SIE White Paper

Intelligent Ecosystem Based on Blockchain Technology

(v1.0)

>> Abstract

Bitcoin and encrypted digital currency are hot topics now. Many people think that Bitcoin and blockchain technology will fundamentally change people's payment way, global economy and even political pattern. Subsequently, we find that existing blockchain technology already cannot meet ever-growing user demand. To sum up, blockchain technology encounters three challenges-deficiency of measure value, self-evolution and ecological construction.

This paper introduces technical architecture design of SIE and plans to construct one blockchain system which can quantify measure value, has self-evolution ability and can promote ecological construction of blockchain.

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I. Introduction

1.1 Brief introduction to blockchain technology

Since Satoshi Nakamoto proposed the design white paper of Bitcoin on October 31, 2008, we have entered one world with blockchain. Generation of Bitcoin relying on massive calculation as per specific algorithm instead of any organization which ensures consistency of distributed billing system of Bitcoin network. Furthermore, Ethereum provides us with one common blockchain framework which can run and has Turing completeness code.

1.2 Business and technology challenges

There are more than 2000 blockchain projects in the world and overall value of global encrypted digital assets reaches to USD 90 billion. User groups in the field of blockchain/digital asset are increasing quickly. Quantity of users changes to 20 million at the beginning of 2017 from 2 million at the beginning of 2013. It's predicted that global blockchain/digital asset users will reach to or exceed 0.2 billion approximately in 2020. With diversification of application scene, users' demand of blockchain technology is increasing and we discover many challenges.

Deficiency of value scale We think that blockchain world needs a pervasive value scale to measure the value of user and smart contracts, and upper application can excavate deeper value in this pervasive value scale by combining its own scene.

Upgrading of blockchain system Different from version iteration of common software, blockchain systems cannot compel users to upgrade its clients and protocols because of their natural decentralization.

Establishment of blockchain application ecological environment With the rapid growth of various applications (DApp) in the blockchain, a good ecological environment is essential to improve user experience. It includes how users can retrieve their expected DApp in a huge number of blockchain applications, how to motivate developers to provide more DApps for users, and how to help developers build better DApps faster.

1.3 SIE design principles

In view of the above opportunities and challenges, we design a self-evolutionary blockchain system based on value incentive. Specifically, we have the following design principles:

• **Fair ranking algorithm to define value scale**

Blockchain world needs a pervasive value scale to measure the value of simple data at the bottom of blockchain and to discover the higher dimensional information so as to explore and exploit the greater value of blockchain world. Similar to Google's PageRank, we also propose SIE (Social Intelligent Evolution) algorithm of blockchain world, which comprehensively considers the financial liquidity in the blockchain and speed, breadth and depth of funds spreading, and gives a fair ranking to blockchain users. SIE is the value scale given to the blockchain world to help developers effectively measure the importance of each user, smart contracts and DApp in the blockchain in terms of their own scenes. SIE has great commercial potential and can be used in search, recommendation, advertising and other areas.

• **Blockchain system and application self-evolution**

A well-conditioned blockchain system and its applications can achieve self-evolution. With less external interference, it can realize faster computing, stronger systems and better experience. We call this kind of self-evolution ability as SIEN. In the system architecture of SIE, the basic protocol will become a part of the chain data through the good design of the block structure, and the upgrade of the basic protocol will be realized through the appending of the chain data. For smart contracts, SIE completes the upgrade of smart contracts by storing supporting state variables across contracts at the bottom of the contract.

• **Construction of application ecological environment in blockchain**

In the SIE, we put forward a PoD algorithm based on the contribution degree of the account. Using the value scale of the SIE, we can find the account with higher contribution to the ecology, give the account qualification equally, curb the monopoly of the accounting right, integrate the economic punishment

in the PoS, prevent the public chain from being maliciously destroyed, and help the development of the ecology freely.

In SIE, we propose DIP (Developer Incentive Protocol) for smart contracts and DApp developers. The core idea of DIP is to give incentives to developers of smart contracts or DApps that contribute highly to the community. Incentives are written to the block by the bookkeeper. Based on the SIEN mechanism, SIE further includes search engines to help users better explore the high-value applications in the blockchain.

Because of its huge ecology, Ethereum is a very successful public blockchain platform. SIE is intended to learn from the excellent design of other blockchain systems, such as Ethereum, from the smart contract programming fully compatible with Ethereum, so that products based on Ethereum can be migrated to SIE at zero cost.

II. Issuance and Private Scheme

1. The total issuing of SIE is 3 billion.

2. Retain 500 million SIEs for secret product development and operation costs, through contract locking, locking SIEs from the second year of release, 25 million unlocking a year, a total of 20 years unlocked. This fund is used to ensure the normal operation and reasonable expansion of the R&D and operational teams.

3. Offline private offerings are only for institutions and large investors, with a USD 1 million start-up price of USD 0.6 per unit and a total of 500 million SIEs. This 500 million SIE is in the locked state, and the SIE starts to unlock after 6 months of offline private. 10% is unlocked every month, and the unlocking is completed in 10 months.

4. The total online private offering is 500 million SIEs at a price of USD 0.9 per offer, and users can use the "relationship" to get preferential options.

5. Trade freely on multiple exchanges.

6. The company's remaining USD 1.5 billion will be used as a user incentive fund for SIE holdings and promotions and is expected to be released for three to five years.

III. SIE Account Number Address Design

3.1 User’s account address

Similar to Bitcoin and Ethereum, the private key of the user is obtained by the command of the encrypted user, and such a private key is formed into the corresponding public key. In addition, the SIE address includes a check code in order to prevent the SIE coin from being sent to other users by the incorrect input of the character by the user. The user address calculations in SIE are as follows:

```
cont ent=ri pemd160(sha3_256(publ i ckey))
checksum =sha3_256(0x19<<(21*8)+0x57<<(20*8)+cont ent )[0: 4]
address=base58(0x19<<(25*8)+0x57<<(24*8)+cont ent <<(4*8)+checksum)
```

Among them 0x19 is the filling of a single byte and 0x57 is the type corresponding to the user's account address. The length of concent is 20 bytes, the length of checkum is 4 bytes, and the length of address is 32 characters. After using base58 encoding, the following typical addresses are as follows: 14e52b7cd0a54062bb4bb9d99c874ba, which begins with a number.

3.2 Smart contract address

In the SIE chain, the computation of the smart contract address is slightly different from the ordinary account address. For the smart contract address, there is no need for an additional command. The computation is as follows:

```
cont ent=ri pemd160(sha3_256(t x. from,t x. nonce))
checksum =sha3_256(0x19<<(21*8)+0x58<<(20*8)+cont ent )[0: 4]
address=base58(0x19<<(25*8)+0x58<<(24*8)+cont ent <<(4*8)+checksum)
```

As you can see, this is similar to the calculations of the ordinary user's account address, but the difference is that the smart contract addresses correspond to the type 0xc5. Similarly, a typical smart contract address is as follows: 0xc5b106f17246b2f5c0c658dbd6e8d168695806ab。

IV. Consensus algorithm for POD contribution proof

4.1 Design objective

In order to better build the public ecological chain, we believe that fairness is equally important. If the capital of the public chains can easily occupy the voice of consensus, there will be a lot of damage to the interests of developers and households in the public chains. It is very difficult to precipitate the depth of value and violate the SIE design principles because of such a public ecological chain that can not protect the interests of the builders of public chains. Therefore, when we design a consensus algorithm, we pursue for fairness as much as possible and safeguard the interests of the public chain builders while keeping fast and irreversible.

4.2 Design of PoD algorithm

4.2.1 Generation of new blocks

Similar to the situation that PoI consensus algorithm selects the the account with high importance, the PoD will select the account with higher contribution in the ecology. The difference is that the PoD gives the selected account the equal probability of accounting rights to participate in the creation of new blocks to prevent the probability tilt from deriving monopoly.

When selecting an account with a high contribution, we used the original NR Pervasive Value Scale of SIE for assessment. In the algorithm design of the NR, the account's liquidity and spread were taken into account. We believe that accounts that meet these characteristics have a high contribution to the ecological construction. Therefore, in the PoD, the Top N accounts will be selected from NR ranking. These accounts are eligible to become validators of the new block after they have voluntarily paid a certain number of SIEs as deposits.

Given a validators set, the PoD algorithm determines who is the proposer of the new block in the verifier set by a pseudo-random number, and the proposer creates a new block. The validators set is not fixed. Qualified accounts can choose to join or exit the validators set. With the changes of periodic NR,

qualified accounts will also be different. Thus, we set up a dynamic change mechanism in the PoD design validators set to implement the alternation of the validators set.

4.2.2 The alternation of validators set

The alternation of the validators set is the same as that of the dynasty. Therefore, we divide the validators set according to the dynasty, and the validators set within a dynasty does not change. A dynasty cannot be changed too fast, and at least it will remain unchanged for a certain period of time. Therefore, we define each block as an Epoch, and the dynasty will not change in the same Epoch. Hence, the change of dynasty will only happen when the Epoch handover. At this time, the first block of the previous Epoch will be examined. If this block reaches the finality state, the current Epoch will enter the next dynasty D1, otherwise it will continue the previous one. The dynasty D0 does not change, as shown in Figure 1.

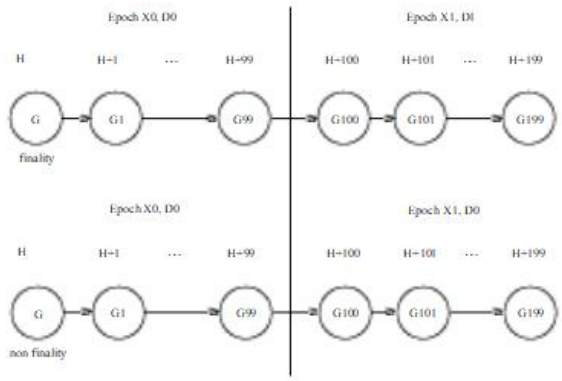

Figure 1: The alternation of validators dynasty (assuming X=100)

Due to the network delay, each node may see whether the status of the finality of the block G is inconsistent when the dynasty change, therefore, referring to Casper's dynamic verification set strategy, the consensus process of each dynasty will require to accomplish by validators set the current dynasty and the previous dynasty. Therefore, in any dynasty, eligible accounts can only apply to join or withdraw from the D+2 validators set. When the dynasty changes to D+2, they could join the new block consensus process.

4.2.3 Consensus process

After the new block is proposed, every validators set in the current dynasty set will participate in a round of BFT (Byzantine Fault Tolerant) and vote to determine the legitimacy of the block. At the beginning of the voting, every Validator who participates in the consensus of this block will be charged 2x (x is the proportion of the incentive bonus) from the deposit, and then enter the two-phases voting process.

• **In the first phase,** all validators need to vote Prepare votes for the new block, and then receive a 1:5x reward, if there are a total of Validators who possess more than 2/3 of the deposit in the current dynasty and the last dynasty, vote a Prepare votes for the new block, the new block entered the second phase of the vote. It needs to be explained here that the proposer of the new block will be voted for the new block by default.

• **In the second phase,** all the Validators need to vote the Commit votes for the new block, and the validator who has voted on the Commit vote can receive another 1:5x reward, if there are a total of Validators who possess more than 2/3 of the deposit in the current dynasty and the last dynasty, vote a Commit votes for the new block, the new block entered the finality state.

In order to speed up the whole ecological forward extension, if the time stamp between the Prepare and Commit votes of block b and the time stamp of block b differ by more than T, these tickets will be considered as expired and ignored directly.

4.2.4 Bifurcation selection

The PoD algorithm selects the authoritative chain with the score of the block at each height, always chooses the block with the highest score to join the authoritative chain, and the score of block b at height h is as follows:

$$Score(b;h) = \sum_{(b';h') 2 children(b)} Score(b';h') + \sum committeddepositinb$$

That is, the sum of the deposits corresponding to the commit votes received by the block and all its descendant blocks, as shown in Figure 2.

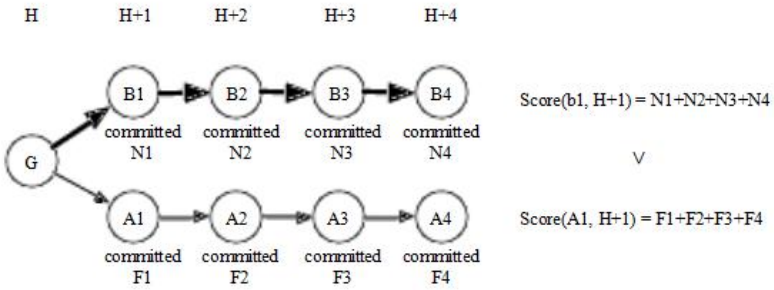

Figure 2: Bifurcation selection

4.2.5 Voting rules

In order to avoid malicious destruction of the consensus process, resulting in the consensus process cannot be completed, impeding the development of the ecological, PoD refer to Casper's minimum penalty rules to constrain the Validator's consensus activities.

Assume that the Prepare and Commit votes in the consensus process are as follows:

• Prepare(H;v;vs), where H is the current block hash, v is the current block height, and vs is the height of an ancestor block of v. Commit(H ; v), where H is the current block hash, v represents the current block height.

The PoD algorithm has formulated the following four basic rules for the entire voting process:

• There is a strict sequence of the two phases consensus process for a single block. Only after the first stage of Prepare (H; v; vs.) votes total weight reaches 2/3, the Validator could vote the second phase of the Commit (H; v) votes.

• It is not mandatory to start a block consensus after another block consensus is completed. Interwoven consensus (interwoven consensus) is allowed, but it is not mean without order completely. Only the height, vs,

completes the first phase of the process and owning 2/3 Prepare (Ha nc; vs; vs'), it is possible to vote Prepare (H; v; vs) votes based on the vs. to his descendant blocks to ensure that the interweaving progresses towards steadily.

• In order to prevent nodes from using interweaving consensus to maliciously cross multi-block voting, requiring the vote a Prepare (H; w; u) based on height u, then all blocks with a height between spans u and w, Commit (H ; v) votes can no longer be vote to ensure that the consensus process is efficient and orderly.

• To prevent nodes from betting on multiple branches at the same time using the same deposit, resulting in nothing at stake, requiring a highly-pitching Prepare (H 1; v; vs 1) vote and no further choose a different Prepare (H 2; v; vs2) vote.

Validators violating the rules above will be penalized for all the deposits once they have been reported and verified. The whistleblowers will share 4% of the penalty as a reward, and the remainder of the penalty will be destroyed.

4.3 PoD economic analysis

4.3.1 Incentive analysis

Participating in the PoD algorithm Validator, each 1x SIE reward can be obtained on a legal block. If the network is not smooth or someone cheats, the Prepare phase cannot complete and into the Commit phase, all Validators will lose 0.5x. Therefore, the validator that becomes the value node will share a large amount of billing revenues while keeping the network open and not participating in cheating.

4.3.2 Cheat analysis

Double spend

Assuming merchant confirms the transaction and deliver the goods after the new block has reached finality state, then fraud should complete double

spend under the PoD consensus algorithm to achieve zero-cost shopping, the minimum cost is as following:

First of all, Fraud needs to raise its own Nebulas Rank to Top N, then pay a certain number of SIE as the deposit to be a verifier, and apply for participating in the verification of the D+2 dynasties block.

Then, Fraud needs to be selected by the pseudo-random algorithm as the proposer of the new block, at this moment, Fraud proposes two extremely same new blocks, the hash value of one is hash1 which contains the transfer transaction of Fraud to merchant, and the hash value of the other is hash2 which contains the transfer transaction of Fraud to Fraud himself.

Finally, in order to make both hash1 and hash2 blocks reach finality, as shown in Figure 3, fraud requires at least 1/3 of all deposits to bribe 1/3 verifiers, and let them vote Commit for two blocks.

Therefore, to complete a successful double spend, Fraud needs to spend a certain amount of effort and financial resources to improve his Nebulas Rank, and then wait until he is lucky to be selected as the proposer, cost at least 1/3 of the total deposit to make the two blocks reach finality state.

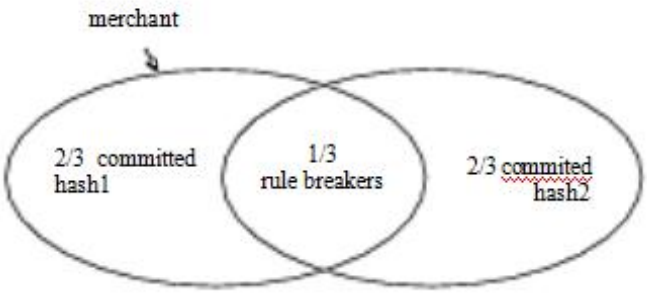

Figure 3: Economic punishment for double payment

51% attack

It requires 51% computing power to initiate 51% attack in PoW, and requires 51% deposit in PoS, however, in PoD, it requires 51% accounts of the verifier set, which means that there is a sufficient number of high prestige users

to enter the Top N of Nebulas Rank, and requires paying corresponding deposit, therefore, 51% attack will be more difficult in PoD.

(short-range attack)

The block in each height in PoD has a consensus valid term, for example, when a height is over 100 to the latest height, all blocks of that height will be considered to expire during consensus, and all new consensus activities on those blocks will be directly ignored.

The short-range Attacker attempts to forge A chain to replace B chain as an authoritative chain if the block of height H + 1 has not expired, and Attacker needs to make the score of block A1 higher than B1. Since multi-voting will be severely punished, Attacker will inevitably bribe the verifiers, otherwise, Attacker will not be able to complete the short-range attack. In order to demonstrate the security of PoD consensus algorithm, the cost that Attacker needs to pay when different numbers of blocks fail.

If Attacker wants B1 to fail, the minimum cost is as shown in Figure 4, which equals to once double speed, Attacker is lucky to become the H + 1 height block proposer, then at least 1/3 of the verifiers in Epoch D0 should vote more to make A1 reach finality, and the minimum cost is 1/3 of all deposits.

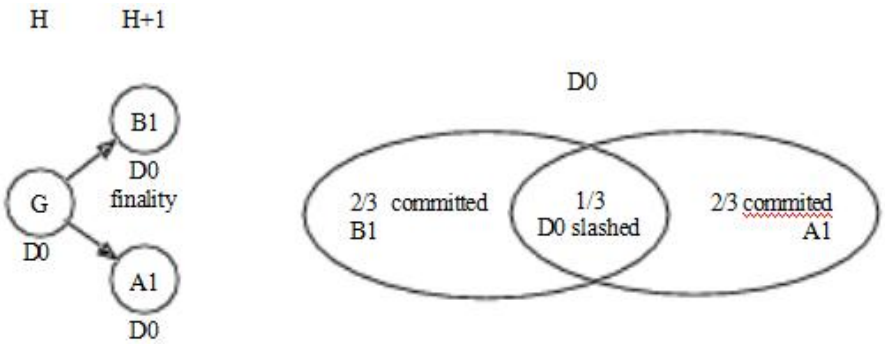

Figure 4: The situation that a block is disabled by short-range attack

If Attacker wants to make B1-B2 fail, assume that both B1 and B2 have reached finality, the transactions in the block have entered into force, in order

to make these transactions fail, two situations are taken into consideration here. The first is as shown in Figure 5 (a), the height H + 1 and H + 2 are in the same Epoch, the Epoch is the same, then, Attacker needs to bribe 1/3 verifiers in D0 to make A1 reach finality, then, these 1/ 3 verifiers will be punished and the deposit will be completely fined. The total deposit sum in the verification of A2 is only 2/3 of A1, then, Attacker wants to make A2 reach the commit votes with value the same as B2, it is necessary to bribe all verifiers who have not cheated, and at least 3/3 of the total deposit needs to be lost, even though, it still can't ensure that score of A1 is higher than B1, and the risk of attack failure is high. The second is as shown in Figure 5 (b), the height H + 1 and H + 2 are just in different Epochs, and the Epoch is different, then, Attacker needs to bribe 1/3 verifiers in D0 to make A1 reach finality, and then bribe 1/3 verifiers in D1 to make A2 reach finality, the completion of such attack requires at least 2/3 of the total deposit.

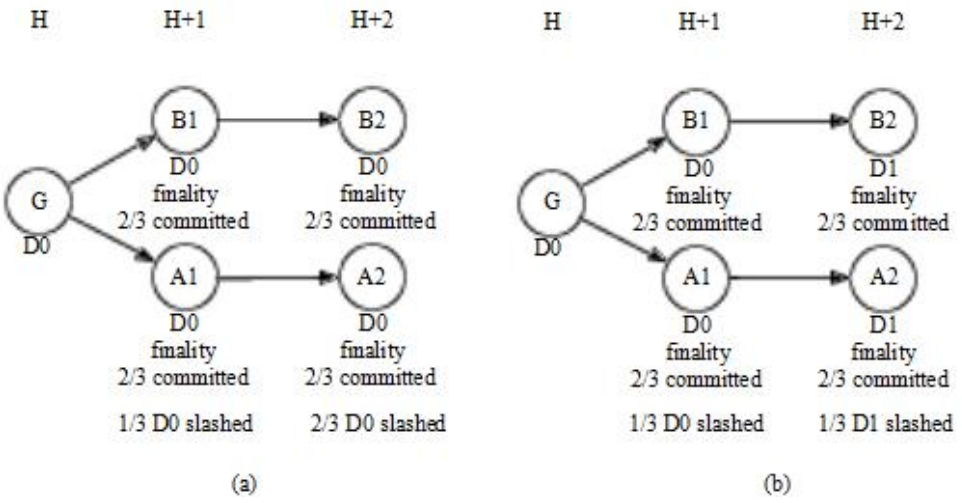

Figure 5: The situation that two blocks are disabled by short-range attack

If Attacker wants to make B1-B3 fail, as shown in Figure 18, Attacker needs to bribe 1/3 verifiers in D0 to make A1 reach finality, then, bribe 1/3 verifiers in D1 to make A2 reach finality, and finally bribe the rest 2/3 verifiers in D1 to make A3 reach finality, as a summary, at least 4/3 of the total deposit will be lost.

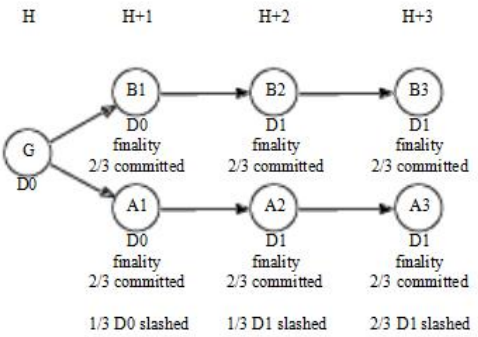

Figure 6: The situation that three blocks are disabled by short-range attack

If Attacker wants to make B1-BN fail, where N is limited by the valid term of the block consensus, it will not be big, when N = 3, the deposit of all verifiers in the current Epoch will be completely fined, therefore, when N > = 4, it is not possible to complete the attack to make the score of B1 higher than A1 for making B1-BN fail, there is no meaning to initiate such attack.

V. Blockchain network-SIEN

We will build a blockchain network SIEN (Social Intelligent Evolution Network) to support the flow of SIE Token. In addition, SIEN will be used to provide storage and computing services for user data for secret chat services, as well as sharing services for artificial intelligence computing forces, even providing storage and computing power support for other distributed applications outside the secret.

5.1 Multichain

The SIEN network is a multichain system consisting of one main chain and several side chains.

The main chain acts as the backbone of all side chains, which carries the account system of SIEN network, provides core data, existing evidence verification and cross-chain communication of the side chain.

Each side chain may, in principle, be used to handle a particular type of problem, for example, one side chain specifically providing storage services (which may also be a more specific type of storage service, such as key-value storage of small pieces of data, storage of relational data, etc.); one side chain can be provided with a service for neural network computing to provide computing resources for the training of Bot in the secret network; one side chain may also be provided for content creation and knowledge sharing services in the secret network, etc.

SIEN will provide the basic construction specifications and tools of side chain, side chains which are created under corresponding specifications can be incorporated into the SIEN network and create their own value.

5.2 Consensus mechanism

Bitcoin adopts PoW - Proof of Work as the consensus mechanism, which guarantees the fairness of participation in the aspect of algorithm. However, PoW has also brought negative impact on the mechanism of computing force theory, and the biggest problem is computing force competition which causes great waste of computing resources and energy, also causes the increasing concentration of computing force to several large mining pools, the risk that

the entire network is controlled by one or several combined large mining pools becomes higher and higher. In addition, the characteristic of PoW mechanism itself determines the upper limit of the processing capacity of the network. Taking Bitcoin as the example, the processing capacity is about 10 TPS, and such processing capability is far from meeting the application scenarios which has very high transaction frequency such as small-scale payment.

The PoS - Proof of Stake mechanism and its derivative version --- DPoS-Delate Proof of Stoke mechanism have solved the problem of low efficiency and resource waste of PoW consensus mechanism in a certain degree. But the way to determine the rights and interests by holding the equity is inherently controversial, how the initial shares are issued, how to ensure that the big shareholders do not evil, and so on, which are the problems that PoS mechanism can't avoid.

We creatively integrate the two kinds of consensus mechanisms of PoW and DPoS and take the advantages of both to design the consensus mechanism of SIEN. In the main chain, we adopt PoW consensus mechanism; however, in the side chain, the consensus mechanism is selected by side chain, and the builder of side chain can select PoW or DPoS as the consensus mechanism according to the characteristics of the side chain in processing business.

Our belief base is security and fairness, so the PoW consensus mechanism chosen by the main chain guarantees the security and fairness of the whole network, in addition, the problems processed by the main chain itself are relatively single with low frequency, therefore, its relatively weak network processing capability will not become the bottleneck of the system. While the free selection freedom of consensus mechanism by side chain makes it possible to choose the DPoS for processing the high-frequency businesses. Using a vivid metaphor, the side chain is like a single bank, processing a large number of businesses (such as intra-bank transfers) every day, then, it adopts a relatively fast way such as DPoS to settle the business, since it is settled internally, the possibility of problem is low, even there's problem, it can also be solved internally; the main chain, like the settlement institute between banks, processes settlement among different banks according to the fixed cycle, it is relatively slow as PoW, but more secure and credible. Even using the mode of main chain + side chain, SIE network can still ensure that the cross-chain

transaction is quasi-real-time because the mutually recognized side chains directly set special heat wallet, which corresponds to the "credit line" between the banks, and realizes user-level real-time transfer transaction through the respective transfer inside the two side chains.

5.3 Description on SIEN development plan

Due to limited R&D resources, our focus is on secret chat services and artificial intelligence in early stage, and the development of SIEN will start after them.

Because the issuance time of SIE Token is earlier than the development plan of SIEN network, the initial issuance of SIE Token will be based on the Ethereum network. Later, we will provide mapping and transfer tools that allow users to easily transfer the SIE Token to the SIEN network after launching the SIEN network online.

Before SIEN network has launched online, secret chat services and artificial intelligence services will temporarily run in the centralized server. However, in the initial design stage of secret chat service and artificial intelligence service, it includes the design of core data architecture, design of basic algorithm, basic architectural design of artificial intelligence, etc. and the service or module can be transplanted to the SIEN network as one of the basic goals of the design.

VI. Application direction of SIEN

6.1 Decentralized application

One of the characteristics of blockchain technology is decentralization, while SIEN system strives to fully support decentralized application in the technical level, and SIEN develops different modules to provide the development platform applicable to different systems and different users, so as to simplify the preparation work of developers, thereby realizing rapid development. In addition, through the introduction of mobile terminal strategy, different DApp ideas are customized, so that ordinary Internet users can truly share the value brought by the blockchain technology. DApp applications facing different industries can bring blockchain technology to more users and industries. For example, decentralized sociality, decentralized storage and decentralized domain name service, decentralized computing service and so on, through the introduction of incentive mechanism, it will use the idea of sharing economy more deeply to change the existing APP market and business model.

6.2 Strategy for mobile terminal

At present, the development of blockchain technology is more likely to stay at PC client terminal, only the blockchain mobile terminal service has realized, it can make ordinary Internet users join in the community, thus promoting the blockchain technology to land in China. In SIEN ecosystem, we not only fully support and push the mobile application strategy, but also work with the third party developers to provide users with mobile terminal services, including mobile terminal wallets, mobile terminal DApp applications, mobile terminal smart contract applications, and so on. The SIEN development team plans to set up DApp Store for integrating the blockchain technology with existing Internet products and digital currencies, such as WeChat, cloud computing, and so on.

VII. Application scenarios of SIEN

In this section, we will introduce the application scenarios of SIEN network, and help readers to deeply understand the design idea and application mode of SIEN.

7.1 Application of blockchain technology to smart contract

SIEN is an open source and decentralized forecasting market platform that uses blockchain technology to execute the smart contracts. On the SIEN platform, any person can create a forecasting market for the subject of interest in any place without any centralized approval. In return, the creator of the market will receive general transaction costs from the market. Another important characteristic of SIEN platform is to reduce fraud and counterparty risk: monetary transactions on the platform are strictly regulated through smart contracts, and the distributed Oracle system ensures that no one can present inauthentic result to the event. Token named "SIE" is used inside the SIEN system. SIEN uses distributed Oracle technology, allows smart contracts to run on it, and has created a highly autonomous and trusted platform that does not need to trust any individual and organization.

7.2 AI computing power sharing

The secret artificial intelligence service itself requires massive computing resources for various computing and training services. If you build AI computing network by yourself, you need to invest a lot of software and hardware resources. We have found a new road --- build AI computing power sharing services in the blockchain network SIEN.

The characteristics of SIEN network guarantee the security and fairness of the network itself. Based on this, we have constructed a set of measurable computing resource evaluation and transaction system, and encourage more people to share their spare computing power for the SIEN network.

First, the abstraction of computing resources is to be solved so that it can be measured. An AI network shall be a computing network, therefore, the traditional basic measurement mode of CPU, memory, network is still needed; in addition, we focus on the abstraction of floating-point parallel computing power of special attention in the field of AI, and we have investigated all kinds of AI computing devices, such as CPU, GPU and specially designed AI computing chip, basing on these devices, we have abstracted a fair AI computing power measuring index.

We will then resolve the acquisition and trading of computing power, and we will design a side chain for AI computing power sharing on SIEN. This side chain provides declaration of computing power, use and calculation of computing power, computing power transaction and other services related to AI computing power sharing.

For the mainstream platform, we provide the accessed SDK, both the computing force provider and user can conveniently and quickly access the network or develop applications, and use the shared computing power on the network.

Thanks to the safe and transparent mechanism of blockchain, when it is profitable, there will be more and more people willing to share their free spare computing resources on SIEN to get income; thanks to the easy availability of computing resource itself, the shared computing power of SIEN network will be more cost-effective than the mainstream platform.

It is foreseeable that there will be more and more artificial intelligence applications to select SIEN network in addition to driving the "secret" AI itself.

7.3 Content creation and sharing

We have mentioned the development plan of content creation and knowledge sharing, in this section, we will introduce the application prospects of this type of application after integrating into SIEN network.

The SIEN network supports the users to create side chain for providing specific service, as the content creation and knowledge sharing network, user can construct a side chain to complete the storage of content, existing evidence of copyright, pricing and transaction of content, etc.

The content created by the user can be completely or partly stored in the data of the side chain, which can greatly solve the problem of storage. Blockchain can solve the issue of the copyright existing evidence, and the copyright creator can record the fingerprint of the work in block data of the side chain, and the time stamp of blockchain and the work information which cannot be tampered with are the most powerful copyright evidence. Moreover, the creator of the side chain may select to issue Token through SIE or by himself for the content pricing and transaction that flows in the side chain.

Because it is profitable, and the possibility of piracy is reduced, the content creators will prefer to create content on the SIEN platform, and users are more inclined to consume and share the content on the SIEN platform as content is constantly enriched.

VIII. Development prospect of SIE

Although it is a challenging task to predict the future, we have seen the bright prospects of SIE and the ecosystem that we are building. We believe that, in the future, the decentralized, fully inclusive, spontaneous and flexible organization created by us will have an obvious advantage compared with the still, centralized and general organizations that were prevalent in the 20th century. In addition, with the advent of cryptography, voluntary philosophy and blockchain technology, this is possible, and we believe that many people have been working hard and have the wish to create a better world.

We will realize this wish in the next one to two years. We will certainly encounter various challenges along the way, but we firmly believe that our plasticity and harmonious cooperation will lead us to success. We are fortunate enough to live in an innovative era of advanced technology and innovative ideas that make us stand on the shoulders of giants.