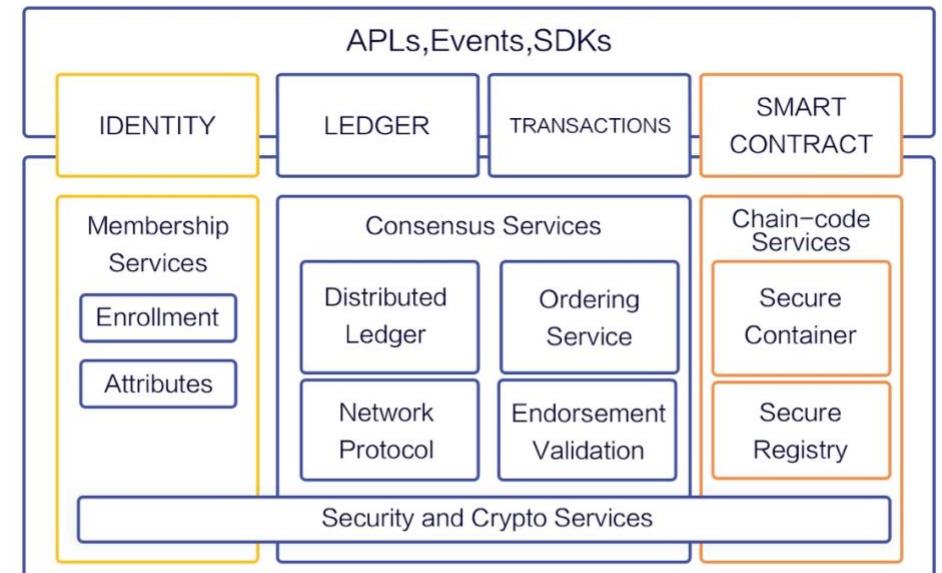
At the same time, as the account is generated, each registered user is also assigned a public/private key pair, which defines a specific account. The Public Key is a unique ID that is the identity of the user. Each account is indexed by an address, and the address is derived from a public key. The public key stores the balance information of each account. The private key is a specific password for each account, and we can access an account with a private key. The address generation process is: private key \rightarrow public key \rightarrow address.



3.3.3 Information Data Storage System

The Group Chain archives data in the form of data blocks. Each data block consists of a block header, a transaction queue, a root hash of the Merkle Patricia tree, a Unix timestamp, and so on. The stored data types mainly include account data, accounting data, transaction data, and underlying smart contracts. Account data mainly includes personal information, attributes of each account and assigned account addresses uploaded by different account types such as groups and individuals during the registration process. These data also include accounting data transaction data, underlying network protocols, sub-ledger data, transaction orders, approvals endorsement and so on. The RLP (Recursive Length Prefix) is the main encoding method for data serialization, and can serialize any nested binary data. The Group Chain adopts the data form based on MPT (Merkle Patricia Tree). Any slight change of stored data on the MPT will cause the root node of the MPT to change, so the consistency of the data can be verified, thereby ensuring the fairness and transparency of the information data storage system.

Information data storage system structure diagram



3.3.4 The underlying smart contract engine

The underlying smart contract engine of the Group Chain creates the following smart contract applications based on actual needs: task release and redemption, digital payment, community management, cross-border e-commerce, the belt and road, and provide users with smart contract templates to develop new smart contract applications. The smart contract of the Group Chain is developed based on blockchain 3.0 technology, and the user can conveniently use the template to develop a new application scenario. User-accessible data is limited to intra-chain data, and external data needs to be sent to the contract via a transaction. The target address of smart contract is passed through the stack, so that the contract can dynamically call other contract codes at runtime, so the participating nodes of each smart contract must obtain the same target address when dynamically calling the target code. In addition, the Group Chain allows multiple anonymous members to participate in constraining smart contract agreements, each participant is fully informed about the transaction, the value can be transferred between accounts, or placed in a smart contract for third party hosting.

The smart contract engine of the Group Chain will be based on the underlying SDK of the public chain, providing customized client applications to facilitate users to call and release smart contracts, enabling users to develop new smart contract applications in combination with their own needs, including but not limited to PCs. End, WAP station, APP (iOS & Android), PAD, H5, applet, etc.

Domain name registration system of Group Chain:

```
def register ( name, value );
    if !self , storage [name];
        self, storage [name] = value
```

```
PUSH1 0 CALLDATALOAD SLOAD NOT PUSH1 9 JUMPI STOP JUMPDEST PUSH1 32
CALLDATALOAD PUSH1 0 CALLDATALOAD SSTOR
```

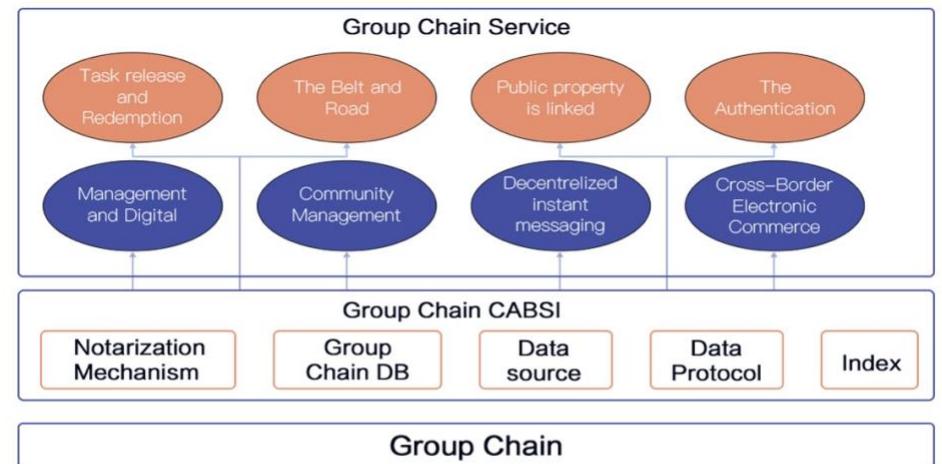
The bytecode program implements a domain name registration system. Anyone can send a message containing 64 bytes of data, of which 32 bytes are treated as keys, ie domain name registrants; another 32 bytes are treated as values, ie domain name. The contract checks that if the key exists in the store of the contract account. If the key does not exist, insert it into the store of the contract account itself.

During execution, an infinitely extendable array of bytes is called "memory", a program counter pointing to the current instruction to be executed is called "PC", and a 32-byte based stack is maintained by the EVM. At the beginning of execution, PC = 0, the memory and stack are empty. Now suppose that a message is sent, the message contains 123 bits of gas cost and 64 bytes of data, the first 32 bytes are the code of the number 54 and the last 32 bytes are the code of the number 20202020. Therefore, the initial state is: {PC : 0, STACK : [], MEM : {}, STORAGE : {}}, the instruction at 0 is PUSH1, which means that one byte of data is pushed onto the stack, and jump 2 steps in the code, the current state is {PC : 2, STACK : [0], MEM : {}, STORAGE : {}}. The instruction at 2 is CALLDATALOAD, which means that a value index is popped from the current stack, 32 bytes message in the 64 bytes are loaded at the index position, and the data is pushed onto the stack, the current state. Yes {PC : 3, STACK : [54], MEM : {}, STORAGE : {}}.

The instruction at 6 JUMPI pops two values from the stack, a1 : 9, a2 : 1, and if the second value a2 is non-zero, it jumps to the value specified by a1. If the value at index 54 of the contract account's storage is not 0, then a2 will become 0 (due to the NOT instruction), then we will not jump to the value specified by a1, then the next instruction will be STOP, thereby aborting the execution of the code. The current status is {PC : 9, STACK : [], MEM : {}, STORAGE : {}}.

The instruction JUMPDEST at 9 does not have any effect on the state of the virtual machine. It just marks a valid jump address, then the PC becomes 10. After the execution of PUSH1 at 10 is completed, the status changes to {PC : 12, STACK : [32], MEM : {}, STORAGE : {}}. After the execution of the instruction CALLDATALOAD at 12, a value of index: 32 is popped from the stack, and then 32 bytes of the 64 bytes of data in the message after the index 32 are pushed onto the stack, and the status is now changed to {PC : 13, STACK : [2020202020], MEM : {}, STORAGE : {}}. Next, execute PUSH1 at 13 and the status is {PC : 15, STACK : [2020202020, 0], MEM : {}, STORAGE : {}}.

CALLDATALOAD at 15 pops the index value 0 from the stack, and pushes the first 32 bytes of data in the message data onto the stack again. At this time, the status changes to {PC : 16, STACK : [2020202020, 54], MEM : {}, STORAGE : {}}. The SSTORE operation at 16 pops up two values a1 from the stack: 54,a2: 2020202020, stored in the store of the contract account, ie {PC : 17, STACK : [], MEM : {}, STORAGE : {54 : 2020202020}}, there are no instructions at 17, so the smart contract is aborted.



3.3.5 Asset Management System and Digital Payment

The asset management system of the Group Chain will digitally assign social assets through blockchain technology, thus helping the community to better grasp the trend of public assets and prevent the loss of collective assets. In addition, the asset management platform also provides personal asset management services to members of the community, using the decentralized features of the blockchain to break the query of members of the community about the traditional centralized accounting system. Intelligent management of assets by blockchain will greatly improve the efficiency of asset management and avoid disputes.

In addition, the Group Chain digital wallet can also accept the transfer and storage of mainstream digital currency such as BTC, EOS, ETH, USDT. Both the legal currency and the mainstream digital currency can be freely exchanged with the digital currency GTOKEN issued by the platform, thus making the Group Chain a comprehensive digital asset management platform. At the same time, GTOKEN can also serve as a certificate for users to enjoy group benefits and corporate public asset services. The platform encourages users to use GTOKEN to consume in the collective assets of the corresponding groups, such as hospitals, hotels, schools, gaming institutions, etc., and gives them twice token rebate according to the value of consumption and the contribution of users to the group. Therefore, users can share the economic dividends of the development of the group and further enhance the cohesiveness of the group. At the same time, digital currency payment reduces the distribution of intermediate links, reduces transaction costs, and improves payment efficiency.



3.3.6 Anonymous payment system

The Group Chain will use the Zerocash protocol to build a decentralized anonymous payment (DAP) scheme, a decentralized model that allows for any number of direct anonymous transfer payments. The construction of the Zerocash protocol consists of the following steps (can be based on any ledger-based currency, such as Bitcoin, Ethereum, etc.): first use zk-SNARKs and commit mode to give a simplified build, making COMM statistically hidden Non-interactive commitment model. Subsequently, the CMList is compressed using a CRH function that resists conflicts. By modifying the coin commitment, it is possible to support direct anonymous payment payments. Among them, in order to provide the payment target, we use the concept of address to generate an address key pair (apk, ask) for each user. And by modifying the structure of the address key pair, each user has a unique key pair (addr_pk, addr_sk) to send coins. The entire transaction process is included in the transaction txPour. Therefore, even if the currency is required to be redeemed, the destination address of the redemption amount can be defined on the premise of anonymous payment.

Setup

- INPUTS: security parameter λ
- OUTPUTS: public parameters pp

1. Construct C_{Pour} for Pour at security λ .
2. Compute $(pk_{\text{Pour}}, vk_{\text{Pour}}) := \text{KeyGen}(1^\lambda, C_{\text{Pour}})$.
3. Compute $pp_{\text{enc}} := G_{\text{enc}}(1^\lambda)$.
4. Compute $pp_{\text{sig}} := G_{\text{sig}}(1^\lambda)$.
5. Set $pp := (pk_{\text{Pour}}, vk_{\text{Pour}}, pp_{\text{enc}}, pp_{\text{sig}})$.
6. Output pp.

CreateAddress

- INPUTS: public parameters pp
- OUTPUTS: address key pair ($addr_{\text{pk}}, addr_{\text{sk}}$)

1. Compute $(pk_{\text{enc}}, sk_{\text{enc}}) := K_{\text{enc}}(pp_{\text{enc}})$.
2. Randomly sample a PRF_{addr} seed a_{pk} .
3. Compute $a_{\text{pk}} = \text{PRF}_{\text{addr}}(a_{\text{pk}})$.
4. Set $addr_{\text{pk}} := (a_{\text{pk}}, pk_{\text{enc}})$.
5. Set $addr_{\text{sk}} := (a_{\text{sk}}, sk_{\text{enc}})$.
6. Output ($addr_{\text{pk}}, addr_{\text{sk}}$).

Mint

- INPUTS:
 - public parameters pp
 - coin value $v \in \{0, 1, \dots, v_{\max}\}$
 - destination address public key $addr_{\text{pk}}$
- OUTPUTS: coin c and mint transaction tx_{Mint}

1. Parse $addr_{\text{pk}}$ as $(a_{\text{pk}}, pk_{\text{enc}})$.
2. Randomly sample a PRF_{an} seed ρ .
3. Randomly sample two COMM trapdoors r_s .
4. Compute $k := \text{COMM}_s(a_{\text{pk}} || \rho)$.
5. Compute $cm := \text{COMM}_s(v || k)$.
6. Set $c := (addr_{\text{pk}}, v, r_s, cm)$.
7. Set $tx_{\text{Mint}} := (cm, v, *)$, where $*$:= (k, s) .
8. Output c and tx_{Mint} .

VerifyTransaction

- INPUTS:
 - public parameters pp
 - a (mint or pour) transaction tx
 - the current ledger L
- OUTPUTS: bit b, equals 1 iff the transaction is valid

1. If given a mint transaction $tx := tx_{\text{Mint}}$.
 - Parse tx_{Mint} as $(cm, v, *)$, and $*$ as (k, s) .
 - Set $cm' := \text{COMM}_s(v || k)$.
 - Output $b := 1$ if $cm = cm'$, else output $b := 0$.
2. If given a pour transaction $tx := tx_{\text{Pour}}$.
 - Parse tx_{Pour} as $(rt, sn_1^{\text{old}}, sn_2^{\text{old}}, cm_1^{\text{new}}, cm_2^{\text{new}}, v_{\text{pub}}, info, *)$, and $*$ as $(pk_{\text{sig}}, h_1, h_2, \pi_{\text{Pour}}, C_1, C_2, \sigma)$.
 - If sn_1^{old} or sn_2^{old} appears on L (or $sn_1^{\text{old}} = sn_2^{\text{old}}$), output $b := 0$.
 - If the Merkle root rt does not appear on L, output $b := 0$.
 - Compute $hsig := \text{CRH}(pk_{\text{sig}})$.
 - Set $x := (rt, sn_1^{\text{old}}, sn_2^{\text{old}}, cm_1^{\text{new}}, cm_2^{\text{new}}, v_{\text{pub}}, hsig, h_1, h_2)$.
 - Set $m := (x, \pi_{\text{Pour}}, info, C_1, C_2)$.
 - Compute $b := V_{\text{sig}}(pk_{\text{sig}}, m, \sigma)$.
 - Compute $b' := \text{Verify}(\pi_{\text{Pour}}, x, \pi_{\text{Pour}})$, and output $b \wedge b'$.

Pour

- INPUTS:
 - public parameters pp
 - the Merkle root rt
 - old coins $c_1^{\text{old}}, c_2^{\text{old}}$
 - old addresses secret keys $addr_{\text{sk},1}^{\text{old}}, addr_{\text{sk},2}^{\text{old}}$
 - path $path_1$ from commitment $cm(c_1^{\text{old}})$ to root rt, path $path_2$ from commitment $cm(c_2^{\text{old}})$ to root rt
 - new values $v_1^{\text{new}}, v_2^{\text{new}}$
 - new addresses public keys $addr_{\text{pk},1}^{\text{new}}, addr_{\text{pk},2}^{\text{new}}$
 - public value v_{pub}
 - transaction string info
- OUTPUTS: new coins $c_1^{\text{new}}, c_2^{\text{new}}$ and pour transaction tx_{Pour}

1. For each $i \in \{1, 2\}$.
 - Parse c_i^{old} as $(addr_{\text{pk},i}^{\text{old}}, v_i^{\text{old}}, \rho_i^{\text{old}}, r_i^{\text{old}}, s_i^{\text{old}}, cm_i^{\text{old}})$.
 - Parse $addr_{\text{sk},i}^{\text{old}}$ as $(a_{\text{sk},i}^{\text{old}}, sk_{\text{enc},i}^{\text{old}})$.
 - Compute $sn_i^{\text{old}} := \text{PRF}_{a_{\text{pk},i}^{\text{old}}}(\rho_i^{\text{old}})$.
 - Parse $addr_{\text{pk},i}^{\text{new}}$ as $(a_{\text{pk},i}^{\text{new}}, pk_{\text{enc},i}^{\text{new}})$.
 - Randomly sample a PRF_{pk} seed ρ_i^{new} .
 - Parse $addr_{\text{sk},i}^{\text{new}}$ as $(a_{\text{sk},i}^{\text{new}}, sk_{\text{enc},i}^{\text{new}})$.
 - Compute $k_i^{\text{new}} := \text{COMM}_{a_{\text{pk},i}^{\text{new}}}(\rho_i^{\text{new}} || v_i^{\text{new}})$.
 - Compute $cm_i^{\text{new}} := \text{COMM}_{a_{\text{pk},i}^{\text{new}}}((v_i^{\text{new}} || k_i^{\text{new}}))$.
 - Set $c_i^{\text{new}} := (addr_{\text{pk},i}^{\text{new}}, v_i^{\text{new}}, \rho_i^{\text{new}}, r_i^{\text{new}}, s_i^{\text{new}}, cm_i^{\text{new}})$.
 - Set $C_i := \mathcal{C}_{\text{enc}}(pk_{\text{enc},i}^{\text{new}}, (v_i^{\text{new}}, \rho_i^{\text{new}}, r_i^{\text{new}}, s_i^{\text{new}}))$.
2. Generate $(pk_{\text{sig}}, sk_{\text{sig}}) := K_{\text{sig}}(pp_{\text{sig}})$.
3. Compute $hsig := \text{CRH}(pk_{\text{sig}})$.
4. Compute $h_1 := \text{PRF}_{a_{\text{pk},1}^{\text{old}}}^{\text{pk}}(1 || hsig)$ and $h_2 := \text{PRF}_{a_{\text{pk},2}^{\text{old}}}^{\text{pk}}(2 || hsig)$.
5. Set $x := (rt, sn_1^{\text{old}}, sn_2^{\text{old}}, cm_1^{\text{new}}, cm_2^{\text{new}}, v_{\text{pub}}, hsig, h_1, h_2)$.
6. Set $a := (path_1, path_2, c_1^{\text{old}}, c_2^{\text{old}}, addr_{\text{sk},1}^{\text{old}}, addr_{\text{sk},2}^{\text{old}}, addr_{\text{pk},1}^{\text{new}}, addr_{\text{pk},2}^{\text{new}})$.
7. Compute $\pi_{\text{Pour}} := \text{Prove}(pk_{\text{Pour}}, x, a)$.
8. Set $m := (x, \pi_{\text{Pour}}, info, C_1, C_2)$.
9. Compute $\sigma := S_{\text{sig}}(sk_{\text{sig}})$.
10. Set $tx_{\text{Pour}} := (rt, sn_1^{\text{old}}, sn_2^{\text{old}}, cm_1^{\text{new}}, cm_2^{\text{new}}, v_{\text{pub}}, info, *)$, where $*$:= $(pk_{\text{sig}}, h_1, h_2, \pi_{\text{Pour}}, C_1, C_2, \sigma)$.
11. Output $c_1^{\text{new}}, c_2^{\text{new}}$ and tx_{Pour} .

Receive

- INPUTS:
 - public parameters pp
 - recipient address key pair ($addr_{\text{pk}}, addr_{\text{sk}}$)
 - the current ledger L
 - OUTPUTS: set of received coins
1. Parse $addr_{\text{pk}}$ as $(a_{\text{pk}}, pk_{\text{enc}})$.
 2. Parse $addr_{\text{sk}}$ as $(a_{\text{sk}}, sk_{\text{enc}})$.
 3. For each Pour transaction tx_{Pour} on the ledger:
 - Parse tx_{Pour} as $(rt, sn_1^{\text{old}}, sn_2^{\text{old}}, cm_1^{\text{new}}, cm_2^{\text{new}}, v_{\text{pub}}, info, *)$, and $*$ as $(pk_{\text{sig}}, h_1, h_2, \pi_{\text{Pour}}, C_1, C_2, \sigma)$.
 - For each $i \in \{1, 2\}$.
 - Compute $(v_i, r_i, t_i, s_i) := \mathcal{D}_{\text{enc}}(sk_{\text{enc}}, C_i)$.
 - If D_{enc} 's output is not \perp , verify that:
 - cm_i^{new} equals $\text{COMM}_{a_{\text{pk}}}(v_i || \text{COMM}_{r_i}(a_{\text{pk}} || \rho_i))$.
 - $sn_i := \text{PRF}_{a_{\text{pk}}^{\text{old}}}^{\text{pk}}(\rho_i)$ does not appear on L.
 - If both checks succeed, output $c_i := (addr_{\text{pk}}, v_i, \rho_i, r_i, s_i, cm_i^{\text{new}})$.

3.3.7 Decentralized Information Instant Messaging Tool

The decentralized instant messaging tool of the group chain will be developed based on the peer-to-peer protocol development. The public and private key mechanism of the blockchain technology ensures the security of communication and prevents it from being stolen. Users of the group chain can publish the projects through the decentralized instant messaging tool to ensure the security. Due to the decentralized storage, information does not need to be temporarily stored by the central server, then it will prevent data from backing up by the centralized storage system. In this system, the information flow will be calculated by the nodes firstly and then backed up by other nodes. By setting up a peer-to-peer communication private chain on the public chain, the entire information will be restricted to the nodes of private chain, so that the information is circulated in an absolute closed environment to achieve privacy and security. With the use of decentralized information exchange platform, it makes sure that the public data cannot be hidden, and the hidden information won't be disclosed, improving the social communication efficiency comprehensively.

The group chain will store all the generated data in the user's own "free database", that means each user is a terminal, has all the rights to process the data, and is not filtered or obtained by the platform. The end-to-end encryption algorithm makes sure no one can obtain the user's private conversation, thus ensuring the security and privacy of the user's data. In addition, the data on the blockchain cannot be tampered with; each node has a backup, which means single point of failure will not compromise data integrity; blockchain technology can store multiple private keys.



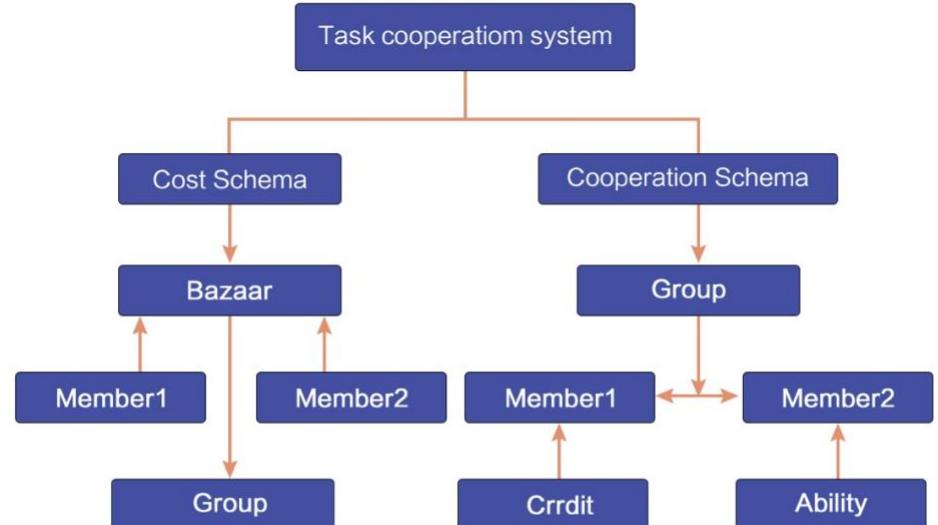
3.3.8 Task cooperation system

The blockchain technology will accumulate the transaction records of each user, including the credits, areas of expertise, ratings records. The unchangeable and truthful characteristic will reduce the obstacles of cooperation and promote the mutual trust, improve the cooperation efficiency. The group members can also use the information to get to know any other member quickly and directly, laying the foundation for future cooperation. The credit system will be established in this way and extend to be a new cooperation mode. The GTOKEN platform will combine the advantages of blockchain technology and introduce two new cooperation mechanisms:

The first one: the social cost mechanism. The members with strong reputation can set their own "communication value". In other words, if you want to talk to them for cooperation, you need to pay a point fee first. In this way, social willing can be clarified through the upfront cost, the members with strong credit will get both social benefits and potential project sources. Whether the "communication value" is reasonable or not will be tested by the market. If two sides both have "communication value" and want to talk with each other, the cost is the difference between the two people's value, and is paid by someone who is relatively low; meanwhile, the member can also ask the host to pay the total "communication value".

The Second one is the Cooperative matching mechanism. Within the group, each member's ability and needs will be evaluated according to the identity, historical credit, skill characteristics. These will be used to recommend them the matching partner members in the group, the host member will decide whether to interview or not. This ensures that the interaction logic between the members of the group can be rebuilt and the vitality within the group will be greatly enhanced.

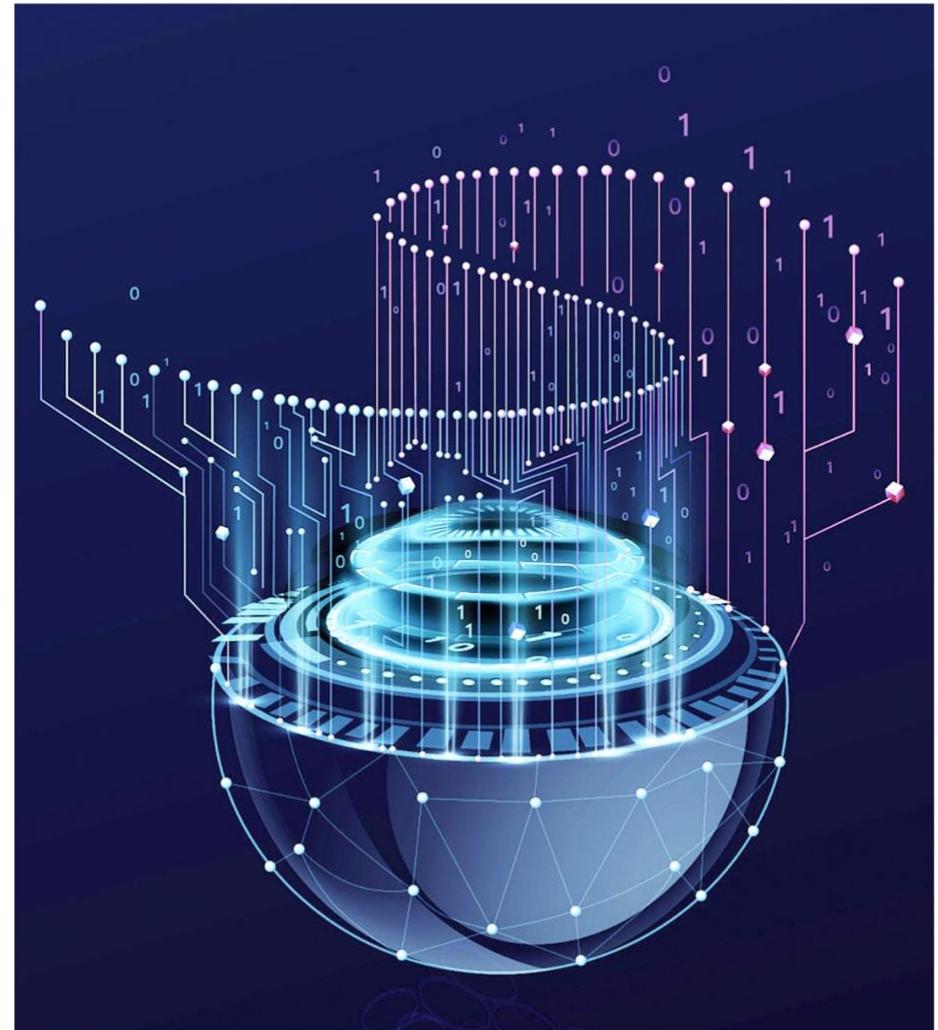
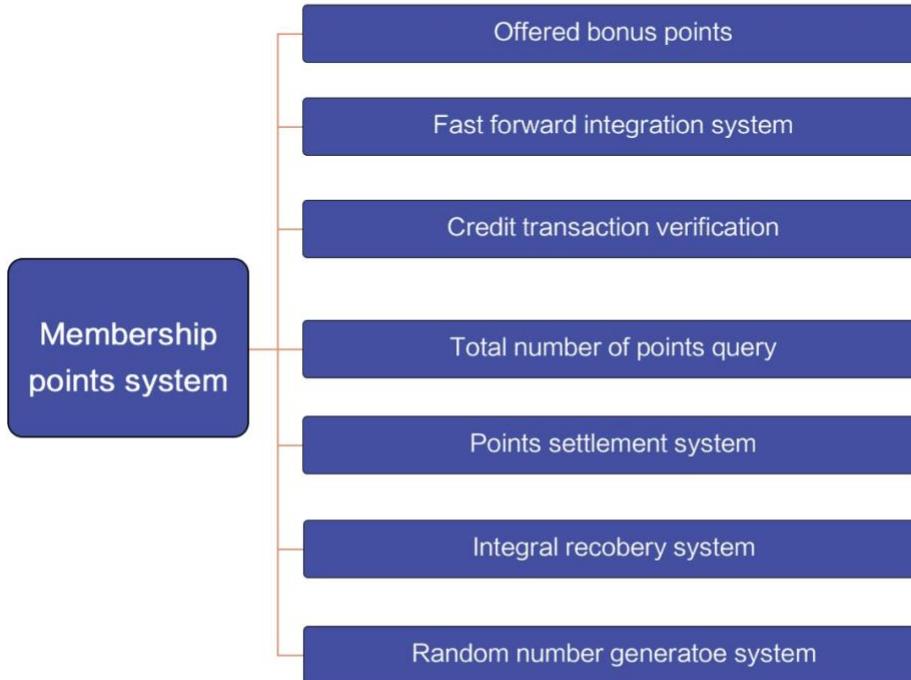
Community chain task cooperation system



3.3.9 User Credit System

The Membership Points System is a common customer maintenance system to enhance the user's stickiness in each enterprise. It is often accompanied by regular models such as points exchange and points for gifts, but points are mostly the idle state in the majority of the enterprises. The traditional integral mechanism has the disadvantages of difficult traceability, low security, automatic zero clearing, difficult circulation and difficult settlement. It cannot truly reflect the effect of the value-added system.

The Membership Points System of GTOKEN will greatly solve the above problems. The GTOKEN will replace the points, and its functional modules include integral task reward, fast-issue point system, point transaction verification, and total point inquiry. The blockchain settlement system can be used to implement instant and accurate point settlement and recovery. The entire process follows a strict encryption algorithm and verification system. The point settlement system of the group chain will link all distributed recorded points on the chain, and then the points will be automatically settled according to the smart contract, will not be controlled by any centralized organization or third party. The bonus Token also will be distributed to the user's identity address instantly, ensuring absolute open, fairness and transparency in the exchange process.



TOKEN MECHANISM AND ISSUANCE PLAN

4.1 GTOKEN Economy Model

The group chain will adopt the inflation economic model, with an annual increase of 5%. The initial generation of GTOKEN will be based on the Ethereum contract technology. After the main network is online, the group chain will adopt the DPOS consensus mechanism, which will generate 49 super nodes as the block producers by voting. The incentives for them are not only from the handling fee, but also the additional issuance, and the super node will share the inflation gains by weight.

In order to promote a broader consensus ecosystem, except for considering the total number of Tokens for each candidate node, more emphasis is put on the regulation coefficient of valid address parameter on total Token numbers in the part of super nodes voting. Regarding the node address voting, the final number will be calculated according to the following rules:

$$\text{Value} = n * k \quad \text{and}, \quad n = \sum_1^i f(\alpha_i) = \begin{cases} 1, & \alpha_i > 100\text{GTOKEN} \\ 0, & \alpha_i \leq 100\text{GTOKEN} \end{cases}$$

n is the number of valid addresses, and the judging criteria of valid address is: $\alpha_i > 100$ GTOKEN (α_i is the Token value of the i -th address), that means only the address which has larger than 100 GTOKEN coin can be determined as a valid address.

k is the number of valid addresses for the super node, they are ranked as $k=1.5$ for the top ten, $k=1.2$ for the 11th to 20th, $k=1$ for the 21-30, and $k=0.8$ for the rest.

4.2 GTOKEN issuance and distribution plan

Assignment object	Proportion	Number of allocations (100 million pieces)	Description
Group incentives	10%	3	Group operations and promotion
Technology	15%	4.5	Group operations and promotion
Founding Team	10%	3	Held by the founder team, released in four years
Foundation	15%	4.5	Operation and maintenance of the Foundation
Business	10%	3	For exchanges, marketing and value management
Token exchange	40%	12	For the qualified individual and institutional investors
Total amount	100%	30	

The system will intercept the top 49 dynamic value real-time dynamically as the super nodes at GMT + 8 00:00 every day, they are responsible for super nodes duties in the next 24 hours and share the additional income according to the value weight.

4.3 GTOKEN exchange and lock mechanism

The sale of GTOKEN will be in strict accordance with laws and regulations around the world and sold to the qualified investors. The initial issuance of GTOKEN is 3 billion, 40% of which, or 1.2 billion tokens are used for exchange.

Token exchange ratio: 1ETH: 6000GROUP

Locking conditions: 30% unlocked on the first trading day, 20% unlocked on the same day next month, 20% on the same day another next month, 30% on the same day 3 month later.

Official token exchange address: 0xfe61ba201d3778dd2482bfe4361706003ba20970

4.4 Release Plan for Founding Team

The tokens held by the founding team will be locked for two years and released gradually within four years, 30% released after 2 years, 35% released after 3 years and 35% released after 4 years.

INVESTMENT INSTITUTIONS AND TEAMS



Core Founding Team



Kong Xiangke
Chairman

Mr. Kong served as vice chairman of the Kuomintang Administrative Committee, vice chairman of the International Hongmen General Group, chairman of the Taiwan Chinese Confucian Group, vice president of Carry Air-Leasing Ltd., and director of the Department of Business Administration of the Chien Hsin University of Science and Technology. He was responsible for managing the asset of Kuomintang party for years. He graduated from the Department of Economics of Taiwan University with a master's degree and a doctoral degree from the Department of Management of Taiwan University of Science and Technology.



Xiong Yufeng
VP

Mr. Xiong served as convener of Taiwan agricultural blockchain promotion activities, convener of China liquor block chain research center, chief representative of the agricultural development strategy group in Greater China, vice chairman of yahoo lions 300A1 blockchain association, and have rich experience in blockchain investment and blockchain technology.



Li Zhaoliang
VP

Mr. Li used to be the chief operating officer of Yunduan Culture and Education Co., Ltd., the chief operating officer of Zhangsheng Entertainment Co., Ltd., the chief operating officer of Xinwutai Media Group, and the head of cloud computing and video streaming technology in Xinwutai Group. Mr. Li has extensive experience in the field of blockchain technology development.

Core Founding Team



Zhu Bangwen
VP

Mr. Zhu used to be the president of China Taiwan Global Cross-border E-commerce Association, the president of China International Electronic Commerce Association, the president of China Cross-Straits Affairs Exchange Association, and the president of Zhongtian Shangyu International E-Commerce Co., Ltd. Mr. Zhu has many years of work experience and resources in the field of cross-border e-commerce and IT Internet.



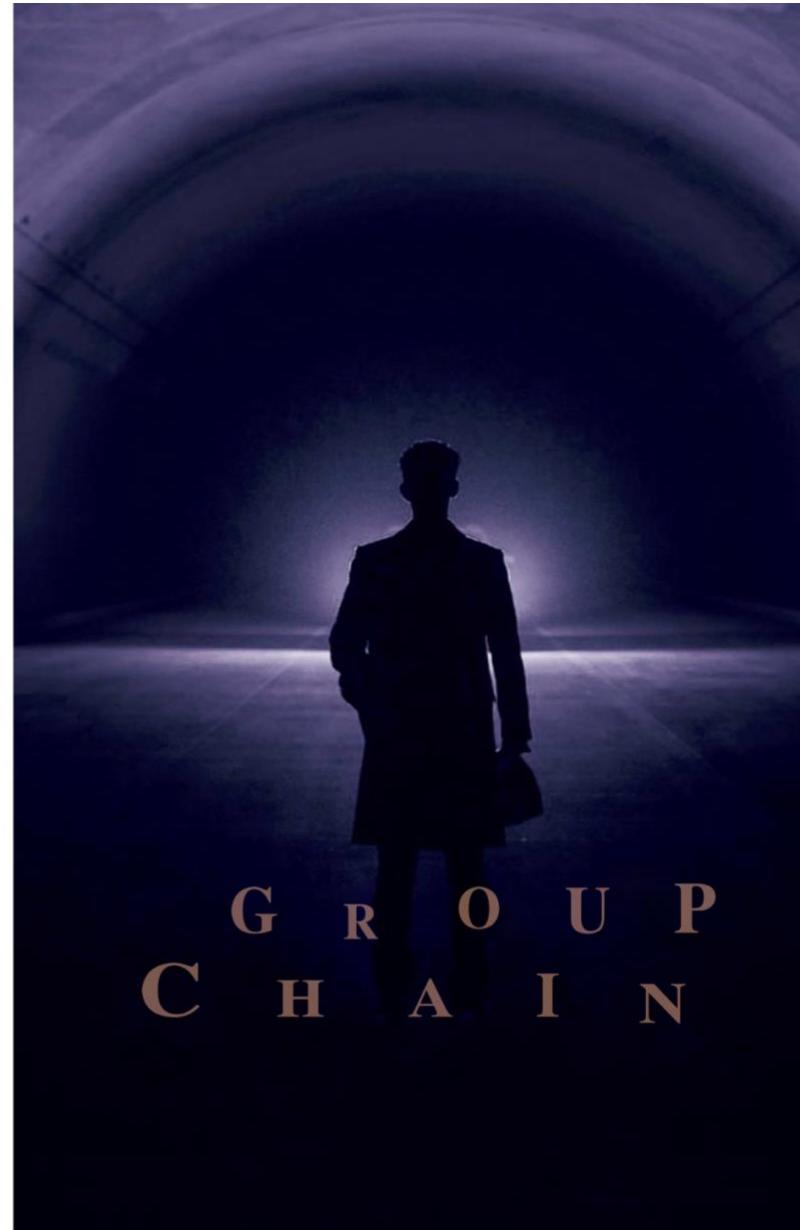
Zhang Kaiwei
VP

Ph.D of information institute at University of London, master degree at University of Pittsburgh. Mr. Zhang used to be the founder of Guangdong Liansu Cross-Straits Science and Technology Park, the chairman of Guangdong IC Association, the young chairman of the European Taiwan Chamber of Commerce, the chairman of the European Taiwan University Alumni Association, has 15 years of experience in high-tech information engineering research and multinational company management.



Wu Junyu
VP

Mr. Wu used to be CEO of Xi'an Headquarters of Beijing Zhongmei Group Medical Group, General Manager of Hyperbaric Oxygen Therapy Center in Taiwan, Consultant of International Talent Cultivation Center of National Sun Yat-Sen University, and General Manager of Customer Service Department of Taiwan Big Brother Telecom Group. He has extensive work experience in community maintenance, human resource management and team building field.



G R O U P
C H A I N

Consultant**Liu Peixu**

Current President of the International Hongmen Federation
Former Chief Executive Officer of the International Hongmen Federation
Founding President of the International Hongmen Federation

President Liu Peixu is currently the chairman of the International Hongmen Federation and a representative of the Hongmen community in the world. He was born in Taipei, obtained a Bachelor of Business from Fu Jen University and a JD from Armstrong University in the United States. In 1975, he joined Hongmen and was in charge of the major management of the company. From 1981 to 1991, he visited various Hongmen groups in the world. In 1992, he served as the chief executive of the International Hongmen Federation. In 2009, was elected the president of the International Hongmen Federation.

Chen Boguang

Chairman of the China Zhigong Party
President of the China Zhigong Culture Group
Honorary President of World Chen Clan Group

Chen Boguang, the chairman of the Taiwan Zhigong party, obtained Ph.D. at the National Development Institute of the Chinese Culture University. He has long been committed to cross-strait exchanges and promoting the great rejuvenation of the Chinese nation. He is now. President Chen is the head of Hongmen Huatai Mountain, the executive vice president of the China Cross-Straits Exchange Group, the vice president of the National Taiwan Compatriots Investment Enterprise Group, the president of the Taiwan Branch of the Beijing Capital Economic Research Association, and the honorary president of the World Chen Clan Group.

Carlos Chou

Former Oracle/Siebel Global President
SAP Global Senior Vice President
HP Global Vice President

Carlos Chou has worked for several Fortune 500 technology companies such as the President of Siebel, President of Oracle Asia Pacific, Senior Vice President of SAP Global, responsible for global CRM business and the Global Vice President of HP company, led the global Business Solutions division. He used to managed \$3 billion revenue division. He is Good at driving growth through innovative market strategies.

Consultant**Li Keming**

vice president and CIO of Gome Holdings Group

Lv Yi fan, vice president and CIO of Gome Holdings Group, is responsible for building the whole ERP system of Gome. In the process of system construction, a strong implementation team has been set up that composed of employees from different departments covering stores, business sectors, IT and others to provide Gome customers with a new service platform. Gome's financial organization has become more standardized and effective during the tenure of General Lu, so that it can form an effective mechanism in the whole budget preparation, budget implementation and cost control. He has rich experience and industry resources in enterprise strategy, enterprise management, SAP, Internet data.

Li Keming

President of the Harvard Business School Alumni Group in Taipei
Honorary Vice Chairman of China Confucianism Research Association
Chairman of Yuanda Venture Capital Co., Ltd.

Li Kuming, Honorary Vice Chairman of the China Confucianism Research Association, President of the Taipei Harvard Business School Alumni Group. He served as the Chairman of Yuanda Venture Capital Co., Ltd., Chairman of Yuanda International Asset Management Co., Ltd., and Vice Chairman of Yuanda Jinghua Securities Co., Ltd. He is the author of when Confucius meets Harvard's: Aspiration and Workplace, and teaches Business Negotiation for the EMBA and IMBA programs at National Chengchi University.

Han Taiyu

Vice President of the International Hongmen Federation
Founding President of International Hongmen Charity Federation
Chairman of Bailai De Co., Ltd.

Vice Chairman Han Taiyu, First Vice Chairman of the 3rd International Hongmen Chinese Group in 2010-2012, Chairman of the 4th International Hongmen Chinese Group 2012-2014. In order to implement the revival of China, the idea of a peaceful development across the Taiwan Strait, he led the group to join the cross-strait forum, and strengthen the interaction with the Chinese Zhigong party and other sectors. He is the current Vice President of the International Hongmen Federation, the founding president of the International Hongmen Charity Federation.

Consultant

Zeng Wanhua

Chairman of the International Hongmen Chinese Federation
 Chairman of Daliu Trading Co., Ltd.
 Chairman of Fangchuan Technology Engineering Co., Ltd.

Zeng Wanhua, currently the chairman of the International Hongmen Chinese Federation, the core member of the International Hongmen Federation for more than 20 years. He has long been committed to cross-strait exchanges and actively participated in the process of promoting the great rejuvenation of the Chinese nation. Mr. Zeng has been operating in the engineering construction industry for many years, he is the chairman of Daliu Trading Co., Ltd. and the chairman of Fangchuan Technology Engineering Co., Ltd., and actively participates in the construction of the One Belt and Road Initiative. He has rich project resources and begins to participate in blockchain programs.

Lin Lihui

Chairman of the International Hongmen Women's Federation
 Chairman of Dunyang Construction Co., Ltd.

Lin Lihui, currently the chairman of the International Hongmen Women's Federation, she has been in Hongmen for over 10 years and engaged in the promotion of women's rights and interests. At the same time, Ms. Lin has been working on cross-strait exchanges and the great rejuvenation of the Chinese nation for years. Chairman Lin has been engaged in the real estate industry for many years, she is currently the vice chairman of the China Cross-Strait Real Estate and Economic Trading Association and the chairman of Dunyang Construction Co., Ltd.

Lu Siyou

Vice President of Macau Multinational Holding Group
 Vice President of Taiwan Business Association in Macau
 Vice President of the Macau Creative Industries Association

Lu Siyou is currently the vice president of the Macau Multinational Holding Group and the vice president of Taiwan Business Association in Macau. He has actively participated in cross-strait economic and cultural construction and trade exchanges for the years. Mr. Lu is an outstanding representative of Taiwanese businessmen, he served as Vice President of Guoguang Art School, Secretary General of Taiwanese Business Association in Foshan, and the Secretary-General of the Taiwan Business Service Center in Guangdong Province. He has achieved remarkable results in the economic and cultural fields and made outstanding contributions.

Consultant

Chen Shiming

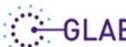
Lecturer in Guangwu Industrial College
 Secretary-General of the Hanhui Culture and Education Foundation

Chen Shiming is currently a lecturer at Guangwu Industrial College and the secretary-general of the Hanhui Culture and Education Foundation. Mr. Chen has been committed to promoting the development of education, he has served as a teacher of the Huaiwu Business School, a convener of the Social Activities Group of the Humanities Research Society and the general manager of Bisheng Culture Co., Ltd. He has been focusing on the youth education and cultural activities for many years.

Zhang Zhaocheng

Honorary Chairman of Peking University Taiwan Alumni Group
 Secretary-General of the Chinese Taoist Association
 Executive Director of Chinese Taoist Academy

Zhang Zhaocheng is the honorary chairman of the Peking University Taiwan Alumni Group, the Secretary General of the Chinese Taoist Association and the Executive Director of the Chinese Taoist Academy. Mr. Zhang graduated from the Philosophy Department of National Taiwan University and the Institute of Religious Studies of Peking University. He has long been committed to the study of religious culture, actively promoting the cross-strait ethnic integration, and the development of Taoism cultural exchanges between the two sides.

INSTITUTIONAL
INVESTORS



International Hongmen Federation

The International Hongmen Federation is the largest overseas Chinese group in the world. The regulations of the federation is "Uniting Hongmen members, carrying forward the Hongmen's loyalty spirit, revitalizing ethics, promoting social welfare, serving the people and benefiting mankind". In 2004, President Liu Peixun revisited the five major tasks of the International Hongmen Federation: carrying out the Hongmen's loyalty spirit, promoting Chinese traditional culture, promoting cross-strait economic and cultural exchanges, promoting China's peaceful reunification, and realizing the great rejuvenation of the Chinese nation. There are more than 10 million members in Hongmen federation and many industries all around the world, such as the invested enterprises, infrastructure, public utilities, tourism, hotels, gaming and other industries. Hongmen's comprehensive resources will become the core resource for the GTOKEN Token project.



China Qingxi Association (Taiwan Veterans Association)

The China Qingxi Association was established in 2000 under the active planning and guidance of General Jin Enqing (now the committee chairman of the Chinese Kuomintang), the commander of the Military Command District Command of the Ministry of National Defense of Taiwan (now the Reserve Command). With the aim of "serving the reserve, concentrating on the reserve, creating a peaceful society, supporting reserve mobilization, and cooperating with national defense". The China Qingxi Association has set up the Qingxi General Meeting in 22 cities in Taiwan, covering 364 township grassroots organizations in Taiwan. The current membership is more than 1 million. The China Qingxi Association will become a strategic partner of the GTOKEN Token, and actively promote the GTOKEN chain platform among the underlying organizations and members.



Chinese Taoist Association

The Chinese Taoist Association of Taiwan in China was first established in Beijing in September 1912. The Chinese Taoist Association has a purpose of promoting the teachings, organizing the canons, cultivating the country, serving the society, establishing the national integrity, and promoting the world's great harmony. It consists of the Taiwan Provincial Taoist Association, the Taipei City Taoist Association, the New Taipei City Taoist Association etc. and Hongda Committee, Volunteer Committee, Youth Committee, Women's Committee, and Academic Committee are established. We will work hard to rejuvenate the Chinese national culture. There are currently more than 10,000 members of the association, located in Taiwan or overseas Chinese areas. The Chinese Taoist Association will become the strategic partner of the GTOKEN Token, and actively promote the use of the GTOKEN chain platform in Taoist members.

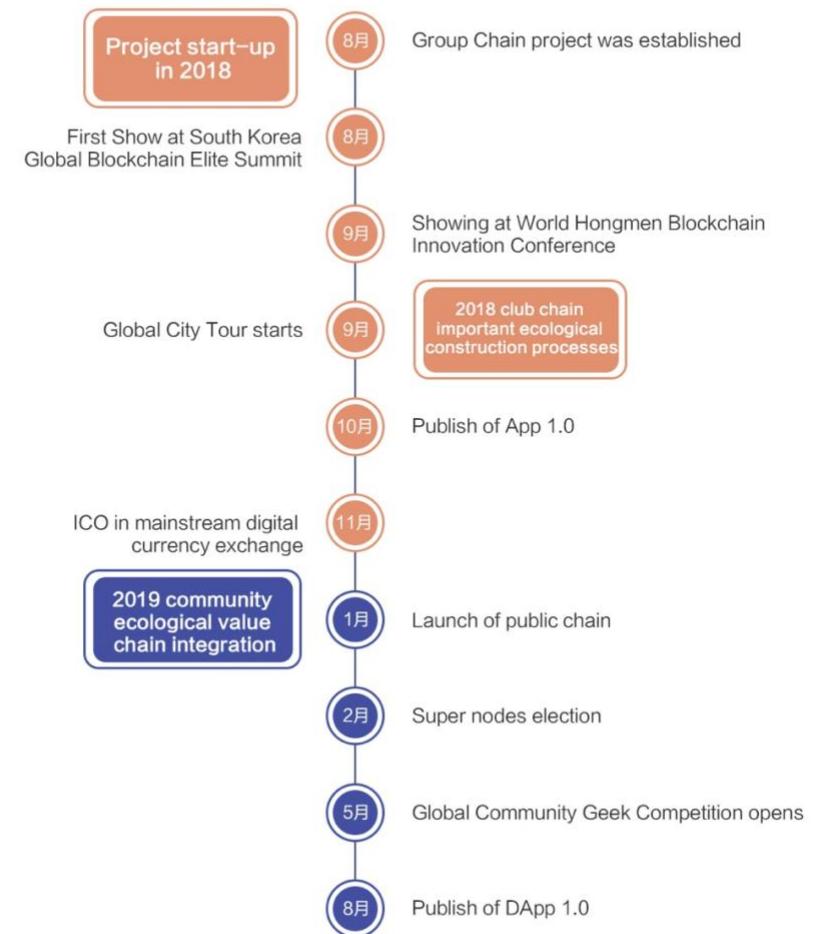
IMPLEMENTATION ROADMAP

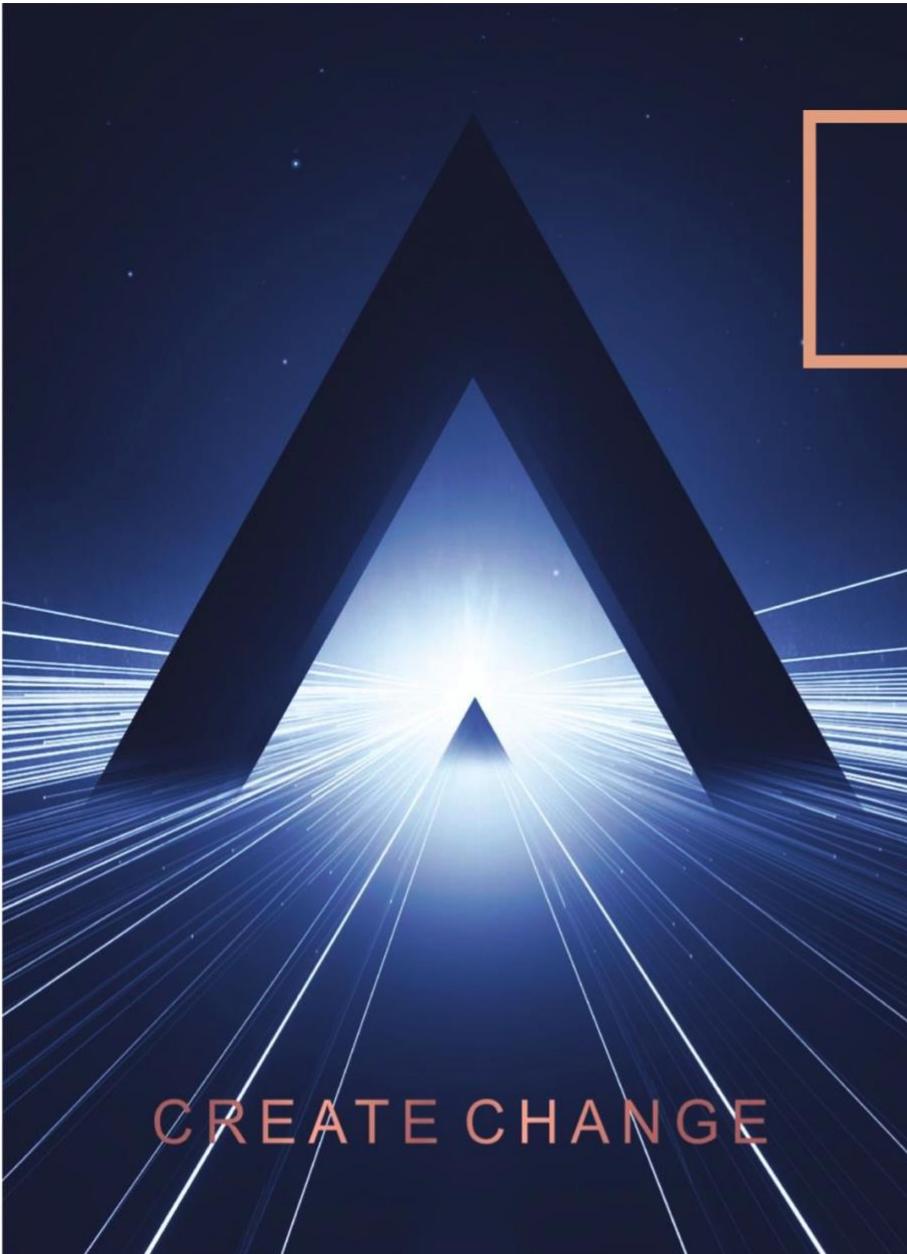
The Universal Group Token (abbreviation: Group Chain) will accelerate in five aspects including public chain technology development, users import, launch of application scenarios, big event marketing, and community construction.

All progress of the Group Chain will be updated synchronously on the official website gtoken.world
The following are key time nodes:



TIME LINE Community chain time planning





CONTACT

Official email: universalgroup2018@outlook.com
Official website: gtoken.world

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The investment in the project means the participant has the capacity for civil conduct, and the contract with Group Chain is true and effective. The parties cooperate on the basis of free will.

Group Chain will try the best to guarantee the settlement and implementation of the design contents of the projects, provided that there may be revision and upgrade of the document contents due to technical reform or other force majeure factors. Please be informed of the latest information from official website.

Group Chain platform has explicitly stated the potential risks to the participants. Once the participants make project investment, it shall be deemed that they have understood and recognized the project statement and accepted the potential risks.

GROUP CHAIN



universal Group Token

Born for Better Groups

THANKS