



# **Star Tower Agreement White Paper**

**Owned by the Star Tower team or company**

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# I. Introduction

Star Tower In recent years, the global popularity and coverage of smart devices have continued to increase, especially with the popularization of 5G technology, the connectivity of smart devices has been further enhanced. As an indispensable tool in people's daily lives, smart devices have become the core terminals in the era of the Internet of Everything. This rapidly developing smart device industry has spawned digital transformation, promoted the development of augmented reality (AR) and virtual reality (VR), promoted the advancement of distributed computing, and increased the connection of IoT devices.

Against this background, Star Tower's new blockchain architecture based on smart mobile devices (such as smartphones) came into being. The vision of the Star Tower project is to transform the public chain operating environment from the original high-energy centralized server or a few nodes to the public chain operation on low-energy smart devices or multiple nodes. At the same time, Star Tower is committed to enhancing the AI self-checking and self-processing function of contract vulnerabilities to solve some challenges and limitations in the traditional public chain environment, including solving problems such as high latency, high energy consumption, poor scalability, smart contract vulnerabilities, low transaction throughput, and node concentration.

StarTower uses RIP technology to achieve efficient interaction of intelligent computing resources, solve data processing, transmission problems, data set training, resource services and other problems for public chain networks and enterprises, and thus build a completely decentralized, secure and reliable intelligent public chain network. StarTower can promote distributed collaboration, intelligent computing resource sharing and resource loss-free interaction among smart devices, providing new possibilities for the next stage of development of the Internet.

## 1. Project Overview:

Our project aims to run the Star Tower public chain node software on smartphones and smart devices, so that the excess computing, storage, network, power, memory, and other resources of smart devices can be converted and supplied to the Star Tower public chain. This feasible implementation method reduces the dependence on centralized servers, solves the pain points and drawbacks of existing public chains, and builds a completely decentralized, secure and reliable smart public chain network to achieve distributed collaboration, resource sharing and transaction processing among smart devices.

In our application, smart devices can interact directly and share computing resources, storage space and data processing capabilities safely. These resources will be supplied to the Star Tower public chain with zero loss, thereby reducing energy waste.

By using smart devices as public chain carriers, we have solved some problems in the traditional public chain network environment. The traditional public chain network operating environment usually relies on a small number of high-energy centralized servers or nodes, which leads to a series of problems, including high energy consumption, long network delays, low transaction throughput, smart contract vulnerabilities, etc. In addition, due to the

high concentration of nodes, the decentralization of the public chain is threatened and it is easy to become an attack target. First, StarTower provides faster data processing and response time by running N smart devices as N nodes for Star Tower carriers, reducing dependence on centralized cloud servers or central nodes, and achieving highly decentralized nodes. Secondly, we enhance data security and privacy protection, and ensure the security of Star Tower public chain interaction and data by adding contract vulnerability self-checking, self-processing and self-upgrade functions. Finally, through a unique incentive model, we promote resource sharing and collaboration between smart devices, improve resource utilization, and provide more computing power for the Star Tower public chain.

Our project is not only a technical practice, but also a pioneering solution that provides a more efficient, secure and trusted computing environment for enterprises and individuals. We believe that the integration of smart computing and blockchain will promote the development of the digital economy and bring positive impacts to society.

## **2. Project goals:**

**Build a global smart computing network:** Star Tower establishes a distributed smart computing network by deploying blockchain nodes on smart devices. This will provide faster data processing and response times and reduce dependence on centralized cloud servers.

**Realize resource sharing:** Use smart contracts and blockchain technology to achieve resource sharing between smart devices. Including computing resources, storage space, bandwidth, etc. This will improve resource utilization and provide more intelligent computing capabilities for industries such as AI/OT.

**Improve data security:** Ensure the security of interaction and data sharing between smart devices through the immutability of blockchain and the programmability of smart contracts. This will prevent potential data tampering and malicious attacks.

**Promote the application of intelligent computing and blockchain:** Promote the application of intelligent computing and blockchain through the development and deployment of practical application scenarios. This may cover the fields of Internet of Things, smart cities, industrial automation, healthcare, etc., providing more efficient, secure and trustworthy solutions for these fields.

**Academic research and knowledge contribution:** The project will actively participate in academic research in related fields and contribute to the development of intelligent computing and blockchain. We will share project experience and technical achievements to promote exchanges and cooperation between academia and industry.

Through the intelligent computing and blockchain fusion application project, we will open up new possibilities in the field of intelligent computing and blockchain, and provide enterprises and individuals with a more efficient, secure and trustworthy computing environment. We believe that the combination of this technology will promote the development of the digital economy and bring positive impacts to society.

### **3. Project and motivation background:**

The background and motivation of StarTower involve some challenges of current blockchain technology and the popularity of smart mobile devices.

Challenges of traditional public chain environment:

- High energy consumption centralized servers: Traditional public chain networks usually rely on a small number of high energy consumption centralized servers or nodes. These servers have huge energy demand, resulting in unnecessary energy consumption.
- High latency and low transaction throughput: Since the network relies on centralized servers, it leads to high latency and low transaction throughput, which limits the performance of the blockchain network.
- Smart contract vulnerabilities: In the traditional public chain environment, smart contracts have the risk of vulnerabilities, and traditional public chains cannot be updated and maintained or repaired by themselves. The long time of manual upgrades may lead to security issues and data leakage.

Challenges of cross-chain interconnection of traditional public chains: Traditional public chains have incoordination in asset interaction and cross-chain. The centralized or Turing incomplete design leads to unstable cross-chain interaction, which easily leads to problems such as asset loss.

Popularization of smart mobile devices:

- Popularization of smartphones and other smart devices: Smartphones and other smart devices have been popularized in all aspects of people's lives. They have powerful computing, storage and network capabilities.
- Underutilized resources: Many smart devices are idle most of the time, failing to fully utilize their computing, storage, and network resources.

Blockchain application expansion:

Blockchain technology, as a decentralized, secure and reliable distributed ledger technology, was initially widely used in the field of cryptocurrency. However, over time, the application scope of blockchain has gradually expanded to supply chain management, digital identity authentication, cross-border cross-border payments, IoT security and other fields. The immutability, decentralization and programmability of smart contracts of blockchain provide Star Tower with a more secure, reliable and transparent environment.

Importance of data privacy and security:

With the continuous growth and flow of data, data privacy and security have become the focus of important attention. Traditional cloud computing models may have security risks such as data leakage, man-in-the-middle attacks and data tampering. Star Tower integrates multiple technologies to provide a higher level of data security, ensure the integrity and confidentiality of data, and enhance users' trust in data privacy.

Demands of vertical industries:

Many vertical industries, such as IoT, smart cities, industrial automation, healthcare, cross-border payments, web interconnection, etc., have put forward urgent needs for the combination of computing energy and blockchain. These industries require real-time data processing and analysis capabilities to improve efficiency, reduce costs, and ensure data security and credibility. The integration of Star Tower provides innovative solutions for these industries.

Distributed evolution of network topology:

Traditional centralized computing models have problems with single point failures and performance bottlenecks. The Star Tower project will promote the distributed evolution of network topology. By deploying blockchain nodes on smart devices, computing and storage tasks can be dispersed to smart devices around the world, reducing the burden on central servers and improving the reliability and scalability of the overall system.

Enhanced autonomy and self-governance:

The combination of the unique mechanism model of the Star Tower project provides more autonomy and self-governance for smart devices and users. Through the smart public chain, smart devices can negotiate and interact directly without relying on the control of the central server. This decentralized approach increases the flexibility and controllability of the system, enabling devices to make decisions and perform tasks more autonomously.

Economic benefits and cost advantages:

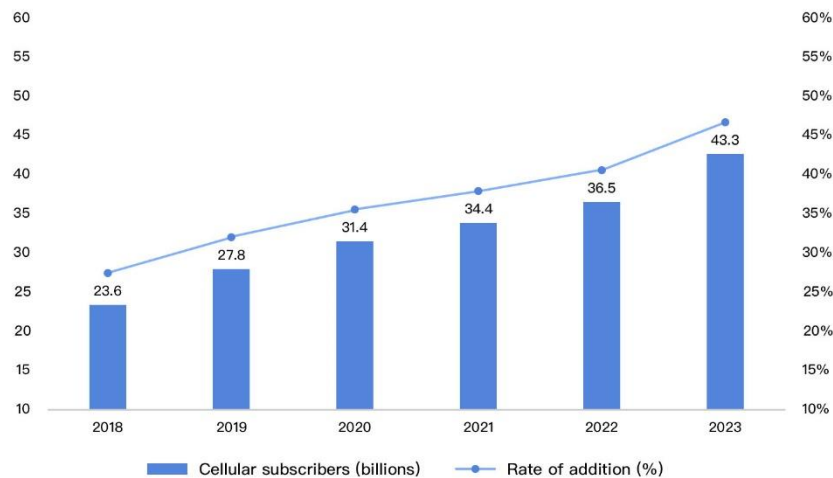
The Star Tower project can bring economic benefits and cost advantages. The idle computing resources and storage space of smart devices can be rewarded through mining, incentives, etc., improving resource utilization and reducing costs. In addition, through the decentralized structure, the maintenance and operation costs of the central server can be reduced.

Flexibility and scalability:

The Star Tower project uses the self-developed Resource Interaction Proof (RIP) with flexible configuration options, which can adapt to distributed systems of different scales and needs.

In this context, the motivation of the Star Tower project is to propose a new blockchain architecture based on smart mobile devices, using the idle resources of smartphones and other smart devices to build a decentralized, efficient, secure and sustainable public chain network. By using smart devices as public chain nodes, the Star Tower project aims to solve the problems of high energy consumption, high latency, poor security, and cross-chain interactive asset interconnection in the traditional public chain environment, and enhance resource sharing and collaboration between smart devices to improve the performance and security of the blockchain network.

The average annual growth rate of smartphone users is about 14.2%.



#### 4. Star Tower's components, overall workflow, and roles

*In Star Tower's platform, the following main components are usually included:*

1. **Intelligent computing nodes:** Intelligent computing nodes refer to computing units deployed on smart devices. They are responsible for performing intelligent computing tasks, processing data, and providing computing resources. Intelligent computing nodes can be smartphones, IoT devices, servers, etc., with certain computing capabilities and storage resources.
2. **Blockchain network:** A blockchain network is a distributed network composed of multiple nodes for storing and managing transaction data and smart contracts. The blockchain network ensures the security and reliability of data and provides decentralized transaction verification and consensus mechanisms. Common blockchain networks include Ethereum, HyperlStarTowerr Fabric, etc.
3. **Smart contracts:** Smart contracts are a piece of automated contract code defined programmatically and deployed on the blockchain for execution. They are used to manage and execute transaction logic, including resource sharing, interaction, and transactions between devices. Smart contracts ensure the reliability and transparency of transactions and automatically perform related operations based on preset conditions.
4. **Client applications:** Client applications are software installed on user devices for interacting with smart computing and blockchain platforms. They provide user interfaces that enable users to manage and monitor their smart devices, initiate resource sharing requests, view transaction records, etc. Client applications can be mobile applications, web applications, or desktop applications.
5. **Network communication protocols:** Network communication protocols are used for



communication and data transmission between devices. They ensure reliable connections between smart devices and nodes, and provide data encryption and security protection.

6. Data storage system: The data storage system is used to store transaction data, smart contracts, and other related information. It can be a distributed database, file system, or object storage, etc., to ensure data persistence and high availability.

These components together constitute the infrastructure of smart computing combined with blockchain platforms. They work together to achieve distributed collaboration, resource sharing, and transactions between devices, and provide secure, reliable, and efficient smart computing services.

## **2. Roles:**

1. Smart devices: Smart devices are the basic components of the entire platform. They can be smartphones, sensors, IoT devices, or other devices with computing and communication capabilities. Smart devices participate in the workflow of smart computing and blockchain by providing computing resources, storage space, and data processing capabilities.

2. Network nodes: Network nodes are intermediate nodes that connect smart devices and blockchain networks. They are responsible for managing and maintaining the operation of smart computing networks and forwarding requests and interactions between devices to appropriate nodes. Network nodes can be servers, routers, or other network devices.

3. Blockchain nodes: Blockchain nodes are devices or servers that participate in blockchain networks. They store and maintain a complete copy of the blockchain and participate in the consensus algorithm and transaction verification of the blockchain. Blockchain nodes exchange and synchronize information through a peer-to-peer communication protocol.

4. Smart contracts: Smart contracts are automated contracts that define and execute transaction and contract logic programmatically. They run on the blockchain and perform corresponding operations based on predetermined conditions and rules. In the platform where smart computing is combined with blockchain, smart contracts are used to manage interactions between devices, resource sharing, and transactions, etc.

5. Platform managers: Platform managers are entities or organizations responsible for managing and operating the intelligent computing combined with blockchain platform. They are responsible for formulating the rules and policies of the platform, coordinating the work of various roles, solving problems in the operation of the platform, and promoting the development and growth of the platform.

These roles work together to build a decentralized platform that integrates intelligent computing and blockchain, realizing distributed collaboration and resource sharing between devices. They jointly promote the operation and development of the platform and provide users with efficient, secure and reliable intelligent computing services.

1. Install and configure Star Tower node software:

- Install and configure Star Tower node software on smart devices (such as smartphones).
- The software can be downloaded through the app store or official website, and users install and set it up according to the guide.

2. Resource provision and sharing:

- Once the Star Tower node software is installed and started, the smart device will begin to provide its computing, storage, network, power, memory and other resources to the Star Tower public chain.
- These resources will be integrated and managed for various operations and transaction processing of the public chain.

3. Network connection and data exchange:

- Star Tower node software establishes network connection and communicates with nodes on other smart devices to form a distributed network.
- Smart devices exchange and communicate data through the network, including transaction information, smart contract execution results, etc.

4. Contract vulnerability detection and processing:

- The Star Tower project is committed to adding self-checking and self-processing functions for contract vulnerabilities. Nodes running on smart devices will automatically perform contract vulnerability detection and processing operations.
- If a contract vulnerability is found, the node on the smart device will automatically process it or warn the user.

5. Transaction processing and consensus mechanism:

- Nodes on smart devices participate in the transaction processing and consensus mechanism of the public chain, execute smart contracts, verify the validity of transactions, and record them on the blockchain.
- Nodes (smart devices) reach consensus through consensus algorithms to ensure the consistency and security of the blockchain.

6. Reward and incentive mechanism:

- The Star Tower project adopts a unique reward model to encourage resource sharing and collaboration between smart devices.
- Participating nodes will receive corresponding rewards after completing certain tasks to motivate them to provide more computing power and resources.

7. Data processing and settlement:

- The Star Tower public chain uses the resources provided by smart devices for data processing and settlement, including Resource Interaction Proof (RIP), cross-asset intermediate currency settlement, data processing, transmission and other operations.
- These operations are completed through nodes on smart devices and recorded on the

blockchain to ensure security and traceability.

Through the above process, the Star Tower project has realized the use of smart devices as public chain servers and nodes, and solved a series of challenges and limitations in the traditional public chain environment through functions such as resource sharing and contract vulnerability detection.

Detailed process introduction:

When the smart device runs the Star Tower node software, resource provision and sharing, network connection and data exchange will be carried out according to the following steps:

### **### Resource provision and sharing:**

1. Start the Star Tower node software:

- The user starts the Star Tower node software on the smart device and allows it to access the device's computing, storage, network, power and other resources.

2. Resource integration and management:

- After the Star Tower node software runs on the device, it will detect the available resources of the device, including CPU, memory, storage, etc., and integrate these resources into the public chain network.
- The Star Tower node software allocates appropriate resources for the public chain network to use according to the performance and configuration of the device.

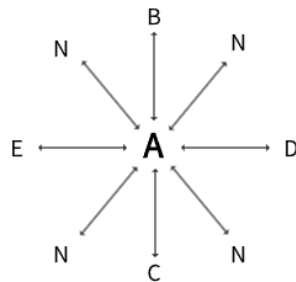
3. Resource sharing agreement:

- The Star Tower project will implement the Star Tower resource sharing agreement, which stipulates the method and conditions for resource sharing between smart devices to ensure the stability and reliability of the public chain network.
- Smart devices agree to share resources in accordance with the Star Tower agreement and receive corresponding rewards or incentives based on the amount of resources they provide.

4. Resource scheduling and management:

- The Star Tower node software is responsible for managing and scheduling the resources provided by smart devices to ensure their effective use in the public chain network.
- The software dynamically adjusts resource allocation according to demand to meet the processing requirements of different tasks while maximizing resource utilization.

Point-to-point connection channel



\*The letters represent nodes (smart devices)

A smart device contributing resources will provide approximately 61 people with access to the public chain network.

Nodes discover each other through the network and establish point-to-point connection channels to form a distributed network.

### ### Network connection and data exchange:

#### 1. Establish network connection:

- After the Star Tower node software is started on the device, it will automatically try to establish a network connection with the nodes running on other smart devices.
- The nodes discover each other through the network and establish a point-to-point connection channel to form a distributed network.

#### 2. Data exchange protocol:

- The Star Tower project defines a set of Star Tower data exchange protocols, which stipulates the format and method of data exchange between nodes.
- Nodes exchange data in the format agreed upon by the protocol, including transaction information, block data, smart contracts, etc.

#### 3. Data transmission and verification:

- When the node on the smart device receives data sent by other nodes, it will verify and confirm to ensure the integrity and validity of the data.
- Data transmission is protected by Star Tower technologies such as encryption and signature to prevent data tampering and malicious attacks.

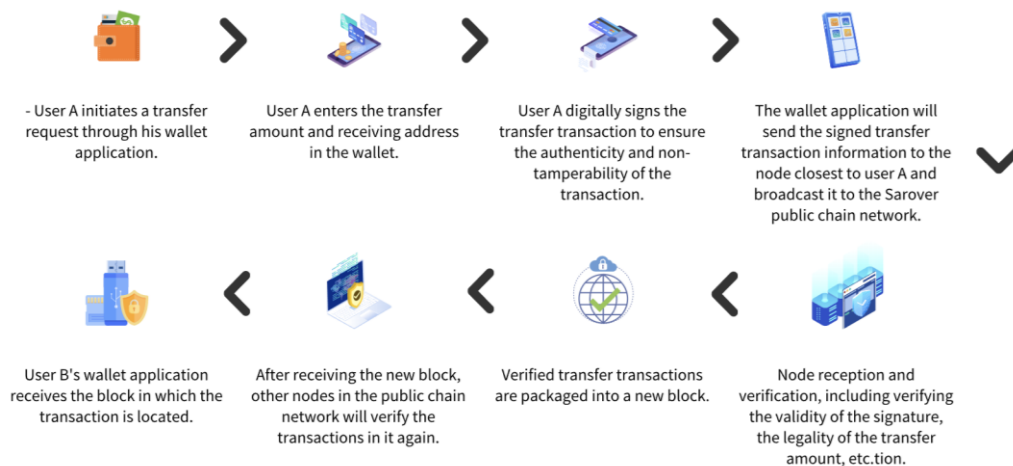
#### 4. Transaction broadcast and confirmation:

- When a new transaction is generated, the node broadcasts it to the entire network, and other Star Tower nodes verify and confirm it after receiving it.
- Ensure the validity and consistency of transactions through the Star Tower consensus algorithm and incorporate them into the Star Tower block to achieve tamper-proof and persistent storage of data.

Through the above steps, the Star Tower project realizes resource sharing and network connection between smart devices, provides basic support for the operation of the public

chain network, and ensures the data consistency and security of the network through data exchange.

### Transfer steps



## 5. Governance Tokens

SAVV is the native utility and governance token of the Star Tower blockchain, which is the main carrier for paying network transaction fees and rewarding distributed shard storage and smart computing provided by participants to the network. SAVV is also used as a token for one smart device to request another device to provide computing resources, storage space or data processing capabilities, etc. These requests and shared resources will be recorded on the blockchain through smart contracts, ensuring the credibility and transparency of the interaction.

The utility of SAVV is as follows:

- Pay transaction fees on the StarTowerChain network;
- Reward distributed shard storage and shared interactive smart computing resources;
- Ensure the distributed governance of the StarTowerChain network.
- StarTower ecological service fees.

### SAVV Initial Allocation

The initial allocation of Star Tower is allocated to major stakeholder groups to establish the foundation of the ecosystem and network.

- Star Tower (SAVV) fixed total: **100,000,000**
- Infrastructure supply: **10%** (unused and destroyed)
- RIP sharing: **90%**

The initial distribution of Star Tower will be completed through resource provision reward mining, which means that **100%** of the tokens will be generated by rewarding resource providers. This initial distribution method helps to build the foundation of the ecosystem

and network, and incentivize stakeholders to participate in resource sharing and network construction.

Specifically, according to this distribution plan, 100% of Star Tower tokens will be allocated to users who participate in resource provision as rewards. This can be done by participating in nodes providing computing resources, storage space or data processing capabilities. This distribution method ensures that the distribution of Star Tower tokens is based on actual contributions to participating in network construction and development, which helps to build a healthy and active ecosystem.

## **6.Token Function:**

### **a. Voting Rights:**

Users holding Star Tower tokens will obtain corresponding voting rights to participate in the distributed governance decisions of the Star Tower public chain. These decisions may include protocol updates, parameter adjustments, proposal approvals, etc.

### **b. Proposal Submission:**

Users holding a certain number of Star Tower tokens can propose governance proposals to influence the development direction and important decisions of the Star Tower public chain. These proposals may involve technology upgrades, ecosystem construction, community development, etc.

### **c. Community Fund Support:**

A portion of Star Tower tokens will be used to establish a community fund to support ecosystem development, project incubation, developer incentives, etc. The use of the community fund will be determined by community voting.

## **Financial Model:**

### **a. Payment of Transaction and Service Fees:**

Users need to pay certain transaction or service fees when trading on the Star Tower public chain or using StarTower related services. These fees will be paid in the form of Star Tower tokens, and part of them will be used for network maintenance and development, and part of them will be used to reward miners and nodes or destroy them.

### **b. Incentive Mechanism:**

Users holding Star Tower tokens can get rewards by participating in network consensus, providing computing resources, etc. These rewards will be issued in the form of Star Tower tokens to encourage users to participate in the security and stable operation of the network.

### **c. Governance rewards:**

Users participating in governance will receive corresponding governance rewards to encourage more users to participate in the governance and development of the public

chain ecosystem.

d. Voting incentives:

To encourage more users to participate in voting and proposals, users who hold and actively participate in governance will receive a certain proportion of voting incentives to increase their enthusiasm for participation.

e. Long-term holding rewards:

Users who hold Star Tower tokens for a long time will receive additional rewards to encourage stable holding behavior and enhance the value stability of tokens.

f. Infrastructure construction:

A portion of transaction fees and network revenue will be used to support infrastructure construction, including node operation rewards, technology development, security audits, etc., to ensure the continued stable operation of the public chain network.

g. Ecosystem development:

A certain proportion of tokens will be used for the development and expansion of the ecosystem, including developer incentives, DApp incubation, community activity support, etc., to promote the healthy development of the ecosystem.

h. Burning mechanism:

In order to maintain the scarcity and value stability of tokens, a certain proportion of token burning mechanism may be introduced, and a part of the transaction fees will be used to repurchase and destroy tokens, thereby increasing the value of each token.

Through the above governance tokens and financial models, the Star Tower public chain will be able to better achieve community autonomy, ecosystem development and sustainable and stable operation. At the same time, the design of incentive mechanisms and governance rights will attract more users to participate in the public chain ecosystem and promote the prosperity and development of the entire ecosystem.

## **7. Destruction mechanism**

The destruction mechanism is a mechanism for maintaining the scarcity of tokens and increasing their value. It reduces the supply of tokens by destroying a certain number of tokens, thereby increasing the value of each token. The following is a detailed description of the destruction mechanism:

How the destruction mechanism is implemented:

1. Transaction fee destruction:

Each transaction conducted on the Star Tower public chain requires a certain number of Star Tower tokens to be paid as transaction fees. 70% of the transaction fees will be used for destruction.

## 2. Buyback destruction:

Regularly or irregularly, the Star Tower Foundation or the network operator will take out 70% of the company's profits to purchase a certain number of Star Tower tokens from the market, and then permanently destroy these tokens.

## 3. Reward destruction:

A portion of the tokens obtained from the incentive mechanism may be used for destruction. For example, the tokens obtained from mining rewards and node incentives will be destroyed in a certain proportion.

Advantages of the destruction mechanism:

### a. Increase the value of tokens:

By destroying a portion of the tokens, the supply of tokens is reduced, thereby increasing the scarcity and value of each token and increasing the market price of the token.

### b. Encourage holders:

The destruction mechanism can encourage token holders to hold tokens for a long time, because they know that the value of SAVW will increase over time, thereby increasing the holding rate of SAVW.

### c. Promote ecosystem development:

Increasing the value of tokens helps attract more users and developers to participate in the Star Tower public chain ecosystem and promote the healthy development of the ecosystem.

### d. Resist inflation:

The destruction mechanism helps to resist inflation because each destruction reduces the supply of SAVW, which helps maintain the stable value of tokens.

Through the implementation of the above destruction mechanism, the Star Tower public chain can effectively increase the value of tokens, encourage holders to hold tokens for a long time, and promote the healthy development of the ecosystem.

## 8. StarTowerCloud

With the rapid advancement of digitalization, the amount of data is growing exponentially. In this era when the value of digital assets is increasingly prominent, the security, privacy and reliability of data storage have become the core demands of the information ecosystem. In the face of increasingly complex security threats and privacy protection needs, the traditional centralized cloud storage architecture has exposed many limitations, such as single point failure risks, data vulnerability to monitoring and tampering risks, etc. StarTower is based on the world's first decentralized anonymous cloud storage technology, and is committed to reshaping the cloud storage landscape and bringing disruptive changes to the data storage field.



## 2.1 Decentralized architecture

The traditional cloud storage model is highly dependent on centralized server clusters to implement data storage and management logic. Under this architecture, data is stored in a few core nodes. Once these key nodes are subjected to force majeure events such as network attacks, hardware failures, and natural disasters, the integrity and availability of the data will suffer a devastating blow.

The decentralized architecture adopted by StarTower is based on distributed system theory and builds a peer-to-peer network (P2P) consisting of many nodes around the world. During the data writing phase, the erasure coding technology is used to divide the data into multiple redundant fragments, and these fragments are stored in nodes in different geographical locations according to a specific hash algorithm (such as SHA-256). Each node only stores part of the data fragments, and the nodes use the distributed hash table (DHT) for efficient resource location and collaboration.

For example, when storing a 1GB file, the system first divides the file into 10 data blocks (Chunks), and then uses the erasure coding technology to generate an additional 5 redundant blocks. These 15 blocks are randomly distributed to nodes in different regions. When reading data, as long as any 10 blocks can be obtained, the original file can be restored through the erasure coding algorithm. This architectural design makes the system have strong fault tolerance. The failure of a single or multiple nodes will not affect the normal access to data, greatly improving the stability and reliability of data storage.

## 2.2 Data encryption technology

Data encryption is the core line of defense for StarTower to ensure data security. Before the data enters the storage network, the system uses a multi-layer encryption mechanism, combining asymmetric encryption algorithms (such as RSA) and symmetric encryption algorithms (such as AES-256) to encrypt the data.

In the data encryption process, the AES-256 algorithm is first used to generate a random session key (Session Key), and the key is used to symmetrically encrypt the data. Then, the session key is encrypted using the user's public key through the RSA algorithm to generate an encrypted key package. The encrypted data and key package are stored on different nodes respectively.

In the data reading stage, the user first uses his own private key to decrypt the key package, obtain the session key, and then uses the session key to decrypt the encrypted data. This combination of asymmetric encryption and symmetric encryption ensures the efficiency of encryption and decryption, as well as the security of key transmission. At the same time, during the data transmission process, the SSL/TLS protocol is used for encrypted transmission to prevent the data from being stolen or tampered with during network transmission.

## 2.3 Anonymization technology

In the digital age, the importance of data privacy protection is self-evident. StarTower innovatively uses a series of anonymization technologies to ensure the isolation between user identity information and stored data.

The system uses zero-knowledge proof technology, so that users do not need to expose their real identity information to the system when they authenticate and authorize data access. Users can prove that they have access rights by generating specific encrypted proof files without providing any personal identification.

At the same time, at the data storage level, Chaumian Mix-Nets technology is used to anonymize user data. Mixing and encrypting the data of multiple users makes it difficult for attackers to trace the specific user identity from the stored data. In addition, Tor-like Routing technology is used to route and forward data access requests to hide the user's real IP address, further enhancing user privacy protection.

## 3.1 Individual users

Individual users accumulate a large amount of private data in their daily lives, such as photos, documents, videos, etc. StarTower provides individual users with a safe and private cloud storage environment. Users can safely store their personal data in StarTower cloud disks without worrying about personal privacy violations caused by data leaks.

## 3.2 Enterprise users

Enterprises involve a large number of core assets such as commercial secrets, customer data and intellectual property rights during their operations. StarTower's decentralized anonymous cloud storage technology provides enterprises with a highly secure data storage solution. Enterprises can store key data in StarTower cloud disks and use its powerful security features to effectively prevent security threats such as data leakage and hacker attacks, and safeguard the core competitiveness of enterprises.

## 3.3 Digital currency field

In the field of digital currency, the secure storage of private keys and the confidentiality of transaction data are the key to ensuring the security of user assets. StarTower provides digital currency users with a reliable storage solution. By securely storing important information such as private keys and transaction history of digital currency wallets, it effectively prevents risks such as private key theft and transaction data leakage brought by centralized storage, and ensures the security and stability of digital currency assets.

## 3.4 Special application scenarios

In scientific research projects, a large amount of sensitive experimental data and research results are involved. StarTower's decentralized anonymous cloud storage technology can meet the security needs of scientific research teams in the process of data sharing and collaboration, and ensure that data can be efficiently circulated under the premise of protecting privacy. In addition, in special scenarios such as whistleblower platforms, secure

data storage and anonymous protection are crucial. StarTower technology can provide reliable data protection for whistleblowers and encourage the legal disclosure of information.

StarTower's decentralized anonymous cloud storage technology integrates cutting-edge technologies in multiple fields such as distributed systems, cryptography, and network security, bringing a new solution to the field of data storage. Through innovative technical architecture and security mechanisms, it effectively solves the pain points of traditional cloud storage models and provides users with higher security, stronger privacy and more reliable services.

Looking to the future, with the development of emerging technologies such as artificial intelligence and the Internet of Things, the amount of data will continue to grow explosively, and the demand for data storage and privacy protection will become more urgent. StarTower will continue to deepen technological innovation, continuously optimize system performance, expand application scenarios, and contribute to the healthy development of the digital economy and the advancement of digital civilization.

## **II. Consensus Mechanism**

Star Tower brings together a combination of 1 consensus mechanism + AI, giving each participant in the smart network the ability to receive rewards.

### **1. Resource Interaction Proof Consensus**

Resource Interaction Proof:

The Star Tower project uses a self-developed consensus mechanism called Resource Interaction Proof (RIP). Resource Interaction Proof is a new type of proof-of-work mechanism that aims to use resource sharing and block processing on user smart devices to achieve the mining process.

Distributed Network: The Star Tower public chain builds a distributed quasi-linear network consisting of nodes running on a large number of smart devices. These nodes jointly maintain the entire public chain network by communicating with each other and exchanging information. Block Processing and Verification:

Nodes running on smart devices are responsible for processing and verifying transactions on the blockchain. They maintain the security and stable operation of the entire public chain network by executing smart contracts and verifying the validity of transactions.

Proof-of-Work Mechanism:

As a proof-of-work mechanism, Resource Interaction Proof (RIP) requires nodes participating in mining to prove that they have provided certain resources, such as computing power, storage space, etc., for processing and verifying transactions on the blockchain. These nodes need to show that they have put in enough work to maintain the

security and operation of the entire network.

Validity and consistency:

The RIP consensus mechanism is designed to ensure that every node in the entire network participates in mining and transaction verification in accordance with the rules to ensure the validity of transactions and the consistency of the blockchain. Only nodes that have passed the resource interaction proof are eligible to participate in the generation and addition of new blocks.

## **2. AI StarTower**

AI StarTower verifiers verify the authenticity of the space, bandwidth, and calculations of all storage service providers and node users in the network to eliminate false capacity and bandwidth, calculation claims, and ensure the validity, continuity, and reliability of the network computing power. Validators will be for their efforts to protect the network. These mechanisms are designed to ensure that the network operates efficiently and securely while preventing any "bad actors" from manipulating the network.

The advantage of AI StarTower block verification is that it can use machine learning and deep learning algorithms to process large amounts of transaction and block data, improving the efficiency and accuracy of verification. It can help reduce the workload and computation of node audits, and increase the speed of transaction processing and the security of the overall system.

Through the Resource Interaction Proof (RIP) consensus mechanism and AI, the Star Tower project realizes the resource sharing and mining process of user smart devices, providing important guarantees for the safe and reliable operation of the public chain network.

## **3. Resource Interaction Proof Example**

The following is a simple example of a Resource Interaction Proof (RIP) network:

### **1. Network Participants**

- Smart device nodes: including smartphones, laptops, IoT devices, etc., which join the network by running the Star Tower client software and contribute computing power, storage space and bandwidth resources.
- Validator nodes: composed of AI StarTower validators, responsible for verifying the authenticity of resources (such as storage, bandwidth, computing power) provided by other nodes in the network to ensure the efficient operation of the network.
- Block generation nodes: Through the RIP consensus mechanism, nodes that successfully complete resource interaction proofs are eligible to generate new blocks and receive rewards.

### **2. Resource Interaction Proof (RIP) Process**

#### **1. Resource Contribution:**

- Smart device nodes declare to the network the resources they can provide (such as 10GB

storage space, 5Mbps bandwidth, 1TFLOPS computing power).

- Nodes use these resources to process transactions on the blockchain, execute smart contracts or store distributed data.

## 2. Resource Verification:

- AI StarTower validators analyze the resource data provided by nodes through machine learning algorithms to detect whether there are false claims (such as false storage space or bandwidth).
- Validators use deep learning models to predict the historical behavior of nodes and determine whether they are trustworthy.

## 3. Proof of Work:

- Nodes need to prove that they have invested enough resources (such as completing a certain number of transaction verification or storage tasks).
- Validators confirm the workload of nodes through the RIP consensus mechanism and generate proofs.

## 4. Block Generation and Rewards:

- Nodes that successfully pass the resource interaction proof are eligible to participate in the generation of new blocks.
- After the block is generated, the node receives corresponding rewards (such as tokens) based on the proportion of resources it contributes.

# 3. AI StarTower's Verification Mechanism

- Fake Resource Detection:
  - The AI model identifies abnormal behavior (such as a sudden increase in storage claims or bandwidth usage) by analyzing the resource usage pattern of nodes.
  - For suspicious nodes, AI triggers further verification or temporarily restricts their participation in the network.

- Transaction and Block Verification Optimization:

- AI uses machine learning algorithms to quickly process large amounts of transaction data and identify potential double-spending attacks or invalid transactions.
- Through deep learning models, AI optimizes the block verification process, reducing the workload and computing overhead of nodes.

- Enhanced network security:

- AI monitors the behavior of nodes in the network in real time, detects and prevents malicious attacks (such as DDoS attacks or data tampering).
- By dynamically adjusting resource allocation, AI ensures efficient operation and resource utilization of the network.

## 4. Example scenario

*Suppose a user A has a smartphone and joins the Star Tower network:*

1. User A's phone claims to provide 5GB storage space and 2Mbps bandwidth.
2. The AI StarTower verifier confirms the authenticity of its resource claim by analyzing user A's device data.
3. User A's phone is assigned the task of storing part of the blockchain data and verifying transactions.
4. User A's phone successfully completes the resource interaction proof and participates in the generation of a new block.
5. User A receives the corresponding token reward, and the amount of the reward is proportional to the resources he contributes.

## 5. Summary of advantages

- Decentralization: Through distributed networks and the RIP consensus mechanism, Star Tower achieves decentralized resource management and block generation.
- Efficiency: AI StarTower validators optimize resource verification and block processing processes, improving the overall efficiency of the network.
- Security: The AI model enhances the security of the network and prevents false resources and malicious behavior.
- Fairness: All participants are rewarded according to the resources they contribute, ensuring the fairness and incentives of the network.

### Code Description

1. Node structure:

- Represents a node in the network, including resource information such as storage space, bandwidth, computing power, etc.
- `IsHonest` indicates whether the node is honest, and malicious nodes will forge resource proofs.

## 2. ContributeResources function:

- Simulates node contribution resources and generates resource interaction proofs.
- Honest nodes generate valid proofs, and malicious nodes generate forged proofs.

3. AIValidate function:

- Simulates the AI validator to verify the node's resource proof.
- If the node is malicious, the verification fails.

4. GenerateBlock function:

- Simulates the block generation process, and the block contains the validator's resource proof.

5. Main function:

- Create multiple nodes (including honest nodes and malicious nodes).
- Simulate the process of resource contribution, verification, and block generation.

**4. Resource Interaction Proof (RIP), as the core consensus mechanism of the Star Tower project, has the following advantages:**

1. Utilize excess resources of smart devices:

Resource Interaction Proof (RIP) allows smart devices to participate in the mining and transaction processing of the public chain by sharing computing, storage, network and other resources, making full use of the idle resources of smart devices and improving resource utilization.

2. Reduce dependence on centralized servers:

By making smart devices public chain nodes, Resource Interaction Proof (RIP) reduces dependence on traditional centralized servers. This decentralized architecture improves the network's anti-attack ability and reliability.

3. Solve the pain points and drawbacks of traditional public chains:

Resource Interaction Proof (RIP) effectively solves many problems existing in the traditional public chain environment, such as high energy consumption, long network delay, and low transaction throughput, by increasing transaction processing speed, reducing energy consumption, reducing network delay, and increasing transaction throughput.

4. Self-check, self-processing and self-upgrade functions:

Resource Interaction Proof (RIP) has the functions of self-checking, self-processing and self-upgrade of contract vulnerabilities, which can timely discover and solve vulnerabilities in smart contracts, improve the security and stability of the public chain network, and reduce the risks and losses caused by contract vulnerabilities.

5. Build a completely decentralized, secure and reliable public chain network:

The implementation of Resource Interaction Proof (RIP) enables the Star Tower project to build a completely decentralized, secure and reliable smart public chain network. Resource sharing and transaction processing between smart devices are realized through Resource Interaction Proof (RIP), laying a solid foundation for the distributed collaboration and development of the public chain network.

6. Because Resource Interaction Proof (RIP) is efficient and fast, it is suitable for resource-constrained environments, such as mobile devices or IoT devices. This makes the protocol

widely applicable and practical in a variety of scenarios.

7. Resource Interaction Proof (RIP) uses a quasi-linear network to combine linear and nonlinear characteristics.

- Flexibility: Quasi-linear networks can exploit both linear and nonlinear characteristics, making the model more flexible. This allows it to adapt to a variety of complex data patterns and relationships, thereby improving the expressiveness of the model.

- Interpretability: Quasi-linear networks are usually easier to understand and explain than fully nonlinear models. The linear part allows some of the model's behaviors to be directly explained by linear relationships, while the nonlinear part can capture more complex patterns in the data.

- Generalization ability: Quasi-linear networks can maintain the generalization ability of linear models to a certain extent, while being able to capture more data features through the nonlinear part, thereby achieving good performance on a wider range of data sets.

- Computational efficiency: Quasi-linear networks may have higher computational efficiency than fully nonlinear deep neural networks. The linear part usually has fewer parameters and faster training speed, while the nonlinear part can also improve computational efficiency through techniques such as parameter sharing.

In summary, Resource Interaction Proof (RIP), as the consensus mechanism of the Star Tower project, fully utilizes the idle resources of smart devices, reduces dependence on centralized servers, solves the pain points and drawbacks of traditional public chains, and has self-inspection, self-processing and self-upgrade functions. It provides key support and guarantee for building a completely decentralized, secure and reliable smart public chain network.

## **5. Uniqueness of Star Tower**

### **1. Smart devices as nodes:**

The Star Tower project uses smartphones and other smart devices as public chain nodes, allowing them to participate in mining and transaction processing. Traditional public chain networks usually rely on a small number of high-energy centralized servers or nodes, while Star Tower achieves decentralization and high dispersion of public chain networks by widely involving smart devices, thereby improving the security and stability of the network.

### **2. Resource sharing and collaboration:**

The Star Tower project promotes resource sharing and collaboration among smart devices through the resource interactive proof (RIP) mechanism. The idle computing, storage, network and other resources of smart devices are fully utilized, which not only improves resource utilization, but also strengthens the stability and security of the network. This resource sharing model helps to improve the efficiency and scalability of the entire public chain network.

### **3. Contract vulnerability self-checking and self-processing:**

Star Tower is committed to solving the problem of smart contract vulnerabilities. By adding



the self-checking, self-processing and self-upgrading functions of contract vulnerabilities, nodes running on smart devices can promptly detect and repair contract vulnerabilities, thereby improving the security and stability of the public chain network. This feature enhances the robustness of the public chain and reduces the potential risk of contract vulnerabilities to the network.

#### 4. Reduced energy consumption:

Traditional public chains rely on a small number of high-energy-consuming centralized servers or nodes, while the Star Tower project uses the resources of smart devices to reduce overall energy consumption. Through the resource interactive proof (RIP) mechanism, the efficient operation of the public chain network is achieved and energy waste is reduced. This energy-saving and environmentally friendly feature makes the Star Tower project of great significance in sustainable development.

#### 5. Cross-asset intermediate currency settlement:

The Star Tower public chain is not only a cryptocurrency platform, but also supports cross-asset intermediate currency settlement. This means that exchanges and settlements between different assets can be carried out on the Star Tower network, providing users with a wider range of financial services and application scenarios. This cross-chain interconnection feature expands the application field of the public chain and provides more possibilities for the liquidity and availability of digital assets.

The Star Tower project has unique innovations in smart device participation, resource sharing, security, energy efficiency and financial applications, and has made important contributions to building a more decentralized, efficient, secure and reliable public chain network.

## 6. \*How computing resources work

### 1. Virtualization technology: building standardized computing units

```
01. def virtualize_hardware(device):
02.     """
03.     Virtualize hardware resources and quantify CPU, GPU and other resources of different devices into standard computing units.
04.
05.     :param device: smart terminal device object, including CPU, GPU and other hardware information
06.     :return: standardized computing unit
07.     """
08.     cpu_cores = device.get_cpu_cores()
09.     cpu_frequency = device.get_cpu_frequency()
10.     gpu_capability = device.get_gpu_capability()
11.
12.     # Generate standard computing units based on hardware parameters
13.     standard_unit = {
14.         'cpu_cores': cpu_cores,
15.         'cpu_frequency': cpu_frequency,
16.         'gpu_capability': gpu_capability
17.     }
18.
19.     return standard_unit
```

### 2. Containerized management: achieving isolation and encapsulation of computing power

```

01. def create_container(app, resources):
02.     """
03.     Create a container for the application and encapsulate the required computing resources.
04.
05.     :param app: application object
06.     :param resources: CPU, memory and other computing resources required by the application
07.     :return: container object
08.     """
09.     container = {
10.         'app': app,
11.         'resources': resources,
12.         'status': 'created'
13.     }
14.
15.     # Set resource limits and allocation rules for containers
16.     set_resource_limits(container, resources)
17.
18.     return container
19.
20. def set_resource_limits(container, resources):
21.     """
22.     Set computing resource usage limits for applications in the container.
23.
24.     :param container: container object
25.     :param resources: computing resources
26.     """
27.     container['cpu_limit'] = resources['cpu']
28.     container['memory_limit'] = resources['memory']
29.     container['gpu_limit'] = resources['gpu']

```

## \*Computing power storage working method

### 1. Distributed storage system: building a secure data warehouse

```

01. def store_compute_info(compute_info, nodes):
02.     """
03.     Encrypt computing power information and store it in multiple nodes.
04.
05.     :param compute_info: computing power information, including computing power size, available time, usage history, etc.
06.     :param nodes: distributed storage node list
07.     :return: storage result
08.     """
09.     encrypted_info = encrypt_data(compute_info)
10.
11.     # Use erasure coding technology to store data in a distributed manner
12.     storage_result = distribute_data(encrypted_info, nodes)
13.
14.     return storage_result
15.
16. def encrypt_data(data):
17.     """
18.     Encrypt computing power information.
19.
20.     :param data: computing power information
21.     :return: encrypted data
22.     """
23.     # Encrypt data using encryption algorithm
24.     encrypted_data = encryption_algorithm(data)
25.     return encrypted_data
26.
27. def distribute_data(data, nodes):
28.     """
29.     Distribute data and store it in multiple nodes.
30.
31.     :param data: Encrypted data
32.     :param nodes: List of distributed storage nodes
33.     :return: Storage result
34.     """
35.     # Use erasure coding technology to store data in a distributed manner
36.     storage_result = erasure_coding(data, nodes)
37.     return storage_result

```

### 2. Micro-isolation technology: strengthening storage security defense

```

01. def micro_isolation(node, access_policy):
02.     """
03.     Set micro-isolation policy for storage nodes to restrict access rights.
04.
05.     :param node: storage node
06.     :param access_policy: access control policy
07.     :return: isolated node
08.     """
09.     node['access_policy'] = access_policy
10.     node['status'] = 'isolated'
11.
12.     return node
13.
14. def enforce_access_control(node, requester):
15.     """
16.     Enforce access control policy to ensure that only authorized devices or programs can access node data.
17.
18.     :param node: storage node
19.     :param requester: device or program requesting access
20.     :return: whether access is allowed
21.     """
22.     if requester in node['access_policy']['allowed']:
23.         return True
24.     else:
25.         return False

```

\* Collaboration in computing power interaction and scheduling

1. Collaboration with software-defined networks (SDN): Optimizing computing power interaction networks

```

01. def sdn_optimize_network(compute_requests, network_status):
02.     """
03.     SDN optimizes the network path based on computing power requirements and network status.
04.
05.     :param compute_requests: computing power request list
06.     :param network_status: current network status
07.     :return: optimized network path
08.     """
09.     # Allocate bandwidth based on the priority of computing power requests and network congestion
10.     optimized_path = allocate_bandwidth(compute_requests, network_status)
11.
12.     return optimized_path
13.
14. def allocate_bandwidth(requests, network_status):
15.     """
16.     Allocate bandwidth based on request priority and network status.
17.
18.     :param requests: computing power request list
19.     :param network_status: network status
20.     :return: bandwidth allocation result
21.     """
22.     # Implement bandwidth allocation algorithm
23.     bandwidth_allocation = bandwidth_algorithm(requests, network_status)
24.     return bandwidth_allocation

```

2. Collaboration with edge computing offloading: Improving overall computing performance

```

01. def edge_offload(task, device, edge_nodes):
02.     """
03.     Offload computing tasks to edge nodes.
04.
05.     :param task: computing tasks
06.     :param device: smart terminal device
07.     :param edge_nodes: edge node list
08.     :return: task execution results
09.     """
10.     if not can_handle_locally(device, task):
11.         # Select the best edge node
12.         best_edge_node = select_best_edge_node(edge_nodes, task)
13.
14.         # Send tasks to edge nodes
15.         result = send_task_to_edge(task, best_edge_node)
16.
17.     return result
18.     else:
19.         # Local processing tasks
20.         return handle_locally(device, task)
21.
22. def can_handle_locally(device, task):
23.     """
24.     Determine whether the device can handle tasks locally.
25.
26.     :param device: smart terminal device
27.     :param task: computing tasks
28.     :return: Whether it can be processed locally
29.     """
30.     # Evaluate the computing power, power and other resources of the device
31.     return evaluate_resources(device, task)
32.
33. def select_best_edge_node(edge_nodes, task):
34.     """
35.     Select the edge node that is most suitable for processing the task.
36.
37.     :param edge_nodes: edge node list
38.     :param task: computing task
39.     :return: optimal edge node
40.     """
41.     # Select the best node based on task requirements and node computing power
42.     best_node = find_best_node(edge_nodes, task)
43.     return best_node

```

Through the above code and function description, we can see how StarTower uses virtualization technology, containerized management, distributed storage, micro-isolation technology, SDN collaboration and edge computing offloading to efficiently and securely package, store, interact and schedule the computing resources of smart terminals. These technical modules work together to ensure the efficient use of computing resources and the stable operation of the system. (For more details, please go to <https://github.com/StarTowerChain/>)

### III. On-chain penalties

#### 1. Penalty description:

For Star Tower, individuals have a positive incentive to participate in the network, making their resources a node, thereby increasing the network effect and index. In addition, bad actors face the following forms of negative incentives and fines imposed on them by the network.

Definition of violations: In the Star Tower network, violations may include but are not limited to:

- Participating in double payments or fraud;
- Participating in false resource sharing to defraud rewards;
- Maliciously attacking network nodes or conducting network attacks;
- Other behaviors that violate the network protocol or smart contract.

Penalty mechanism: Different penalties may be taken for different violations:

- Double payments or fraud may result in asset freezing or deduction of a certain percentage of assets as a fine;
- Malicious attacks on network nodes may result in being blacklisted and restricted from participating in network activities;
- Other behaviors that violate the network protocol or smart contract may result in the inability to participate in network transactions for a certain period of time or the deduction of a certain percentage of credit score.

Penalty execution: The execution of on-chain penalties is usually automated by smart contracts, avoiding the possibility of human intervention and misjudgment. When a network node finds a violation, the smart contract may automatically execute the corresponding penalty according to the pre-set rules to ensure that the violation is dealt with in a timely and effective manner.

Complaint mechanism: To ensure fairness and justice, the Star Tower network has established a complaint mechanism that allows users to appeal against the decision to punish themselves. The complaint mechanism may be managed by community autonomy or multi-party participation to ensure the fairness and transparency of the penalty decision.

Preventive measures: In addition to the penalty mechanism, the Star Tower network also takes a series of preventive measures to prevent violations, including network monitoring, security review, identity verification and other measures to reduce the probability of violations and improve the security and stability of the network.

The stability of the entire network is maintained by RIP, which means that SAVW nodes are responsible for any double signatures, failures or other misconduct through slashing. In order to be eligible to generate blocks, each node is assigned a RIP equity score to monitor its normative behavior on the chain. If a SAVW node shows improper behavior, such as missing blocks, its equity score will be reduced. If the node's penalty score exceeds 30, it will not be eligible to participate in block generation and elections. To regain eligibility, a node must reset its stake score by paying the appropriate penalty amount.

## IV. Node Rewards and Distribution to Delegators

The two types of rewards for validators are (1) base rewards (newly minted SAVW) and (2) fees collected from transactions in each block.

Validators can decide how much to give back to delegators who delegate SAVW or hash power to them. These validators are incentivized to greatly reward their delegators in order to attract more hash power and stake. After collecting their fees, the protocol uses a function to determine the split between validators' staking rewards and hashpower rewards, defined as:

$$rH = rHp/tHp * m/S * R \quad (2)$$

$$rS = rSp/tSp * (1 - m)/S * R \quad (3)$$

Where:

$rH$  = validator rewards attributed to hashpower

$rS$  = validator rewards attributed to staking

$R$  = total rewards attributed to all delegators

$$rHu = rH/rHp \quad (4)$$

$$rSu = rS/rSp \quad (5)$$

Where:

$rHu$  = validator rewards per unit of hashpower

$rSu$  = validator rewards per unit of stake

Note that these functions are designed to create an active market for rewards and encourage competition between validator sets for delegated hashpower and delegated stake. By the same mechanism, delegators will attempt to optimize their own rewards by selecting validators with lower delegated hashpower and stake.

Node Reward and Distribution Application Example

Assume there are 2 validators and both are elected:

A: 2 units of computing power, 1 unit of equity

B: 1 unit of computing power, 4 units of equity

We also assume that there are a total of 10 units of SAVW computing power on the core network, so validator 1 has 20% of the computing power and validator 2 has 10% of the computing power. Similarly, we assume that there are a total of 20 units of equity on the SAVW network, so validator 1 has 5% of the equity and validator 2 has 20% of the equity. For this example, we also set  $m$  to  $2/3$ .

For simplicity of calculation, we set the number of rewards to be distributed to both validators to 1.

Points:

$$SA = 2/10 * 2/3 + 1/20 * 1/3 = 9/60 \text{ (6)}$$

$$SB = 1/10 * 2/3 + 2/10 * 1/3 = 8/60 \text{ (7)}$$

Rewards:

$$rHA = (2/10 * 2/3)/SA = 8/9 \text{ (8)}$$

$$rSA = (1/20 * 1/3)/SA = 1/9 \text{ (9)}$$

$$rHB = (1/10 * 2/3)/SB = 1/2 \text{ (10)}$$

$$rSB = (2/10 * 1/3)/SB = 1/2 \text{ (11)}$$

Rewards per unit:

$$rHuA = rHA/2 = 4/9 \text{ (12)}$$

$$rSuA = rSA/1 = 1/9 \text{ (13)}$$

$$rHuB = rHB/1 = 1/2 \text{ (14)}$$

$$rSuB = rSB/4 = 1/8 \text{ (15)}$$

Relay Rewards

Relayers earn part of the basic system rewards and transaction fees for cross-chain communication. Relay rewards are distributed in batches of every 100 Star Tower blocks. Relays receive rewards regularly.

## V. Advantages of Star Tower Mining

The use of Star Tower mining has the following advantages:

1. Reduce network latency: Star Tower mining transfers mining tasks from centralized cloud servers or high-energy-consuming devices to smart devices for processing. This can reduce the delay of data transmission and improve the efficiency of the mining process. Smart devices have a large global share, and usually users are closer to each other or the geographical location of the data source is advantageous, so they can respond to mining tasks faster and reduce the impact of network latency on mining speed.
2. Resource sharing and collaboration: Star Tower adopts the resource interactive proof (RIP) mechanism to promote resource sharing and collaboration among smart devices. This means that mining participants can share their own computing, storage and network resources, which improves mining efficiency and benefits, and also strengthens the stability and security of the network.
3. Enhance network security: Star Tower reduces dependence on centralized servers by distributing mining tasks to smart mobile devices around the world. This distributed mining method improves the security of the network because it is difficult for attackers to concentrate on attacking a single central node. In addition, the use of resource interactive proof (RIP) ensures the security of data transmission and calculation during the mining

process.

4. Flexibility and scalability: Resource Interaction Proof (RIP) has flexible configuration options and can adapt to distributed systems of different sizes and needs. At the same time, because the threshold setting is very small, the protocol may have strong scalability and can cope with the growth and changes in the scale of the system.

5. Promote innovative application scenarios: Star Tower provides possibilities for innovative application scenarios and business models. Resource interaction and sharing between smart devices can derive various new application scenarios, such as distributed storage, CDN computing, Internet of Things, etc., which promotes the application and development of blockchain technology in various fields.

## **VI. Security of the project**

Introduce Star Tower separately to ensure the security of the project:

1. Resource Interaction Proof (RIP) cryptography technology: Unique cryptography technology is used to ensure the confidentiality and integrity of data. Use technologies such as public-private key encryption algorithms, digital signatures, and hash functions to encrypt and verify data to prevent unauthorized access and tampering.

2. AI smart contract audit: AI StarTower conducts a comprehensive audit of smart contracts to discover potential vulnerabilities and security risks. By checking the contract code through methods such as static analysis, code review and fuzz testing, Star Tower will automatically fix the problems found according to the vulnerabilities to ensure the security of smart contracts.

3. Access control and authentication: Establish a strict access control mechanism. Star Tower restricts only authenticated users to access Star Tower and related resources. Use technologies such as multi-factor authentication, AI, access tokens and permission management to ensure that only authorized users can perform operations.

4. AI StarTower security audit and monitoring: The AI StarTower security audit and monitoring system monitors the security status of networks and applications in real time. By monitoring abnormal activities, network traffic analysis, intrusion detection and other means to promptly detect security threats, and automatically take corresponding measures to ensure that they meet the expected functions and security standards. By performing static and dynamic self-analysis of smart contract codes, detecting potential vulnerabilities and security risks, and self-maintaining and processing, Star Tower tries to avoid vulnerabilities and security risks in smart contracts, thereby ensuring the security of user assets.

5. Decentralized architecture improves network security: Star Tower adopts a decentralized architecture design, and decentralized data and transaction records are stored on multiple



nodes, thereby improving the security of the network. Even if some nodes are attacked or fail, the network can continue to operate without data loss or transaction failure due to single point failure.

6. Star Tower Updates and Upgrades: Star Tower will automatically update and upgrade blockchain software, smart contracts and related components in a timely manner, and automatically fix known security vulnerabilities and weaknesses. Keep Star Tower's technology stack and dependent libraries up to date to reduce security risks.

In summary, Star Tower ensures the security of the project through encryption technology, smart contract security review, decentralized architecture, real-time monitoring and emergency response mechanism, etc., providing users with a trustworthy and secure blockchain platform (in 2024, StarTower core technology has passed ISO/IEC 27001, ISO/IEC 25010, GDPR, SOC2 and other certifications).

## **VII. Features of the Star Tower Project:**

1. Autonomous identity and traceability: Blockchain can provide autonomous identity and traceability for smart devices. Each device can have a unique identity and use blockchain for authentication and traceability, thereby ensuring the credibility and integrity of devices and data in the network.

2. Distributed collaboration and sharing economy: Smart computing and blockchain can promote distributed collaboration and resource sharing between devices. Through smart contracts and blockchain technology, smart devices can directly interact and share computing resources, storage space, etc. securely, thereby building a decentralized smart computing network.

3. Data security and privacy protection: Smart computing can process and analyze data on smart devices without having to transmit sensitive data to the cloud. The decentralization and encryption characteristics of blockchain can ensure the security and privacy protection of data during transmission and storage.

4. Innovation and cooperation opportunities: Through Star Tower, users can cooperate and communicate with each other. This brings opportunities for innovation and cooperation to individuals, enterprises, etc., and promotes knowledge sharing and technological progress.

5. Sustainable development: Star Tower reduces energy consumption and environmental impact by effectively utilizing computing resources. This helps promote sustainable development and is in line with the concept of environmental protection and green mining.

6. Superior intelligent algorithm optimization: Star Tower has introduced advanced intelligent algorithm optimization technology to maximize mining efficiency and benefits

through intelligent scheduling and resource allocation of mining tasks. These intelligent algorithms can analyze market conditions in real time, adjust mining strategies, and automatically optimize mining operations, so that users can achieve excellent performance in the mining process.

7. De-trust and verifiability: Blockchain technology can provide verifiability and de-trust characteristics for intelligent computing scenarios. By storing the calculation results and data of smart devices on the blockchain, the traceability and verifiability of the calculation results can be ensured, thereby increasing trust in the calculation process.

8. Autonomous participation: Blockchain projects provide participants with the opportunity to participate autonomously. Computing power providers can freely choose to participate in projects and rent or share computing power according to their own conditions and advantages. Demanders can choose suitable computing power providers according to their own needs.

9. Data privacy and security: Blockchain projects focus on data privacy and security. Through the characteristics of encryption and distributed storage, users' data is protected, and only authorized computing power providers can access the data. This mechanism of protecting user privacy and data security increases the trust of participants.

10. Service-level agreement and payment mechanism: Smart computing and blockchain can be combined to realize automated service-level agreements and payment mechanisms. Through smart contracts and blockchain technology, automated transactions and payments between smart devices can be realized, ensuring fair and reliable interactions between service providers and users.

11. Incentive mechanism: The Star Tower project adopts an incentive mechanism to encourage computing power providers to participate and contribute through token rewards and economic incentives. This incentive mechanism can motivate participants and improve the quality and efficiency of overall computing power.

12. Community consensus and governance: Blockchain projects usually establish a community consensus and governance mechanism that enables participants to jointly make decisions and manage the development of the project. Through the wisdom and consensus of the community, the project can better respond to challenges, promote innovation, and maintain sustainable development.

These characteristics enable smart computing to be combined with blockchain to solve problems such as credibility and security, data privacy and control, data privacy and control, transaction transparency and traceability, decentralization and autonomy, latency and response time. The project has advantages in providing efficient, secure and reliable intelligent computing resources, promoting the development of computing sharing and cooperation. At the same time, these characteristics also provide participants with more

choices and control, promoting the development and diversification of intelligent computing.

#### 8. Star Tower Problem Solving

Star Tower solves the following problems in combination with blockchain:

1. Credibility and security: Trust and security can be established between devices in smart computing through blockchain. Blockchain technology provides a decentralized consensus mechanism and tamper-proof data records to ensure the credibility of interactions and the integrity of data. Smart devices can interact and share resources securely and directly through smart contracts without relying on centralized third parties.

2. Data privacy and control: Smart computing involves a large amount of data exchange and processing, and this data may contain personal privacy or sensitive information. By combining blockchain, smart devices can better control their data and determine which data can be shared and how to control access. The decentralized nature of blockchain can protect data privacy and give data owners more control.

3. Scalability and elasticity: Smart computing networks can achieve high scalability and elasticity through the distributed nature of blockchain. Smart devices can participate in sharing computing resources, storage space, etc., and dynamically join or leave the network as needed. Blockchain technology can provide consensus and resource management mechanisms to ensure the stability and reliability of smart computing networks.

4. Transaction transparency and traceability: Through the immutable nature of blockchain, interactions and resource sharing in smart computing can achieve a high degree of transparency and traceability. All interactions and transaction records are recorded on the blockchain and can be viewed and verified by all participants. This increases the credibility of interactions and helps to discover and solve potential problems.

5. Decentralization and autonomy: Smart computing networks combined with blockchain can achieve decentralized resource allocation and decision-making mechanisms. Smart contracts can automatically execute prescribed rules and conditions, and achieve autonomy and autonomous decision-making between smart devices. This decentralized feature can reduce dependence on centralized institutions and improve the efficiency and flexibility of the entire smart computing network.

6. Trust and cooperation: Participants in the Star Tower network can establish trust and cooperation through blockchain. The immutability and consensus mechanism of blockchain ensure the reliability of transactions and contracts, thereby promoting trust and cooperation between smart devices. This provides a decentralized trust foundation for smart computing networks, allowing different entities to safely share resources and participate in collaboration.

7. Payment and incentive mechanism: Smart computing combined with blockchain can provide payment and incentive mechanisms to encourage smart devices to participate in resource sharing and computing tasks. Through smart contracts and cryptocurrencies, payment rewards can be realized for smart devices to provide computing resources, storage space, etc. This can promote more smart devices to participate in mining, provide computing resources, and jointly build a more powerful smart computing network.

8. Prevent single point failure: Smart computing combined with blockchain can solve the single point failure problem in traditional cloud computing. In traditional centralized cloud computing, if the cloud server fails, the entire system may be affected. The data and calculations in the smart computing network are distributed on multiple smart devices. Through the decentralized characteristics of blockchain, even if a smart device fails, other devices can still continue to provide services and perform computing tasks, ensuring the availability and stability of the system.

9. Automated execution of smart contracts: Smart contracts in blockchain can realize automated execution in smart computing. Smart contracts are pre-defined computer programs that can automatically perform operations when specific conditions are met. Smart devices can automate resource allocation, task scheduling, and data sharing through smart contracts, reducing the need for human intervention and improving the efficiency of the entire smart computing network.

Star Tower combines blockchain to solve issues such as credibility and security, data privacy and control, scalability and elasticity, transaction transparency and traceability, as well as decentralization and autonomy. This provides higher security, credibility and flexibility for the development of intelligent computing networks, and promotes the innovation and application of intelligent computing and blockchain in various fields.

## **VIII . Star Tower Problem Solving**

Star Tower solves the following problems in combination with blockchain:

1. Credibility and security: Trust and security can be established between devices in smart computing through blockchain. Blockchain technology provides a decentralized consensus mechanism and tamper-proof data records to ensure the credibility of interactions and the integrity of data. Smart devices can interact and share resources securely and directly through smart contracts without relying on centralized third parties.

2. Data privacy and control: Smart computing involves a large amount of data exchange and processing, and this data may contain personal privacy or sensitive information. By combining blockchain, smart devices can better control their data and determine which data can be shared and how to control access. The decentralized nature of blockchain can protect data privacy and give data owners more control.

3. Scalability and elasticity: Smart computing networks can achieve high scalability and elasticity through the distributed nature of blockchain. Smart devices can participate in sharing computing resources, storage space, etc., and dynamically join or leave the network as needed. Blockchain technology can provide consensus and resource management mechanisms to ensure the stability and reliability of smart computing networks.

4. Transaction transparency and traceability: Through the immutable nature of blockchain, interactions and resource sharing in smart computing can achieve a high degree of transparency and traceability. All interactions and transaction records are recorded on the blockchain and can be viewed and verified by all participants. This increases the credibility of interactions and helps to discover and solve potential problems.

5. Decentralization and autonomy: Smart computing networks combined with blockchain can achieve decentralized resource allocation and decision-making mechanisms. Smart contracts can automatically execute prescribed rules and conditions, and achieve autonomy and autonomous decision-making between smart devices. This decentralized feature can reduce dependence on centralized institutions and improve the efficiency and flexibility of the entire smart computing network.

6. Trust and cooperation: Participants in the Star Tower network can establish trust and cooperation through blockchain. The immutability and consensus mechanism of blockchain ensure the reliability of transactions and contracts, thereby promoting trust and cooperation between smart devices. This provides a decentralized trust foundation for smart computing networks, allowing different entities to safely share resources and participate in collaboration.

7. Payment and incentive mechanism: Smart computing combined with blockchain can provide payment and incentive mechanisms to encourage smart devices to participate in resource sharing and computing tasks. Through smart contracts and cryptocurrencies, payment rewards can be realized for smart devices to provide computing resources, storage space, etc. This can promote more smart devices to participate in mining, provide computing resources, and jointly build a more powerful smart computing network.

8. Prevent single point failure: Smart computing combined with blockchain can solve the single point failure problem in traditional cloud computing. In traditional centralized cloud computing, if the cloud server fails, the entire system may be affected. The data and calculations in the smart computing network are distributed on multiple smart devices. Through the decentralized characteristics of blockchain, even if a smart device fails, other devices can still continue to provide services and perform computing tasks, ensuring the availability and stability of the system.

9. Automated execution of smart contracts: Smart contracts in blockchain can realize automated execution in smart computing. Smart contracts are pre-defined computer programs that can automatically perform operations when specific conditions are met.

Smart devices can automate resource allocation, task scheduling, and data sharing through smart contracts, reducing the need for human intervention and improving the efficiency of the entire smart computing network.

Star Tower combines blockchain to solve issues such as credibility and security, data privacy and control, scalability and elasticity, transaction transparency and traceability, as well as decentralization and autonomy. This provides higher security, credibility and flexibility for the development of intelligent computing networks, and promotes the innovation and application of intelligent computing and blockchain in various fields.

## **IX. Project Outcomes**

1. Establish an intelligent computing network: Through the development and implementation of Star Tower, a decentralized intelligent computing network will be established. The network will consist of multiple intelligent devices that can collaborate, share resources and perform computing tasks. The establishment of an intelligent computing network is one of the core outcomes of the project.

2. Develop a trusted resource sharing and interaction platform: Star Tower will develop a secure and trusted resource sharing and interaction platform. The platform will implement smart contracts and decentralized data records based on blockchain technology to ensure the credibility and transparency of interactions and resource sharing between smart devices. The development of the platform will provide a reliable infrastructure to support the cooperation and collaboration of smart devices.

3. Improve computing and data processing efficiency: The introduction of intelligent computing can improve the efficiency of computing and data processing. By pushing computing tasks and data processing to smart devices, the delay and bandwidth pressure of data transmission are reduced. The results of this project will be reflected in the efficiency and rapid response capabilities of smart devices when performing computing tasks and processing data.

4. Enhanced data privacy and security: Combined with blockchain technology, the project will focus on the protection of data privacy and security. Smart devices can establish secure direct interactions and resource sharing through blockchain, ensuring the confidentiality and integrity of data. The results of the project will include providing strong data privacy and security mechanisms and enhancing the overall security of the smart computing network.

5. Realization of smart computing mining: The project will also realize the ability of smart computing mining. Smart devices can contribute computing resources by participating in mining and receive corresponding incentives. This will provide a new source of income for smart devices and promote the development and expansion of smart computing networks.

6. Business cooperation and partnerships: Through the implementation of Star Tower, business cooperation and partnerships may be established. Smart device suppliers, enterprises and other relevant stakeholders may participate in the project to jointly promote the development and application of smart computing and blockchain technology. These cooperation and partnerships will be one of the valuable results of the project.

7. Realization of application scenarios: Through the combination of smart computing and blockchain, various application scenarios can be realized. These scenarios may cover the fields of Internet of Things, smart cities, industrial automation, healthcare, etc. The results of the project will be reflected in the development and deployment of actual application scenarios, providing more efficient, secure and reliable smart computing solutions for these fields.

8. Improve resource utilization: Star Tower can achieve higher resource utilization. By sharing the computing resources, storage space and bandwidth of smart devices, the resource utilization efficiency of the entire network can be improved. The results of the project will be reflected in the optimization of resource sharing and scheduling mechanisms to maximize the utilization of resources.

9. Innovative business models: The results of Star Tower may also include innovative business models and revenue mechanisms. Through the payment and incentive mechanisms of blockchain, a more flexible and sustainable business model can be established to incentivize smart devices to participate in resource sharing and computing tasks. This will provide new business opportunities and sources of revenue for relevant stakeholders.

10. Promote industry development: The application of Star Tower will promote the development and innovation of the entire industry. The results of the project will provide new insights and practical experience in the field of intelligent computing and blockchain at the technical and commercial levels. This will have a positive impact on the development path, standard setting and policy formulation of the industry.

11. Academic research and knowledge contribution: The implementation of Star Tower may produce academic research results and contribute to the academic community in related fields. The experience and lessons of the project can provide reference and reference for other researchers and promote academic progress in the field of intelligent computing and blockchain.

In general, the Star Tower project results will include technical implementation results, such as intelligent computing networks, resource sharing platforms, etc., as well as business and application results, such as the realization of application scenarios and innovation of business models. These results will bring practical impact and promotion to the development and application of intelligent computing and blockchain fields.

## X. Business

### 1. Business logic:

Market demand: The combination of Star Tower is a hot area in the current market. With the rapid development of the Internet of Things, artificial intelligence and big data, the demand for real-time data processing, security and privacy protection is increasing. Our project meets this market demand and provides a more efficient, secure and trusted computing environment for enterprises and individuals.

Value proposition: Star Tower provides the following through the combination of intelligent computing and blockchain technology.

- Faster data processing and response time: Pushing computing power to network intelligence reduces data transmission time and latency, providing faster data processing and response time.
- Data security and privacy protection: Through the immutability of blockchain and the programmability of smart contracts, the security of interaction and data sharing is ensured, and the security and privacy protection of data are enhanced.
- Resource sharing and collaboration: Promote resource sharing and collaboration between smart devices, improve resource utilization, and provide more computing power for devices.
- Decentralization and autonomy: Through smart contracts, smart devices can negotiate and interact directly, increasing the flexibility and controllability of the system, enabling devices to make decisions and perform tasks more autonomously.

Revenue model: Our revenue model can be based on the following aspects:

- Software license fees: Provide licenses for our intelligent computing and blockchain fusion application software, and price them according to the scale of use and functions.
- Service fees: Provide consulting, custom development, deployment and maintenance services related to our applications, and charge fees based on the project scale and service content.
- Resource trading: We will package and sell the excess storage, computing, bandwidth and other resources generated by sharing to those who need them.
- Mining income sharing: Through the mining activities of smart devices, we obtain a part of the mining income and share it with the device owner.
- Value-added services: The platform will provide a series of value-added services, such as smart contract writing, blockchain technology consulting and project promotion, to help users better utilize technologies such as blockchain, WEB3, metaverse and NFT, and get more benefits from them. The platform will earn income from the service fees generated by providing value-added services.
- NFT trading, metaverse, digital asset management: Star Tower will provide NFT trading



platform and digital asset management services. Users can list their digital assets for trading, and at the same time manage and protect their digital assets through the platform's digital asset management services. The platform will earn revenue from the handling fees and service fees generated by the user's transaction and management behavior.

Business partners: Establish partnerships with equipment manufacturers, IoT platform providers, blockchain technology providers, etc. to jointly promote the application of intelligent computing and blockchain. Through cooperation, we can expand market coverage, provide more comprehensive solutions, and jointly explore new business opportunities.

Market competitive advantages: Star Tower has the following competitive advantages in the field of intelligent computing and blockchain fusion applications:

- Technological leadership: We have leading intelligent computing and blockchain technologies, and effectively combine them to provide innovative solutions. Our team has rich technical experience and expertise to develop highly reliable and secure applications.
- Comprehensive solutions: Star Tower provides a comprehensive intelligent computing and blockchain fusion solution, including software, services and technical support. Our customers can get the required technology and services in one stop, simplifying the procurement and implementation process.
- Industry specialization: Star Tower focuses on specific vertical industries, such as IoT, smart cities, industrial automation, etc., and has a deep understanding of industry needs and challenges. Through customized solutions, we are able to meet customers' specific business needs and provide personalized support and consulting services.
- User experience: Star Tower focuses on user experience and is committed to providing a simple, intuitive and easy-to-use interface that enables users to easily operate and manage smart devices and blockchain networks. We continuously optimize products and services through continuous user feedback and improvements to improve user satisfaction and loyalty.
- Compliance and credibility: Star Tower follows the best practices of data privacy and security to ensure that our solutions comply with relevant regulations and standards. Our blockchain technology guarantees the integrity and transparency of data and enhances user trust in data security and credibility.

Market prospects: The market prospects for Star Tower's intelligent computing and blockchain fusion applications are very broad. It is expected that the development of the Internet of Things, smart cities, industrial automation and other fields will continue to drive the demand for intelligent computing and blockchain. With the further maturity of technology and the increase in market awareness, we have the opportunity to take the lead in this rapidly developing market and gain considerable market share and benefits.

In short, Star Tower's business logic is based on competitive advantages in market demand, technological advantages, comprehensive solutions, user experience and compliance. We believe that our project can meet customer needs, create business value, and succeed in the

field of intelligent computing and blockchain fusion applications.

## 2. Business logic analysis:

**Market demand:** The combination of intelligent computing and blockchain technology meets the current market demand for real-time data processing, security and privacy protection. With the development of the Internet of Things, artificial intelligence and big data, the demand for a fast, secure and reliable computing environment is getting higher and higher.

**Problem solving:** The project solves some problems in the traditional cloud computing environment through the combination of intelligent computing and blockchain technology. For example, it provides faster data processing and response time, reduces dependence on centralized cloud servers; enhances data security and privacy protection through the immutability of blockchain and the programmability of smart contracts; promotes resource sharing and collaboration between smart devices, and improves resource utilization.

**Value proposition:** The project provides multiple value propositions, including faster data processing and response time, enhanced data security and privacy protection, resource sharing and collaboration, decentralization and autonomy, etc. These value propositions can meet the needs of users and improve their work efficiency, data security and business flexibility.

**Revenue model:** The project's revenue model can be achieved in a variety of ways, such as software licensing fees, resource transactions, service fees and mining revenue sharing. These sources of income can help the project achieve profitability and provide financial support for continued research and development and the provision of high-quality services.

**Competitive advantages:** The project has competitive advantages in the field of intelligent computing and blockchain fusion applications, such as technological leadership, comprehensive solutions, industry specialization, user experience and compliance. These advantages can help the project stand out in the market, attract customers and win the competition.

**Market prospects:** Intelligent computing and blockchain technology have broad market prospects in the fields of Internet of Things, smart cities, industrial automation, etc. With the continuous development of these fields and the increase in application scenarios, the project has the opportunity to gain market share and achieve sustainable growth.

## 3. Business vision:

Our business vision is to become a leader in the field of intelligent computing and blockchain fusion applications, and to promote digital transformation and change the way the industry operates through innovative solutions and excellent services. We are

committed to building a trusted, efficient and secure intelligent computing ecosystem to provide enterprises and individuals with an excellent computing experience.

Our vision includes the following aspects:

1. Technology leadership: We are committed to maintaining our technological leadership and continuously developing and innovating solutions for the fusion of intelligent computing and blockchain. By continuously introducing the latest technologies and algorithms, we will provide customers with an efficient, reliable and secure computing environment.

2. Industry leader: We hope to become a leader in the field of intelligent computing and blockchain fusion applications. Through close cooperation with partners and market expansion, we will continue to expand our market share and establish our brand and reputation globally.

3. User value: Our mission is to create value for users. We will continue to listen to customer needs and feedback, provide customized solutions that meet their business needs, and provide an excellent user experience. By providing high-quality services and support, we will win the trust and loyalty of our customers.

4. Social impact: We hope to promote the development and progress of society through our technology and solutions. We will be committed to solving the challenges facing the industry, promoting sustainable development, promoting resource sharing and cooperation, and improving the efficiency and sustainability of society.

5. Community co-construction and cooperation: We will actively build an active and interactive community to encourage communication, sharing and cooperation among users. We will provide online forums, social media platforms and cooperative project opportunities to promote interaction and cooperation among users and jointly promote the development and innovation of mining technology.

6. Global expansion: Our business vision is to become a leading AI computing power sharing mining platform worldwide. We will actively expand the international market and establish close cooperative relationships with users and partners around the world. Through localized services and support, we will meet the needs of users in different regions and gradually build a global brand influence.

In short, our business vision is to become a leader in the field of intelligent computing and blockchain integration applications, create value for customers, promote the development of the industry, and have a positive impact on society. We will continue to work hard to innovate and improve to achieve this vision and become a benchmark and role model in the industry.

## **XI. Company Introduction: Star Tower**

Star Tower is a leading French technology team focusing on the research, development and application of intelligent computing and blockchain technology. Star Tower is committed to providing customers with efficient, secure and reliable intelligent computing solutions through innovative solutions combining intelligent computing and blockchain.

In an increasingly connected world, intelligent computing has become a key technology to meet the rapidly growing data and computing needs. Blockchain, as a decentralized, secure and reliable distributed ledger technology, brings new opportunities and challenges to intelligent computing. We believe that the integration of intelligent computing and blockchain will promote the development of the digital economy and bring huge value to enterprises and individuals.

As a leader in the field of intelligent computing and blockchain, Star Tower provides comprehensive solutions and professional consulting services. Our team consists of technical experts, researchers and industry consultants with rich experience and extensive knowledge, and can tailor the best intelligent computing solutions for customers.

Our core product is an innovative intelligent computing and blockchain integration platform. Star Tower provides customers with a highly scalable, secure and reliable intelligent computing environment based on advanced technology and open architecture. Our platform supports key functions such as smart contracts, decentralized data storage and resource sharing, providing users with a seamless intelligent computing experience.

Whether you are an enterprise or an individual user, Star Tower is committed to helping you realize the potential of intelligent computing and combine it with blockchain technology to create a more efficient, secure and trusted computing environment. Our mission is to provide customers with excellent solutions to promote digital innovation and business growth.

Join us and you will work with a team of top experts and innovators in the industry to promote cutting-edge research and practice in intelligent computing and blockchain technology. We look forward to working with you to create the future of intelligent computing and blockchain.

## **XII. Legal**

### **1. Privacy Policy**

Please read the Privacy Policy carefully.

Contact us: [startower@startower.fr](mailto:startower@startower.fr)

Star Tower.FR ("Company", "Star Tower", "we", "our") is committed to protecting your personal data and regards protecting your privacy as a top priority.

## 1. Types of Data We Collect

The type of personal data we collect from you directly or from third parties depends on the circumstances of the collection and the nature of the service requested or transaction conducted. It may include (but is not limited to):

- (a) Personal information related to an individual, such as name, gender, date of birth and other personal identification numbers;
- (b) Contact information, such as address, telephone number and email address;
- (c) Technical information, such as IP address and login information for API services;
- (d) Statistical data, such as website hits.

This Privacy Policy covers information we collect about you when you use our products or services or otherwise interact with Star Tower, unless a different privacy policy is displayed. This policy also explains your choices regarding our use of your information.

Your choices include how to object to certain uses of your information and how to access and update certain information about you. If you do not agree to the terms of this Policy, please do not use the Website or any of our Services. Each time you use any Website or any of our Services, the current version of this Privacy Policy will apply.

## 2. How do we collect personal data?

This Privacy Policy covers any personal data provided to us:

- (a) when you use our products and services;
- (b) when you create an account with us;
- (c) under any other contractual agreement or arrangement.

Some other ways we collect personal data include (but are not limited to):

- (a) communicating with you by phone, mail, fax and email;
- (b) when you visit our website;
- (c) when you contact us in person;
- (d) when we contact you in person;
- (e) when we collect information about you from third parties; and other channels, including our support desk.

## 3. How do we collect your personal data on our website?

On our website, we collect your personal data in the following ways:

- (a) IP address

We use your IP address to help diagnose problems with our server and to administer our website.

- (b) Cookies

A cookie is an element of data that a website can send to your browser, which may then store it on your system. We use cookies on some of our pages to store your preferences and record session information.

The information we collect is then used to ensure a more personalized level of service for our users. You can adjust the settings on your browser to be notified when you receive a cookie. Please refer to your browser documentation to check whether your computer has cookies enabled or to request not to receive cookies.

Because cookies allow you to take advantage of some of the basic features of the website, we recommend that you accept cookies. For example, if you block or otherwise reject our cookies, you will not be able to use any products or services on the website that may require you to log in (a token holds the storage cookie for collection).

It is important to prevent unauthorized access to your password and computer. You should always log out after using a shared computer. We use the information collected from cookies to evaluate the effectiveness of our website, analyze trends and administer the platform. The information collected from cookies enables us to determine which parts of our website are most visited and what difficulties visitors may have when accessing our website.

With this knowledge, we can improve the quality of your experience on our platform by identifying and providing more of the most requested features and information and resolving access difficulties. We also use cookies and/or technologies called web bugs or clear gifs, which are often stored in emails, to help us confirm that you received and responded to our emails and to provide you with a more personalized experience when using our website. Your continued use of the website and any subsequent use will be interpreted as your consent to the storage of cookies on your device.

- (c) User Feedback Form

Our feedback form asks you to provide us with contact information (such as your name and email address) so that we can respond to your comments. We use the contact information in the registration form to send you information about our company. Your contact information is also used to contact you when necessary.

- (d) General Site Tracking

We also use third-party service providers to help us better understand how our website is used. Our service providers will place cookies on your computer's hard drive and receive information we select, such as how visitors navigate through our website, which pages are viewed, and general transaction information. Our service providers analyze this information

and provide us with aggregate reports.

The information and analysis provided by our service providers will be used to help us better understand the interests of our visitors to our website and how to better serve those interests. The information collected by our service providers may be linked and combined with information we collect about you when you use the Platform. Our service providers are contractually prohibited from using the information received from our Website except to assist us.

- (e) Web Server Site Access Logs

Here is how we store our web server site access logs (applicable to <https://Star Tower.fr>, [StarTower.cloud](https://StarTower.cloud)):

- (i) To limit request rates and prevent certain types of attacks against us, we track incoming IP addresses for a very short period of time and then release them.
- (ii) By default, we do not store identifiable “x-forwarded-for” originating IPs in our web server site access logs during your visit to the Website.
- (iii) However, we may temporarily activate “x-forwarded-for” logging in the event of certain types of third-party attacks, general server/application troubleshooting, or other related reasons.
- (iv) As part of our routine server maintenance, all originating web server site access logs are only retained for a minimum of 5 days and then automatically purged on a schedule.

#### 4. What do we use your personal data for?

We may use your personal data for the following purposes:

- (a) to enable us to provide our services to you and to perform our services;
- (b) to protect your own and/or other customers' safety and well-being;
- (c) to investigate and respond to your claims and inquiries;
- (d) for business development purposes, such as statistical and marketing analysis, system testing, maintenance and development, customer surveys, or to help us conduct any future transactions with you, such as determining your requirements and preferences;
- (e) to comply with any legal or regulatory requirements; and/or
- (f) for all other purposes related to any of the above purposes. (“Core Purposes”)
- (g) to communicate offers, products, services and information about products and events;
- (h) to market/cross-market and communicate with you about products and services offered by us and our service partners and our appointed agents; and/or
- (i) for all other purposes related to any of the above purposes. (“Ancillary Purposes”)

(collectively, the “Purposes”)

#### 5. Access/Correct/Update Your Personal Data

You may request access to your personal data, and update or modify your personal data, as follows: (a) For online registered customers, you may log in to your online account and update your personal data.

Please note that a nominal fee may be charged and/or supported by Ethereum signed messages, depending on the information requested. We will endeavor to provide you with

the information as quickly as possible. However, we also reserve the right to verify the authenticity of all requests.

## 6. Withdrawal of Consent

Please note that the Company is obliged to process your personal data for the core purposes listed above, otherwise certain services or features provided by Star Tower may be affected.

If we process your personal data for the Ancillary Purposes without your consent, we will not be able to provide you with the latest information about our future, new and/or enhanced services and products. However, you can stop receiving promotional offers by:

- (a) unsubscribing from the mailing list;
- (b) editing the relevant account settings to unsubscribe; or
- (c) sending a request by contacting us.

## 7. To whom do we disclose your personal data?

We will not trade or sell your personal data to third parties. Your personal data may only be disclosed or transferred to the following third parties designated or authorized by the Company for the following purposes: (a) data warehouses; (b) IT service providers; (c) data analysis and/or marketing agencies; (d) legal authorities as permitted or required by law, such as to comply with a search warrant or subpoena issued by a court of competent jurisdiction; and/or (e) regulatory authorities applicable to you; and/or (f) safety and security personnel.

In addition to the above, your personal data may also be disclosed or transferred to any actual and potential assignees, transferees or acquirers of the Company (including our affiliates and subsidiaries) or our business, assets or group companies, or in connection with any reorganization or exercise of our business, assets and/or liabilities.

We will take practicable steps to ensure that employees, officers, agents, consultants, contractors and other third parties mentioned above who are involved in the collection, use and disclosure of your personal data comply with and abide by the terms of this Privacy Statement.

We are subject to various legal and regulatory obligations imposed by laws and regulators in various jurisdictions, such as anti-money laundering laws, anti-terrorist financing laws, financial services laws, corporate laws and privacy laws. These obligations may require us to process certain data for payment processing, to comply with court orders or for other purposes not disclosed herein.

## 8. How long will we retain your personal data?

The Company stores data in global hosting providers with servers or smart devices across regions, and we will take all reasonable steps to ensure that all personal data is destroyed or permanently deleted when it is no longer required for that purpose and establish a disposal schedule for inactive data after 24 months.

## 9. Links to Third-Party Websites

We may link this website and/or our applications to the websites of other companies or



organizations (collectively, "Third-Party Websites"). This Privacy Statement does not apply to such third-party websites as these websites are not under our control. If you use the links provided to access third-party websites, the operators of these websites may collect your personal information.

Please ensure that you are happy with the privacy statements of these third-party websites before submitting any personal information. We try to ensure that all third-party linked websites have equivalent measures in place to protect your personal information, but we cannot assume legal or other responsibility for the activities, privacy policies or privacy compliance levels of these third-party websites.

#### 10. Additional Information or Assistance

Please note that this Privacy Statement may be amended from time to time in accordance with applicable laws and regulations, and such changes may apply to you.

If you have further questions or complaints about our processing of your personal data or our privacy policy, or wish to access, update or modify your personal data (as described above), please contact us via the feedback form in "Contact Us".

## 2. Terms of Service

Please read these Terms of Service carefully.

By accessing or using our Services, you agree to be bound by these Terms of Service and all terms incorporated by reference.

These Terms of Service and any terms expressly incorporated herein (the "Terms") apply to your access to and use of all services provided by StarTower.fr ("Company", "we", or "us") (our "Services").

### 1. Eligibility

You represent and warrant that you: (a) are of legal age to form a binding contract; (b) have not been previously suspended or barred from using our Services; and (c) have full power and authority to enter into this Agreement and that doing so will not violate any other agreement to which you are a party.

If you are registering to use the Services on behalf of a legal entity, you further represent and warrant that (i) such legal entity is duly organized and validly existing under the applicable laws of its jurisdiction of organization, and (ii) you are duly authorized by such legal entity to act on its behalf.

### 2. Account Registration

You must create an account with the Company to access the Services (an "Account"). When you create an account, you agree to:

- (a) create a strong password that you do not use for any other website or online service;
- (b) provide accurate, truthful information;
- (c) maintain and promptly update your account information;
- (d) maintain the security of your account by protecting your account password and limiting access to your computer and account;
- (e) notify us immediately if you discover or suspect any security breach related to your

account; and

- (f) accept responsibility for all activities that occur under your account and accept all risks of any authorized or unauthorized access to your account, to the maximum extent permitted by law.

When you create an account, we assign you an account identifier that you must maintain in order to access your account.

### 3. Discontinuation of Service

We may modify or discontinue any part of our Service, temporarily or permanently, at any time, at our sole discretion, without any liability to you.

### 4. Assumption of Risk

You acknowledge and agree that there are risks associated with using Internet-based services, including, but not limited to, the risk of hardware, software and Internet connection failure, the risk of malware introduction, and the risk that third parties may gain unauthorized access to information stored in your account.

You acknowledge and agree that the Company is not responsible for any communication failures, interruptions, errors, distortions or delays you may experience when using the Services, regardless of the cause. The Company assumes no liability for any loss, damage or claim arising from the use of our Services, including, but not limited to, any loss, damage or claim arising from:

- (a) password "brute force" attacks,
- (b) server failures or data loss,
- (c) forgotten passwords,
- (d) corrupted wallet files,
- (e) incorrectly constructed transactions or incorrectly entered Ethereum addresses; or
- (f) unauthorized access to the Mobile Application,
- (g) "phishing", viruses, third-party attacks or any other unauthorized third-party activities.

### 5. Third-Party Services and Content

When using our Services, you may view content provided by third parties or use the services of third parties, including links to such third parties' web pages and services ("Third-Party Content"). We do not control, endorse or adopt any Third-Party Content and are not responsible for Third-Party Content, including, without limitation, material that may be misleading, incomplete, erroneous, offensive, indecent or otherwise objectionable in your jurisdiction.

In addition, your business dealings or correspondence with such third parties are solely between you and the third party. We are not responsible for any loss or damage of any sort incurred as the result of any such dealings, and you understand that your use of Third-Party Content and interactions with third parties is at your own risk.

### 6. Acceptable Use

When accessing or using the Services, you agree that you will not violate any law, contract, intellectual property or other third-party rights or commit a tort, and you are solely

responsible for your conduct when using our Services. You may not:

- Use our Services in any manner that could interfere with, disrupt, negatively impact, or inhibit other users from fully enjoying our Services, or that could in any way impair, disable, overburden, or impair the functionality of our Services;
- Use our Services to pay for, support, or otherwise engage in any illegal activity, including, but not limited to, illegal gambling, fraud, money laundering, or terrorist activity;
- Use any robot, spider, crawler, scraper, or other automated means or interface not provided by us to access our Services or extract data;
- Engage in automated data collection (scraping), unless such automated data collection is limited to search indexing for display on the Internet;
- Copy any content posted (such as public tags or name tags) or extracted from our API, CSV exports, or our website or any of our affiliated websites without our prior consent or authorization.
- Use or attempt to use another user's account without authorization;
- Attempt to circumvent any content filtering technology we use, or attempt to access any service or area of our services that you are not authorized to access;
- Introduce any viruses, trojan worms, logic bombs, or other harmful materials to the services;
- Develop any third-party applications that interact with our services without our prior written consent;
- Provide false, inaccurate, or misleading information; and
- Encourage or induce any third party to engage in any activity prohibited by this section.

## 7. User-Generated Content

7.1. Responsibility for User-Generated Content - You are solely responsible for the content of, and any damages resulting from, any User-Generated Content that you post, upload, link to, or otherwise make available through the Services, regardless of the form of that content. We assume no responsibility for any public display or misuse of your User-Generated Content. We have the right (but not the obligation) to refuse or remove any User-Generated Content that we determine in our sole discretion violates any Star Tower terms or policies.

7.2. Ownership of Content and Publishing Rights - If you do not create or own the rights to any content you post, you agree that you are responsible for any content you post; you will only submit content that you have the right to post; and you will fully comply with any third-party licenses related to the content you post.

7.3. Licenses Granted to Us - We need the legal rights to do things like host your content, publish and share your content. You grant us and our legal successors the right to store, parse and display your content and make incidental copies as necessary to present the website and provide the Services.

7.4. Moral Rights - You retain all moral rights in the content you upload, post or submit to any part of the Service, including the rights of integrity and attribution. However, you waive these rights and agree not to assert them against us to enable us to reasonably exercise the rights granted in Section 7.3.

7.5. If applicable law cannot enforce this Agreement, you grant Star Tower the necessary

rights to use your content without attribution and to make reasonable adjustments to your content as necessary to present the website and provide the Services.

#### 8. Copyright and Other Intellectual Property

Unless otherwise indicated by us, all copyright and other intellectual property rights in all content and other materials contained on our Website or related to the Services, including, without limitation, the Company or Company logos and all designs, text, graphics, pictures, information, data, software, sound files, other files, and the selection and arrangement thereof (collectively, the "Company Materials"), are the exclusive property of the Company or our licensors or suppliers and are protected by copyright and other intellectual property laws.

Unauthorized use and/or duplication of the Materials without the express written permission of the author and/or owner of this Website is strictly prohibited. Excerpts and links may be used, provided that full and clear credit is given to StarTower.fr with appropriate and specific direction to the original content.

#### 9. Trademarks

The "Star Tower" company logo and any other Company product or service names, logos or slogans that may appear on our Services are trademarks of the Company and may not be copied, imitated or used, in whole or in part, without our prior written permission.

You may not use any trademark, product or service name of the Company without our prior written permission, including, without limitation, any meta tags or other "hidden text" utilizing any trademark, product or service name of the Company. In addition, the look and feel of our Services, including all page headers, custom graphics, button icons, and scripts, are the service marks, trademarks, and/or trade dress of the Company and may not be copied, imitated, or used, in whole or in part, without our prior written permission.

All other trademarks, registered trademarks, product names, and company names or logos mentioned through our Services are the property of their respective owners. Reference to any product, service, process, or other information by name, trademark, manufacturer, supplier, or otherwise does not constitute or imply an endorsement, sponsorship, or recommendation by us.

#### 10. Suspension; Termination

We may, in our sole discretion, and without liability to you, suspend your access to all or part of our Services with or without prior notice in the event of any force majeure event, breach of these Terms, or any other event that makes it commercially unreasonable for the Company to provide the Services.

We may, in our sole discretion, immediately terminate your access to the Services without prior notice and delete or deactivate your account and all related information and files in that account without liability to you, including, for example, if you breach any of these Terms.

#### 11. Cookie Statement

This website uses cookies. Cookies are small text files that are placed on your computer by

websites that you visit. They are widely used in order to make websites work properly or work more efficiently, as well as to provide information to website owners. Cookies are typically stored on your computer's hard drive.

We use the information collected from cookies to evaluate the effectiveness of our website, analyze trends, and administer the Platform. The information collected from cookies enables us to determine which parts of our website are most visited and the difficulties our visitors may have when accessing our website. With this knowledge, we can improve the quality of your experience on the Platform by identifying and providing more of the most requested features and information, and resolving access difficulties. We also use cookies and/or a technology called web bugs or clear gifs, which are often stored in emails, to help us confirm that you receive and respond to our emails and to provide you with a more personalized experience when using our website.

We also use third-party service providers to help us better understand how our website is used. Our service providers will place cookies on your computer's hard drive and receive information that we select that will help us understand how visitors navigate our website, which pages they view, and general transaction information. Our service providers analyze this information and provide us with aggregate reports. The information and analytics provided by our service providers will be used to help us better understand the interests of visitors to our website and how to better serve those interests. The information collected by our service providers may be linked and combined with information we collect about you when you use the Platform. Our service providers are contractually prohibited from using the information received from our website except to assist us.

Your continued use of the website and any subsequent use will be interpreted as your consent to the storage of cookies on your device.

## 12. Privacy Policy

Please refer to our detailed Privacy Policy.

## 13. Disclaimer

(a) To the maximum extent permitted by applicable law, unless we expressly provide otherwise in writing, our services are provided on an "as is" and "as available" basis to the maximum extent permitted by applicable law. We expressly disclaim, and you waive, all warranties of any kind, whether express or implied, including, but not limited to, the implied warranties of merchantability, fitness for a particular purpose, title and non-infringement, with respect to our services (including information and content) and the materials contained therein.

(b) You acknowledge that the information you store or transmit through our services may be irreparably lost or damaged or temporarily unavailable due to various reasons, including software failures, changes in agreements with third-party providers, Internet outages, force majeure events or other disasters, planned or unplanned maintenance, or other reasons within or beyond our control. You are solely responsible for backing up and maintaining copies of any information you store or transmit through our services.

## 14. Limitation of Liability

Unless otherwise required by law, in no event shall the Company, our directors, members, employees or agents be liable for any special, indirect or consequential damages or any other damages of any kind, including, without limitation, loss of use, lost profits or lost data, arising out of or in any way connected with the use of or inability to use our services or the Company Materials, whether in an action of contract, tort (including, without limitation, negligence) or otherwise, including, without limitation, any damages caused or resulting from any user's reliance on any information obtained from the Company, or from mistakes, omissions, interruptions, deletion of files or email, errors, defects, viruses, delays in operation or transmission, or any failure of performance, whether or not caused by a force majeure event, communications failure, theft, destruction or unauthorized access to Company records, programs or services.

#### 15. Indemnification

You agree to defend, indemnify and hold harmless the Company (and each of our officers, directors, members, employees, agents, and affiliates) from and against any claim, demand, action, damages, losses, costs or expenses (including, without limitation, reasonable attorneys' fees) arising out of or relating to:

- (a) your use of or conduct in connection with our Services;
- (b) any Feedback you provide;
- (c) your violation of these Terms; or
- (d) your violation of any rights of any other person or entity.

#### 16. Miscellaneous

16.1. Entire Agreement; Order of Precedence. These Terms contain the entire Agreement and supersede all prior and contemporaneous understandings between the parties with respect to the Services. These Terms do not alter the terms or conditions of any other electronic or written agreement you may have with the Company with respect to the Services or any other Company product or service, or otherwise. If there is any conflict between these Terms and any other agreement you may have with the Company, the terms of that other agreement will control only to the extent these Terms are expressly identified and stated to be overridden by the other agreement.

16.2. Amendments. We reserve the right to change or modify these Terms from time to time at our sole discretion. Unless we indicate otherwise through notice of such revised Terms, the revised Terms will be effective immediately upon posting to the Service. Any revised Terms will apply to the Service after such changes become effective. Your continued use of the Services after such changes become effective constitutes your acceptance of such changes. If you do not agree to any revised Terms, you must cease using the Services.

16.3. Waiver. Our failure or delay in exercising any right, power or privilege under these Terms does not constitute a waiver.

16.4. Severability. The invalidity or unenforceability of any provision of these Terms will not affect the validity or enforceability of any other provision, all of which will remain in full force and effect.

16.5. Force Majeure Events. The Company shall not be liable for any loss or damage arising

out of any event beyond the reasonable control of the Company, including, without limitation, flood, abnormal weather conditions, earthquake or other acts of God, fire, war, insurrection, riot, labor dispute, accident, governmental action, communications, power failure or equipment or software failure (each, a "Force Majeure Event").

16.6. Assignment. You may not assign or transfer any of your rights or obligations under these Terms, including by operation of law or in connection with any change of control, without the prior written consent of the Company. The Company may assign or transfer any or all of its rights under these Terms, in whole or in part, without your consent or approval.