



POSEIDON NETWORK

White Paper V1.0

World's First Decentralized Content Acceleration Network

Faster · Cheaper · Production Ready · Multipurpose · Layer 2 Solution · Build Sharing Economy

ABSTRACT

The POSEIDON NETWORK was founded by Light Lin, Taiwan's best-known serial entrepreneur. His past well-known entrepreneurial experiences include: Wretch.cc, a social networking platform; flyingV.cc, a crowd-funding platform; BiiLabs.io, a blockchain lab; venue.tw, a wetland creative experimental base, etc. He was also involved in the creation of Angel Club, a venture capital institution affiliated to National Chiao Tung University and also FungLy Capital. He also serves as advisor at government agencies such as the Silicon Valley of Asia and DIGI+ Advisory Committee in Asia.

Products of the POSEIDON NETWORK are positioned as a worldwide decentralized P2P infrastructure, including: Decentralized CDN, Distributed Storage, Distributed Content Delivering, TEE...etc. The POSEIDON NETWORK is the world's first CDN hybrid blockchain application platform, which is built on the concept of Internet of Things (IoT) and has four business models: B2B, B2C, C2B2B and C2B2C.

By the first quarter in 2019, there are already 25+ stable enterprise customers and super nodes around 30+ countries in the POSEIDON NETWORK.

The POSEIDON NETWORK is the world's first CDN hybrid blockchain application platform.

With the development of the Internet, the number of connected devices and the demand for network quality are increasing. Image technology has always been the most bandwidth-hungry telecom transmission product, and it is increasingly requiring more bandwidth. In recent years, streaming applications such as music, video, live streaming and virtual reality (AR/VR) are also in large demand of bandwidth. For example, 4K quality films and photos have entered people's daily lives as basic needs, and their resolution is 4 times that of standard high quality.

When the 5G communication system is gradually replacing the 4G system, the bandwidth of each device will be 10 to 40 times the current size. In the time of IoT, the average number of devices a

person uses will reach 20 or more, which is 3-5 times the current number. Each central server will have 10 to 50 times more capacity, and edge computing and idle bandwidth requirements will surge. In the next 15 years, 5G will contribute 2.2 trillion US dollars to the global GDP, accounting for 5.3% of GDP growth. The global CDN market is expected to grow to 30.89 billion USD by 2022, at a Compound Annual Growth Rate (CAGR) of 32.8% during the forecast period.

In the next 15 years, 5G will contribute 2.2 trillion US dollars to the global GDP, accounting for 5.3% of GDP growth. The global CDN market is expected to grow to 30.89 billion USD by 2022, at a Compound Annual Growth Rate (CAGR) of 32.8% during the forecast period.

The POSEIDON NETWORK is already using IoT to supply CDNs to customers. We found that CDN issues can be solved with blockchain technology, with powerful IoT devices and Token Economy. In the end, we introduce the blockchain technology not for its own sake, but to compliment it with a strong NAS, to achieve our goal of completing the CDN ecosystem. We are using the technology to change the world and change people's internet habits!

Internet technologies, such as Facebook, YouTube, Google, Spotify, Android, iOS, Uber, Airbnb, Dropbox, and Bitcoin, that people are now so familiar with did not exist in the past. As technology continues to change the world, it is believed that the POSEIDON NETWORK will become the leader of innovation and technology in the near future. Technology is constantly changing the world. Upon reading this White Paper, you can also join the POSEIDON NETWORK to change the world with us together!

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4G changes life, and 5G will change the society as a whole. Using IoT equipped with CDN and proper blockchain technology, the POSEIDON NETWORK will thrive like a sea god when the wave of 5G strikes.

Deploying the POSEIDON NETWORK means reorganizing the future of the world, a future with you.

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1. POSEIDON NETWORK

1.1 Market Analysis

POSEIDON NETWORK has focused on content delivery network (henceforth referred to as CDN) for a long time, it's the main service and main source of profit of us now, product-ready, faster and better price.

Rising Online Users, per-capita online consumption, and growing demand for high quality video content, many gaming services have been adopting online channels for delivering content to the users, which has further enabled the growth of CDN market. One of the major companies, Cisco, has also predicted that the amount of internet traffic is expected to increase by fourfold, emphasizing the need for content delivery networks.

The global CDN market is expected to grow from USD 7.47B in 2017 to USD 30.89B by 2022, at a Compound Annual Growth Rate (CAGR) of 32.8% during the forecast period. Besides, the global storage market is expected to rise from USD 30B in 2017 to USD 89B by 2022, at a CAGR of 23.7% during the forecast period. (source: Markets and Markets)

CDN MARKRT REVENUE: 2003-2017
RETAIL CONTRACT VALUE



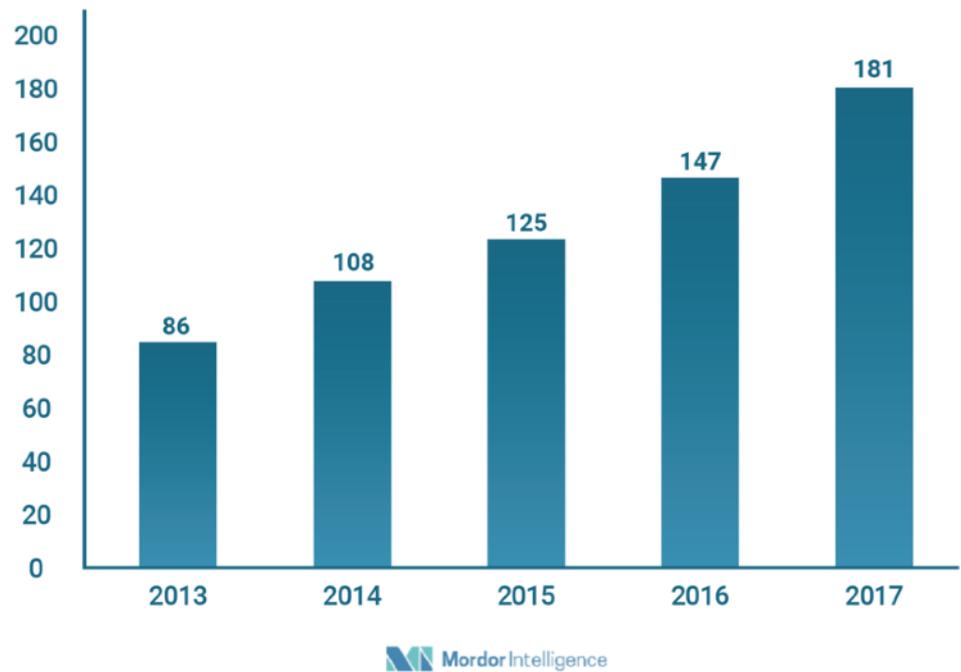
2017 –2022 Global CDN market Compound Annual Growth Rate (CAGR) is 32.8%

2017 – 2022 Global Storage market Compound Annual Growth Rate (CAGR) is 23.7%

Media delivery is expected to have high market share. Rising demand for rich video content among the increasing online users and the trend of digitization among the organizations across the end user verticals, boosts the overall CDN market demand. Online gaming is one of the major areas where CDN is gaining prominence. The gaming companies are increasingly investing in CDN to deliver high-quality content for ensuring better user experience. Many media organizations are making a transition toward digital distribution model. These transitions present a great market opportunity to the CDN vendors.

The key consumption markets locate at developed countries. The USA takes the market share of 42% in 2017, followed by Europe with 20.7%. China's consumption market has a quicker growing speed, with a market share of 41% from 2013 to 2017. We tend to believe this industry becomes more and more mature, and the consumption increasing rate will show a smooth curve. The need for content to be mobile-compatible is further expected to increase, owing to the expected growth of consumed data to about 4.5 GB per month, which is now at an amount of 900 MB on average. (source: Mordor intelligence)

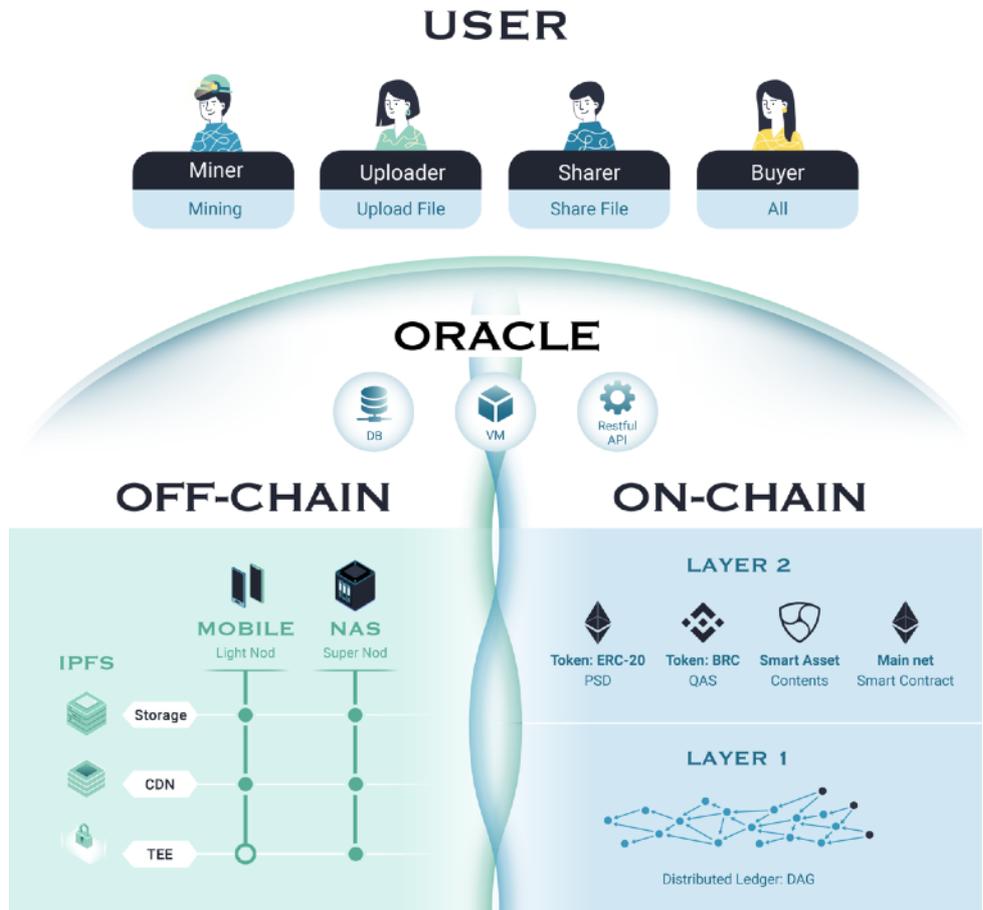
AUDIENCE FOR GAMING VIDEO CONTENT IN THE U.S (IN MILLION)



By adopting blockchain technology with IoTs like NAS, desktops and mobiles, POSEIDON NETWORK solves the problems of unused network resources in the world, pour them into the world of CDN. We find the way to decrease the cost and incredibly improve the efficiency of CDN. It is time for POSEIDON NETWORK to dominate the CDN market and emancipate the world.

1.2 Overall Architecture

The following four modules define the main functions of the POSEIDON NETWORK Framework. The overview is as follows:



1.2.1 User App

Information and resources management at the application end is called Smart Contract, with features including mining, social sharing, trading, etc.

Every user can choose to register and login with different social media accounts, including Facebook, Google, Telegram, and WeChat. A set of private keys are automatically generated after logging in, and it is stored in the Trusted Execution Environment (TEE) of the NAS Super Node directly through KeyStore API, using session token in the social login as encrypted signature.

User data and mapped public keys of social login are stored in the Oracle database for future queries. If multiple social logins are bounded, encrypted signature is enhanced to be multi-sig when BiID verification modules such as FaceID, TouchID can be used.

You can use the private key on the TEE via BioID to call smart contract whenever you want to use smart contract. As it is hidden in the user flow, the user does not need to know how the private key is called and how to use smart contract.

If the app is uninstalled or your cell phone is replaced, you can simply re-bind the previously bound social login account and generate the same unlock key to unlock the private key in the TEE.

The Miners page contains: use the Poseidon App as the Mobile Edge to share bandwidth and space; choose how much space and bandwidth to share; dashboard and bandwidth mining data and revenue can be seen in the app; receive corresponding QQQ 1u every day.

1.2.2 Oracle

Oracle is built on the cloud serving as a bridge between smart contracts and the outside world.

One feature of the POSEIDON NETWORK is that any user can interact with on-chain and off-chain via the Restful API. In the future, Oracle will operate on virtual machines and communicate with the repository.

1.2.3 Off-Chain

Using NAS as a super node, mobile phones and computers can be regarded as a light node. Nodes provide decentralized CDNs, storage space, and services such as TEE.

The process looks like this: Store files on IPFS and NAS through distributed technology and quickly deliver files to the desired device using QEdge CDN. Upload the file to get the file Hash / URL, and get the file through the file Hash / URL.

1.2.4 On-Chain

Integration with Layer 1 (DAG as DLT) and Layer 2 (token, digital asset, main net). Because DAG is free of service charge, non-QAS transactions such as file metadata records are stored in the DAG as non-tamperable files. Metadata files include UserID, FileID, URL, Price...etc.

Using the characteristics of different blockchain technologies and the advantages of each Blockchain to realize the flexibility of Smart Contract layers and to call Smart Contracts based on ETH, EOS,

TRON, etc. It is first developed based on ETH, and gradually EOS is adopted to speed up transactions and NEM is used to manage digital assets.

1.3 Mission and Vision

Team's Vision

Transforming the world with decentralized technology, revolutionizing the habit of using the Internet.

Our Mission

- ◆ Make good use of and give new life to the world's idle network resources.
- ◆ Maximize the integration of idle resources and reduce any unnecessary waste in the online world.

2. BUSINESS MODEL

2.1 Design Philosophy

Make proper use of idle resources, such as bandwidth, storage space, computing power, etc., and integrate them into blockchain technology to create a broader and more sustainable development of the shared economy platform.

Maximization

- ◆ Provide non-mobile, stable power and network resources with full node functionality
- ◆ Provide mobile devices, possible IoT devices with light node capabilities
- ◆ Support for extensible node expansion

Decentralization

- ◆ Open the smart contract source code so that anyone can check any code at any time
- ◆ ◆ Smart contracts are based on public blockchain
- ◆ ◆ Economic model are based on public blockchain
- ◆ ◆ Focusing on the people, realizing organization autonomy

Sustainability

- ◆ Smart contract that can be upgraded
- ◆ Developer-friendly SDK, API
- ◆ Module package design with key software
- ◆ Friendly docker software
- ◆ Mechanism of sustainable governance
- ◆ Design centered around user privacy

2.2 Major Advantages of the Poseidon Network

The service of the CDN product built on the edge computing technology of the POSEIDON NETWORK has major advantages: the average download speed is two to ten times faster than traditional CDNs; the average time to first byte (TTFB,) is 90% shorter, meaning that when clicking to play a movie on the Internet or, there is almost no waiting time. What is better, the average price is only 10%-50% that of the traditional CDN service providers.

The following table provides data on each of the CDN providers in 2018 Q4:

CDN Provider	Dispersity	Type	Points of presence (PoPs)	Price (USD/GB)
Poseidon Network	Very high	Decentralized	1,000,000 +	0.03
Akamai	High	Centralized	1,600	0.28
Google Cloud Platform	Medium	Centralized	93	0.12
Amazon Cloudfront	Medium	Centralized	53	0.14
Microsoft Azure	Medium	Centralized	38	0.23
Cloudflare	Medium	Centralized	112	0.1
Fastly	Medium	Centralized	54	0.19
StakePath	Medium	Centralized	22	0.06
MaxCDN	Low	Centralized	18	0.095
CDN77	Low	Centralized	32	0.125

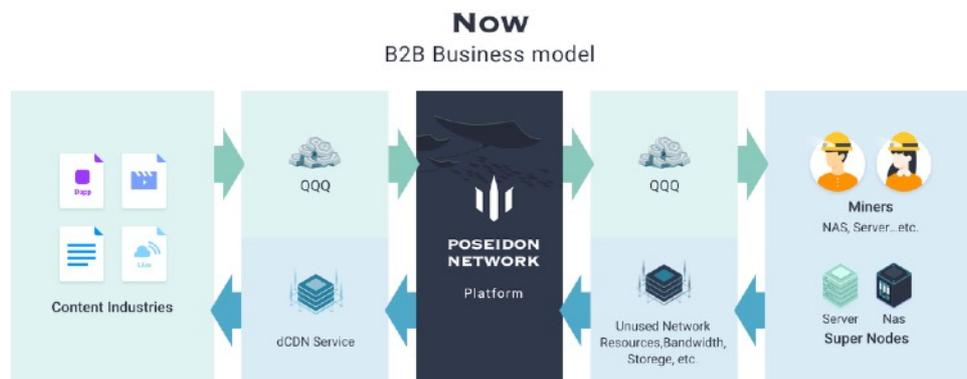
2.3 Multi-Win Situation

- ◆ For business users and general users, they will get cheaper and faster network resources.
- ◆ For super miners and light miners, they will receive additional earnings and reduce waste of resources.
- ◆ Make good use of idle network traffic resources around the world.

2.4 Application Scenarios

2.4.1 B2B Business Model

Introduction to the B2B Business Model



This phase is called the block chain application-landing phase. The POSEIDON NETWORK provides enterprise services from the third quarter of 2018. It provides acceleration services for the following content: video streaming, game update acceleration, image loading acceleration and video live streaming...etc. We choose to operate the B2B's economic model because it is well-received by content industry customers and large miners, both needs are increasing at the same time. We decided to launch the next stage to enhance our scalability.

Miners participating in the POSEIDON NETWORK can earn QQQ by sharing bandwidth and storage space. Miners can choose to keep QQQ Token, or trade to the exchange and convert to fiat.

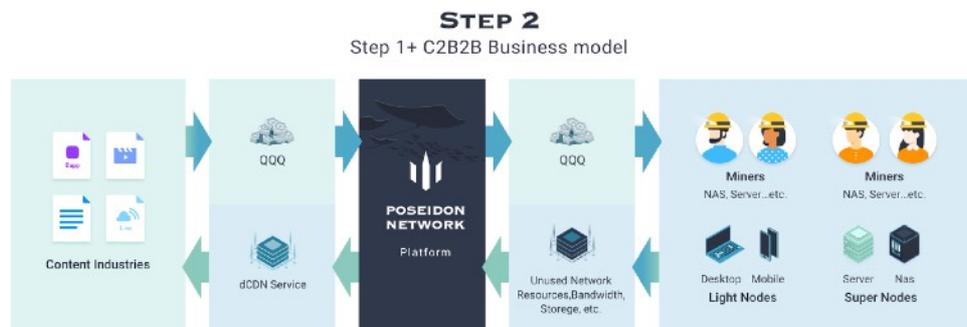
Use Cases

The application at this stage mainly falls in the fields of media,

entertainment and education, such as video live broadcasters, audio and video content industry, audio and video education websites, social media, forums, and update file download support. POSEIDON NETWORK collects the bandwidth, storage space and even the idle network resources of small and medium-sized enterprises, mainly from NAS and Linux systems, and pays the small-to-medium sized enterprises (SMEs) who are willing to provide idle network resources, and provides network resources to the above-mentioned industries and gets profits. For more detailed cases and future work, please see "Chapter 4: Market Planning".

2.4.2 C2B2B Business Model

Introduction to the C2B2B Business Model



This stage is called the seeding stage, which is the focus of current stage of development. It is a mass miner mechanism. Anyone with a well-functioning computer or mobile phone can become a light node. In addition, anyone with a NAS can also be transformed into a super node, sharing idle bandwidth, storage space and other network resources to gain profits.

Use Cases

In addition to SMEs, we also allow the general public to join the POSEIDON NETWORK mining model to share idle resources through NAS, computers or mobile phones to gain profits.

The POSEIDON NETWORK collects network resources such as idle bandwidth, storage space and even computing power for content industry customers. For more detailed cases and future work, please see "Chapter 4: Market Planning".



2.4.3 2C Business Model

Introduction to the 2C Business Model

This phase, called the blooming phase, will increase services of average users. It can be used for quick downloads of videos, fast access to streaming audio and video, such as the download service provided by Mega, or the broadcast of NBA live events.

We have more visions to realize. Please refer to "Future Work" for details.

Use Cases

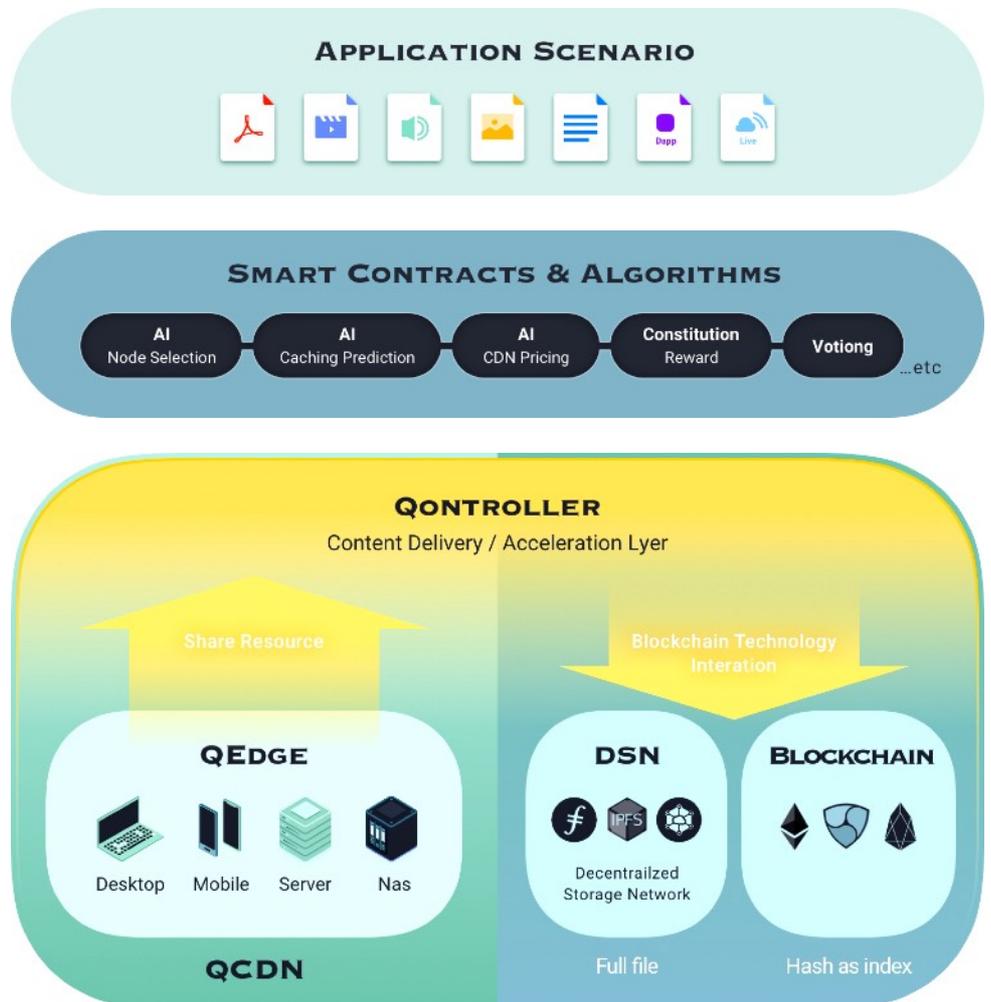
In the third phase, we provide "personalized" data sharing services such as Mega, flicker, etc., and upgrade the POSEIDON NETWORK to a video platform like YouTube and Netflix.

Miners of any level can provide idle network resources, so that the demand side can get the required network resources. The POSEIDON NETWORK business model will become complete at this stage.

For more detailed cases and future work, please refer to "Chapter 4: Market Planning".

3. TECHNOLOGY SOLUTIONS

3.1 Technology Composition



The POSEIDON NETWORK is a platform for a variety of Apps and dApps, starting with the top level as shown in the above illustration.

The upper chart shows the application scenarios of Apps and dApps, including live broadcast, video sharing, photo sharing, file sharing, update file distribution, and future block chain identity, Trust Execution Environment (TEE), etc., and unlimited possibilities.

The middle chart displays smart contracts and algorithms. With the characteristics of the smart contract disclosure, the six main algorithms are like the Constitution and the Congressional system. The various algorithms maintain the efficiency of the POSEIDON NETWORK and form the supervision layer of it.

The lower chart demonstrates the entire underlying architecture, which includes QCDN, DSN, and Block chain. QCDN also contains QEdge as the node and the Qontroller of the distributor. More details will be elaborated in this chapter.

3.1.1 QCDN

This section will explain the next-generation decentralized Content Delivery Network (dCDN) built by the POSEIDON NETWORK, which is called QCDN. It includes a traffic dispatcher called Qontroller, and QEdge, decentralized nodes from all over the world that join our network.

Anyone can become QEdge through the device and perform content delivery (or bandwidth sharing), content storage, edge computing and mutual authentication.

QEdge is divided into two categories: Super Node and Light Node, which will enhance the stability of the entire network. Different levels of nodes have different responsibilities, and can generate different profits.

3.1.2 Qontroller

Qontroller is a distributed traffic dispatcher. Bandwidth traffic scheduling is a key part of QCDN. Traffic access traction, selection of appropriate QEdge, etc. are all done at Qontroller.

In short, Qontroller's job is to distribute traffic to the QEdge around the world with open smart contracts and algorithms. Improving the user experience and saving system costs is our ultimate goal.

3.1.3 QEdge

QEdge is the smallest work unit on the POSEIDON NETWORK. Each unit has a different organization size and everyone is welcome to join.

QEdge's devices are mainly enterprise rooms, NAS, desktop computers, and mobile phones, and will continue to be used on other ideal and feasible IOT devices in the future. The network resources that can be shared include bandwidth, storage space, and computing power.

Anyone who sets the device to QEdge will be rewarded each time they deliver any content. The setup is very simple, even without technical knowledge, just let the device operate QEdge in the background, you

can get the corresponding pay. QEdge's software or app can set a fixed output and even adjust the output automatically, so you can use your computer without losing too much bandwidth.

Automatic bandwidth output adjustment

Node software and mobile app use AI technology to automatically adjust the output bandwidth throttle based on various factors. If the device is largely idle, the node will turn on the bandwidth high-speed output mode. If the user is downloading or watching a movie, the node automatically reduces the speed to the bandwidth low-speed output mode or pauses the bandwidth output. You can also choose a fixed number to share your network resources steadily while stabilizing your earnings.

Personal devices can also participate in the QCDN ecosystem, and receive a variety of revenue acquisition models based on the actual number of times the content is delivered or the content size. In addition, content delivery can be fixed, and profits will be obtained from the amount of earnings generated by the nearby network.

Fixed content output

Fixed content output mainly depends on the preference. If the content is the favorite content of nearby users, it will be a QCDN with a very high hit rate. The more people access it, the higher the profit, and even the number of times it can beat the mine. For example, I like to watch NBA live, and only pass the NBA live content. It happens that all the people in the vicinity are watching it, and the mobile phone will get huge profits.

Super Node

A fully functional node. It has the right to request the content of the distribution and entrust it to the adjacent QEdge for network optimization. It is highly recommended to use NAS as super node.

Light Node

A node with limited functionality for general use.

It works on desktops, mobile devices and other IoT devices.

3.2 Smart Contracts and Algorithms

The POSEIDON NETWORK is basically scalable, core smart contracts that combine to form an autonomous layer and is operated by QQQ tokens. As mentioned above, at the beginning of the development of the network, and before the formation of multiple organizations, the POSEIDON NETWORK will form a Poseidon Autonomous Council with several well-known companies, organizations, research groups, academies and universities in the world to determine the initial codes, parameters and specifications. These renewable smart contract codes, parameters and specifications will become a set of constitution-like guidelines, and the public will continue to develop its law. The POSEIDON NETWORK has six main types of smart contracts and algorithms, which will be introduced here.

3.2.1 Node Selection Algorithm

The selection and optimization of QEdge is a very important part of QCDN. In this smart contract, the artificial intelligence-related algorithm will be used. The core goal is to find the QEdge with the highest relative stability and the most suitable geographical location, to reduce the latency for users to access QCDN, and to reduce the bandwidth cost of QCDN.

3.2.2 Caching Prediction Algorithm

The user's web experience is closely related to the CDN. The CDN solves the problem of network content delivery and user network congestion. It is therefore very important to know the operational efficiency of the CDN. One of the key factors to increase the efficiency of CDN operation is that CDN must provide the corresponding content when the user proposes a request. We use the Poseidon Network Caching Prediction Algorithm to make use of it. Deep learning and neural network-like technologies predict the content of events, and cache high-traffic, high-demand data from the main server to the CDN.

3.2.3 Flexible QCDN pricing smart contract

The QCDN service is priced in US dollars and uses QQQ as the sole token for driving system services. In order to effectively attract general users to join, we have established a mechanism for QCDN price elasticity.

Customers using QCDN can directly pay US dollars, or use QQQ to pay for use. Using QQQ as a payment tool, the price instantly corresponds to the USD exchange rate and can be subject to a certain amount of discount.

3.2.4 QEdge Voting and Reward to Smart Contract

QEdge can be big or small, as small as a light mobile phone node; or as big as thousands of NAS and multiple network lines, or giant enterprises; or like a mining pool with NAS, computers, mobile phones and voluntary organizations scattered around the world. We must have a contract to decide which QEdge has voting rights, legislative power, and QEdge rewards.

As in society, we decide that people who reach a certain age or condition can vote, some can serve as legislators, and some can serve as leaders. We not only encourage the nodes holding QAS to have legislative power, but also design corresponding mechanisms for the nodes that pay more, and give authority to maintain the stability of the whole society.

Using a smart contract with open features, it clearly demonstrates the distribution, open and transparent rankings, motivates everyone to participate in the competition, and is regulated by the public. Similar to contemporary law, public announcements on the Internet, contemporary competitions, people openly compete online. And we have a variety of network and economic stability rewards. The more you can help with stability, the more you can save costs, the more you can improve your speed, the more you can increase your hit rate, the higher the rewards, and the higher the profit.

The initial network reward parameters are as follows. The following are the conditions for additional issuance. The value of the test network is determined by the council and the public after the official launch. The following ratios are the default initial values of the test network:

- ◆ We encourage super miners to use the special network route to the NAS to ensure the stability of the whole network. The rewards are as follows:
 - QEdge with stable on-line and no disconnection for more than 7 days: 1% increase in returns
 - QEdge with stable on-line and no breaks for more than 30 days: 6% increase in returns
- ◆ Rare or critical QEdge: 3-15% increase in returns
- ◆ The degree that QAS holders increase profit is based on the number of shares held.
- ◆ NAS miners using a specific label or model: 30% - 50% increase in returns
- ◆ The top 1% miners in stability: 5% increase in returns

The council will add more incentive schemes to scalable smart contracts, which can be used for the whole QCDN ecosystem.

3.2.5 Payout and Lockup Cycle Smart Contract

Under the token economics model, users receive virtual point rewards of equivalent US dollars by participating in the POSEIDON NETWORK. These rewards are automatically withdrawn daily. Tokens can also be seen as incentives, and every user who receives tokens is the holder of the POSEIDON NETWORK. Under this incentive scheme, and from the perspective of getting more rewards, each user will contribute to form a better ecosystem, forming a virtuous circle.

In order to maintain balance of the POSEIDON NETWORK ecosystem, we encourage users to hold QQQ for a long period of time. Long-term holders receive a higher proportion of rewards.

The following QQQ reward parameters are the values of the test network. After the official launch, it will be decided by the Parliament and the public:

Daily withdrawal: regular rate of returns

- ◆ Withdrawal, every 7 days: QQQ returns increased by 1%
- ◆ Withdrawal, every 30 days: QQQ returns increased by 2%
- ◆ Withdrawal, every 90 days: QQQ returns increased by 5%

In addition, since the QQQ is a type of security token and its holders are members of the board, who have important decision-making power on the overall balance and stability of the POSEIDON NETWORK. Therefore, we will also give more incentives to encourage feedback from QQQ holders.

The parameter is the value of the test network. After the official launch, it is decided by the council and the public.

3.2.6 Upgradable Smart Contract

All smart contracts and algorithms are upgradeable. In the future, members of the Poseidon Autonomous Council are responsible for determining how the POSEIDON NETWORK will evolve and ensuring the vision of the POSEIDON NETWORK. Over time, more governance board seats and diversity will be increased to easily reflect the views of different industries. Based on this, we need to upgrade our smart contract, remove the oligarchic market and return the rights to the public.

3.3 Consensus Mechanism

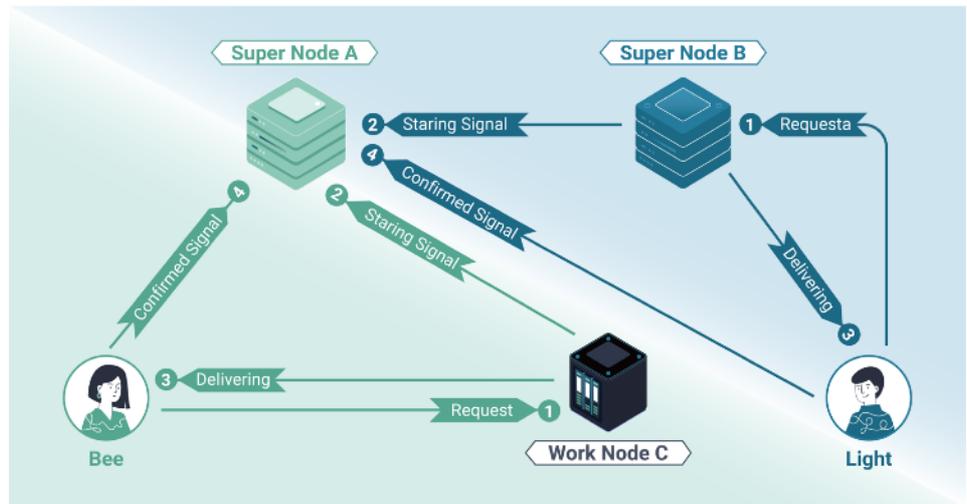
A completely different consensus mechanism: Proof of Delivering (PoD). PoD will determine both the miner's revenue and the user's cost. The core concept is easy to understand: users pay.

The PoS (proof of SpaceTime) and PoR (proof of Replication) consensus mechanisms of the POSEIDON NETWORK and filecoin program are completely different; they are completely different from the PoS (proof of storage) consensus mechanism and file contracts in SiaCoin.

The POSEIDON NETWORK is more focused on content delivery, not just access to data. This means that customers of the POSEIDON NETWORK don't care where content or data is stored, but they care about transmission. For example, live broadcast, the main need for live broadcast is content delivery, not permanent storage. Customers pay QQQ because they need content delivery, not data storage. To

some extent, temporary storage is free because it will disappear soon.

PROOF OF DELIVERING (POD)



Therefore, in this case, the Poseidon Network creates a PoD delivery proof of consensus, which means that each node can only be rewarded based on the amount of content it delivers and needs to be verified by neighboring nodes.

4. MARKET PLANNING

4.1 Profit Model

As a provider of online resources, the POSEIDON NETWORK can generate revenues and profits from a wide range of sources. Now the project is still in its very early stages and needs to rely on strong support from all walks of life.

4.1.1 CDN Services

The CDN service is the main service provided by the POSEIDON NETWORK at this stage. It provides audio and video websites, live broadcast applications, content industry websites, and e-commerce websites with edge bandwidth transmission, storage and computing services. It is almost un-delayed and high-speed when transmitting files, videos, applications and APIs to customers worldwide.

The cost of the fog-end resources is very much lower than the cloud, which can provide customers with more attractive prices. The deployment of the fog is extensive and easy, and it can reach countries and even cities in greater depth, closer to end users, and with a faster speed. The POSEIDON NETWORK significantly reduces the utility fee for the Internet world.

4.1.2 Storage Space Services

The POSEIDON NETWORK is committed to minimizing the world's deadweight loss, including: business costs, provider resources, service provider benefits, etc. Storage is one of the least utilized computer and network resources. Through the POSEIDON NETWORK companies and individuals can obtain low-cost, stable storage space services more effectively, and can also get profitable returns for individuals or business providers with idle storage resources. The NAS vendor that works closely with the POSEIDON NETWORK makes it easy for us to deliver this service to the public, and in the future, more users will join us to create a more dynamic and efficient generation.

4.1.3 Fog Edge Computing

The POSEIDON NETWORK provides a complete solution for the fog edge computing. Under the trend that the Internet of Things is

sweeping the world, multi-center computing in the cloud alone is not enough to cope with the multi-dimensional and complex system architecture of the Internet of Things. By combining the computing resources of the device idle, combined with the smart contract, digital identity and decentralization characteristics of the blockchain, we can not only maximize the effectiveness of the fog device, but also design a fair and open network for the whole world, providing the best fog edge computing services for business and personal experience.

4.1.4 E-commerce Solutions

The POSEIDON NETWORK provides e-commerce fog computing solutions for companies of all sizes that want flexible, secure, highly scalable, low-cost online sales and retail solutions.

Traffic of e-commerce website fluctuates widely. From the calm of midnight to peak traffic with frequent holiday events, the fog-end e-commerce solutions from the POSEIDON NETWORK can expand and shrink as you need it. It only charges for the resources you use, so you can focus your money on branding.

4.1.5 IoT Solutions

With the proliferation of devices, companies are likely to have billions of devices in thousands of locations, and increasingly need solutions to connect them, and to store and analyze device data.

The POSEIDON NETWORK offers a wide range of in-depth features, from the fog side to the cloud, allowing you to build an IoT solution to almost any use case for any device.

Take the enterprise as an example, this program will help establish enterprise IoT applications for predictive quality and maintenance as well as remote monitoring operations. Take advertising as an example, a commercial application is created for traffic monitoring, public safety and health monitoring. Take smart homes as an example, this program will build a home networking application for home automation, home security and monitoring, and home networking.

Even if you can't connect to the Internet, you can make your device smarter. Because in the POSEIDON NETWORK, IoT is integrated with multiple AI services. The network can be easily expanded as the number of devices increases or when the business needs change.

4.1.6 Blockchain Application Solutions

The POSEIDON NETWORK provides the easiest way to build scalable blockchain network modules for you.

Supply Chain Solutions: Blockchain technology is expected to increase transparency across the supply chain and enhance accountability. Blockchain technology has been used to track the source of materials, prove authenticity and source, reduce cases of product recalls, and speed up the flow of goods to maintain a transparent and verifiable information history related to the movement of products in their supply chains. .

Public Sector Solutions: The public sector wants to use blockchain technology to officially register government and citizen-owned assets (such as buildings, houses, vehicles, and patents), using centralized, trusted authorities to maintain verifiable transaction records. What's more, the blockchain also simplifies the voting process, reduces cases of fraud, and improves office logistics functions such as purchasing.

Profit-making business plan: Enterprises are beginning to use the blockchain software to solve the central problem and start to adopt the "decentralized authorization" solution. Bank consortiums and export companies hope to implement cross-border asset transfer between them without the need for central authorization for the contact person. The blockchain solutions are expected to be applied in public utilities, such as point-to-point solar sales, energy trading between large public enterprises, and automatic billing for electric vehicle automatic charging stations.

With blockchain services of the POSEIDON NETWORK, you can easily set up, deploy, and manage a scalable blockchain network without relying on expensive consulting implementations.

4.1.7 Other Services and Solutions

We provide more customized services and solutions. Please contact us for more information.

4.2 Progress So Far

4.2.1 Node Deployment

For cities that meet the following four or more conditions, the POSEIDON NETWORK will seek long-term cooperative partnership with companies, government agencies, universities, etc. as stable large nodes; the POSEIDON NETWORK will give priority to install experiment nodes in cities that meet the following two or more conditions. The conditions are as follows:

- ◆ Capital or major government centers, academic institutions, research stations
- ◆ Metropolitan areas with a population of more than 10 million
- ◆ Areas with stable power supply
- ◆ Scarce locations
- ◆ Politically-stable areas
- ◆ Cities with advanced 5G communication infrastructure

Already-online QEDGES enterprise-level node cities include

- ◆ North America: New York, San Francisco, Los Angeles
- ◆ EU: London, Frankfurt
- ◆ East Asia: Tokyo, Osaka, Seoul, Taipei, Kaohsiung, Hong Kong.
- ◆ Southeast Asia: Singapore, Kuala Lumpur, Manila, Jakarta, Hanoi, Ho Chi Minh City, Bangkok

4.3 Future Work

4.3.1 Blockchain Identity

Blockchain identity is a part of the overall TEE (Trusted Execution Environment) program, including Social Login and Private Key. It utilizes the non-tamperable feature of the blockchain, checks in the digital identity, and does the natural person authentication to become the DID (Decentralized ID).

These certifications include private keys, emails, and general smart phone logins, and features such as TouchID & FaceID; and even ID cards, passports, driver's licenses...

When the number of footprints is enough, you will rebuild "who you are" and everyone will be able to verify your identity, KYC etc. more easily. You don't even have to remember the recovery phase anymore. It is as simple as unlocking your phone. You can also choose not to reveal your identity.

4.3.2 Big Data Integration

When the POSEIDON NETWORK attracts a large number of C-end users, it stores and bins messages and needs of users to ensure that the data cannot be falsified or reversed. Data-winding, whether it is transaction data or various time data, social data, geographic data, etc., will belong to everyone. Personal rights will be extremely valuable "trust assets" for the POSEIDON NETWORK.

4.3.3 Social media

When the number of general users is stable, the POSEIDON NETWORK has corresponding technologies, rules and storage fields. It can also become decentralized, but file sharing platform or forum will be supervised. It means having the freedom of speech and public supervision at the same time.

4.3.4 Audio DRM

After DID, TEE, and Social media have become mature, we can compare the FID of each file by taking advantage of machine learning and deep learning to achieve most of the Audio DRM and even Data/Information retrieval (ML integration).

4.4 After 5G Infrastructures Are Popularly Used

4.4.1 Market

In the next 15 years, 5G will contribute 2.2 trillion US dollars to the global GDP, accounting for 5.3% of GDP growth. Three of the application scenarios include enhanced mobile broadband (eMBB), massive machine type communications (mMTC), ultra-reliable and low-latency communications (URLLC). At the same time, the International Telecommunication Union (ITU) has also defined eight key 5G demand indicators for IMT-2020, which will be described in detail in the next section.

The important role of 5G lies in the interconnection (between people and things). The result of interconnection is communication. A deeper level of communication lies in experience and emotional sharing. 5G will further enable people to communicate at a deeper level, and enhance experience and emotional sharing.

This means that once the 5G infrastructure is deployed in a certain country or region, each mobile phone can be changed from a light node to a super node. The era of “X as a service” is coming, and linking all IoT hardware such as mobile phones and NAS is the day-to-day advantage of the POSEIDON NETWORK, which can also be used to the fullest in this day and age. It means heavy application of the POSEIDON NETWORK is being realized.

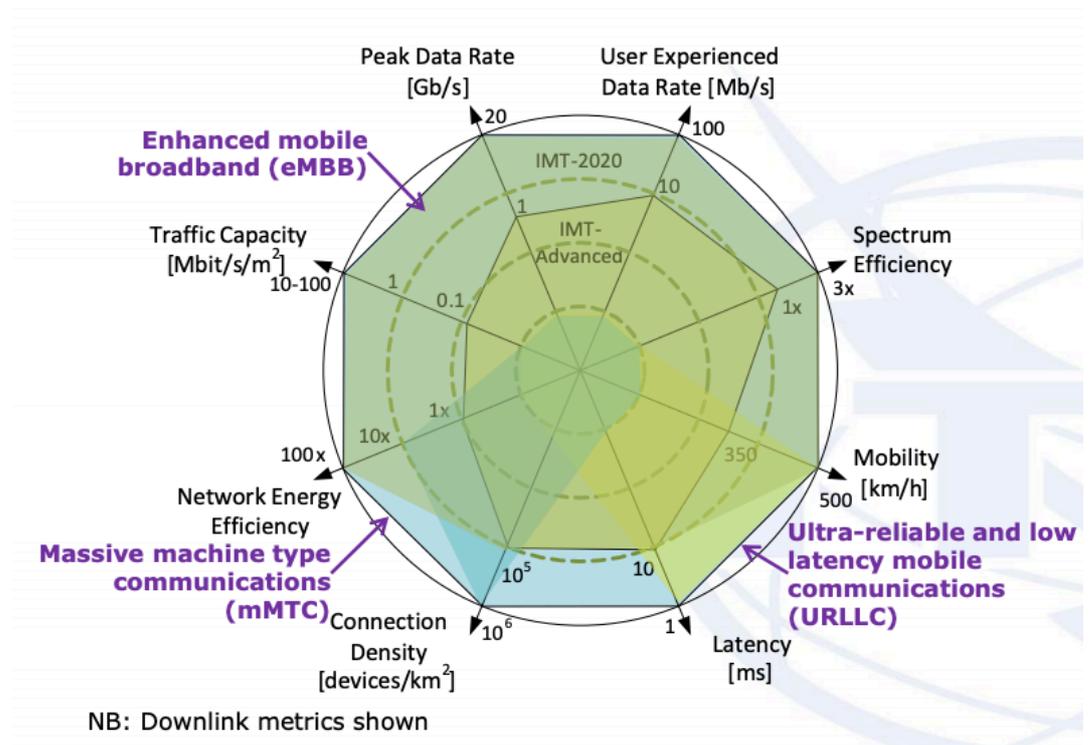
4G changes life, and 5G will change the society as a whole. Using IoT equipped with CDN and proper blockchain technology, the POSEIDON NETWORK will thrive like a sea god when the wave of 5G strikes. In other words, deploying the POSEIDON NETWORK means reorganizing the future of the world. 4G and 5G applications will be introduced in this order.

4.4.2 Eight Key Indicators of 5G IMT-2020 of the International Telecommunication Union

In order to achieve the above three application scenarios, the International Telecommunication Union (ITU) defines IMT-2020 as having eight key demand indicators of 5G, and it also defines its target value, which greatly exceeds the 4G indicator. The eight key demand indicators are as follows:

1. The actual experience rate of a mobile user/device in an area of sustainable and seamless network signal service is up to 100 Mbit/s to 1 Gbit/s
2. The highest peak rate per user/device under ideal conditions is 20Gbit/s
3. The ability to maintain sustainable communication at a speed of 500 km/h
4. Network latency is 1 millisecond
5. The total equipment connection density per unit is 1 million units per square kilometer
6. Energy efficiency is 100 times that of the 4G standard, which can be divided into two categories, for network and device respectively.
7. Spectrum efficiency: The average data transmission per unit of spectrum resource used by each base station is 3 times that of the 4G standard.
8. The intra-area communication capability provides 10 Mbps of service per square meter per base station.

Differences in demand indicators of 4G (IMT-Advanced) and 5G (IMT-2020) are shown below^{1 2} :



² ITU-R IMT.2020 Contribution, <https://www.itu.int/md/R15-IMT.2020-C-0001>.

4.4.3 Enhanced Mobile Broadband (eMBB)

Having enhanced indoor and outdoor ultra-high speed connections for consistent service quality even at the edge of the cell, the eMBB focuses on people-centric applications, which will involve access to all content, applications and services that need to be connected faster. Application scenarios of the POSEIDON NETWORK: viewing ultra-high definition (4K/8K) video, VR/AR application.

In high-speed trains (such as on high-speed rail), the signal is sometimes very poor, because seamless connection between signals has not yet been achieved. The enhanced mobile bandwidth usage scenario can effectively solve such problems by improving the network, increasing network transmission speed, and enhancing communication capabilities, ultimately improving the user experience.

4.4.4 International Roaming

The POSEIDON NETWORK will also provide international roaming services, so that when you go abroad, you only need to connect to other nodes, such as mobile phones, NAS... and other IoTs, enabling you to connect to the local network without using local telecom operators.

4.4.5 Massive Machine-Type Communications (mMTC)

Because these services require extensive coverage, relatively low power consumption and low transmission speed, its application is characterized by a large number of connected devices that typically transmit relatively small amount of sensitive and non-delayed data. As it is being widely used, equipment costs are reduced, and battery life is greatly extended.

Smart home is a common theme, with a wide variety of products, and each product transmits a small amount of data, and is not particularly sensitive to latency requirements. Large-scale, mechanical 5G communications just meet the need of this type of application scenario.

In addition, smart cities are also recognized as one of the important application scenarios of 5G. There are many kinds of objects that can be connected, including transportation facilities, air, water, electricity

meters, etc. More than one million connected devices need to be carried, and the amount of data that the device needs to transfer is small.

Compared to the existing technology, 5G can provide the ability to connect objects in a very dense manner across existing areas. The POSEIDON NETWORK can effectively and massively release the bandwidth of all IoT objects.

4.4.6 Ultra-Reliable and Low-Latency Communications (URLLC)

This use case has very strict requirements for latency and packet loss to ensure improved responsiveness. The application areas of the POSEIDON NETWORK include wireless control of industrial manufacturing or production processes, remote surgery, automation on smart grid distribution, and transportation security.

Driverless and autonomous driving have been applied in specific areas, while driverless driving is an advanced stage of autonomous driving, requiring less latency. To ensure user safety, the transmission latency needs to be as low as 1ms, and it needs to be super reliable. With the arrival of 5G, the POSEIDON NETWORK can turn each car into a node, and driving is expected to be truly unmanned.

5. TOKEN ECONOMICS

5.1 Token Economics Mechanism Design

Token Economics are fundamentally new ways of incentivizing human behavior, The main task in mechanism design is to specify a mechanism that incentivizes rational agents to behave in certain ways, based upon their private information, that lead to socially desired outcomes.

POSEIDON NETWORK issues two kinds of utility token - QQQ & QAS.

QQQ is the functional token of POSEIDON NETWORK platform, the most important part of POSEIDON NETWORK mainnet, furthermore, the only token in this ecosystem. Pay QQQ token to drive the services of POSEIDON NETWORK, or get QQQ from supplying your unused network resources.

QAS token anchored the real value of POSEIDON NETWORK mainnet including all of the devices - NAS, desktops, mobiles, IoTs...etc - and network resources - bandwidth, storage, computations...etc. If you own QAS token, you own some duty and rights to the mainnet, likewise, legal citizen in the world of POSEIDON NETWORK. It means that, you have the right to vote or, even more, amend the law, which are smart contracts in this case, on governance layer.

And, find the table below for the release detail:

	QQQ	QAS
Token Type	Utility Token	Utility Token
Total Amount	21,000,000,000	10,500,000,000
Method	Miners share bandwidth, storage and computing Buying on the exchange Public Sale Reward program	A. Private Sale B. Lockdrop

	QQQ	QAS
Usage	Drive all the services of the main POSEIDON NETWORK	<ul style="list-style-type: none"> A. Anchor the Poseidon Network node value B. Distribute POSEIDON WORK income profit C. Have the right to vote and participate in the direction of POSEIDON NETWORK

5.2 Functional Token QQQ

5.2.1 Main Parameters of QQQ Token

The POSEIDON NETWORK has a virtual credit mechanism designed specifically to reward miners, which is called QQQ. The core formula for QQQ revenue is as follows:

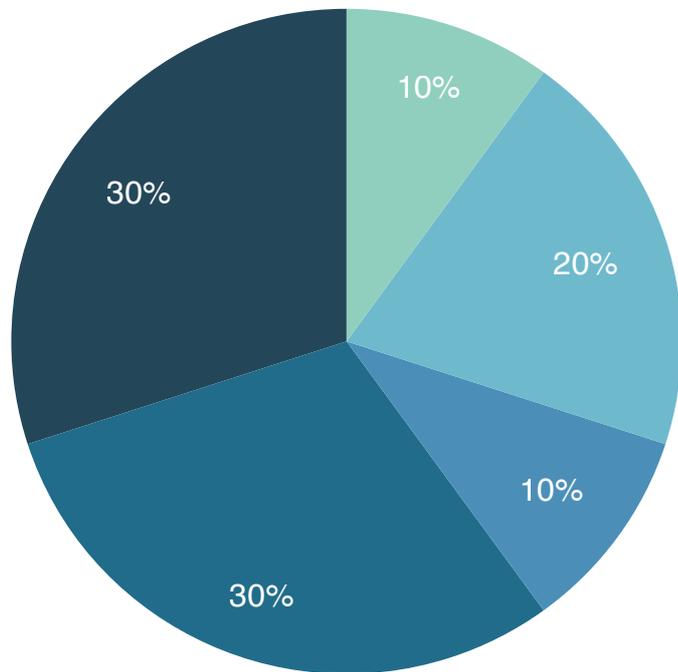
$$R = \frac{M_1}{\sum_{i=1}^n M_n} \times C_t$$

We will devote the following extensive paragraphs to explain the formula.

The revenue is generated by the delivery of content. As long as there are videos, files and other data transmission, it will generate revenue. Customers must pay first. This is called the Proof-of-Delivering (PoD). According to the PoD consensus design, as long as you have the data, you will get QQQ as rewards, and the process is similar to mining.

QQQ will raise funds initially through IEO. The distribution ratio of QQQ tokens is as follows:

● Partner / Advisor ● Team ● IEO ● Community Bounty ● Miner



項目	Allocation	Tokens
IEO	10%	2,100,000,000
Partner / Advisor	10%	2,100,000,000
Team	20%	4,200,000,000
Community Bounty	30%	6,300,000,000
Miner	30%	6,300,000,000

Main parameters of the QQQ token are as follows:

QQQ (Utility Token)	
Total Token	21,000,000,000
Ticker	QQQ
Standard	ERC20
Fund-raising time	May 11, 2019
Lock-up period	6 months

5.2.2 Fair Mining Formula Design

The output of QQQ will be calculated based on the node contribution M value of each node, designed to be fair and to maintain the stability of the whole network. The rights of miners need to be protected to ensure stable supply of miners, so that the stability of the whole POSEIDON NETWORK can be guaranteed.

As long as your node is online, there will be a base reward, which is called UBI (Universal Basic Income). The variable v_c is a controllable variable. If your node is online, even if you don't share any network resources such as transmission, storage, computing, etc., we will still give you a certain reward. This bonus variable is v_c , which is tested on the network. The default is 0.1 and the DAO organization decides its adjustment. The variable CTB value is the actual contribution, which consists of many parameters. The detailed formula for CTB is disclosed in the next section of this section. The formula for "node contribution" is:

$$M = UBI \times v_c + CTB \times (1 - v_c)$$

If there are N devices in the whole network, C_t is the number that can be dig, and your revenue in the whole network (Revenue) R is:

$$R = \frac{M_1}{M_1 + M_2 + M_3 + \dots + M_n} \times C_t$$

Income formula simplifies to:

$$R = \frac{M_1}{\sum_{i=1}^n M_n} \times C_t$$

5.2.3 Design for the Actual Contribution CTB

Due to different network infrastructures and hardware prices in each region, the basic price for network resources such as bandwidth, storage and computing, etc. will affect the actual mining incentives and efficiency, and thus affect the stability of the entire network. Therefore, the design of the actual contribution CTB value is a major challenge for the POSEIDON NETWORK. The formula is as follows:

$$CTB = (d + b + c) \times p_s$$

Equipment variable d

Equipment quality will also affect mining efficiency, resulting in an equipment variable d which considers: CPU core (s), CPU Ghz, and RAM. Hardware scores are more complicated, and hardware upgrades rapidly. The council will reasonably adjust them according to hardware trend. Here, we design the default score of CPU D_C , default score of Ram D_R , and the corresponding variable score points $x_C \setminus x_R$, which correspond to the CPU's brand, core, clock, RAM and sizes and types of hard drive. The formula for d is as follows:

$$d = D_C \times x_C + D_R \times x_R$$

Bandwidth variable b

The bandwidth variable b is one of the most important consumable variables, including the default total scores for upload bandwidth b_u and default total scores for download bandwidth b_d , and also the corresponding variable (initial) scores y_u, y_d . Location is also one of the key factors. For example, bandwidth price for each country is

different. For the POSEIDON NETWORK, we will balance the benefits of all miners in the formula. There is also a certain gap for node values between Singapore and Vietnam, so the GeoLocation factor G is designed to balance the benefits in the two places. The formula for b is as follows:

$$b = G \times (b_u \times y_u + b_d \times y_d)$$

Storage capacity variable c

The storage capacity variable c contains sharable capacity of hard disk H_s , default total scores of the occupied capacity H_o , and the corresponding variable scores (initial) scores x_s and x_o . It also includes the default total score for hard disk type (HDD or SSD) D_H . The formula for c is as follows:

$$c = D_H + H_s \times x_s + H_o \times x_o$$

Special variable p_s

Specially added to the POSEIDON NETWORK is a variable called p_s , which includes node type, online duration, number of QQQ and QAS with a default value of the test network being 1. Any changes will be promptly updated on the website.

5.2.4 Bitcoins and Mining Difficulty

We design the QQQ bitcoin in accordance with the characteristics of spot gold, with the following characteristics:

1. Its global amount is constant
2. Early miners are more likely to get the coins
3. Easy to split
4. Having currency properties, but not in the form of cash
5. Immediate settlement of funds
6. Controllable risk

Based on the first point above, the POSEIDON NETWORK defines the maximum amount of QQQ's measurable total, with an upper limit of

8,400,000,000. Based on the second point, it defines a design where the bitcoin production reduces by 50% every 4 years while the difficulty gradually increases, and the mine is expected to be emptied in 20 years. The output of coins for every four years is as follows:

Time	1 ~ 4 yrs	5 ~ 8 yrs	9 ~ 12 yrs	13 ~ 16 yrs	17 ~ 20 yrs
Total Amount	3,251,612,903	1,625,806,452	812,903,226	406,451,613	203,225,806
Accumulation	3,251,612,903	4,877,419,355	5,690,322,581	6,096,774,194	6,300,000,000

5.2.5 Buy back and The Burn

Destroying tokens is similar to repurchasing. Destroying QQQ coins will make the volatility limit irreversible forever, which can be regarded as a way of deflation. The POSEIDON NETWORK performs deflation in accordance with The Debt-Deflation Theory put forward by world-renowned economist Irving Fisher. Deflation will increase the actual purchasing power of the currency.

In Fisher's formulation of debt deflation, when the debt bubble bursts the following sequence of events occurs:

Assuming, accordingly, that, at some point in time, a state of over-indebtedness exists, this will tend to lead to liquidation, through the alarm either of debtors or creditors or both. Then we may deduce the following chain of consequences in nine links:

1. Debt liquidation leads to distress selling and to (next line)
2. Contraction of deposit currency, as bank loans are paid off, and to a slowing down of velocity of circulation. This contraction of deposits and of their velocity, precipitated by distress selling, causes (next line)
3. A fall in the level of prices, in other words, a swelling of the dollar. Assuming, as above stated, that this fall of prices is not interfered with by reflation or otherwise, there must be (next line)
4. A still greater fall in the net worths of business, precipitating bankruptcies and (next line)
5. A like fall in profits, which in a "capitalistic," that is, a private-profit society, leads the concerns which are running at a loss to make (next line)
6. A reduction in output, in trade and in employment of labor. These losses, bankruptcies and unemployment, lead to (next line)
7. pessimism and loss of confidence, which in turn lead to (next line)
8. Hoarding and slowing down still more the velocity of circulation. The above eight changes cause (next line)
9. Complicated disturbances in the rates of interest, in particular, a fall in the nominal, or money, rates and a rise in the real, or commodity, rates of interest.

Debt-deflation theory has been studied since the 1930s but was largely ignored by neoclassical economists, and has only recently begun to gain popular interest.

After the main network of the POSEIDON NETWORK is online, in order to ensure the investor's rights, we will destroy the QQQ coins according to the profit of each quarter until the destruction of 2,100,000,000 QQQ coins. The destruction process will be open, fair and transparent, ensuring that every user can confirm the destruction news through the blockchain browser.

5.3 Purpose of Financing

It is anticipated that a significant portion of the proceeds of the offering will be used for the following purposes. However, the Company reserves the right to use or deploy the proceeds as it deems appropriate based on its sole discretion. Market expansion and brand promotion

- ◆ Team Building
- ◆ Building super nodes in 37 major cities around the world
- ◆ Strategic acquisition and investment
- ◆ Edge Computing & Blockchain technology development
- ◆ Constructing a legal system for international copyright protection

6. ROADMAP

WHERE WE START

Bootstrapping Poseidon from 2 co-founders Light & Mike, target to disrupt cloud infra with innovative Edge Computing Technology

2018 Q2 – Q3

Core Development

2018 Q4 – 2019 Q1

Centralized dispatcher \ Distributed Edges

Support Storage: AWS S3, User HD (NAS)

100 Nodes, 2,700T B/W Monthly, Total Supply Storage: 400TB

2019 Q2 – Q3

POSEIDON V1: Distributed Qontroller, Distributed Edges

Support Storage: + IPFS

500 Nodes, 15 PT B/W Monthly, Total Supply Storage: 5PB

2019 Q4 – 2020 Q1

POSEIDON V2: Decentralized Qontroller, Distributed Edges

5,000 Nodes, 40 PT B/W Monthly, Total Supply Storage: 15PB

2020 Q2 – Q4

POSEIDON V2: Decentralized Qontroller, Distributed Edges

11,000 Nodes, 150 PT B/W Monthly, Total Supply Storage: 50PB

WHERE WE ARE GOING

Open-sourced, Decentralized, Distributed. Autonomous Content.
Acceleration Layer incentivized by QQQ Token. 5G future works

7. TEAM

7.1 Core Team



Light Lin
CEO

Serial Entrepreneur
Co-founder of [wretch.cc](#) (Yahoo M&A, 2007)
Co-founder of [flyingV.cc](#) (exit, 2018)
Co-founder of [BiiLabs.io](#)
NCTU, Taiwan Angel Club CEO and Co-Founder
General Manager of [Venue](#)
Advisor to the Silicon Valley of Asia and DIGI+ Advisory Committee



Mike Lin
COO

Serial Entrepreneur
Founder of [JavaWorld.tw](#)
Co-founder of Qinfra

7.2 Operation Team



Vicky Gao
Product Manager

Produce in-depth reports that suggest strategic and operational changes.

Collect, monitor and study white paper and business data to create custom reports that help control costs, identify process slowdowns and ensure compliance with industry standards.



Zeph Chang
Product Manager

Analyze product metrics and trends to assess product health and improvement opportunities.

Develop project scope, product vision.

Create concept, control project flow.

Maintaining the prioritized backlog of user stories, features and defects.



Yu En
Product Designer

Define different scenarios and build interaction patterns. They have to use tools that help them study user behavior (UX). Create interface prototypes (UI) and create the logic of the product with wireframes



GT Lin
Product Assistant

Schedule itinerary.

Team communication.

Product development.



Hugo Kuo
Community Manager

The bridge between Poseidon and the community. Engaging with customers and building relationships with customers.

7.3 Core Tech Team



Chi-Hsuan Huang
Blockchain Engineer



Mavis Liu
Backend Engineer



Andy Hsu
Software Engineer



Shawn Chang
Software Engineer



YH Lai
Software Engineer

8. APPENDICES

8.1 Idle Network Resources

Idle resources are tremendous and unnecessary waste of resources.

Take cars as an example. If your car is used for 1 hour a day, which is about 4.2% of the time, it is not running for the other 95.8% of the time. The 95.8% of the idle time is wasted. If every car in the world can travel 50% of the time, or if 50% of the cars are driving, then the number of vehicles in the world can be reduced by more than 90%. Traffic jams would have been resolved, and resource waste in case of cars would have dropped dramatically.

UBER solved this problem. Since the creation and development of companies such as Lyft, Grab, and Blablacar etc., the traffic jam situations in San Francisco, Singapore and other places have improved unintentionally. People with extra vacancies in their cars have more opportunities to make part-time profits. Traditional buses, trains, rapid transit systems, and high-speed rails will not disappear. This is an embodiment of decentralization, or multi-centralization.

The same is true for network bandwidth. If your home's full Wifi network is only used 12 hours a day at home, it means that for 50% of the time bandwidth is wasted. The network bandwidth is more like a faucet. Suppose the water from your faucet is always on, 50% of the water is flowing away. This is a terrible waste. Imagine how much water you have wasted, and how much bandwidth you have wasted. Just because bandwidth cannot be materialized, we don't feel the waste of the bandwidth.

The POSEIDON NETWORK is solving this problem. Internet downloading speed is getting faster, network resources are being wasted less, network traffic jams are being solved, and people with extra bandwidth in their homes are also given the opportunity to give back.

In today's society, not everyone needs a car, but almost everyone needs the Internet.

8.2 The Sharing Economy Has Just Begun

The first wave of startups in the sharing economy business such as Uber and Airbnb is to solve a single problem with lean entrepreneurship. For example, Uber lets a car rely on a driver to make money and distribute more profits. Then UberEats appeared. You can also deliver, run errands, and maybe even become a tour guide in the future. The future in a few years with electric cars and automatic driving can become a scene only seen in science fiction films.

The POSEIDON NETWORK has endless potential and an exciting future.

8.3 What is CDN ?

In addition, we must introduce the CDN in a familiar way. First of all, in the world of internet, all roads are charged. Image the Internet as roads. Imagine the world's main network as a highway. Imagine CDN as cities' elevated highways. The divergence of cities' elevated highways can reduce the severity of traffic jam on the main network. POSEIDON NETWORK provides rental of home wifi or physical network bandwidth at home, just like renting roads of your own, so that the cities' elevated highways can achieve a more thorough diversion effect.

The world's main network, the highway, was established by consultation between the two governments. For example, there is an ocean floor network cable directly between the United States and Japan. The CDN, the domestic elevated highway, is mostly owned and built by companies such as Akamai, Amazon, Google, and Microsoft. The CDN market is an extremely centralized oligopolistic market with high fees and underwhelming latency, which we will introduce later.

Looking at the Wifi or wired networks around you, at home or nearby, these are the established cities' roads. This road is usually available to us for internet, but when we leave home, it is idle. What POSEIDON NETWORK is doing is to safely utilize the unused network at home for our selected, specific and secure Internet companies, such as Youtube and Netflix, such that we can start to charge these companies.

Fifty years ago, it was hard to imagine diversion of highways, because cars were not fast and it was difficult to encounter a traffic jam. The government with the foresight saw the potential of highway diversion,

and as a result, the United States and Germany built the world's densest road network.

Now, although the internet speed is getting faster and faster, because of the rise of Youtube, Instagram, live video, etc., the cost is getting higher and higher, and POSEIDON NETWORK sees the infinite potential in applications of decentralized storage coupled with blockchain technology.

8.4 CDN Demand Is Increasing Year by Year with No Major Breakthrough in Technology

CDN is the abbreviation of Content Delivery Network. CDN was born more than 20 years ago, and the demand for long-distance information transmission has gradually increased, causing heavier and heavier loads on the main network, and as a result the quality of long-distance transmission was getting worse. In 1995, Tom Leighton, a professor at MIT, tried to solve the problem of network traffic jams with mathematics and developed the CDN.

When internet users in Taipei connects to the internet in San Francisco Bay Area, without the CDN, the long-distance data transmission will cross the Pacific Ocean with a distance of about 10,300km. Assuming that data transmission uses the world's fastest fiber-optic, at a speed of 300,000 km/s, a beam of light from Taipei to San Francisco takes at least 35 ms, and the round-trip takes 70 ms. In addition to transmission loss, equipment delay and sometimes the need of encryption and decryption, hundreds of milliseconds are needed. Even if you look at a small picture, it will wait for hundreds of milliseconds, and little things add up. The netizens will be greatly restricted by visiting reddit. Visiting the US Amazon shopping website may drive users crazy.

With the CDN, the servers actually visited by the Taipei residents are not real servers in the United States, but CDN servers in Japan and even Taiwan. The CDN itself has a cache function that distributes and caches the same content on the web page, such as pictures, music, movies, and even Javascript files, to each CDN node, so that the residents do not have to visit the San Francisco Bay Area from Taipei. You can access the Japanese node closer to you, and there is a direct cable between Taiwan and Japan, saving more than 90% of the time. If the CDN node is also located in Taiwan, such as Google's data center

in Changhua, the effect will be more obvious. The large number of applications of CDN also contributed to the evolution of technology in the world, the popularity of cloud computing, the rise of IoT, and the evolution of serverless technology.

8.5 Oligopoly Market of CDN

According to statistics, most CDN users who stream movies, sound files, and downloads of certain types of software and firmware update constitute the largest proportion of the traffic. The global bandwidth for the usage of CDNs and similar products, and the amount of usage of the network itself, will continue to grow at a significant rate. The global CDN market will grow from \$7 billion in 2018 to about \$31 billion in 2022. Despite the many problems to be solved, such as cost and delay, the demand for CDN is still rising. The video streaming and photo sharing software is prospering, and the market for CDN will continue to grow.

The mainstream providers of CDN operate in a similar manner, with only minor differences in service and billing methods, and the relative competitive advantages, such as differences between Akamai and Amazon's Cloudfront. In addition, the market share of these two giants has reached about 50%. The CDN market is monopolized by large companies such as Akamai, Amazon, Google, and Microsoft. Due to high hardware costs, personnel costs, and the difficulty for large-scale organizational innovation, large companies pass on the costs to client enterprises and consumers, and introduce various puzzling billing methods to earn commissions. This is the money that can be saved.

In addition, highly advanced regions incur high electricity and personnel costs. Developing regions have political issues and problems such as the power might not be unstable, and personnel training is not easy. These issues cause nodes to be selected only in specific countries or regions. Most countries are geographically far away, resulting in unnecessary delays for advanced regions and developing regions. There are delays that could have been saved. POSEIDON NETWORK will be particularly popular in these areas, especially in rich areas and isolated and densely populated island-style areas.

While blockchain technology is developing, DSN (Decentralized Storage Network, such as filecoin, siacoin, etc.) must be technically

dependent on CDN to operate effectively. It also constitutes an indispensable reason for the CDN to exist in the world.

In the traditional economy, intermediaries and agents often charge unreasonable fees and provide services without added value. Under the framework of a shared economy, the network allows resource providers and demands to directly match. Traditional intermediaries such as car rental, taxi dealers, advertising agencies, marriage agencies, and even usury will gradually be replaced by shared economies. The higher the profit, the sooner it is replaced. The simpler the service, the sooner it is replaced. The less added value, the sooner it is replaced. When crossing laws and regulations, the unprotected one is replaced first.

Akamai, Amazon, Google, and Microsoft are the traditional economic providers in the CDN field. Being large organizations, it is not easy for them to innovate.

The POSEIDON Network is the star of tomorrow in the CDN field. It uses cutting-edge technology, has strong traditional hardware vendors to support, flexible economic models, ecosystems inspired by token rewards, strong and adaptive organization. Just like the god of the sea, we can sweep the world.

8.6 What is NAS? Why is NAS particularly suitable as a node

NAS is an acronym for Network-Attached Storage, which is simply a "private cloud."

There are already enough cars in the world, and as long as 1% of cars join UBER, UBER will become the world's largest car rental network. Similarly, there are already 5 million NASs in operation in the world. As long as 1% of the world's NAS joins our network, the POSEIDON NETWORK will become one of the best accelerating networks in the world. And, the Internet is easier to access than the car.

The NAS is particularly suitable as a node for the POSEIDON NETWORK. It is due to the hardware properties of the NAS, and it does not unplug the network and power unnecessarily. NAS has many brands, and world-renowned brands include WD, QNAP, Synology, Seagate, and Buffalo.

The first phase of the POSEIDON NETWORK has been developed and finished, and is operating the QNAP NAS node sharing app QEDGE online. Next, we prioritize the development of other brands' NAS nodes sharing app, the POSEIDON NETWORK node sharing app for personal computers, and mobile phones. Node sharing apps for IoT devices are also being developed and tested.

9. DISCLAIMER AND RISK

WARNING

Please read this disclaimer and risk warning in detail, and fully understand the following risks. You acknowledge and agree to bear all the consequences caused by the above risks.

9.1 Disclaimer

This document is for informational purposes only. The contents of this document are for informational purposes only and do not constitute any investment advice to or solicitation of the POSEIDON NETWORK and shareholders selling virtual currency, stocks, securities. Any conduct related to this white paper should not be considered as an act of purchase and sale, including requesting a copy of the white paper or sharing the white paper with others. To participate in the act of purchase and sale, participants should have reached the legal age, have full civil capacity and fully understand all risks. The amount of value-add of QQQ and QAS depends on the market pricing rules and the demand after the implementation of the plan. In extreme cases, they may not have any value. The POSEIDON NETWORK team is not committed to guarantee their value-add and is not responsible for the consequences of changes in their values.

9.2 Policy Risks

In the world, the regulatory policies for blockchain projects and virtual currency transactions in some countries are still unclear. The loss of participants due to policy changes is a possible risk.

9.3 Trading Risks

Trading QQQ and QAS which are virtual currencies has some uncertainties. Because there is no strong supervision in the field of virtual currency trading, risks related to virtual currency such as skyrocketing, all-weather trading, banker trading, etc., and individual

participants have no long-term investment. Experience may result in loss of personal assets. Participants should choose the investment method according to their own situation and experience.

9.4 Coordination Risks

The POSEIDON NETWORK team will spare no effort to achieve all of the development goals set forth in the white paper. At present, there are well-established technical and commercial teams in the project. However, there are unforeseen factors and uncertainties in technology development and other development. The existing business models and the overall planning ideas may not be in good agreement with the market demand, which makes it difficult to achieve profit targets or we may not be able to meet investor expectations. At the same time, the follow-up of this white paper may be adjusted as the project progresses. If the details of the follow-up progress of the project are not known to the participants in time, or the participants are not aware of the plan due to information mismatch, which may cause losses or impact the future development of the plan.

9.5 Security Risks

Virtual currency is characterized by anonymity and difficulty in tracing. It is easy to be exploited by criminals or attacked by hackers, or may involve criminal activities such as illegal asset transfer. Participants are required to fully understand the team's background, understand the overall framework and ideas of the project, make reasonable predictions of their visions, and purchase virtual currency rationally.

9.6 Technical Risks

Blockchain is often described as a very advanced technology. To understand the nature of risk, you must have a complete understanding of applied cryptography and information science. During the update and adjustment process, the POSEIDON NETWORK may find that there are loopholes, and the technical team will continue to make up for it through the form of hot repair. By using the Service, you declare that you have sufficient knowledge, high market familiarity, experience and professional expertise to be able to carefully evaluate the merits and risks of all transactions that you perform in accordance

with the Service, and you agree to be able to take sole responsibility for the aforementioned declaration.

9.7 Malicious Node Risks

The POSEIDON NETWORK is built on a blockchain. Some nodes on the blockchain may be malicious and attempt to take advantages without any contribution. Such hackers may attempt to damage the operating system of the POSEIDON NETWORK. Therefore, we need a strong guarantee to protect the network from malicious attacks, and to determine the security of the transaction and the continued operation of the operating system. Next, we will list and discuss attacks that may threaten the operation of the blockchain network.

9.7.1 Sybil Attack

A malicious node may generate multiple Sybil identities in an effort to gain more benefits or spoof the target network. In general, the protection mechanism should establish a barrier wall to prevent Sybil attacks, but there is no guarantee that such a barrier wall will always be effective to prevent Sybil attacks.

9.7.2 Out-of-Work Attack

Although hackers can control many nodes, these nodes can also be used to create interference with shared computing networks. A node that is maliciously attacked can be called a "zombie." The attack may be done by causing the zombie node to stop working once or completely. In the POSEIDON NETWORK, zombie nodes may override AI's instructions but do not complete or give invalid results. If zombie nodes are mostly responsible for the AI's instructions, then the AI instruction will produce unrealistic results or may directly cause an error.

9.7.3 Outsourcing Attack

It is possible for a malicious node to outsource its instructions to other nodes, so it may be easier to take advantage of its benefits without using the corresponding computing power. In the POSEIDON NETWORK network, nodes should demonstrate their ability to work.

9.8 Governing Law

This disclaimer is governed by the laws of Taiwan (Republic of China) and in accordance with the laws of Taiwan (Republic of China). You agree to accept the jurisdiction of the non-exclusive jurisdiction of the Taiwan (Republic of China) court.

9.9 Disclaimer Update

The POSEIDON NETWORK reserves the right to update this disclaimer at any time with or without prior notice, and any changes will be effective immediately upon posting on this website. Please be sure to check this disclaimer each time you visit this website. By continuing to use this website, you agree to be bound by the disclaimer after the change. In case of discrepancies between the English and Chinese versions, the English version shall prevail.