



Ολυμπιακοί Αγώνες

**ΟΑ**

OLYMPIC GAMES FOR ALL RESHUFFLE



**《OAWHITE PAPER》**

ΟΛΥΜΠΙΑΚΟΙ ΑΓΩΝΕΣ

OLYMPIC SPIRIT·OLYMPIC LIGHT

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## Introduction

At the beginning of 2020, COVID-19 has swept the world, causing a heavy blow to the global economy and changing the lifestyle of people in all countries. Nobel Peace Prize winner Michael Mandela once said that sports has the power to change the world. When the world is reshaped by the epidemic, sports and the Olympic spirit also show its important role. Olympiism hopes to create a better world through sport, advocating the Olympic spirit of mutual understanding, friendship, solidarity and fair competition. The courage to struggle, perseverance, solidarity and mutual assistance shown by the people of the world in the fight against the epidemic is also a vivid portrayal of the Olympic spirit.

In this context, the OA(Greek Ολυμπιακοί Αγώνες, Olympics) project, jointly developed by the project team and the International Olympic Committee, was born. The project is a blockchain project based on blockchain technology to promote the Olympic sports spirit, improve sports quality, sports culture, spread sports culture, develop charity, and create shared economic value. OA fully applies the blockchain decentralized, reliable, intelligent contract and other characteristics, and tries to create a global sports life platform driven by the Olympic spirit. On the OA platform, all subjects and individuals in the industrial chain can carry out information transmission, accurate data, asset trading and capital distribution activities on the OA, all of which are protected and encouraged by blockchain technology.

Core value: decentralized, open, transparent, fair and shared

Development vision: apply blockchain technology to the field of national sports and

fitness, and build a global platform for national sports life.

The OA will continuously issue 200 million digital currencies. OA coins can be used as a medium of value circulation and trading in the field of sports, not only as a bookkeeping reward, but also as a digital currency circulation for general equivalents. Through OA currency, it can provide good digital service support for the development of sports and Olympic spirit communication industry.

# 1, Project Background

## 1.1 Industry Background

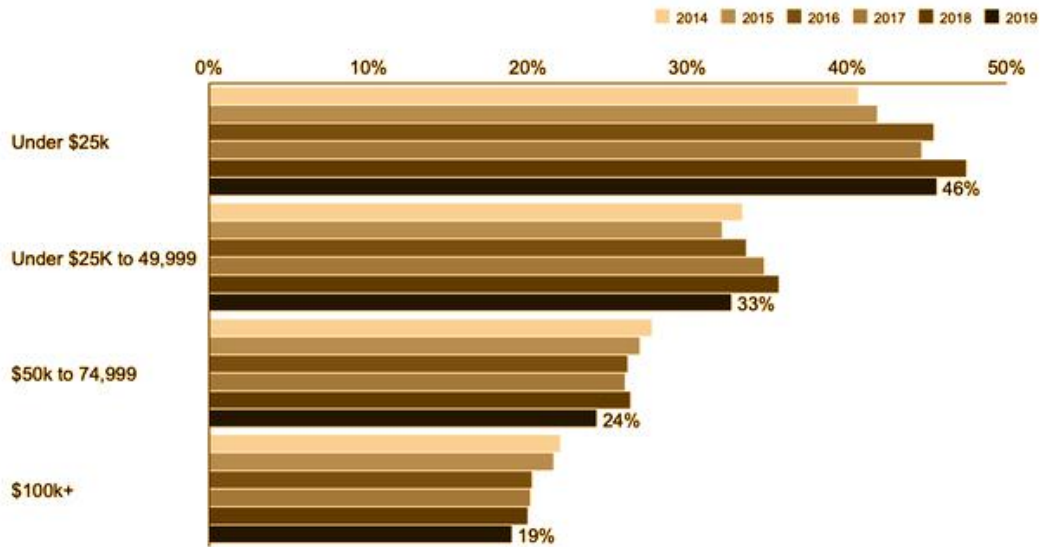
At the beginning of 2020, COVID-19 has swept the world, causing a heavy blow to the global economy and changing the lifestyle of people in all countries. Nobel Peace Prize winner Michael Mandela once said that sports has the power to change the world. When the world is reshaped by the epidemic, sports and the Olympic spirit also show its important role. Olympiism hopes to create a better world through sport, advocating the Olympic spirit of mutual understanding, friendship, solidarity and fair competition. The courage to struggle, perseverance, solidarity and mutual assistance shown by the people of the world in the fight against the epidemic is also a vivid portrayal of the Olympic spirit.

Social isolation and travel restrictions have brought a lot of changes to people's lives, but more people have also realized the importance of sports during this period: sports can not only bring people a healthy body, but also enhance their confidence and determination to constantly overcome challenges. As the beginning of the Olympic Charter, sports is a philosophy of life. In this special period, people have more reason to learn and master the philosophy of life of sports.

COVID-19 brings more families into low-income groups, thus aggravating the gap in individual amount of exercise. In 2019, 46 percent of US respondents who earned less than \$ 25,000 indicated their lack of movement; only 19 percent of respondents over \$ 100,000. The sports industry should work closely to put forward targeted sports solutions for different groups.

### Prevalence of physical inactivity is significantly higher among lower income groups

2014-2019 Physical inactivity by income in the US



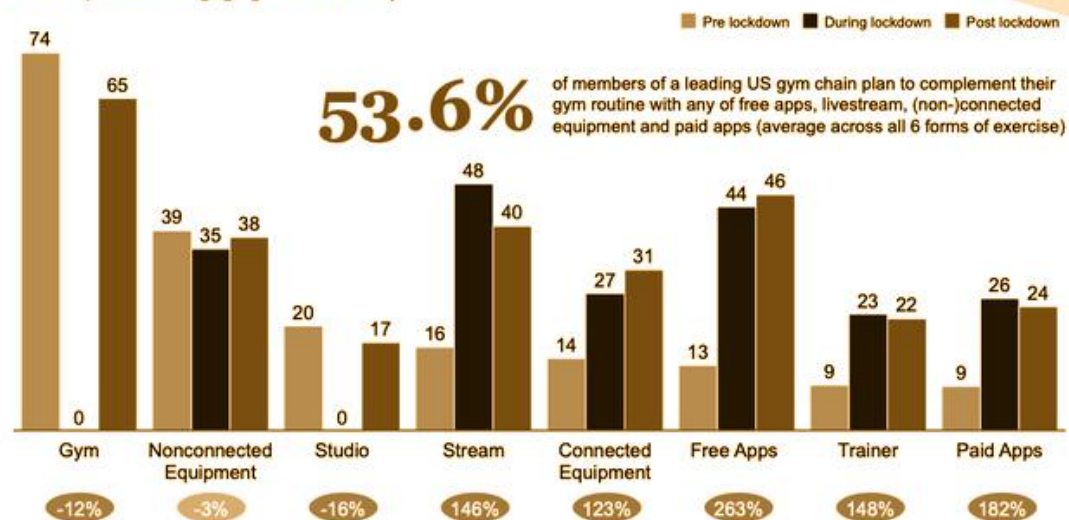
Source: Physical Activity Council - study performed on US population aged 6+ with 18,000 participants

Figure 1-1: Exercise is related with income levels

Over the past year, digital sports and online sports communities have developed rapidly due to social distancing and home isolation regulations. Digital sports will continue to become a hot trend in 2021 and the next year, and traditional sports to complement each other, encourage and lock down the user base.

### Exercisers will combine traditional equipment with digital activities

% of respondents engaging in each activity



Source: Fitness survey at major US gym chain April 2020, n = 2,855

Figure 1-2: Digital motion ratio



## 1.2 Problems faced by the company

In the post-epidemic era, the economic function of sports will be further highlighted. Sports should not become an integral part of the crisis, but a powerful means to solve the crisis. Sports will be a tool to integrate players of diverse social, political, religious or cultural backgrounds, and the important principles of unity, peace, and respect in the Olympic spirit will be further promoted around the globe. But under the current technical conditions, the dissemination and promotion of the Olympic spirit still has some problems

1, trust system is not perfect: in the process of cultural communication, the lack of trust system is exists because of the centralized system and supervision system. This can lead to many problems, such as information transmission distortion, declining public welfare donations, user loss, etc.

2, lacks incentive mechanism: In the field of Olympic cultural communication, although users ' purpose of sharing resources or contributing resources is not mainly for revenue, this behavior is unsustainable for a long time, and the market is always difficult to expand.

3, lacks standardization and scale: the core of the Olympic spirit lies in unremitting self-improvement, through which this spirit can make people participate more in sports and strengthen their bodies. But there is no way for the spread of Olympic culture to standardize and scale. Most institutions and organizations are fighting alone, and rarely can achieve collaborative innovation and development, resulting in a very fragmented competition pattern and serious internal consumption.

## 1.3 Solution ideas

### 1.3.1 Solution

Although the above problems seem complex, we can see the essence that the ultimate root of these problems lies in two points:

Industry opacity brought about by 1, centralized organizations. Under the centralized organizational structure, the lack of external supervision of the transaction content between different subjects, and the lack of right to know between each other will inevitably lead to the phenomenon of inflated prices and shoddy prices.

There is a lack of mutual trust mechanism between different trading entities in different links of 2,. Lack of trust between trading subjects, thus increasing transaction cost and trading efficiency, trading subjects in order to offset this negative impact, will improve their income, reduce their own risk, thus a variety of problems, more importantly, the increase of link will bring the impact of the lack of mutual trust further enlarge.

To solve these problems, we must break the centralized organization, let the trading entities directly connect, improve the efficiency, and improve the transparency of the industry. However, this will bring more serious problems. Without the central organization of —, the existing human technical conditions are difficult to maintain trade trust. The problem of trading mutual trust has been existing with the development of society since the birth of human beings. In order to realize trading mutual trust, mankind has established a lot of legal and technical constraints, but it has been unable to put an end to trade fraud. And decentralization or weakening will make transactions more chaotic —, which blocks the road to solve problems through



traditional technical power or model transformation. So we need to introduce new technical concepts.

### 1.3.2 Solution

Blockchain is a chain data structure that combines data blocks in sequential order and is guaranteed in a cryptography manner. Objectively, the characteristics of blockchain technology play a decisive role in solving the problem of transaction mutual trust, and can fundamentally solve the various problems existing in the current health and cultural market, specifically as follows as:

1, decentralization: based on the characteristics of decentralization, point-to-point transactions can be realized. Every transaction subject, from the user to the Internet server, is a node of the blockchain, and the nodes and the nodes can be traded directly, to avoid too many links. Moreover, the history, circulation and other information of each node is unchangeable, greatly improving the credibility of the transaction.

2, security: In the industrial chain, the data is mostly recorded in the centralized ledger by the core or participating enterprises. When the information on the ledger is not conducive to itself, there is a risk that the ledger information will be tampered with or deleted without permission. The characteristics of chain data can not tamper with and time stamped can ensure that all data is not tampered with. Not tampering with data greatly reduces the asymmetry of information, and the cost of credit investigation and communication between enterprises is subsequently reduced. This application helps enterprises quickly establish trust quickly and differentiate the risks undertaken by core enterprises.

3, Information Transparency: transparent, unchangeable features based on blockchain data information. Each node can see the traceability of the data application. In this way, enterprises will not be able to conduct data fraud, and users' security and privacy can also be fully guaranteed, and its experience is greatly improved.

4, intelligent contract: Under the rules of blockchain definition, various trading entities of the whole industrial chain can automatically execute intelligent contracts through blockchain technology, and no longer need to artificially distinguish the authenticity, which enables them to greatly reduce the management and time cost. Moreover, the ability of automatic trading between nodes will lead to a new business model. Every node in the network can act as an independent business subject and share its own data and resources with other nodes with very low transaction costs, which brings a lot of imagination space for the establishment of the new business model.

As the characteristics can be seen from the above content, the center, security, information transparency and intelligent contract fundamentally solve the problem of mutual trust between different parties. This solution is completed from the underlying technology, which is of decisive significance to solving the problems in the field of the field of Olympic spirit communication and sports life.

## 2, Project Description

### 2.1. Project Mode

In this context, the OA(Greek Ολυμπιακοί Αγώνες, Olympics) project, jointly developed by the project team and the International Olympic Committee, was born. The project is a blockchain project based on blockchain technology to promote the Olympic sports spirit, improve sports quality, sports culture, spread sports culture, develop charity, and create shared economic value.

Development vision: apply blockchain technology to the field of national sports and fitness, and build a global platform for national sports life.

On OA, each subject can peer to peer activities such as information transfer, asset trading, transfer and digital asset allocation, which are protected and encouraged based on blockchain technology. It will inspire the spread of the global Olympic spirit. In addition, through the application of digital currency, the efficiency can significantly improve sports, improve the charity services with the Olympics as the core, the market will be more prosperous. On this basis, there will be a series of derivative services such as online shopping malls, community services, and sports guessing.



Figure 2-1: Mode of the OA

## 2.2 Application scenarios

There are various application scenarios on the OA platforms, including, but not limited to:

### 2.2.1 Olympic Spirit Communication

In the traditional mode, the spread of the Olympic spirit should go through multiple links, and there is likely to be information distortion in the process, and eventually affect the effect of the Olympic spirit spread. On OA, through the decentralized and high security characteristics of blockchain technology, the Olympic spirit can be spread in culture, charity, creativity and other forms. All kinds of enterprises, organizations and individuals can become the nodes of communication, and all the data will be linked to ensure that the information is not distorted. Similarly, people who contribute in the process of communication will be rewarded by digital assets. In this way, the transmission efficiency of the Olympic spirit will be greatly improved, so that more people are exposed to the spiritual core of the Olympic Games, let the poor and backward countries in the world to establish their own Olympic spirit and Olympic assistance, and actively integrate sports and life, so that the world is free from the war, the harm of the epidemic. In particular, the Olympic Committee will periodically conduct aid and charity activities to backward countries through currency OA.

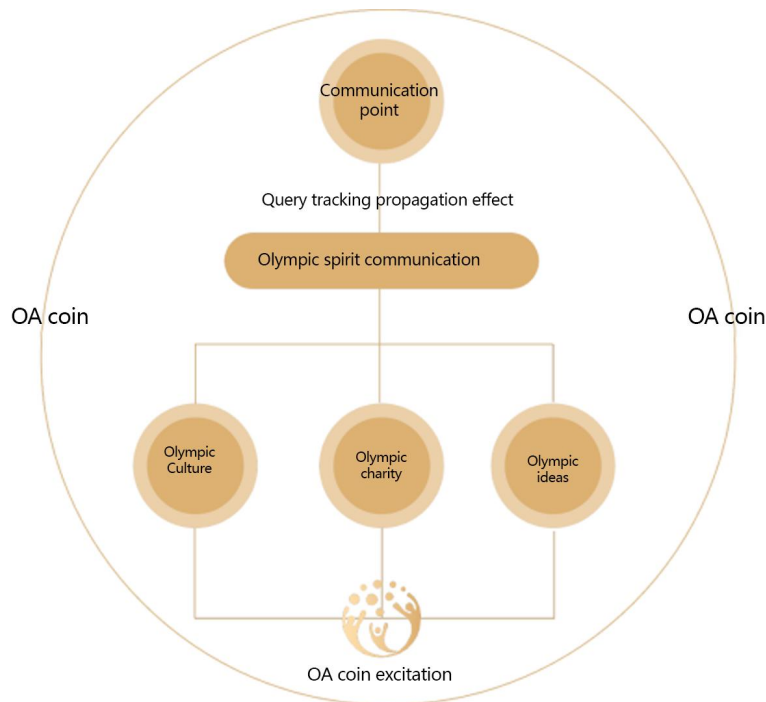


Figure 2-2: Olympic Spirit Communication

### 2.2.2 Online Mall

After users get OA coins, users can conduct some transactions and swaps in OA's online mall, such as buying sports and fitness equipment, consumption time of sports fields, sports clothing, etc. Under the traditional technical conditions, commodity trading must go through multiple links, each link should increase the cost, and the information is extremely opaque. And OA online mall can provide low cost, transparent, convenient transaction scheme, through the characteristics of decentralization and intelligent contract, make point-to-point transaction possible, manufacturers can trade directly with end consumers, can significantly improve the transaction efficiency, reduce transaction costs, and timely obtain market feedback information. And through the intelligent contract, all the costs are automatically implemented according to accordance with the agreed content, without investing too much energy and time, greatly improving the efficiency of the transaction between both parties.

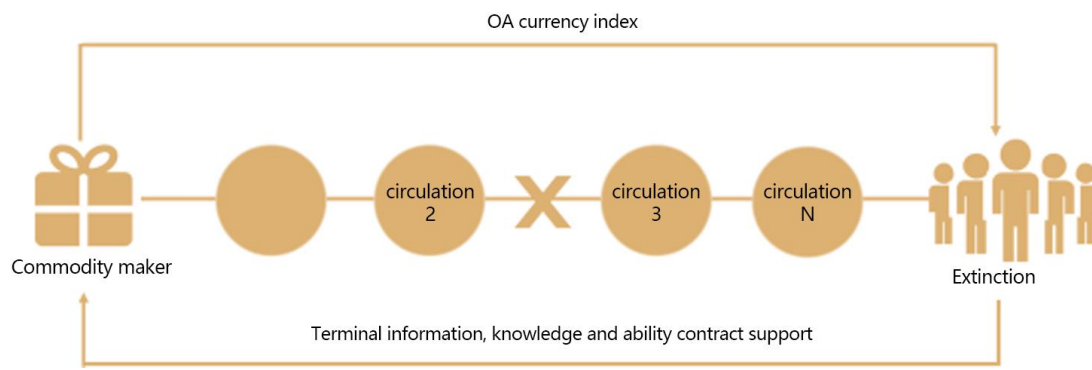


Figure 2-3: OA Online Mall

### 2.2.3 Community Services

OA will build a user community, allowing a large number of sports enthusiasts, club organizations and sports field operators to freely discuss all kinds of problems in the Olympic field, and exchange the Olympic spirit and sports knowledge. And considering that sports fitness is a strong professional, can establish long-term social relations, OA will also open content release module, users can release original content on the platform, help other users learn relevant knowledge, feel knowledge is valuable users can reward subscription to these content, encourage the behavior of the publisher. All remuneration are paid in OA digital currency.



Figure 2-4: OA Community Services

## 2.2.4 Sports quiz

Sports guessing is a very important field in the sports industry, relying on the various technical characteristics of blockchain, OA platform implements the open, fair and just transparent guessing mechanism, all sports guessing projects under the role of the intelligent contract open to the global users, and use the non-interactive random number algorithm to ensure the absolute fairness of the lottery. More importantly, through the OA platform, with blockchain as the media, global users can be convenient to quickly conduct the purchase of guessing services and bonus settlement. The inefficiency of foreign exchange exchange with traditional technical conditions and the high exchange rate of underground banks will no longer exist. Users use the OA currency, which can buy sports guessing services in any country (as long as it logs into the OA platform), and the bonus can also be paid instantly.



Figure 2-5: Sports guessing

In sum, it is seen that as long as the Olympic spirit exists, there is the value and significance of the OA spirit. More importantly, the project relies on the Olympic



Committee as an endorsement, so the application scenarios we can imagine in the global Olympic sports industry, which will provide enough value support for the implementation and application of OA.

## 3, technology implementation

### 3.1OA Technical Principles

OA is an innovative blockchain technology platform improved based on the existing blockchain technology. It not only supports DAPP one-stop development, but also supports the seamless integration and interaction of different chains, with the characteristics of complete functions, rich system and strong plasticity.

OA is designed to target a global-oriented public chain, supports P2P network transmission protocol, PAOS consensus algorithm, smart contracts and virtual machine technology, and signs multiple private keys with multiple signatures to improve the security level of the file access, transaction anonymous protection uses ring signature technology, and multi-chain fusion makes the interaction between OA and other chains fast and simple. The service layer simply processes the data stored by the blockchain and provides the service call interface to DAPP for various applications.

### 3.2 The Solution

#### 3.2.1P2P Communication Technology

OA networks are P2P peer-to-peer networks implemented by the OA protocol, a set of protocols for trade on the Internet that allows people to transfer value in distributed networks like mail that can send money. In fact, the purpose of OA network protocol is to quickly achieve the consistency of transaction information in the whole network nodes, which provides the basis for the consensus process.

#### 3.2.2 Dual Side Chain

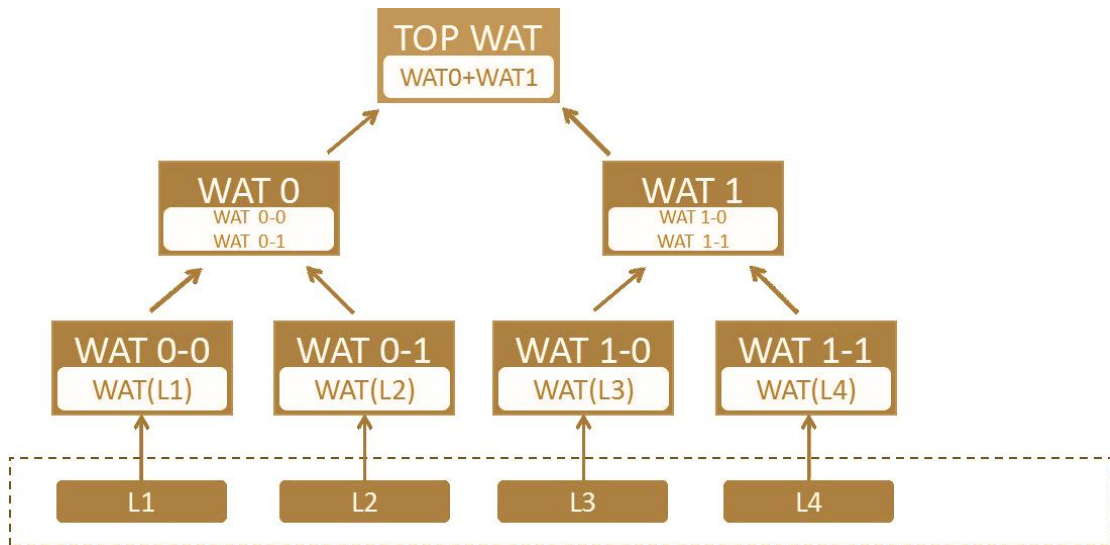
In our vision, OA will build 立 — ' s new underlying technology platform 用 to link a

variety of different blockchain technologies, allowing trust-based value to circulate 自 in different blockchain systems.

OA is a dual side chain of the Block Chain and DAG systems. Realize the interconnection of information and value of blockchain-based distributed systems. Among them, OA is the medium of cross-platform value exchange, and OA platform Ben 身 is the carrier of cross-platform information exchange. Based on the design characteristics of the OA system, OA has taken into account the reading of blockchain-based systems (containing UTXO and Account Based) and DAG-based distributed book information during the initial design stage of the system. In the future, White Black tokens can be sent or accepted directly between the blockchain based on OA and the DAG system. Also enables fully encrypted communication based on zero knowledge proof between OA clients, and other exciting features of the — family.



Traditional blockchain such as Bitcoin and Ethereum is based on binary tree data structures such as the Merkel tree:



OA's technical team consists of technical experts who have been deeply engaged in big data, cloud computing, and cryptography and blockchain for many years. OA will plan to build a channel between  $\hat{\Delta}$  and two completely different underlying data structure systems, so as to be compatible with mainstream blockchain technical standards at the underlying technology level .

### 3.2.3 Consensus algorithm

1, consensus basis

In the OA chain, the nodes are divided into two types: the light node, the full node. Light node does not participate in consensus and saves only the transaction data between the hash tree and itself; the full node participates in consensus and stores all occurring transaction data.

In the OA chain, there are three transaction types: ordinary transactions, contract transactions, encrypted transactions, ordinary transactions directly warehousing; contract transactions triggered by smart contracts and virtual machines, with high

security, autonomy and encrypted transactions using ring signature technology, encrypted transaction data through consensus, using intelligent contract warehousing operations. In order to avoid double flower problems, we will have more processing methods.

## 2, Features

- Large data throughput: OA achieves 1,000 throughput per second.
- Fast transaction rate: The new block was generated for 2-10 seconds, which greatly promotes the implementation of commercial projects compared with the 10 minutes of Bitcoin and the 1 minute of Ethereum.
- High fault tolerance: It supports 50% fault tolerance like Bitcoin, and for an attacker costs 50% to change the ledger of the transaction data.
- Low transaction fee: only a little transaction fee is charged for each transaction, which makes electronic payments shine in cross-border transfer, small payments with high frequency.
- High safety: due to the application of comprehensive technology, the safety has been greatly strengthened. Such as smart contracts, virtual machines, ring signatures, encryption algorithms, and so on.

## 3, consensus process

- The OA network generates a new block every 2-8 seconds. The new block uses the consensus mechanism called PAOS for trading consensus. The process of the new block being recognized by the whole network is the process of consensus among all network nodes. Consensus is completed in two stages. The first stage is to reach

the consensus on the transaction set, and the second stage is to propose the newly generated blocks, and eventually form the consensus blocks. The consensus to reach the transaction set is conducted in separate rounds, with the following operations in each round:

- Each node collects as many transactions as possible at the beginning of the consensus and puts it in the "candidate set";
- Each node combines the "candidate set" in its list of trusted nodes, and votes on each transaction;
- The voting result of the service node transaction in UNL, the transaction reaching a certain voting proportion will enter the next round, the transaction that does not reach the proportion will be discarded, or enter the candidate set of the next consensus process;
- In the final round, all more than 80% of the voting transactions are placed on the agreed transaction set; similar to Bitcoin, the Merkle tree data structure. After forming the transaction set, each node starts packing new blocks, and the process is as follows:

Put the new block number, the Merkle root Hash, parent block Hash, current timestamp, etc. together to calculate the block hash; each node broadcasts the own block hash to its visible node;

After the node collects the block hash broadcast by the nodes in all its trusted list, it calculates the number of occurrence per block hash generated by the node (i. e. the number of "voting" block hash per node). If the proportion of a block exceeds the

threshold (generally 80%), the block hash is regarded as the hash of the block that the consensus passes. If the block hash generated by this node is the same, it means that the block packaged by this node is true, which is a new consensus block, which is directly stored to the local, and updates the state. If the block hash generated by this node is different from that of the hash passed consensus, you need to go to the correct node of a block hash to ask for new block information and store it locally and update the current state;

If any of the above blocks hashes exceeds the set threshold, the consensus process resumes until the conditions are met. Thus, the consensus process for one block ends and the next round of consensus process begins.

#### 3.2.4 Digital Gateway

The OA digital gateway is the import and export of funds into and out of the OA system. It is like an intermediary through which one can inject or extract all kinds of currencies, whether legal currencies or virtual currencies, from the OA system. In this way, even if the two men are distrusted strangers, the transfer could be made as long as they both trust at the same time in the same gateway.

This chain of trust is easily established by large banks or financial institutions, if the gateway. The introduction of a "gateway" solves that the transfer between users is no longer limited to acquaintances and can be made between strangers.

The OA digital gateway algorithm is to find the shortest path between the gateways, and as long as there is an intermediate gateway that exists, you can form a trust chain, which will make the exchange of goods successfully. AgenOA, agent of Alex, may not



believe Beth 's agent Agent B, but may believe that their third party agent, Agent C,, has two IOUs: Alex' s agent to a third party agent and to Beth's agent. Third-party agent Agent C is responsible for the transaction processing, through the third-party agent can form a bridge to support the exchange of different currencies, and the second-level payment can be realized through the fusion lightning network.

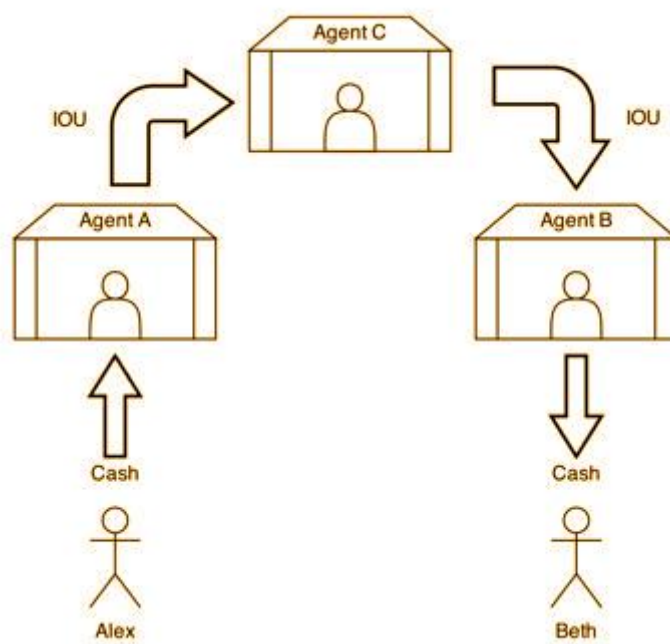


Figure 3-1: Gateway interaction

Blockchain Gateway is essentially a BTC, ETC-based payment bookkeeping system, which can connect with the merchant order system, transfer Token after automatic declaration, also support Token to members batch transfer Token, support background manual batch transfer Token, and API automatic transfer to Token.

### 3.2.5OA Smart contract

OA adopts the hierarchical idea of similar to computer storage architecture in the implementation of intelligent contract function, via virtual machine (OAVM). Smart contracts are close to legal contract language, high security, the handling fee of smart

contract is calculated according to the bytes of the contract. OA's smart contract consists of declarative and complete Boolean statements, thus much closer to the traditional legal contract language, supporting Boolean operations, mathematical operations, and even data storage, etc. OA provides templates for a variety of commonly used declarative smart contracts for user use or improvement to meet custom requirements, reducing contract deployment difficulty and error rate.

Here is a smart contract model:

```
["contract template", [  
  "hash of unit where the template was defined",  
  {param1: "value1",param2: "value2"}]]
```

OA built-in smart contract module software package. From the perspective of module structure, OA smart contract module is between external service module (such as RPC module) and underlying facility module (such as network module, memory module, account module, etc.), memory, basic encryption algorithm, account module, network module and other modules provide underlying support for smart contract.

Smart contracts are defined by the upper application, interpreted by the interpreter, stored by the enclosure, and operated by the OA smart contract module package. The OA Smart Contract interpreter will support a variety of advanced programming languages. App developers can design OA smart contracts using their familiar languages.

### 3.2.6 non-interactive random number generating algorithm

Non-interactive random number generation algorithms are algorithms involved in

random number seed generation without user provision of additional custom information. We take full account of the fairness of the sports guessing, so we apply the random number generated by the hardware seeds to ensure the safety of the system.

The following figure shows the OA non-interactive random number generation process:

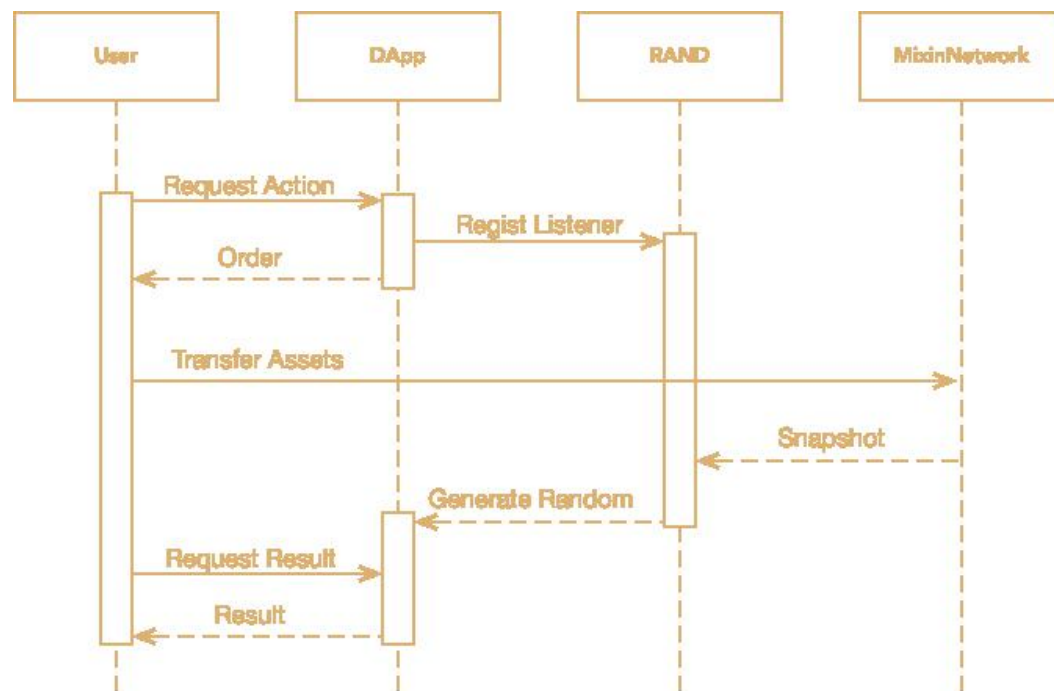


Figure 3-2: OA Non-interactive random number generation process

- Users request registration in the OA service, which will monitor the chain behavior of the registered users;
- The user initiates a password generation request, which is verified by the OA node, and will be recorded in the form of Snapshot;
- OA listens to the Snapshot information generated by the transaction in the ledger in real time and obtains the ID value of the Snapshot as the random number seed seed;
- Select a specific random number generator rand, to generate a random number  $r = \text{rand}(\text{seed})$  to the user;

Where, each Snapshot will consist of three parts of the corresponding request, the signature of the verification node and the previous Snapshot of the verification node, the Hash value obtained by hashing the content of the Snapshot is Snapshot ID. This would mean that neither the request initiator nor the validation party had a way to unilaterally predict and tamper with Snapshot ID values, and it is safe to use Snapshot ID as a random number seed.

After the random number is generated, it needs to be verified when use. On the OA, you can directly query the Snapshot, corresponding to the transaction to hash the Snapshot content to obtain the Snapshot ID, and then use the ID as a random number seed, generate the random number and compare the obtained random number, to verify whether the random number is valid.

### 3.2.7 Anti-quantum Computing

In the current blockchain system represented by Bitcoin, SHA-256 hash calculation and ECDSA elliptic curve password form the most basic security guarantee of Bitcoin system, but with the continuous breakthrough of quantum computer technology, especially the quantum algorithm typical represented by Shaw algorithm, relevant operations can theoretically realize the transformation from exponential to polynomial level, which "difficult" for classical computers will be solved by real 用 quantum computers in the expected future.

Encryption Algorithm	Types of	effect	Potential quantum computer capabilities
AES	The Symmetric Key	encryption	Increase the key length
SHA-2,SHA-3		Hash function	Need for greater output
RSA	Public key encryption	Digital signature key generation	Lost security
ECDSA,ECDH (Oval: Circle curve password)	Public key encryption	Digital signature key generation	Lost security
DSA(Finite domain density)	Public key encryption	Digital signature key generation	Lost security

Most of the existing blockchain systems adopt the elliptic curve digital signature scheme ECDSA,, but the SHOR attack algorithm for ECDSA signature algorithm is applicable to solving difficult mathematical problems such as large integer decomposition and discrete logarithm inversion, and the ECDSA signature algorithm is quite unsafe under quantum attack. OA implements the NTRUSign-251, algorithm based on lattice theory as follows:

#### 1, Key generation

Select two polynomials  $f$  and  $g$  on the ring  $R$  so that the number of 1 of the coefficients of  $f$  and  $g$  is distinct  $d_f$  and  $d_g$ , respectively, and that the public key is calculated according to  $f$  and  $g$ ,

$$h: h = Fq * (\text{mod } q)$$

Solving the  $F, G$  s to satisfy the equation  $f * G - F * g = q$

$$||F|| \approx ||f||, ||G|| \approx ||g||.$$

#### 2, signature process

HASH transform the message  $M$  to a polynomial  $(m_1, m_2)$ , where both the polynomial  $m_1$  and  $m_2$  are a polynomial on the ring  $R_q$ . Calculate the polynomial  $A, B, a, b$  on the

ring to satisfy it:

$$G * m_1 - F * m_2 = A + q * B$$

$$-g * m_1 - f * m_2 = a + q * b$$

The coefficients of A and a meet conditions greater than  $-q/2$  and less than  $q/2$ .

calculate polynomial s:

$$s = f * B + F * b \pmod{q}$$

s is the signature calculated by using the public key h for the plaintext M.

3, validation process

hash transform of message M to polynomial  $(m_1, m_2)$  calculated verified s signature s

and public key polynomial  $h \cdot t = s * h \pmod{q}$

$$t = g * B + G * b \pmod{q}$$

Calculate the distance between s,t and  $m_1, m_2$   $\|m_1 - s\| + \|m_2 - t\|$ , The validation fails

if the distance is greater than Norm Bound, otherwise the signature is valid.

Conclusion: It is known that the security of the NTRUSign-251 signature algorithm is ultimately equivalent to finding the shortest vector problem in a 502-dimensional integer lattice, while the shortest vector problem is invalid under the SHOR attack algorithm, and there is no other fast solution algorithm under the quantum computer. At present, the best heuristic algorithm is also exponential. The time complexity of attacking the NTRUSign-251 signature algorithm is about  $2^{168}$ . Therefore, the OA using the NTRUSign-251 algorithm can resist the SHOR algorithm attack under quantum computing.

## 4, governance Structure

To ensure the sustainability and management effectiveness of the OA project, the OA team established the OA Foundation to regulate the organization and activities of the Foundation and safeguard the legitimate rights and interests of the Foundation, relevant beneficiaries and users, and the Foundation complies with Singapore's Constitution, laws, regulations, rules and policies. The OA Foundation has a Technical Committee, a Business Committee, a Finance and Personnel Committee, and a Joint Representative Committee. Major matters shall be decided by the Joint Representative Committee composed of the Technical Committee, the Business Committee and the Finance and Personnel Committee. The President of the Joint Representative Committee is elected by the Joint Representative Committee for day-to-day affairs management.

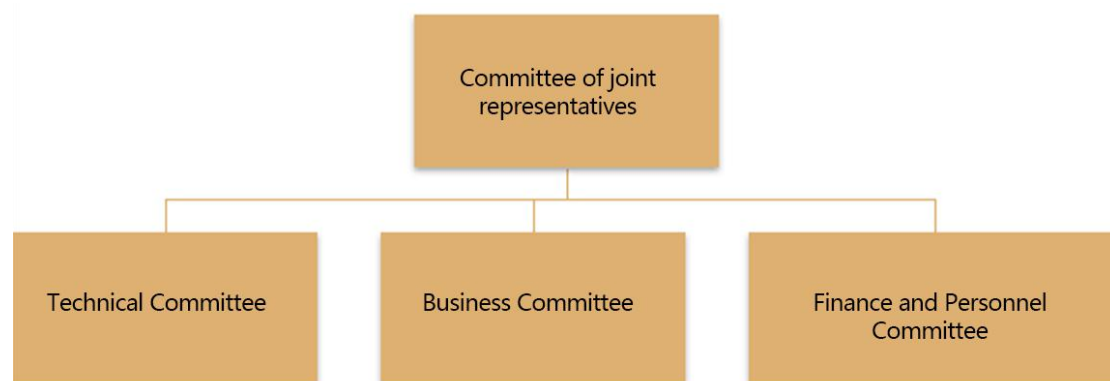


Figure 4-1: Organizational Architecture

The 1, Joint Representative Committee is the highest decision-making body, whose functions include:

- (1) Modify the OA Management Articles of Association;
- (2) Supervise the implementation of the OA Constitution;



(3) Appointment or dismiss the president of the joint representative committee and heads of each functional committee;

(4) Formulate or modify important decisions

.The term of the Joint Representative Committee is five years, and after the expiration of their term, the Technical Committee, the Commerce Committee, the Finance and Personnel Committee will again elect 5-20 members. The elected members will make important and urgent decisions on behalf of the Foundation and need to accept credit adjustments during their tenure

## 2. The Technical Committee:

The OA Technical Committee is responsible for the underlying technology development, product development, review, management, etc. Specifically include:

(1) Code management, code development, code test, code review, code on-line, vulnerability repair, etc.;

(2) holds a project tracking meeting to communicate the project progress and needs;

(3) Excavate the application scenarios of OA technology, so as to achieve commercial landing. Code open source review, public chain, alliance chain open source, private chain can allow not open source.3, Business Committee:

(1) Responsible for OA technology promotion, original chain product promotion, various resource docking, etc.;

(2) Build the OA brand image, establish and improve various management systems;

(3) Responsible for public relations matters. In the event of an event affecting the reputation of the Council, the Committee will conduct a unified PR response after

internal review and evaluation.

4, Finance and Personnel Committee:

(1) Responsible for compensation management and daily operating expenses audit;

(2) Responsible for various administrative affairs, such as the drafting, review of relevant documents, the meeting schedule, etc.

## 5, Release Notes

### 5.1 Introduction to the OA currency

The OA coin is the blood that drives the operation of the decentralized sports life ecosystem. It is mainly applied to the development, protection, payment and other scenarios in the field of global sports and fitness. Later, we will encourage companies or individuals to develop various side chains and applications on the OA basis), when the data interaction between different side chains and applications, intelligent contract execution and assets and information data exchange of each link will consume OA currency, which becomes the basic digital currency on the whole ecosystem.

### 5.2 Release Scheme

The total circulation of OA digital assets is 200 million, and the issuance scheme is as follows:

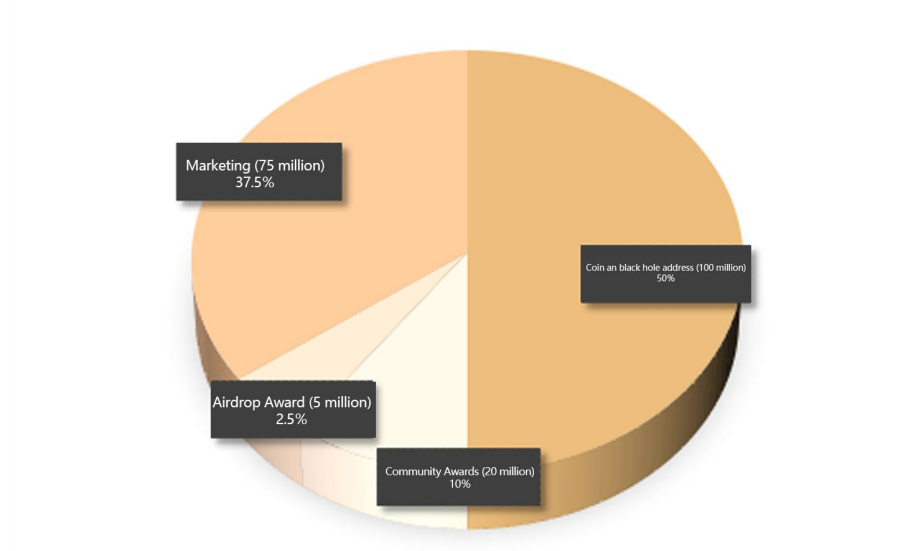


Figure 5-1: Release Scheme

Original Price: 0.01USDT

Once a day: 12: 00~15: 00 time in Lausanne, Switzerland

## 6, Risk Tips and Disclaimer Notes

### 6.1 Disclaimer

This document provides only information related to the Project; nothing in this document or document shall be considered as solicitation, proposes to purchase, sell any securities, futures, options or other financial instruments, or provides or provides any investment advice or services to any person in any jurisdiction; nothing in this document constitutes investment advice or any advice on the applicability of any securities. Past performance does not necessarily indicate future performance, any predictions in this document, market prospects or estimates in this document are forward-looking statements based on certain assumptions and should not be regarded as indicating actual events that will occur.

If the intended exchange person shall make the exchange after his own decision, he shall fully accept such risks and be willing to bear all the corresponding results or consequences by himself. The Foundation and the team expressly do not undertake any direct or indirect losses resulting from participation in the OA project, including but not limited to:

- Because of the economic losses caused by the user transaction operations;
- Any error, negligence or inaccurate information arising by personal understanding;
- Loss resulting from individual transactions of various blockchain assets and any resulting behavior.

## 6.2 Risk Statement

The OA Development and Operations team believes that there are numerous risks in the OA development, maintenance and operation process, many going beyond team control. In addition to those described in this white paper, each OA purchaser should carefully read, understand, and carefully consider the risks: OA is an encrypted digital certificate. Exchange OA is not an investment, we cannot guarantee that OA will add value, in some case has the possibility of declining value, users who do not correctly use OA may lose the right to use OA, or even lose their OA account. The Foundation and the Team Sponsor hereby exchange the risk to the intended user, who shall be deemed clearly aware and fully aware of the following risks:

**Information Disclosure Risk:**As of the date of this white paper, OA is still improving, and its philosophy, consensus mechanisms, deduction algorithms and code, and other technical details and parameters may be frequently changed and updated at any time. Although this white paper contains the latest critical information from OA, it is not absolutely complete. It will still be adjusted and updated from time to time by the OA Development and Operations team for specific purposes. The OA development and operations team is incompetent and not obliged to inform participants of each technical detail of OA in the development, so the inadequate disclosure is inevitable and reasonable.

**Risk arising from the market competition:**Blockchain is an exceptionally competitive field with thousands of teams planning and embarking on different projects, competition will be brutal but, in this era, any good concept, startups and even mature companies are

at risk of such competition. But for us, these competition are the driving force for development.

**Legal and Policy Risk:**The OA project may be regulated by the competent authorities of various countries, and due to the issuance of cryptocurrency that is extremely innovative, the vast majority of countries in the world have legal gaps, with great legal and policy uncertainty in the industry.

**Price fluctuation risk:**If traded in the open market, the encryption passcard prices usually fluctuate sharply. Price shocks often occur in the short term. The price may be denominated in Bitcoin, Etherage, USD, or other legal currency. Such price fluctuations may be due to market forces, including speculation, regulatory policy changes, technological innovation, exchange availability, and other objective factors, which also reflect changes in the balance of supply and demand. The development and operation team of the OA Project is not liable for any certified transactions in any secondary market. The risks involved in the transaction price of the OA currency shall be borne by the trader himself.