QTES

Open digital asset quantitative transaction encryption system

white paper

QTESABSTRACT

With the rapid increase in the popularity of the digital money market in recent years, people's willingness to invest in this field has become stronger. Digital currency has the characteristics of global circulation, attracting investors from all over the world, but individual investors are not profitable.

QTES is the world's first blockchain-based digital asset artificial intelligence quantitative trading ecosystem that integrates suppliers and demanders, as well as transaction support service providers including liquidity providers. At the same time, we grab the data of 100 exchanges around the world to make trade orders, and high-frequency quantitative transactions are profitable. QTES can solve the problem that investors are difficult to use quantitative trading strategies. On this platform, using the conversion channel, transaction currency, and transaction depth, you can use a quantitative trading strategy to profit from it.

QTES provides token exchanges with exchange, promotion, and community maintenance services for digital currency, stocks, futures, commodities, forecast contracts, and other financial products. It is a protocol specification and a business ecosystem. It uses Rights-backed Blockchain Securities to help participants enter the global securities market and convert more than 1,000+ global blockchain assets into equivalents through a digital currency-based QTES all-round exchange account. Securities assets such as stocks, futures, foreign exchange, ETFs and forecast contracts.

QTES provides decentralized financial services for professional blockchain currency business. With its own high-performance public chain as its infrastructure, combined with a top community of global technology and financial elites, it provides customers with comprehensive, secure, convenient and professional asset management and value-added services in the digital currency field, covering the digital currency field. Savings, investment banking, insurance trusts, futures, investment management and wealth management promote the development of digital currency investment. In short, QTES is based on the mainstream blockchain digital assets (bitcoin/Ethernet) as the benchmark for currency exchange, providing a blockchain securities exchange and quantitative trading service platform that links various asset interests.

Contents

QTESABSTRACT 2

第 1 章 Background of the project 4

1.1 Digital currency development 4

1.2 Blockchain + era is coming 5

1.3 Challenges faced by blockchains 6

Trading Concurrency 6

Data storage capacity 7

Versatility 7

Functional completeness 8

Ease of use 8

Inapplicable, unsustainable scenes 9

Wrong implementation method 9

Immature technology 9

Talent scarcity 9

Chapter 2 Market Opportunities 10

Chapter 3. QTES Vision 13

Chapter 4 Introduction to QTES 14

Chapter 5 Blockchain + Smart Contract + Artificial Intelligence + Quantitative Trading 15

Chapter 6. QTES Core Team 17

Chapter 7. QTES Positioning 19

Chapter 8. Key innovations in QTES 21

8.1 Standards for the registration of diversified bit assets 21

8.2 Interactive tools for building diversified digital assets 21

8.3 Major innovations 21

Chapter 9. QTES Model: Three-Tier Architecture 25

9.1 Platform Mode 26

9.2 QTES Master Program and Data Structure 26

9.3 Issuance of Diversified Bit Assets 26

9.4 Exchange of assets on the chain 28

Chapter 10. QTES Release 32

Chapter 11 Risks and Benefits 32

Disclaimer

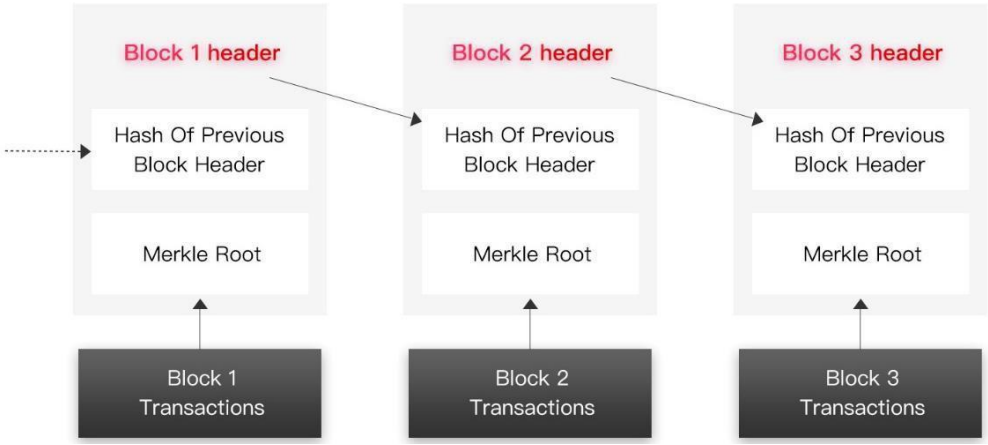
1.Background of the project

1.1 Digital currency development

In 2008, Nakamoto published a paper titled “Bitcoin: A Peer to Peer Electronic Cash System”, which first proposed the concept of blockchain. Immediately in January 2009, Nakamoto used the first version of the software to dig out the founding block, including the phrase: "The Times 03/Jan/2009 Chancellor on brink of second bailout for banks." Words like magic spells have opened up the era of blockchains and digital currencies.

Blockchain technology has gained widespread attention and support for its great development prospects. Blockchain as a basic support technology, gradually independent and applied to a variety of scenarios, as a result of the birth of a variety of digital currency based on this concept (such as Litecoin, Dogecoin, Ripple, etc.), at the same time, all kinds of general / Professional public-chain platforms (such as Ethereum, NEO, IPFS, etc.) are also rapidly evolving.

Currently, projects based on blockchain technology have been derived from the beginning of digital currency to finance, development tools, storage, trading, data, environmental protection and even artificial intelligence. Deloitte's latest report shows that the total number of global blockchain projects has exceeded 90000, but there are still quite a few vertical areas of the problem that are waiting for blockchain technology to bring a new dawn.



1.2Blockchain + era is coming

Blockchain technology has begun to deploy applications around the world. The developed countries such as the United States, Britain, Japan, Germany, and Australia have recognized that blockchain technology has great application prospects in the optimization of public services and social mechanisms, and began to create blockchains. The road to development.

At present, there are mainly application trends, public service level:

· Public administration

· Social Security

· Intellectual property management and protection

· Applications in areas such as land ownership management

Relevant practices show that this technology can help to increase public participation, reduce social operating costs, improve the quality and efficiency of social management, and play an important role in promoting social management and governance. The blockchain brings technical means of efficiency improvement and cost reduction, and provides new ideas for economic and social development and governance. Around the blockchain system, we can create a wealth of products and services, and people can collaborate on a large scale without geographical restrictions without mutual trust. Thus, a new era of economics is presented to the public. Blockchain technology has been successfully applied in the field of digital cryptocurrency. In the future, there are also a wide range of application scenarios in economic, financial and social systems. At present, the point-to-point value transmission of blockchain has overturned people's imagination of the Internet. The application of blockchain has also extended to various fields of economic society. The most mature field is the financial sector (payment, transaction settlement, trade finance, digital currency). , equity, private equity, bonds, financial derivatives, crowdfunding, credit, risk control, credit reporting), the application of other industries (health health, IP licensing, Internet of Things, education, social management, etc.) is also accelerating the development stage. In the future, blockchain applications will go deep into all aspects of society.

1.3 Blockchain challenges

At present, people have widely recognized the huge application value of blockchain, but the technological development of blockchain has not yet reached the mature stage, especially in enterprise-level applications, blockchain transaction concurrency, data storage capability, versatility, There are still obvious deficiencies in functional completeness and ease of use.

Trading concurrency

At present, the high-level concurrent transaction capability of the open source blockchain system is generally not high, and the consensus algorithm is an important aspect that restricts performance. The typical consensus algorithms used in the blockchain are: PoW, PoS, DPoS, PBFT, etc. Their performance comparisons are as follows:

Systems		Committee Formation (Resources)	Performances	
			Throughput	Latency
Hybrid	ByzCoin	PoW	1000tx/s [1]	10–20s[1]
	Algorand	Lottery	90tx/h[2]	40s[2]
	Hyperledger	Permissioned	110tx/s[3]	<1s[3]
	RSCoin	Permissioned	2ktx/s[4]	<1s[4]
	Elastico	PoW	16blocksin110s[5]	110sfor16blocks[5]
	Omniledger	PoW/PoX	≈10ktx/s[6]	≈1s[6]
	BlueChip	Flexible	350tx/s[7]	<1s[7]
proof-of-X	Ouroboros	Lottery	257.6tx/s[9]	20s
	Snow-white	Stake	100-150tx/s[9]	–
	IntelPoET	TH12	1000tx/s[10]	–
proof-of-word	Bitcoin	PoW	7tx/s	600s
	Bitcoin-NG	PoW	7tx/s	<1s
	DECOR+HOP	PoW	30tx/s[8]	60s

Performance comparison test of the mainstream blockchain platform

Another important factor limiting performance is the book structure. At present, the typical blockchain ledger is designed as a single-chain structure of blocks, meaning that all transactions can only be processed sequentially in a global manner. Due to the lack of parallelism in transaction processing, it is difficult to achieve performance close to traditional centralized systems.。

注：

1 144 nodes/committee.
2 50k nodes/committee.
3 4 nodes/committee.
4 3 nodes/committee.10 committees.
5 100 nodes/committee.16 committees.
6 72 nodes/committee(12.5%adversary).25 committees.
7 4 nodes/committee.15 committees.
8 1 minute averageinterval;1block= 1 MB.
9 40 nodes.
10 Asreportedinablogpost.

Transactional concurrency in a corporate scenario typically requires hundreds to thousands of transactions per second, much higher than the typical blockchain that currently includes the public and alliance chains, and requires blockchain Performance can scale dynamically as the business grows. Therefore, there is an order of magnitude difference between reality and goal, and it is necessary to continuously optimize and improve the high concurrent transaction performance of the blockchain system.

Data storage capability

In terms of data storage capability, since the blockchain data is only added and not removed, the data is only increased or decreased. As time goes by, the blockchain system's need for data storage size can only be continuously increased. This trend has grown even more when corporate data.

Different from the main content of the public currency digital currency is the "account balance", the data in the enterprise scenario contains structured and unstructured data, and the amount of data is very large. Taking the e-commerce supply chain as an example, the number of daily data records of the main e-commerce portals is usually above 10 million. If further expansion along the supply chain is carried out, the amount of data per extension will be further enlarged.

At present, the typical blockchain system realizes the storage of reconciliation data. The typical implementation is based on file system or simple KV database storage. Without the design of distributed storage, there is also a relationship between data storage capability and actual needs. Larger gaps require exploring more efficient ways to store big data.

Versatility

Blockchain needs to adapt to diverse business needs and meet data sharing across business-to-business chains. This means that blockchains must have sufficient versatility and standards for data logging to represent various structured and unstructured Information and the ability to meet the cross-chain requirements required to expand the scope of the business.

At present, most of the blockchain systems on the market adopt specific consensus algorithms, encryption algorithms, account models, account models, storage types, lack of pluggable capabilities, and cannot adapt to different scenarios.

Functional completeness

Throughout the existing blockchain platform, the model abstraction is single, and it is difficult to adapt to the requirements of rapid development of business systems. In addition, there is a lack of support for some of the features commonly found in enterprise applications, such as user authentication, multi-level authorization, and so on. Furthermore, when it comes to enterprise business collaboration, cross-enterprise event notification mechanisms are particularly important, but few blockchain platforms support it.

Ease of use

The blockchain is made up of a variety of technologies, resulting in high learning costs, difficult implementation, and scarcity of talent. How to let users quickly understand the blockchain, low-cost learning blockchain, and quickly apply blockchain technology to their own business, there are great challenges at present. Blockchain technology needs to lower learning and usage thresholds, support rapid implementation deployments, provide interfaces that are close to the business, and promote adoption.

From the introduction of Bitcoin to today, people have tried very diverse application scenarios. Originally the application of coins, the emergence and popularity of various digital currencies caused widespread concern and discussion. It has been found that the blockchain, which is the underlying technology of Bitcoin, can be used to solve some pain points of existing businesses and innovate business models. As a result, financial and industrial fields have begun to form alliances such as R3 and Hyperledger. The technology circle has also gradually shifted more attention from "coins" to enterprise-level applications in the blockchain.

Extensive attempts have been made in many areas, such as supply chain management, internet finance, securities and banking, trade finance, insurance, health care, asset management, digital copyright protection, charity, government public services, regulatory compliance and Audit, games, charity, etc. However, the blockchain application that has been successfully implemented has been relatively small, and both technology and business are still in the exploration stage.

The positive practice of the industry has further consolidated and deepened people's understanding of the potential value of the blockchain, but there have been few successful landing cases, most of which remain in the concept or POC stage. The formation of this situation is affected by many factors:

Inapplicable, unsustainable scene

There are a lot of cases for the blockchain and the blockchain, rather than starting from solving the pain points of the business, resulting in the lack of effective value of the case, such as the deposit of information that does not need to be public. Or design business innovation without combining the characteristics of the blockchain. The business model is still designed with traditional ideas. For example, the centralization influence is still used to simply move the business to the chain, and the business boundary cannot be expanded efficiently.

Wrong implementation method

Without fully understanding the technical characteristics of the blockchain, it is impossible to design a reasonable technical solution. A more typical example is to simply use the blockchain as a database and move the original centralized system data directly to the blockchain.

Immature technology

The current maturity status of blockchain technology is not fully understood, and the technical solution is too optimistic. At present, the blockchain needs to be improved in many aspects such as performance, scalability, ease of use, functional completeness, operation and maintenance cost, etc. The more reasonable application method should be based on the application layer business system, and the bottom of the blockchain is optimized. As a supplement, the application of blockchain technology is carried out.

Scarcity of talent

The blockchain is a multidisciplinary integrated technology solution, including distributed, storage, cryptography, network communication, chip technology, economics, law, etc., with high technical professional competence, long history of technical learning, personnel training, and practical experience accumulation. At present, there are many factors affecting the application of blockchain. The above is just a few points to illustrate that the development of blockchain still has a long way to go.

2.Market opportunity

2.1 Quantitative trading is the future investment trend

Quantitative trading refers to the use of procedures to execute trading strategies and order placement. Compared with traditional fundamental analysis and technical analysis, quantitative investment mainly relies on data and models to find investment targets and investment strategies. Different from traditional investment methods, quantitative investment does not rely on personal feelings to manage assets, but appropriately reflects investment ideas, intuition and other factors in the quantitative model through the code, using computers to help the human brain process a large amount of information, and help investors summarize the induction. Market rules.

Compared with subjective investment, quantitative investment strictly implements the investment advice given by the quantitative investment model, and the investment strategy implemented through the program will not be interfered by investor sentiment. The computer can quickly respond to the market through quantitative analysis of data, and can avoid the deviation caused by human negligence and laziness, thus overcoming many human weaknesses, such as greed and luck. Because the data required to quantify investment is even larger, the ability of the human brain to process information is extremely limited. Faced with a huge market, the quantitative investment model can rely on computers to analyze more data and capture more investment opportunities than human subjective investment strategies.

The advantage of quantifying the investment strategy itself is that it can clearly describe various investment concepts in different economic environments and different market environments. The United States has more than 30 years of history in quantitative trading or quantitative investment. According to Bloomberg's data, as of November 4, 2008, the total assets of 1,184 quantitative fund management reached US$184.8 billion. Compared with the assets of 21 US dollars in 1988, the average annual growth rate reached 20%. %, while the non-quantitative fund growth rate for the same period is only 8%.

Today, ten years later, 60% of the orders in the securities market are issued by the program. More than 80% of the large US funds and one-third of the large Asian funds have used quantitative investment strategies. Quantitative transactions have gradually become Future investment trends in the financial sector. In the future, digital currency led by QTES and others will lead the digital asset quantitative trading to a more standardized and stable road.

2.2 a huge market without risk arbitrage

Arbitrage is a risk-free trading activity in the digital currency market. While the same transaction is trading in two or more markets, there is a certain inherent price difference between the pairs of transactions due to factors such as differences between regions. However, due to the fact that the market supply and demand relationship, market environment and trading rules are not completely consistent, there will be a situation in which price conduction is delayed or distorted. Therefore, the inherent price difference will deviate. Cross-market arbitrage is also the opportunity to use market imbalance to buy (or sell) certain trading pairs in one market and sell (or buy) the same trading pairs in another market. To achieve a profit spread.

Just in the digital currency market, there are exchange rate differences between various types of digital currency currencies, and the exchange rates between different exchanges are different, regardless of whether the market is in a long market or a short market, as long as there is a difference between different trading pairs and exchanges. Investors have the opportunity to use quantitative trading strategies to make a profit.

At this stage, the global digital currency daily trading volume reaches $40,000,000,000. If the profit margin is 1% based on the arbitrage fund amount and the profit margin is 0.5%, then only arbitrage strategy can be used to get 2 million US dollars per day. The annual profit can reach 730 million US dollars, and the profit margin is very considerable.

The reason why arbitrage has a huge market space in the digital currency market is because retail investors have strong trading impulses. Retail investors rarely compare the current prices of multiple exchanges at the time of the transaction, so there is no greater sensitivity to the spreads between exchanges and trading pairs. The arbitrageurs can use the platform mechanism of the arbitrage system to complete the risk-free arbitrage investment behavior according to the different prices in different markets.

2.3 Investor's dilemma

Most participants do not have a complete trading strategy when investing in digital currency. In the face of price fluctuations in the secondary market, they do not know when to buy and sell, resulting in frequent losses. Quantitative transactions in the digital currency market just address investor concerns and provide them with solid returns.

In real life, investors often have difficulty applying quantitative trading strategies to actual digital currency investments because of various conditions. In the face of ordinary investors and quantitative trading investors, we have summarized their troubles:

Trouble of ordinary investors

The number of digital currency currencies that can be traded on secondary market exchanges worldwide is 1,486, resulting in nearly 10,000 transactions. At the same time, there are more than 180 exchanges around the world, each with different transaction currencies and pairs. For ordinary investors, it is difficult for them to monitor the price of several exchanges at the same time. At the same time, because of their limited ability to acquire information and data and build models, this poses a significant obstacle to the construction and use of quantitative trading strategies.

Quantify the troubles of trading investors

For investors with a certain quantitative trading base, it is difficult to implement quantitative trading models and complete backtesting functions. Because the trading interfaces of different exchanges are different, it is difficult for investors at this stage to develop a common interface based on their own capabilities. It is used to collect data from various platforms and complete strategic transactions. It is indirectly difficult to use existing resources to achieve cross-market and cross-transaction. arbitrage.

3.QTESVision

QTES' mission is to bring appropriate digital currency financial products and services to all investors through blockchain technology and professional communities, and to explore and construct a decentralized stable digital currency financial ecosystem through blockchain technology. Investors bring protection and guide them to avoid risks, bring value-added assets, and ultimately contribute to the chaotic blockchain industry and the disruption of the digital currency market.

QTES will greatly enhance the investment professionalism of the existing digital currency market. Through a series of smart contract-based financial products and smart financial community services, QTES investors are no longer fully exposed to risks, allowing digital currency assets to own Better investment, circulation and inheritance channels, not only the profit of the QTES founding team will all give back to the market, but also the profit of QTES investors will also feed back the community and form a virtuous cycle of financial ecology. QTES is also an innovative system. In the future, it will not stick to the existing product and service design. It embraces all innovations that are conducive to the development of investors and blockchain, and constantly enhances and stabilizes its professionalism in the digital currency market. , authority and influence.

In the 7X24-hour digital currency trading market, because the number of retail investors is very large, the number of trading currencies is large, and the exchanges are very scattered, which makes the quantitative trading strategy very suitable for such a market environment where price conduction is lagging or even distorted. And because there is an exchange rate difference between the trading pairs, there are also currency differences between hundreds of exchanges, which creates a huge arbitrage space. However, ordinary investors often become victims of market volatility because they do not have available quantitative trading investment tools.

Looking at the digital currency market, there is no mature professional platform at this stage to help investors conduct quantitative transactions. Under such an opportunity, we will establish a QTES platform. QTES is a one-stop quantitative trading platform used in the digital currency market. Investors can use the tools and strategies provided by QTES to easily complete quantitative transactions, reduce the threshold for the use of quantitative transactions, and help investors achieve stable investment returns.

4.QTESIntroduction

Although the blockchain was initially highly anticipated in the core financial sector, due to factors such as technology maturity and regulation, the blockchain was first used in the non-core business of the financial industry, and there were landing projects like Jinqiu and Oklink.

Beyond the financial field, with the continuous exploration of technology and application scenarios, blockchain technology has allowed us to see many very sexy projects, such as the borders reported by 36氪, Gongxinbao, and Magic Orange.

With the increasing number of blockchain developers, there have been a variety of successful public, private and alliance chain applications on the market, but all have encountered a problem, the assets and interests in their respective chains can only be run in their respective circles. However, it is impossible to interact with assets on other home chains, let alone with actual assets.

Therefore, QTES hopes to connect the world of digital assets with the atomic world and build a decentralized network of registration and circulation of diversified assets.

To put it simply, QTES is a blockchain interaction protocol for diverse digital assets. Different types of assets (revenue rights, unlisted shares, claims, digital currencies, etc.) running on QTES can be exchanged and gambling through the agreement. Interact with complexity based on smart contracts.

QTES is designed to be compatible with Bitcoin UTXO design, enabling high-speed concurrency and controlled anonymity, as well as leveraging Bitcoin and the Ethereum ecosystem.

The design of QTES wallet system will introduce BIP32, BIP43, BIP44 concept, and provide support for multi-currency, multi-account, multi-address and multi-key with Hierarchical Deterministic Wallets (or "HD Wallets"); at the standard level, support National secret standard (SM2, SM3) and unified asset identification ODIN.

QTES will form a complete ecological closed loop with wallet as the traffic entrance, and cover the most profitable projects in the blockchain field. Its goal is to create a security steward of digital assets and become the leader in the wallet field.

5.Blockchain + Smart Contract + Artificial Intelligence + Quantitative Trading

A smart contract is a "programmable contract," or "contract intelligence."

The "intelligence" is the intelligence of execution, that is to say, to achieve certain conditions, the contract is automatically executed, such as automatic transfer of securities, automatic payment, etc., which will be an important development direction of blockchain technology. Since the blockchain can realize the point-to-point value transfer, the corresponding programming script can be embedded in the delivery, and the unforeseen transaction mode can be handled through the smart contract to ensure that the blockchain can continue to take effect. This kind of programmable script is essentially a list of numerous instruction summaries, achieving pertinence and conditionality in value exchange, and achieving specific uses of value. Therefore, any price-exchange activity based on blockchain can be hard-controlled by means of intelligent programming for common use, direction and various constraints, eliminating the cost of legal or contractual constraints.

In order to avoid the problem of slow transaction speed and few transaction orders in the past decentralized platform, QTES provides artificial intelligence (AI) high-frequency automatic quantization function based on smart contracts.

AI technology is the foundation of the QTES blockchain platform. With AI, you can safely apply rules when processing transactions. You can use them to automate the verification steps to encode the conditions that were included in the signed physical contract in the past. AI means that QTES blockchain trading is much more than just buying and selling currencies, and there will be a wider range of instructions embedded in the blockchain. A traditional contract means that two or more parties agree to do something or not to exchange something, and each party must trust each other to fulfill its obligations. AI smart contracts don't have to trust each other, because AI smart contracts are not only defined by code, but also enforced by code, completely automatic and unable to intervene.

QTES is committed to developing innovative blockchain financial ecosystems, expanding the application boundaries and technology boundaries of blockchain technology, enabling all Internet users to appreciate the value of blockchain technology. Through QTES AI (removing brick robot), it is possible to identify the difference and transaction volume of digital assets on each trading platform, decide whether to execute the arbitrage task, and start the arbitrage transaction at the right time to become the industry's [transplant brick] artifact.

One of the great advantages of AI is the uninterrupted execution of a program or contract, but the execution of certain contracts depends on some external data facts or evidence. Generally speaking, these data facts will have some trusted third parties submitting data. Providing that one of

the trends brought by the future QTES AI (Transporting Robot) is that trusted third parties will become AIs provided by multiple trusted third parties to achieve higher participation rate and reliability.

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In the digital currency market, there are exchange rate differences between various types of digital currency currencies. The exchange rates between different exchanges are different, regardless of whether the market is in a long market or a short market, as long as different trading pairs and exchanges exist. The difference, investors have the opportunity to use quantitative trading strategies to profit.

At this stage, the global digital currency daily trading volume reaches $40,000,000,000. If the profit margin is 1% based on the arbitrage fund amount and the profit margin is 0.5%, then only arbitrage strategy can be used to get 2 million US dollars per day. The annual profit can reach 730 million US dollars, and the profit margin is very considerable.

QTES automatically selects the best trading pair in the reserve pool, completes the quantitative trading setup and starts high-frequency automated trading, and gains revenue through trading mining. The user can select the optimal time to ensure the depth of the transaction.

5.1, support currency exchange

Currency exchange refers to the exchange between different encrypted digital currencies, which can be based on real-time ratios. Thanks to currency conversion, users are allowed to trade digital assets or realize digital assets more quickly and easily.

In the early stage, all digital assets on QTES were exchanged with QTES, and QTES and ETH were exchanged. In the late open QTES, there are many exchanges between all digital assets.

5.2. Support OTC over-the-counter trading

The inquiry trading method (Over-The-CoQTESter.0IC mode) is also called the over-the-counter trading method, which refers to the transaction conducted by the market trading entity on the basis of bilateral investment, through independent bilateral inquiry and bilateral clearing. Instead of trading in the trading platform, the transaction is concluded privately at a price above or below the trading

platform or with other conditions. QTES supports over-the-counter trading.

5.3, currency transactions

The later use of currency transactions in QTES can directly realize the exchange between digital assets, which is convenient and fast, and the economic cost and time cost are relatively economical.

5.4, security

(1) QTES digital asset wallet development is based on the underlying technology of blockchain. It is the world's first super blockchain digital asset smart wallet that integrates decentralized token wallet and decentralized trading platform.

(2) The user's digital asset storage and transaction records are recorded on the blockchain network ledger. Instead of the QTES server, only the person holding the private key can be controlled.

(3), support two-way anonymous transactions

(4), encrypted communication

(5), QTES is a low-level public chain independently developed by SD#M technology, with extremely high scalability, transactions can be confirmed in milliseconds, and can reach a million-level TPS;

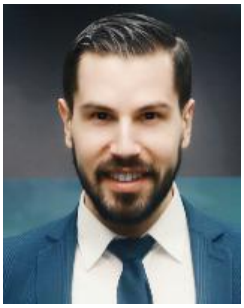
(6), the chain payment scenario can also use QTES to achieve 100% privacy of transaction data.

6.QTEScore team

The core team of QTES comes from the UK, including internationally renowned companies such as the United States; it also incorporates core technology members of ETH, experts in blockchain and IPFS, and the founder and leader of the early blockchain community. As well as the technical underlying, architectural design and risk control of digital asset products, they have a deep understanding and rich theoretical foundation and practical experience in related fields.

The core members of the QTES team include:

Sweeney Madison



Rich technical experience and project management experience, research areas include cryptography, algorithm introduction, blockchain principle, design, application, and actual combat. Years of C/C++ development experience, good at technical public relations, research, improvement and innovation, system architects, design and implementation of large-scale concurrent control layered server architecture. He is currently the chief operating and technical director of the company, leading the research and development of the underlying technology of the new public chain, and is currently the chief of QTES.。

Abdulrahman Al Saleh

Abdulrahman Al Saleh is a professional Chartered Management Accountant and Finance Specialist, and Chairman of the Board of Directors of the UK Financial Support Fund. He is a member of the Supreme Finance Committee and a member of the board of directors of Gulf Navigation Holding PJSC and Taleem PJSC.

Al Saleh is a member of the UAE Auditing Professional Supervisory Board and a member of the Chartered Institute of Management Accountants. He holds an EMBA degree from the University of Sharjah.

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Miguel Benedict

QTESCEO, Ph.D. in Computer Science from Stanford University, Ph.D. in Finance, in the core technology of financial technology - "blockchain", can create a world record of clearing every 15 seconds, surpassing the international general two-minute clearing routine, once After working for many years in Silicon Valley Technology and Google, he devoted himself to the field of financial investment. He experienced the pioneering development of the blockchain investment market and played a vital role in it.

Benny Genaro

A real service service leader who is truly improving the achievements of the lowest level of employees. With many years of experience in the cooperation of top international service industry management organizations, the company has rich experience in management of various types of service industry organizations at home and abroad. He has in-depth understanding and research on financial investment, capital operation and financial market development, and has accumulated a large number of partners in the field of financial investment. He is currently a senior partner of the QTES Foundation.。

SeViolet

He graduated from the University of Finance and Economics in Singapore and studied computer science at the Massachusetts Institute of Technology in the United States, majoring in fine arts and visual arts. Proficient in C#, Objective-C and JAVA programming techniques, blockchain early geeks. Earlier contact with BTC, ETH, and unique insights into digital currency and blockchain technology.

7.QTESPositioning

“Bit tool "era: Bit as a product of auxiliary efficiency, such as: excel table,

Email mailbox; developed into the following "bit currency" era: the existence of bit form, no physical carrier and media corresponding value symbols such as: bitcoin, Ethereum and various public chains, alliance chain tokens; and then more extensive and diverse The era of "bit assets": all valuable, exchangeable atomic assets, such as real economic income rights, equity, creditor, securitized assets, etc., can be transferred to blockchains that cannot be tampered, traceable, and symmetric. On the ledger, interact with the forecasting market such as finance, gaming, and insurance through programmable smart contracts.

However, buying a software (bit tool) and digital currency (bit currency) from the atomic world already has mature software stores such as Appstore, exchanges such as Coinbase, but there is no

transaction or interaction for diversified bit assets. A complete, proven protocol system carries its interactions. Unlike general-purpose smart contract platforms such as Ethereum, QTES is designed as a dedicated public-chain platform for the asset sector and attempts to address the following issues:

● How to make digital assets realize the non-replicability of atomic assets through blockchain technology?

● How to establish a mapping relationship between atomic assets and digital assets and solve compliance problems?

● How to break the gap between the atomic world and the digital world and promote the efficient circulation of assets under the chain?

QTES is the world's first public chain to support the development of digital assets, and the technical architecture supports tens of millions of high concurrency. In fact, QTES can realize the certification of equity assets including stocks, bonds, options, futures, etc., and even support the certification of goods, services and special resources.

For the digital asset market, QTES can be applied not only to off-exchange digital asset trading services with low transaction performance requirements, but also to providing underlying technology and cloud services to major global stock exchanges, promoting global integrated equity markets and new formats. Formation.

QTES's positioning consists of one center, three functions and five sections.

One center: Provides three functions of blockchain technology solutions for the global digital asset trading market: promoting asset certification; helping the real economy to develop; facilitating investors to allocate assets.

Five sections: QTES (QTES Coin), QTES Wallet (QTES Wallet), QTES Digital Asset Trading Platform (QTES Exchange), Open Platform (Bluechip BaaS), QTES Community (QTES commQTESity). QTES has truly realized the jump in blockchain application, completely changing the existing "blockchain+digital currency" pattern in the industry, starting with "blockchain+digital asset market" and promoting "blockchain+real economy". Really promote economic development and wealth creation.

"Our mission is to connect the digital world with the atomic world and build a decentralized network of registration and circulation of diversified assets."

QTES will greatly promote the exchange, interaction and flow of digital information and digital assets of existing value attributes. New digital assets will also be generated through contracts and configurations. QTES will also create applications in a decentralized, market-based management protocol, while providing unique incentives for local and global digital economy participants. As a

medium, QTES (QTES coin) is fully prepared to become an economy that contributes to information profitability, an amplifier for information asset performance. In the future, these information assets will not only be used for the daily work and life, but also the provider of "data food" for artificial intelligence and IoT devices to further accelerate their influence on the atomic world.

8.The main innovation of QTES

8.1 Standards for building a diversified bit asset registration

QTES aims to establish a global open Byte Assets registration platform. It's also easier to create and define and generate a digital asset, and it's easier for users to understand.

8.2 Interactive tools for building diverse digital assets

From the most basic asset exchange tools (exchange between agreements of different forms of digital assets, ownership changes), QTES will also support more complex forms of interaction, such as:

A triggering tool: The asset is voted according to the contract, producing a deterministic Y/N Boolean result or a numerical result to activate the atomic world's participants to share the data set;

B forecasting tools: For example, through zero-sum game, two or more parties gamble, generate prediction information about whether a flight is delayed, and two candidates who will win, and use this forecasting information in real-world financial hedging, insurance and other fields.

8.3 Major innovations

(1) Compatible with Bitcoin UTXO design

QTES consists of three layers: data transaction and transport layer, contract layer, and asset interaction layer. The asset interaction layer operates on assets by invoking contracts, where the Bitcoin UTXO model and transaction data structures are compatible at the data transaction and transport layers for high-speed concurrency and controllable anonymity.

(2) Universal address format

The design of QTES wallet will introduce BIP32, BIP43, BIP44 1 concept, using Hierarchical

Deterministic Wallets (or "HD Wallets") provides support for multi-currency, multi-account, multi-address, and multiple keys. BIP44 provides a five-layer path suggestion: (1) determine the path rules; (2) currency; (3) account; (4) change; (5) address index. Users only need to save a master private key to control the asset wallet of all currencies and all accounts. BIP44 provides good support for the zeroing mechanism. Users can avoid multiple signatures of the same private key without multiple collections at the same address, thus avoiding the risk of private key exposure.

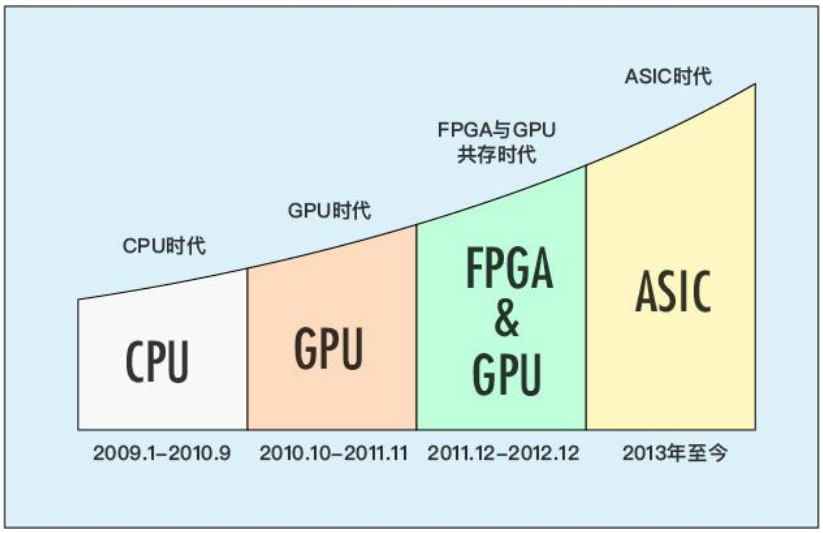
(3) Support national secret standards

QTES's asset control and operations involve private keys, public keys, and address systems. The traditional bitcoin code implementation encrypts ECDSA and SHA256 hashes based on elliptic curve functions. The National Secret SM2 Elliptic Curve Public Key Cryptography Algorithm 2 and the SM3 Cryptographic Hash Algorithm 3 will be further supported in QTES. When implementing the same computational complexity, SM2 processes the private key much faster than the RSA and DSA algorithms, and the encryption efficiency is higher. The compression function of the SM3 algorithm has a similar structure to the compression function of SHA-256, but the design of the SM3 algorithm is more complicated. For example, each round of the compression function uses 2 message words.

(4) Asset naming using ODIN logo

The naming of assets on the chain adopts ODIN (Open Data Index Name) open data index naming standard, which utilizes the transparent and credible and non-tamperable characteristics of the blockchain to ensure the uniqueness of the entire network and the entire chain of assets. Unlike other blockchain-based identification solutions, ODIN is based on the Bitcoin blockchain and supports the extension of multi-level tags to introduce other blockchains (public, federated, private), not to squat strings. Instead, the block record location is used as the identity name.

(5) (5) Artificial intelligence ASIC chip-friendly POW algorithm



Using the artificial intelligence ASIC chip-friendly POW algorithm, the mine can be used for AI acceleration services after being idle or eliminated. Bitcoin mining machines and artificial intelligence deep learning are comparable, they rely on the underlying chip for massively parallel computing. The vast majority of deep learning algorithms can be mapped to the underlying linear generation Number operation. Linear algebra operations have two major characteristics: First, the flow of Tensor

is unconventional and predictable; second, the computational density is high. These two features make AI deep learning particularly suitable for hardware acceleration4. The Bitcoin miner chip has gone through four phases: CPU, GPU, FPGA and ASIC.

In the era of CPU and GPU, mining thresholds are low, and home desktops or notebooks with discrete graphics cards can be used for mining. With the advent of FPGA and ASIC mining machines, the Moore's Law of Bitcoin Mining has grown rapidly. At present, the mining machine's computing power has reached the level of GH/S, and the processing precision of silicon wafer has been improved from 130nm to 14nm, which is close to the limits of current semiconductor technology. . However, the workload proof mechanism has been criticized because the application range of the mining machine hash calculation is too narrow, and it can only be used for mining, resulting in great hardware and energy waste.

If we introduce matrix operations and convolution operations in the mining hashing process, making the mining machine more friendly to the artificial intelligence ASIC than the GPU and CPU, then the amount of computation required for the blockchain consensus can also be applied to the AI hardware. Accelerating services, resulting in greater social benefits: On the one hand, the mining machine market will stimulate the artificial intelligence market and expand the demand for deep learning ASIC chips, just as the current graphics-friendly PoW blockchain promotes the graphics card market; On the one hand, mines that have been eliminated or idle can be applied to AI hardware acceleration services, saving mining costs and creating a win-win situation.

(6) Use sidechain to support cross-chain asset trading and dividends

To operate on other chain assets, developers on QTES can create a small version of the X-chain (other chain) repeater XRelay, and Dapp developers on QTES can make APIs from smart contracts to X-chain repeaters. Called to validate X-chain network activity for cross-chain communication. The transaction and dividends are then completed in the contract.

(7) Class "Separation Witness" design

QTES designed a distributed ledger protocol where multiple assets can interact. Multiple chains with this protocol can exist independently and can be traded across links so that different operators can interact in the same form. Adhere to the principle of minimum privilege, in which the QTES block design separates the data from the Witness and signature parts to achieve separation of asset management and distributed ledger synchronization control. Better programmability and contract support are achieved, and interfaces are reserved for subsequent bypass channels.

The chain protocol allows any network participant to define and distribute assets by writing a custom "publisher." Once issued, the asset unit is controlled by the "control program." The control program is

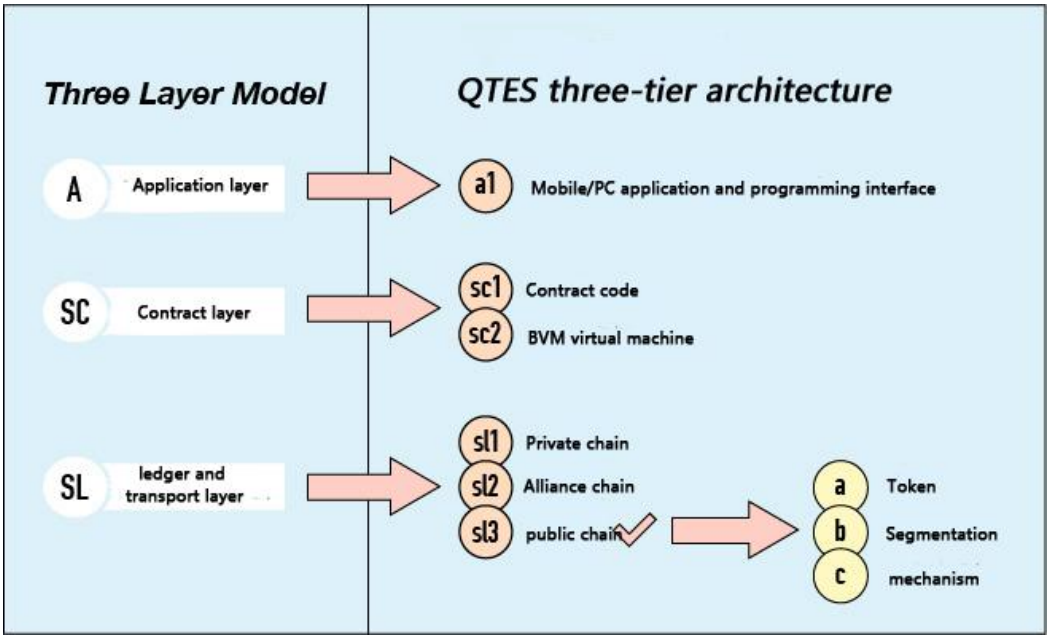
implemented in a Turing-complete programming language that can be used to write complex smart contracts.

(8) Enhanced transaction flexibility

Unlike the Ethereum account model, BUTXO can verify transactions in parallel, using a mechanism similar to nonce to ensure that each unspent output can only be referenced by at most one transaction. In addition, QTES supports ultra-light clients, which are naturally thinner than Ethereum and create a lightweight world state. Participants only need to remember the unused outputs, because the transaction will bring other relevant information (such as asset ID). Share, control program). Another feature of QTES is: compact verification, which only allows the client to verify the transactions associated with the block, without having to verify all transactions, as long as the number of signers is trusted. The whole process is proved by Merkle. The client can also delegate the task of monitoring the entire blockchain to the server it trusts. The block can be forward-backed version compatible by soft fork. QTES not only supports inter-block communication in the implementation of this protocol (but needs to ensure the uniqueness of the global asset ID: each sub-chain is bifurcated from the block height of another chain, according to which the asset ID is guaranteed to be unique) The chains that support different protocols also interact with each other because BVM provides enough instructions.

9.QTESModel: Three-tier architecture

9.1Platform model: three-layer structure QTES will adopt three-layer structure



i. Application layer: support the development of programmable distributed applications, call contracts for asset registration, destruction and trading, dividends

Ii. Contract level: account system, contract code support

Iii. Account layer (data layer): public chain layer without permission, POW consensus

1) Application level:

QTES offers a variety of PC, WEB, and mobile applications to facilitate contracting assets for asset operations. By encapsulating the underlying technology of the blockchain, we reduce the application threshold and provide developers and asset issuers with a more flexible and friendly interface, enabling developers and asset issuers to focus on business models and business logic. Innovation.

2) Contract level: contract level design

2.1) Creation Contract The Creation Contract is a special type of contract on QTES. It is a contract that can issue and audit smart contracts. Developers will retain some permissions, such as private keys, scopes, etc., and have certain specifications and Automated auditing to ensure that the assets on the chain comply with the appropriate specifications and templates are registered and published. The underlying implementation of the creation contract is called to the distribution program in the data transport layer: Asset Issuance Prog ram.

2.2) Ordinary Contracts There are two functions of ordinary contracts. They are used to set up and determine the trading and dividends of assets. These rights are released. Each contract is equivalent to a fund in reality. If a new asset needs to be developed or introduced in the contract, a request must be submitted to the creation contract, which can be posted to the chain after being approved. The underlying implementation of a normal contract calls the control program in the data transport layer: Asset Management Program.

3) Account layer (data layer)

At the level of books and data transmission, QTES adopts the more mature POW mechanism in the public chain and improves it, adopting an algorithm that is friendly to artificial intelligence ASIC chips. And the partitioning mechanism is adopted to accelerate the efficiency of transaction processing while ensuring data consistency.

9.2 QTES master program and data structure

This part mainly operates at the data book level.

The QTES master program consists of three parts, namely

● Asset Issuance Program is responsible for the issuance of assets

● Asset Management Program is responsible for asset cost, exchange, etc.

● The Consensus Program is responsible for determining which new blocks can be included in the QTES. The POW mechanism is currently used.

9.3 Issuance of Diversified Bit Assets

QTES will support multiple types of digital assets. Each asset will be identified by an asset ID, which will be a 256-bit string that distinguishes between different asset types. According to different assets Asset_

ID, we can establish the type of the asset and associate it with the asset: asset generation process

(Asset_Issuance_Program is responsible for generating new asset units) and asset operators (Asset_Management_Program controls and operates on a set of assets).

There are two types of assets running on QTES: QTES (QTES coin, QTES for short) and assets (Assets)

1) Token Token

The token on QTES, QTES, is a special type of token distributed on the QTES for packaged traders and system participants. The POW mechanism is adopted to encourage random anonymous miners to participate in the entire ecosystem and generate them according to the scheduled distribution curve. .

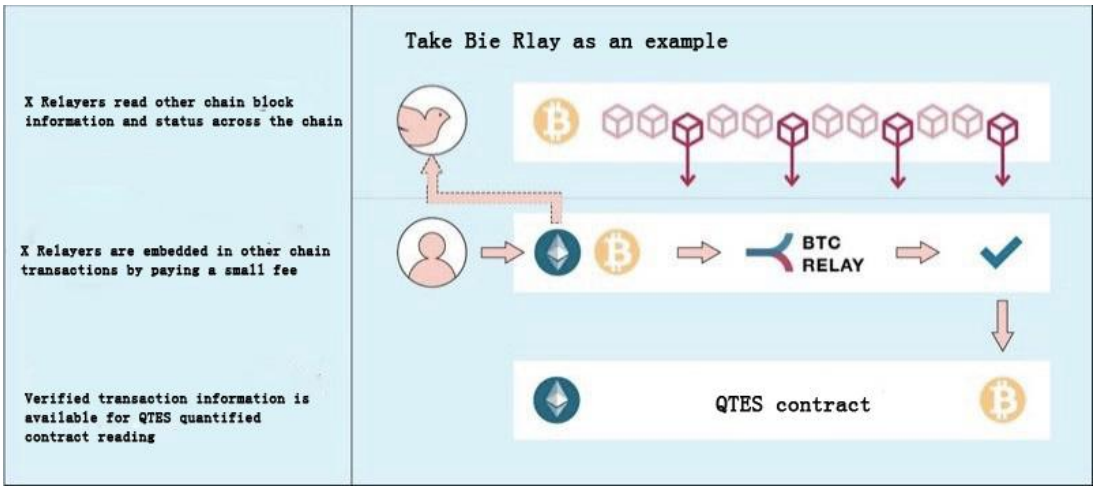
The main uses of QTES are:

i. the handling fee for asset transactions;

Ii. Dividends on income rights assets;

Iii. a deposit for the issuance of assets;

Taking the dividend of the income-based asset as an example, if the issuer of the asset decides to use Bitcoin as the dividend, the corresponding amount of bitcoin can be locked by the side chain, converted into QTES according to the market exchange rate, and then distributed to the address of the asset owner. This process is completed by a contract call XRelay for cross-chain operations, such as BTC and ETH exchange respectively through BTCRelay6, ETHRelay is completed.Relay6、ETHRelay



2) Assets: The application area and ecological value of the assets on QTES:

i. Financial industry

Financial services have become one of the primary application areas of QTES technology, providing effective and reliable ownership certificates and strong and effective intermediary guarantee mechanisms for financial services.

Ii. Credit and ownership management

Credit management is a huge market with a scale of over 100 billion. QTES technology provides data for credit management, which will greatly improve the accuracy of credit evaluation and reduce the cost of evaluation.

Iii. Resource sharing

In the era of big data, the value comes from the mining of data, and the QTES currency technology uses the blockchain to form a unity.

The book, the flow of data between multiple parties will be tracked and managed in real time, and through the control of access rights, the management cost of the data sharing process can be effectively reduced.

Iv. Investment management

v. Regardless of public or private equity funds, QTES technology can be applied to reduce management costs and control risks. QTES coins can provide a common ledger for LDC trading participants, allowing banks and other parties to have confirmed common transaction records and perform accordingly. , thereby reducing risk and cost.

Supply chain

QTES technology applications can provide a transparent and reliable unified information platform, which can view status in real time, reduce logistics costs, and trace the entire production and delivery process of items, thereby improving the efficiency of supply chain management. When a dispute arises, proof and tracing become clearer and easier to vouchers.

9.4 Exchange of assets on the chain

In this section we will discuss the most basic functions of QTES, the "asset exchange" section described above, which will be implemented in the first version of QTES.

Transactions on asset income rights, holding rights, use rights, etc.: A form of registration using contract internal account transfers.

Redemption of assets: The contract is transferred out of QTES.

The account is a concept abstracted internally by QTES. It belongs to the contract layer concept. Each account will correspond to a group of BUTXOs at the data book level. The sum of all BUTXO assets under the account forms the balance of the account.

The following are the basic concepts of the QTES data model:

Transactions

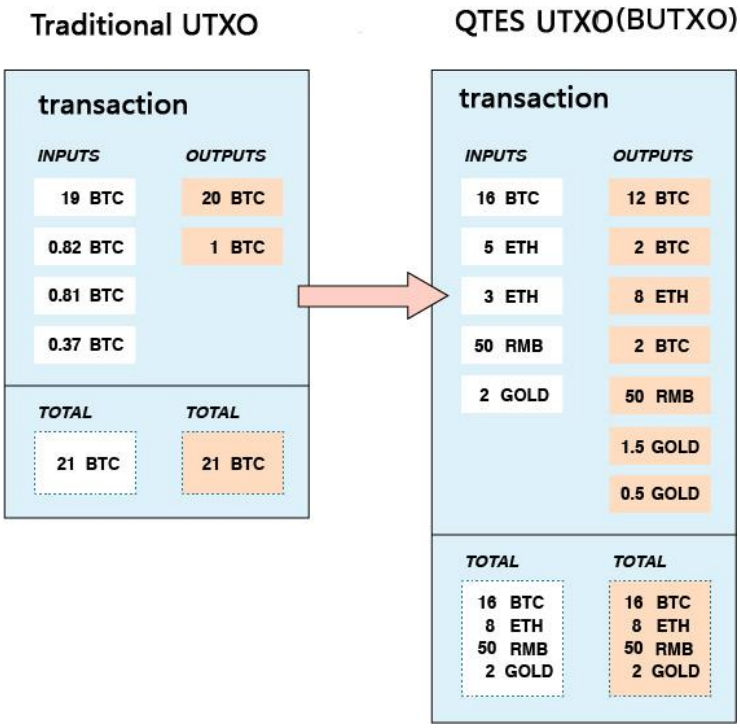
A transaction is a basic operational transaction of a QTES asset, which is a data structure containing input values and output values.

Input Inputs

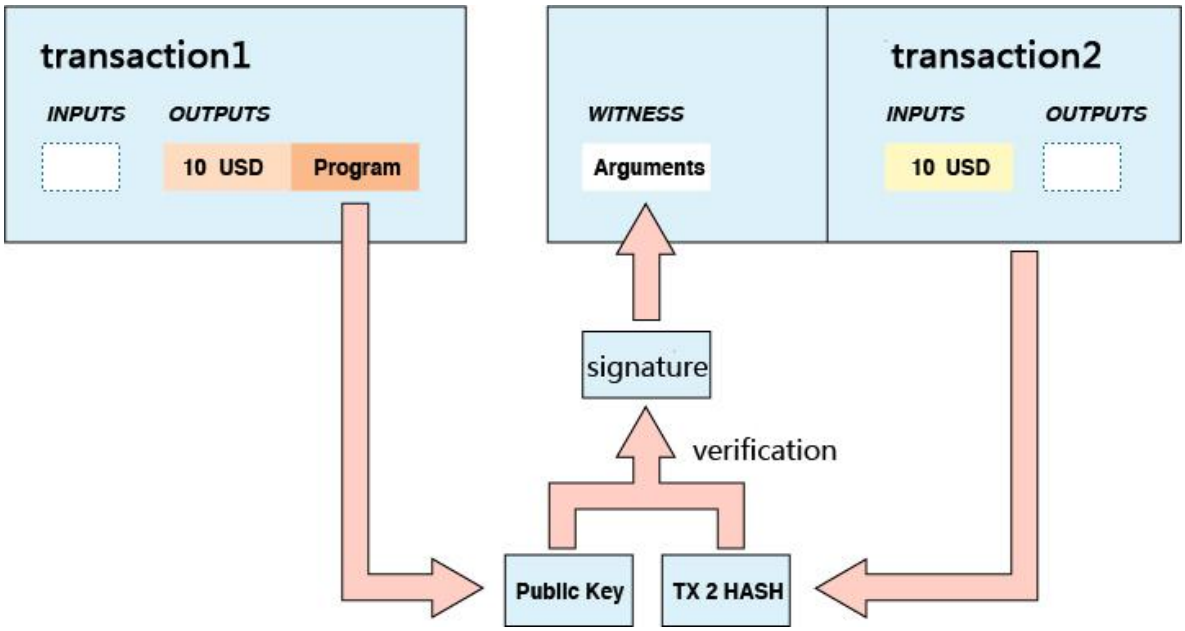
Can be one or more different types of digital assets, or the output of a transaction;

Output Outputs

Determining the post-transaction asset outcome is an asset operating procedure that defines the future cost of this output. The following figure shows the extended BUTXO on QTES, which extends the traditional UTXO structure on the Bitcoin public chain and is compatible with many types of bits and atomic assets.



The input part of each transaction must be a newly generated set of asset units, or a set of BUTXO After two results returned by the asset operator operation, the two inputs must be verified by the release procedure mentioned above. The verification process of the issuing program is that the parameters can be passed to the Witness Field part of the transaction, and then the verification part is passed, and then the transaction is performed. This part is somewhat similar to the isolation verification idea proposed by Bitcoin public chain BIP141.



10.QTESrelease

10.1 Issuance of QTES (QTES)

QTES (QTES Coin, QTES for short) is issued by the QTES Foundation. The purpose of issuing QTES is to quickly build a global QTES community and acquire the big data needed for application development, and then promote the implementation and implementation of QTES's medium and long-term strategy.

QTES is the world's first encrypted digital currency developed specifically for QTES. Its location and functionality are unique and the application scenarios are clear and extensive. First, QTES will serve as the common currency for the QTES Digital Asset Trading Platform (CBEX), the QTES community, and the entire QTES ecosystem.

Used to trade all certified assets within the ecology. At the same time, QTES has also realized blockchain assets with major digital currencies around the world, including Bitcoin (BTC), Ethereum (ETH), Litecoin (LTC), Ripple (XRP), EOS, etc. Free exchange transactions. QTES is the only circulation

token for the QTES intelligent quantitative trading ecosystem. Therefore, QTES has a wide range of applications that are unmatched by general digital currencies, and its value is stable and long-lasting.

10.2 Technical Principles of QTES

QTES complies with the Ethereum ERC-20 TokenStandard protocol, which uses the open source code of Ethereum and is open sourced twice. Ethereum is one of the most mature blockchain solutions, supporting the PoW consensus mechanism. The market value of Ethereum (ETH) is only in Bitcoin, which fully demonstrates the authority and extensiveness of Ethereum in the eyes of global digital asset investors. Application prospects. QTES adopts the universal Ethereum bottom layer, which not only avoids many security risks, but also facilitates secondary development and docking functions of third-party developers. In addition, QTES can exchange and trade currencies with other types of encrypted digital currencies, providing a more convenient payment, transaction and settlement system for users around the world.

10.3 Application scenarios of QTES

As a common currency in the QTES chain ecosystem, QTES is widely used, including but not limited to the following scenarios:

Ø Directly subscribe to various digital assets on the QTES digital asset trading platform;

Ø After QTES logs into the exchange, it can directly conduct various market transactions;

Ø Trade currency transactions with other digital currencies on major trading platforms around the world;

Ø Interconnected with other certified financial assets and freely traded;

Ø Can be used to pay the listing fee, handling fee, etc. of QTES Digital Asset Trading Platform (CBEX);

Ø Interfacing with external businesses, global circulation, direct purchase of physical goods and services;

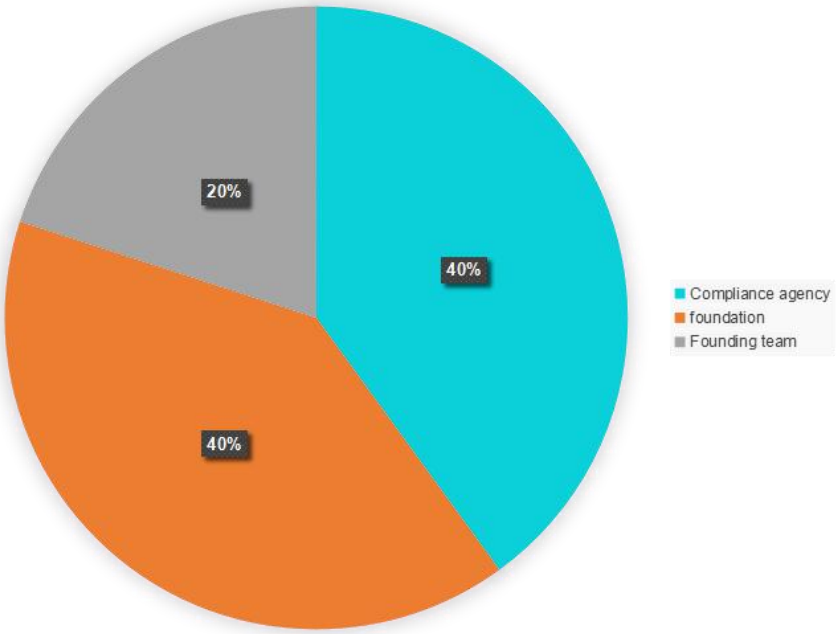
Ø In the QTES chain community, how much QTES represents the size of voting rights.

10.4 QTES Release Plan

Name: QTES

Total issued: 100 million

Allocation



The role of QTES in the QTES ecosystem includes:

1. As a general pass in the QTES ecosystem, acting as a payment and settlement in all asset transactions

2. Building a global QTES community and self-development and maintenance for the main reward mechanism;

3. Collect big data and cultivate fans and users for the underlying technology development and application development of QTES;

4. For the operation, marketing and promotion of the QTES ecosystem;

5. Used to sponsor top experts, institutions and academic activities in the blockchain field.

11.Risk and advantage

11.1 Technical Risk Risk Description:

With the rapid development of the Internet market, there will be other similar products, technical imitation is inevitable, how to ensure the leading technology?

Coping strategies: The QTES Foundation has already applied for patents related to software management, forming legal barriers and protecting the company's expertise in platform technology. QTES is a blockchain and Internet self-employment project. The company has abundant talent resources and guarantees the company. The quality of the core R&D team will help the QTES Foundation continue to maintain its technological leadership in the market.

11.2 Management Risk Risk Description:

The QTES Foundation belongs to the entrepreneurial team. The members have less experience in the industry and have enough experience to achieve good business operations.

Coping strategies: The founding team members of QTES Foundation have rich professional experience. The main members have high comprehensive quality, strong professional knowledge and strong working ability; they have the ability to recruit excellent employees and seed users. The consultant team we hired is a top expert in all fields and industries and has a good variety of resources to ensure that the project can receive professional guidance and effective support from all parties.

11.3 Market Risk Risk Description:

Faced with the fierce competition of many mature job-seeking outsourcing platforms in the market, how does QTES, as a new entrant, form its own advantages?

Coping strategy: QTES as a blockchain and Internet self-employment project, we are the first decentralized trading platform to support the painless trading platform for the digital asset securities market; the latitude of QTES in platform positioning is more than many platforms on the market. To be high, we will work with these platforms to help them drain and become our strategic partners, so that they can be more professional in their respective fields and industries.

11.4 Financial Risk Risk Description:

The product has just launched into the market and requires a certain period of adaptation. A large number of product promotion and marketing promotion methods in the early stage may lead to a slightly longer payback period in the previous period, and will the cash flow be tight?

Coping strategy: open source and reduce the existing funds, make the existing funds play the biggest role as much as possible, so as to reduce the amount of financing; pay attention to the management of cash flow, increase the collection of receivables, try to keep Good cash flow; vigorously use online marketing methods to reduce pre-announcement and marketing expenses; and obtain continuous income through virtual asset transactions.

11.5 Business Risk Risk Description: Will the company's decision-makers and management personnel make mistakes in the operation and management, which will lead to changes in the company's profitability and affect normal operations?

Coping strategies: The QTES Foundation will hire high-level financial analysts to conduct risk assessments of company decisions in order to accurately predict risks and minimize risks; the QTES Foundation will improve various rules and regulations, including intellectual property protection systems, user credits. The evaluation system and various company operation contract management systems reduce risks with a relatively complete system.

12.Disclaimer

This white paper is only intended to convey the purpose of the information and does not constitute an opinion regarding the sale and purchase of QTES. The above information or analysis does not constitute an investment decision. The white paper does not constitute any investment advice, investment intention or instructed investment. The White Paper does not constitute or be construed as providing any sale or any act of inviting a share of the sale or purchase, nor is it a contract or commitment of any kind. Relevant intent users clearly understand the risks of QTES. Once investors participate in the investment, they understand and accept the risk of the project, and are willing to personally bear all the corresponding results or consequences. The QTES team does not assume any direct or indirect asset losses resulting from participation in the QTES program.