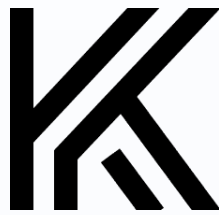


karlBenz



KarlBenz

white paper

**Building a block — chain pass-through platform for
ecological economy and helping develop vehicles
intelligently**

March 2019

Use of the Documents

The purpose of this document is to introduce KarlBenz's ecosystem, which is quite technical. The readers are relevant personnel, investors or consumers who have a certain understanding of the automotive industry and block-chain technology, as well as Bitcoin, People who have a certain understanding of cryptocurrencies such as Ethereum

Range of the Documents

This document is an introduction to the KarlBenz-decentralized intelligent vehicle Block-chain platform ecosystem. This document describes the important elements and details of the intelligent vehicle ecosystem platform architecture. The development team optimizes and upgrades the architectural design and functionality of existing products, so actual products may appear different from those described in this document.

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Preface : Project background of Block—chain

In the history of the development of the Internet in the past 50 years, there have been two great changes. The first great change was a global computer network. Since the birth of the APA network in 1969, mainstream countries around the world have gradually connected to the Internet, opening the journey of global networking. The second great change was the global application of the Internet. Since the publication of

the World Wide Web paper in 1989, the Internet application has presented “a hundred flowers blossoming” and realized the global outbreak of application. Now the third major change is brewing.

The e-Cash proposed in 1983 was a digital payment system, but it failed later due to centralization.

In 1997, HashCash was a digital currency using the PoofofWork (PoW) mechanism, which was later widely used by digital currencies.

B-money, proposed in 1998, was the first decentralized digital currency system proposed, but unfortunately no specific implementation was proposed.

In 2008, the concept of block-chain was first proposed by Nakamoto Satoshi. Although the block-chain has undergone the evolution of previous generations, this period belongs to the development stage of digital currency. Until the birth of Bitcoin in 2009, it began to mark the dawn of the block-chain technology that brought great changes to the digital economy era, and truly realized the decentralized, open account digital currency system, officially opening up the block-chain technology. Development has also opened up people to start research and exploration in smart contracts.

The block-chain 1.0 is characterized by a digital currency, and the 2.0 is characterized by a smart contract. Then the feature of the block-chain 3.0 is that the application falls to the ground, and the offline scene is

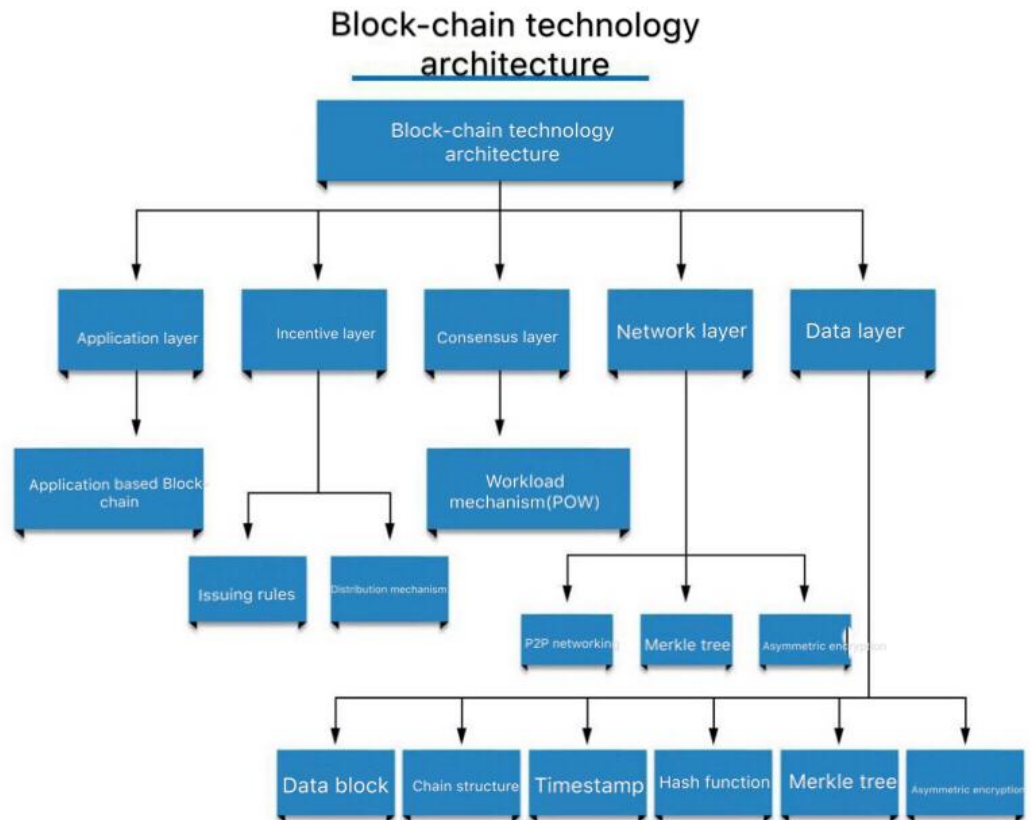
digitized and synchronized into the network of the block-chain. Any great innovative technology will make a huge change to the world. The block-chain's change to the world is mainly reflected by changing the organizational form of the company, the way of business cooperation, and the way of social governance.

1 Comprehension of Block-Chain for KarlBenz

1.1 Get to know about Block-Chain

Since 2017, the block-chain has gradually entered the vision of technology companies and the people, which has aroused widespread concern and extensive discussion.

Block-chain is the underlying technology of Bitcoin, like a database book, which records all transaction records, essentially a decentralized database. The academic community generally believes that block-chain technology is the cornerstone of the next generation digital economy, which can greatly promote the development of trusted storage, business collaboration, and trusted exchange and sharing of data.



1.2 Connotation of Block-Chain project

With the support of block-chain technology, it is found that the significance of block-chain is to build a more reliable Internet system, fundamentally solve the phenomenon of fraud and rent-seeking in value exchange and transfer, with block-chain technology. The popularity of the digital economy will be more real and reliable. It can both disclose information and protect privacy. It not only makes decisions together but

also protects individual rights. This mechanism improves the efficiency of value interaction and reduces costs.

From the perspective of public service, block-chain technology is exploring applications in areas such as public management, social security, intellectual property management and protection, commodity anti-counterfeiting, land ownership management, etc. Relevant practices show that this technology helps to raise the public. Participation, reducing social operating costs, improving the quality and efficiency of social management, and promoting the social management and governance levels have an important role in promoting.

In the economic sense, this new value interaction created by the block-chain is based on “weak centralization”, but this does not mean that the various “centres” in the traditional society have completely disappeared, and there will be a large number of future block-chains. The “multi-center” system is mainly based on the alliance chain, private chain or hybrid chain. The block-chain will further improve the operational efficiency of the “center” and reduce its considerable cost.

From a technical point of view, we believe that the block-chain is a technology system that is maintained by multiple parties, stores data in a block-chain structure, uses cryptography to ensure transmission and access security, and can achieve consistent data storage, cannot be tampered with, and cannot be denied. . This technology has brought

unlimited imagination to the world. The global interest in the block-chain continues to heat up. The major economies in the world have begun to study the block-chain technology and development trends from the national strategic level.

2 Intelligent vehicle industry market analysis

2.1 A promising intelligent vehicle industry

Intelligent vehicles refer to the addition of advanced sensors, controllers and analysis systems to ordinary vehicles. They can automatically sense and collect vehicle traffic and road traffic data, and then implement drivers, passengers, cars, and roads through in-vehicle sensing systems and information terminals. The exchange of information enables the vehicle to automatically analyze the driving environment and safety status, and can reach the destination with the fastest and most effective route according to the driver's wishes, and intelligently provide information such as road traffic and surrounding services for the driver. Since 2014, China's smart driving market has expanded rapidly. It is estimated that the overall market size will reach 63.5 billion yuan at the end of last year, with a compound annual growth rate of 42%. It is

expected that this number will increase to 121.4 billion yuan in 2020, and the market is a blue ocean.

In the future, the rapid development of algorithms, artificial intelligence and safety control systems will lead the automotive industry to a more automated and intelligent direction. There are two major themes for the development of smart cars in the future: one is intelligent, networked and electrified. As an important vehicle, the vehicle forms an arbitrary location, any time, and access to any information mode through on-board sensors, infrared, visual, controller, actuators and other electronic devices to provide intelligent environment support for vehicles to improve vehicle safety. The purpose of the safety assisted driving system and the vehicle information service system has now become a highlight and selling point of automotive intelligence. In addition, with the development of dedicated short-range communication technology, sensor technology and vehicle control technology, the pace of automatic driving and driverless technology from the laboratory to the actual application is accelerating. For example, Tesla, Google and Baidu have successively carried out driverless driving. Technology-related tests, Mercedes-Benz, BMW, Audi and other manufacturers already have more mature autonomous driving technology.

Another theme for the future development of smart cars is interconnection. With the development of high-speed wireless LAN technology and the gradual maturity of standards, when vehicles run at high speed, a stable communication link can be established between vehicles and vehicles, vehicles and roads, which provides application scenarios for automotive interconnection, and major automobile manufacturing. Manufacturers, component manufacturers and communication equipment manufacturers have jointly developed a system based on vehicle-to-vehicle information interaction. Europe and the United States have also integrated professional short-range communication technology with 4G and future 5G to achieve unified coordination in network management. . In addition, we have seen that some Internet companies are studying Internet vehicles. They integrate Internet operating systems, big data, communications, navigation, multimedia and other information, automobile group vehicle information, and vehicle and parts service information online and offline. Users provide smart travel, for example, the two giants Baidu and Google have respectively introduced operating systems for Internet cars, and have been applied on some models.

2.2 The latest intelligent vehicle technology applications constantly become true

With the continuous advancement of algorithms and sensors, automotive manufacturing and Internet technology companies have increased their efforts in the smart car industry. Among them, Waymo, GM Cruise and Tesla are leading the industrialization maturity. Most of the other manufacturers set the timetable for automatic driving of Level 3 and above in mass production passenger cars to be around 2020-2021.

The technology companies that use Google as an example have obvious advantages in technology maturity. Google's subsidiary, Waymo, is a leader in the autonomous driving industry with a first-mover advantage in technology reserves and drive test experience. At the algorithm level, TensorFlow developed by Google is the most widely used open source deep learning computing platform. On the road test level, as of July 2018, WayMo auto-driving cars have reached 8 million miles on public roads. Waymo's products have been initially commercialized. Starting in April 2017, Waymo allowed residents of Phoenix, USA to apply for a Level 4 autopilot. It is expected that a paid autopilot service will be launched in the end of 2018.

Taking GM as an example, the mainstream direction of traditional car companies is to lay out an industry chain of autopilot solutions that can achieve consumer-grade industrialization. In terms of industrial chain layout, GM acquired the self-driving startup Cruise and the laser radar start-up Strobe in 2016 to make up for the shortcomings of its software

and laser radar, and completed the basic layout of the computing platform and sensors; In terms of GM's 2017 Cadillac CT6, it has joined the Level 3 level of automatic highway driving, and has achieved the first level 3 automatic driving on the production car; in terms of technical reserves, it is generally used to release CruiseAV in January 2018. The car can achieve Level 4 automatic driving, without a steering wheel and pedals, is expected to be mass-produced in 2019.



2.3 Traditional automakers such as the US, Japan and South Korea have transformed

With the development of automotive electronics and artificial intelligence, the handling of automobiles has become more and more simple, and the economy and driving safety have become better and better. Various intelligent electronic components are widely used in the automotive field and occupy an increasing proportion of the cost of the entire vehicle. This

phenomenon has become a trend in the automotive industry. Traditional automakers have also undergone transformations, such as Volvo's first mass production of the first automatic driving technology - traffic jam assist system. The system integrates adaptive cruise control and lane keeping assist system to enable the car to automatically follow the preceding vehicle when the driving speed is less than 50 km/h. In addition, Audi, Cadillac and other manufacturers are also introducing technologies such as automatic steering, acceleration and deceleration, lane guidance, and automatic parking.

Here, I have to mention the booming Korean vehicle manufacturers. As a veteran auto powerhouse, the Korean auto industry has been running from scratch, from weak to strong, and has completed more than 100 developed countries in less than 60 years. Years of history, and become the world's largest automobile production country, its achievements have attracted worldwide attention.

The Korean government hopes that infrastructure development will promote the development of autonomous vehicles. For example, the recently revised Korean Motor Vehicle Management Act allows for the testing of self-driving cars on urban roads, which means that Korean roads will become autonomous vehicle test sites, providing more critical data for improving autonomous vehicles.

The South Korean government has vigorously promoted the development of autonomous vehicles. The Ministry of Land, Infrastructure and Transport of Korea pointed out that since March 4, 2016 to November of the same year, the self-driving test license has been issued to several corporate units for on-the-spot testing, including Hyundai Motor and its Hyundai Motor. Biss, Kia Motors, National Seoul University, etc.

It can be seen from the above that South Korea is one of the first countries in Asia to fund autonomous driving technology. In addition to government support, Korean private funds have been involved in the development of autonomous driving since 2015. From the beginning of the university laboratory research and development, to the participation of commercial companies such as Hyundai Motor, Naver also announced that it will invest 470 million in five years. The dollar funds are fully developed in the direction of automatic driving and artificial intelligence.

Hyundai Mobis, the world's leading auto supplier, is also the largest auto parts supplier in Korea. Its layout in the field of autonomous driving has already been rolled out, and it has caught up with the development trend of autonomous driving very early.

As early as June 9, 2016, Hyundai Mobis issued a statement saying that it has obtained approval from the Ministry of Land and Transportation to allow unmanned vehicles to operate temporarily. Hyundai Mobis

driverless cars can be used in the highway designated by the government as the test operation area (Seoul - Xing - Hufa, 41 km) and National Highway (Suwon, Pyeongtaek, Yongin, Paju, etc.) Driving in the area. It is the first time that a driverless car has been approved to operate in a Korean parts manufacturer.

At present, Hyundai Mobis has applied unmanned technology to the modern Sonata, installed five radars on the front, rear and side of the vehicle, and equipped with front camera and control device. Radar and camera sensors are capable of detecting a 360-degree range around the vehicle, providing a variety of operational information. After the control device calculates the measured information, it can automatically adjust to a speed of 110 kilometers per hour by maintaining the distance to the front vehicle, preventing rear-end collision, and changing lanes.

2.4 Analysis of weak points in the intelligent vehicle industry

2.4.1 The overall data is complex, statistically difficult, and information security is difficult to guarantee

The global block-chain industry is growing rapidly, and block-chain applications are just getting started. Among them, the emergence of vertical industry entrepreneurs is bound to be the first model of the block-chain application, professional underlying technology, logical and

strict design, clearly hit the pain points of its application industry, these are the key to winning the market and accelerating development.

Today's vehicles are generating and processing unpredictable amounts of data. Advances in the vehicle industry have led to the development of interconnected vehicles, electric vehicles and autonomous vehicles, and vehicles are becoming the mobile center of information. This new concept of vehicles is changing the way we think about time, money management, entertainment and overall life.

Because of the acquisition of vehicle data, service providers have opened up new business opportunities to provide personalized services to vehicle users. However, due to unequal data transaction relationships between vehicle users and service providers (eg, vehicle manufacturers, vehicle service developers, vehicle insurance providers, etc.), it is also impossible to reward data supply by vehicle users. In general, personal data is only used as evidence to identify individuals, not as equivalent to any added value added. In particular, service providers who cannot provide advanced data protection can easily abuse customer data or even disclose data beyond the scope of the agreement.

Therefore, it is necessary to establish a trustworthy platform to quantify the value of vehicle data and provide a fair compensation system for data contributions. In this way, both the data provider and the data consumer will benefit from the transaction.

2.4.2 Centralized Internet of Things system is prone to problems and inefficiency

At present, the Internet of Things has become an important part of the Internet ecosystem. With the development of 5G and NB-IoT, IoT devices will expand rapidly in the future.

Most of the current IoT systems are based on the standards of their respective vendors, and the information they form is often discrete and fragmented, forming an island of fragmented information. There is still no real wide-area Internet system, which has a lot to do with the characteristics of the Internet of Things system, such as a large number of customization requirements, and the connection between the upper and lower links often has strong technical dependence, and the complete IoT system design. There are more things to consider than the Internet, and the knowledge to be mastered is both broad and deep. This is one of the reasons why the development of the Internet of Things is relatively slow. At the same time, it also produces a lot of information about the incompatibility of information and fragmentation. These point and line information data need to be holographically separated by chain information anchoring. Through cross-vendor access and clearing, it is beneficial to break the barrier of trust between local IoT and wide-area Internet of Things and improve information flow. At the same time, by

building the value of the IoT infrastructure, we can effectively assist in the unification of the Internet of Things standards.

In the operation and manufacturing of traditional industries, although enterprises often know that information technology can bring many benefits to enterprises, such as improving automation operation and management efficiency, it can enrich security measures and so on. However, the process of physics information is often costly (industrial informationization), and the measurement of cost factors and efficiency costs by enterprises hinders the process of enterprise informationization.

Among the traditional informationization costs, centralized cloud servers, large servers and network equipment, as well as a large number of information facilities such as sensors, information automation equipment and other infrastructure, and their maintenance costs will be very high.

IoT products are no longer treated as mobile peripherals. In the future, every hardware device in the Internet of Things should have independent computing, control, and communication capabilities. Any product can download APP applications independently, and the protocol standards between devices are the same, achieving true interoperability.

2.4.3 The overall ecological model too simple form , failing to combine users with manufacturers and service providers.

While data on the external and in-vehicle sources of vehicle use, equipment and components is already available, the systematic collection and management of data is extremely limited. Most vehicle manufacturers and service providers rely on a personalized system for data storage and management. Only the recently introduced interconnected vehicles enable electric vehicles and autonomous vehicles to generate data through interaction with roads, vehicles, pedestrians and the overall transportation infrastructure. As the vehicle industry advances, not only in-car data, but also related to charging and battery-related insights are considered valuable information. Advances in smart vehicles have also increased the demand for user data generated by various applications.

The problem is that the format of the collected vehicle data varies by vehicle manufacturer and service provider. In most cases, the data is technically incompatible with other systems and cannot be shared. While legal restrictions may lead to a lack of data sharing, the main obstacle to sharing vehicle data is the lack of a common technical framework. Due to the lack of a public agreement to collect data, participants were unable to properly understand how their personal information was used. In addition, even if the individual agrees to share his data with the service provider

under the contractual agreement, his contribution has not been fairly compensated.

At present, no organization or company is able to comprehensively collect valuable vehicle data generated in each part, including the communication system, internal and external systems, and application layers.

3 KarlBenz - Building a block-chain certification platform for ecological economy, helping vehicles develop intelligently

3.1 What is KarlBenz

KarlBenz is a data market based on block-chain technology that provides automotive, consumer and service providers with a block-chain infrastructure that can share and exchange automotive data. Not only does it create a platform for collecting data on unwanted cars, but it also compensates for all the data generated by all car users. In the past, useless car data will become a source of revenue for different services. A new business concept and model was born. With the ecological economy that creates value in a virtuous circle, KarlBenz is expected to become a leader in the field of automotive data.



3.2 Implication of KarlBenz

According to the analysis of professionals, most of the projects were issued for the first time, and the lack of relevant experience led to the lack of sustainability of the system. The entire vehicle consisted of tens of thousands of parts and more than 100 million lines of software code. This requires a complete architecture that enables secure management of the storage and propagation of vehicle data, but it is not easy to build and develop reliable and highly information-safe block-chains.

To sum up the above issues, the data certification of the vehicle industry requires basic skills related to vehicle and transportation construction, as well as the ability to develop a comprehensive safety

system. The vision can only be achieved when it meets the needs of the block-chain ecosystem. However, most of the certificates are composed only of preliminary ideas, lacking experience or practical ability. These block-chain companies are only established to attract investment, but there is no practical result in technology. This pain point has become a bottleneck in the development of the industry.

KarlBenz has developed the KarlBenz data platform and the KarlBenz wallet to address industry pain points such as vehicle data and the initial distribution of existing vehicles.

At the same time, unlike traditional block-chain projects, KarlBenz has already excavated existing products and absorbed real users, and has continued to improve and expand existing businesses, rather than starting projects from scratch. In contrast, this is less risky and more confident than direct issuance. The release of the KarlBenz Pass is aimed at developing the KarlBenz block-chain and running a safe and scalable data life cycle. This gives the KarlBenz platform a unique technology, model and security advantage.

The huge potential of KarlBenz will create a revolutionary automotive data market, as well as a benign development of the block-chain pass platform eco-economy. With the continuous popularization of smart cars, KarlBenz is bound to improve the economic ecology of the entire automotive industry, which in turn will promote the

entropy of the entire social and economic benefits, and help the intelligent development of vehicles.

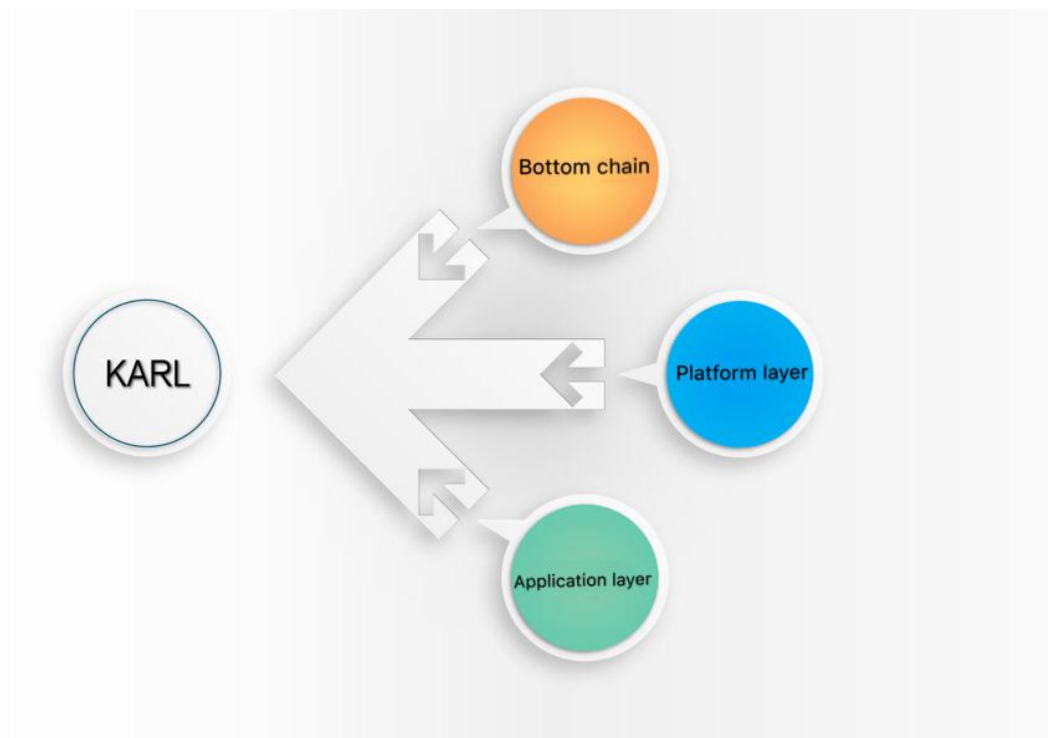
3.3 Technical characteristics of KarlBenz

The KarlBenz block-chain is designed to process large amounts of time series data quickly and efficiently, combining the practical Byzantine Fault Tolerant Algorithm (PBFT) and the Share Authorization Proof Mechanism (DPoS) concept, similar to Tendermint's algorithm. For the first category, this approach can process more than 1000 transactions per second, eliminating the bandwidth waste that can occur when using Workload Proof (PoW) or Proof of Entitlement (PoS) consistency algorithms. Vehicles and IoT devices will generate large amounts of data and record this data in the block-chain, and KarlBenz will create permissions for the block with the most computing resources and shared nodes (KarlBenz Pass) instead of letting The node competes for the block. Therefore, the Karbenz blockchain has the following advantages:

Maintain more than 1000 transactions per second (guaranteed 1000TPS)

The privilege saves the block creation permission. Block creation can only be done by the verifier with a majority of 2/3 protocols, so there is no branching problem

Through the ownership of the pass to compensate the node participants (such as IoT devices or vehicles) with limited computing resources in the existing share authorization mechanism consensus algorithm, the candidate is selected as the verifier through the voting process of the network participants to inform the community Their commitment and calculation specifications. However, there is a certifier selection issue when relying on the voting process.



First, candidates can register error messages (calculation specifications, etc.) about their nodes, and it is difficult to assess their commitments after the candidate has been selected. Secondly, there may

be a misplacement in voting for candidates. They think that these candidates will definitely win to get compensation. Finally, and perhaps most importantly, in order to choose a verifier, the network participants must repeat the voting process.

To solve these problems, only nodes that meet certain eligibility criteria can be selected as verifiers. Initially, 22 verifier candidates will be selected, but the number may increase in order to accommodate changes. For each required verifier, 10 candidates will be identified first, bringing the total number of candidates to 220.

The 22 selected verifiers will remain unchanged until 500 blocks are created. After creating 500 blocks, they will randomly select a new certifier from the candidate group. Nodes with verification history will be excluded from the current group, ensuring that each node has the same turn in the certifier role.

The consensus mechanism for block generation follows the "Proposal → Pre-voting → Pre-Submit → Submit" process outlined in the Tendermint protocol. According to the agreement, the risk of malicious activity is extremely low, because the average blocking time is expected to be only 1 to 2 seconds, and the verifier participating in the consensus process holds a deposit, and if any foul is found, the margin may be forfeited.

3.4 Advantage of KarlBenz

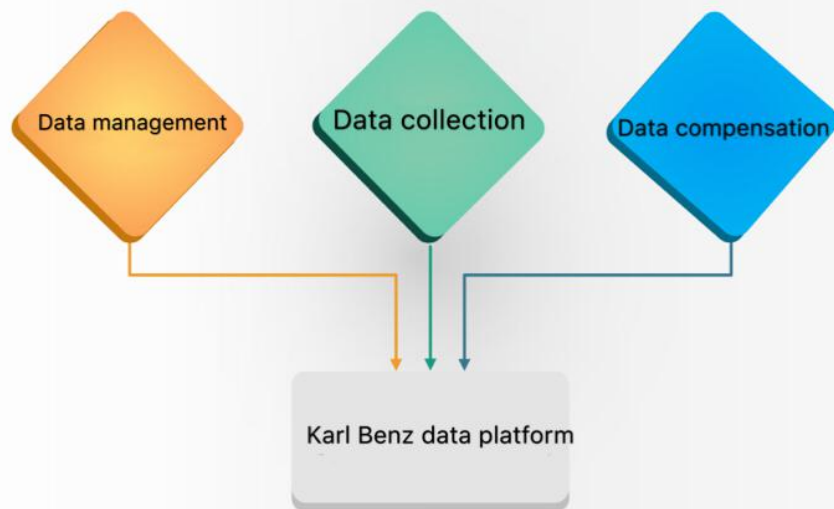
3.4.1 Distributed data collection management exchange

There are several very significant issues in the current automotive market, such as data management, unsystematic data collection, inefficient data provision, low returns, and insufficient information security. The value of data brought about by these problems has shrunk. The difficulty in collecting data on complete vehicle operating systems in the market and the risk of sharing vehicle information are too great obstacles and problems for the development of the current automobile market.

KarlBenz's vision is to create a safe and secure environment to share vehicle data based on expertise in the vehicle industry. With standardized data collection and vehicle data as trading units, a compensation system for data supply is constructed, and data security and privacy protection are applied in the block-chain.

Specifically, the KarlBenz platform only provides a trading environment with no data ownership. Any market-based value transaction involving the provision of vehicle data will be reasonably compensated by KarlBenz. The user agrees that the shared vehicle data will be stored in the KarlBenz block-chain with additional relevant information about transactions, data ownership and data usage rights. The decentralized storage method will be implemented by the peer-to-peer storage function

of the KarlBenz block-chain, and the storage space created by the organic system may be infinite. Decentralized stored data can be decrypted based on the data buyer's request only by authorization from the legal data owner



3.4.2 Decentralized, safe and efficient, data cannot be falsified and lost

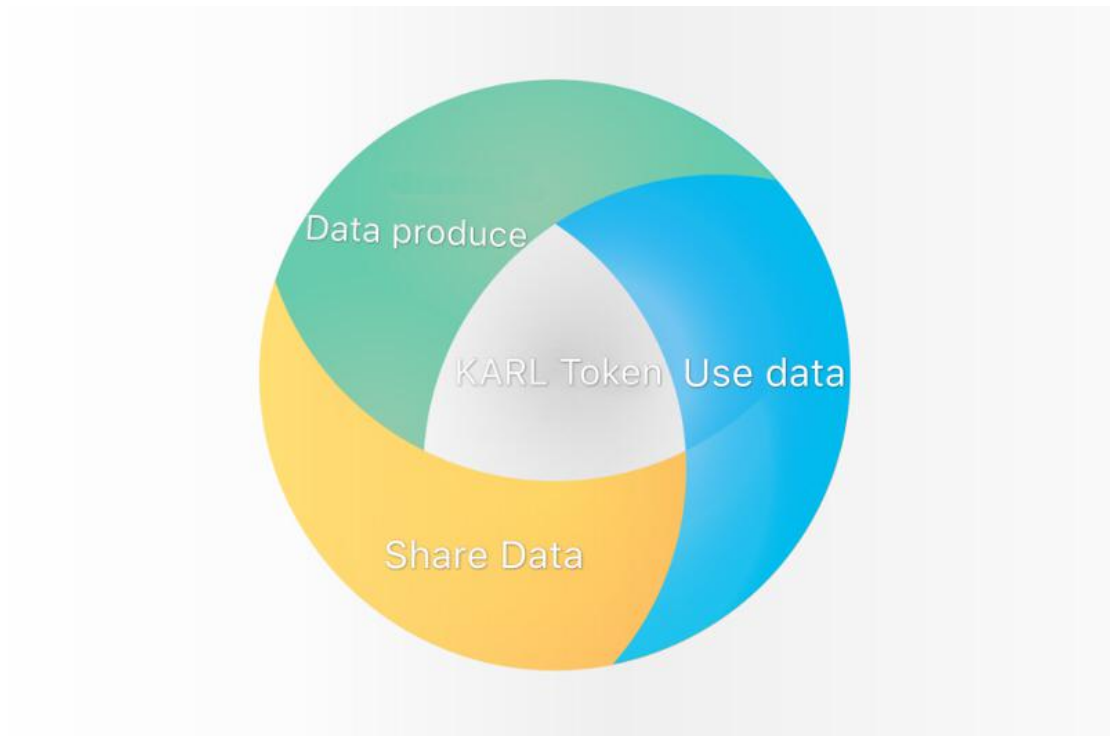
User-shared data is stored in the KarlBenz platform block-chain with additional information about transactions, data ownership and data usage rights. Similar to how data is typically stored in a block-chain, all of this data is stored in blocks. Raw data containing sensitive personal information will be encrypted, de-identified and fragmented for maximum security. This decentralized storage approach will be

implemented through the peer-to-peer storage capabilities of the KarlBenz platform.

Only through the authorization of the legal data owner can the decentralized data be decrypted according to the requirements of the data purchaser. The KarlBenz platform helps in the process of verifying credentials and permissions. However, the KarlBenz platform only involves connections to peer-to-peer networks and still does not have full access to the data. Finally, through the KarlBenz platform, the user's data is safely and secretly preserved, and cannot be tampered with and lost.

3.4.3 A virtuous cycle and creating an ecological economy that links and meets multiple needs

KarlBenz takes into account the interests of all parties in the market. Participants are both data producers and data users. You can get a pass through sharing car data, which allows the sharer's car to be more customized and more accurate maintenance or service, and the pass obtained through sharing can be used to purchase these services or unlock more data, data Consumers can obtain the right to withdraw and use data by paying the KarlBenz Pass, which can be said to form a closed-loop economic ecology based on information value.



4 Ecological framework of KarlBenz project

4.1 Data platform: building an integrated database to connect block-chain platforms for cars, users and service providers

The booming KarlBenz platform data is currently available for vehicle lifecycle management, vehicle fault prediction and safety improvement, authentic certification of vehicles and their components, and theft prevention, vehicle accident analysis, personalized vehicle insurance plans, and reliable use of used vehicles. P2P sells more than ten fields. Including not limited to:

Life cycle management (including vehicle parts replacement)

Vehicle failure prediction and safety improvement

Authentic certification and anti-theft of vehicles and their parts

Vehicle accident analysis

Personalized vehicle insurance plan

Trustworthy P2P sale of used cars

P2P power sale for vehicle charging

Provide location information service for vehicle charging and parking

Music and video streaming and billing

Experience content streams simultaneously in multiple vehicles

Local Dynamic Map (LDM) Service

Open participation bounty for vehicle data users

Safety supervision of vehicle-related personal information

In-vehicle or connected vehicle commercial/payment

The KarlBenz platform is essentially an IT system consisting of KarlBenz's market operations strategy, data strategy, security strategy and software. It is also responsible for community operations between participants and system support for the operation of the KarlBenz block-chain.

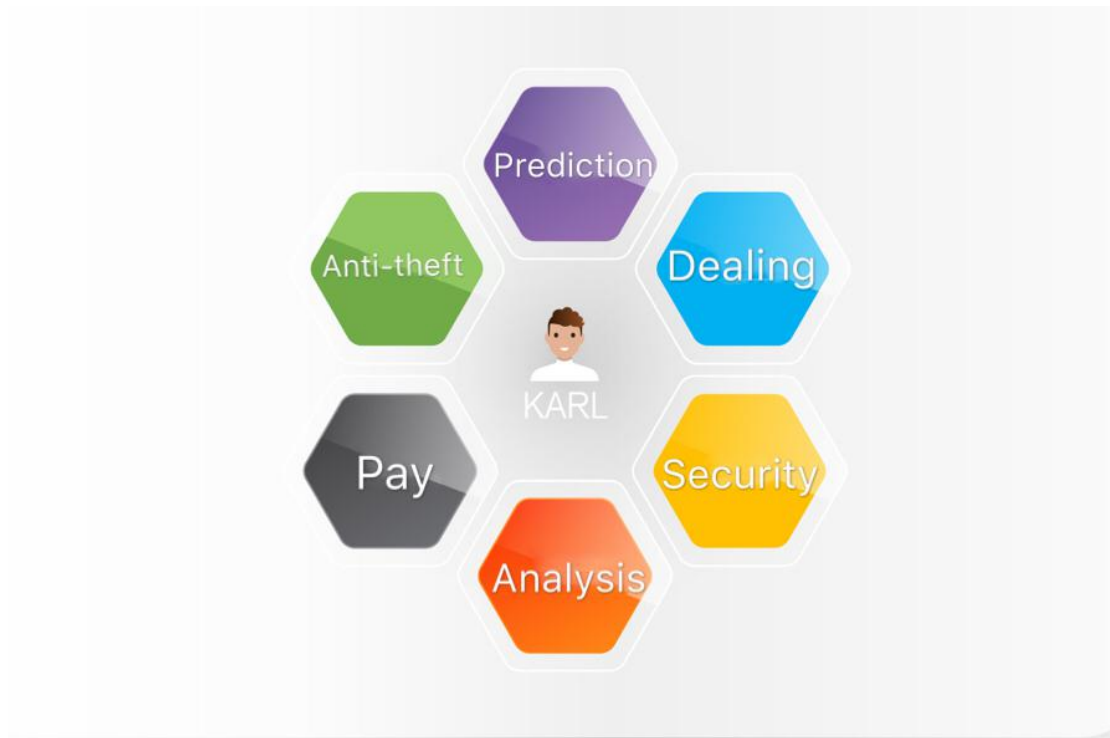
Despite the rising demand for vehicle data, one of the main reasons for not collecting and sharing data is that vehicle data standards vary by vehicle manufacturer. To solve this problem, each manufacturer's vehicle

data standard will be converted to comply with international standards.

While this may rearrange the order of the data values, it does not change the value of the data itself. In addition, vehicle data users will be provided with a rich application programming interface (API), which means that data buyers will be able to easily access vehicle data from the KarlBenz block-chain.

The value of vehicle data depends on the supply and demand of market data. The KarlBenz platform uses machine learning and collaboration protocols to calculate the optimal valuation to avoid the quantity and quality of market platform data when making compensation.

The KarlBenz platform does not interfere with vehicle traffic and processed data flows between market participants and the KarlBenz block-chain. The platform supports communications to enable smooth operations in the KarlBenz market, including policy and software distribution, key distribution and participant authentication certificates.



4.2 KarlBenz Mobile Wallet: Exclusive supporting security wallet development, give service for users

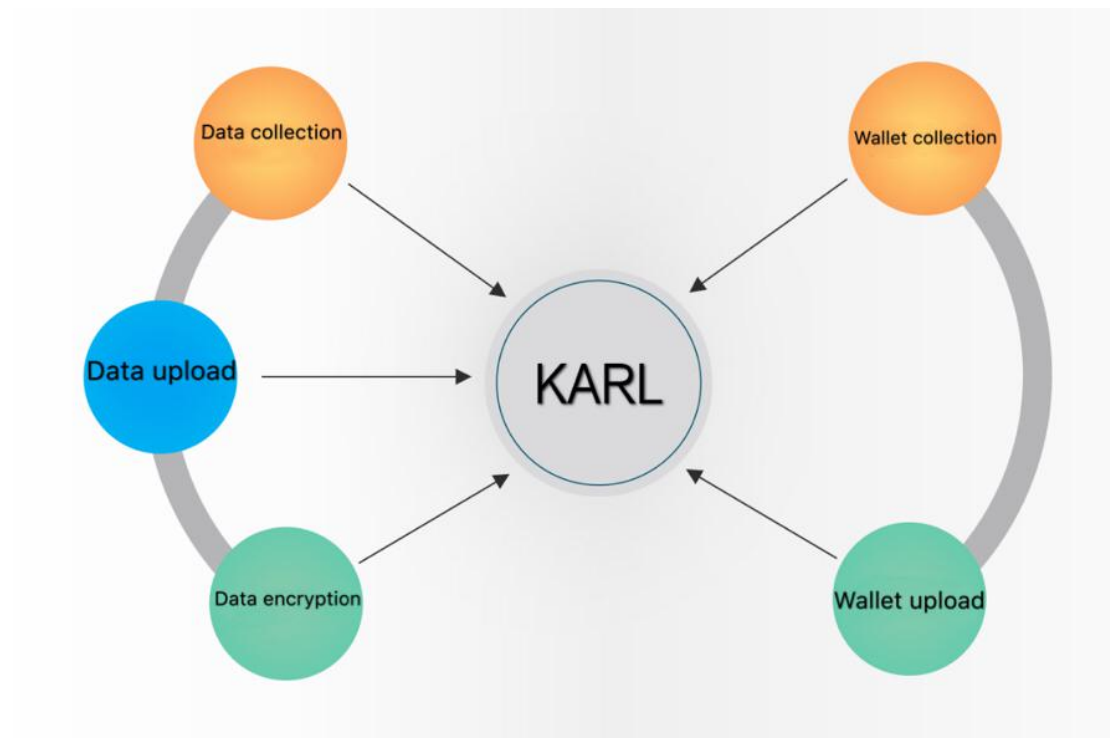
The KarlBenz wallet is also used as a client and node for the KarlBenz block-chain. The KarlBenz data collector transmits the collected in-vehicle data via Bluetooth to the KarlBenz mobile wallet on the smartphone. For vehicle data collected by the KarlBenz Mobile Wallet, highly sensitive personal information contained in the data is first encrypted and uploaded to the KarlBenz block-chain.

The vehicle data contains only part of the event data and the raw data of any raw data. Therefore, due to its small size, vehicle data can be uploaded in real time through a mobile communication network. However, if the collected data is more diverse and contains larger data such as video or voice, it can be uploaded via Wi-Fi or input to an additional storage location before being bulk uploaded.

Use software and hardware to collect vehicle data. There are two ways to collect internal and external generated vehicle data:

Data collection using the KarlBenz mobile wallet

Insert the KarlBenz data collector into the vehicle port for data collection. The collected data is first sent to the KarlBenz mobile wallet installed on the user's smartphone, and then any vehicle data containing personal or confidential information is encrypted and transmitted to the KarlBenz block-chain.



4.3 Ecosystem: a closed-loop economic ecology based on information value, combined with users, manufacturers, service providers

With the market principle of “Every participant contributes to market activities as both data producers and consumers”, automotive users, manufacturers, service providers and other automotive industry participants can provide automotive data and market Value to get the corresponding benefits.

Among them, the first is the production data compensation, which is compensated by the way consumers buy data in the KarlBenz market. However, rewards depend not only on supply and demand, but on the contrary, the value of the data is based on various elements of the purchase process. Determining rewards based on data values and

transactions is a core principle of health operations in the KarlBenz market. This is the basis for the market to self-regulate to ensure that only high-quality data flows and adjusts and stabilizes the value of KarlBenz.

The second is to participate in node compensation. The participation of the KarlBenz node has increased the reliability of the KarlBenz Block-chain and contributed to the development of the KarlBenz market. As a result, the KarlBenz Pass is rewarded by providing additional compensation to the nodes through the contribution of KarlBenz's peer-to-peer storage and by determining the contribution to the KarlBenz block-chain and market.

The third is that the block generates compensation. KarlBenz uses the DPoS algorithm, so the KarlBenz platform measures and discloses information contributed to the KarlBenz block-chain to support a fair and open representative selection process. The contribution information includes the capacity and quantity of the data transaction, the balance of the KarlBenz Pass, the average storage during the set time period, and the contribution of the transaction.



5 Token of Project

5.1 Token of KarlBenz standardization contract

KarlBenz Coin is a token of KarlBenz, with a total of 63 million pieces, which will never be issued; KarlBenz has an indispensable position in the overall ecology, is the carrier of value transfer, and flows between platforms, affecting the data. Production, data sharing, and data use make the entire platform ecologically healthier and more dynamic.

5.2 Issued plan

We believe that tokens are an indispensable module, and all rules are defined in the token module in KarlBenz. Designed for the system as an

application scenario to motivate development across the entire block-chain network. And every system will support KarlBenz tokens.

The total number of KarlBenz is 63 million, and all KarlBenz will only be generated by intelligent nodes. Of these, 20 million were all airdropped to all global community support members, and the remaining 43 million were collected in the mine pool for mining.

5.3 Operating system user interface

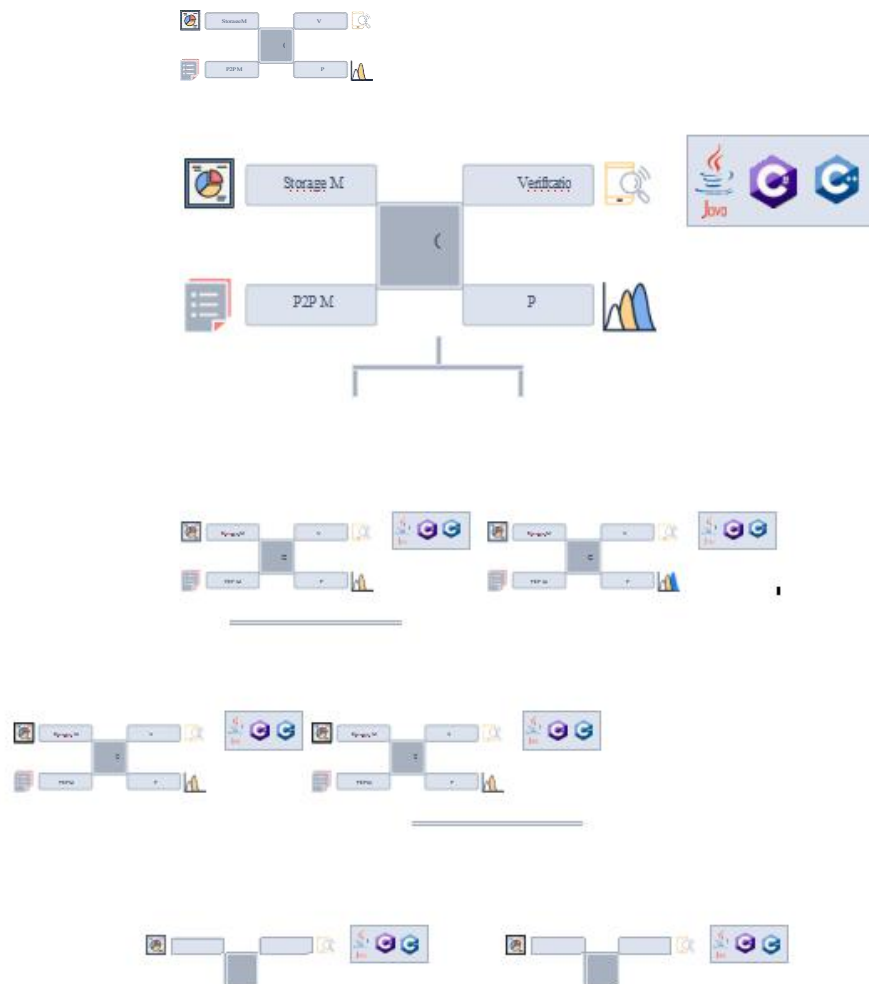
Intelligent contract execution

KarlBenz's intelligent contracts, is protocol rules, are executed automatically and can be generated in different ways.

Support native languages: Java, C++, Go, etc.

Distributed cloud storage

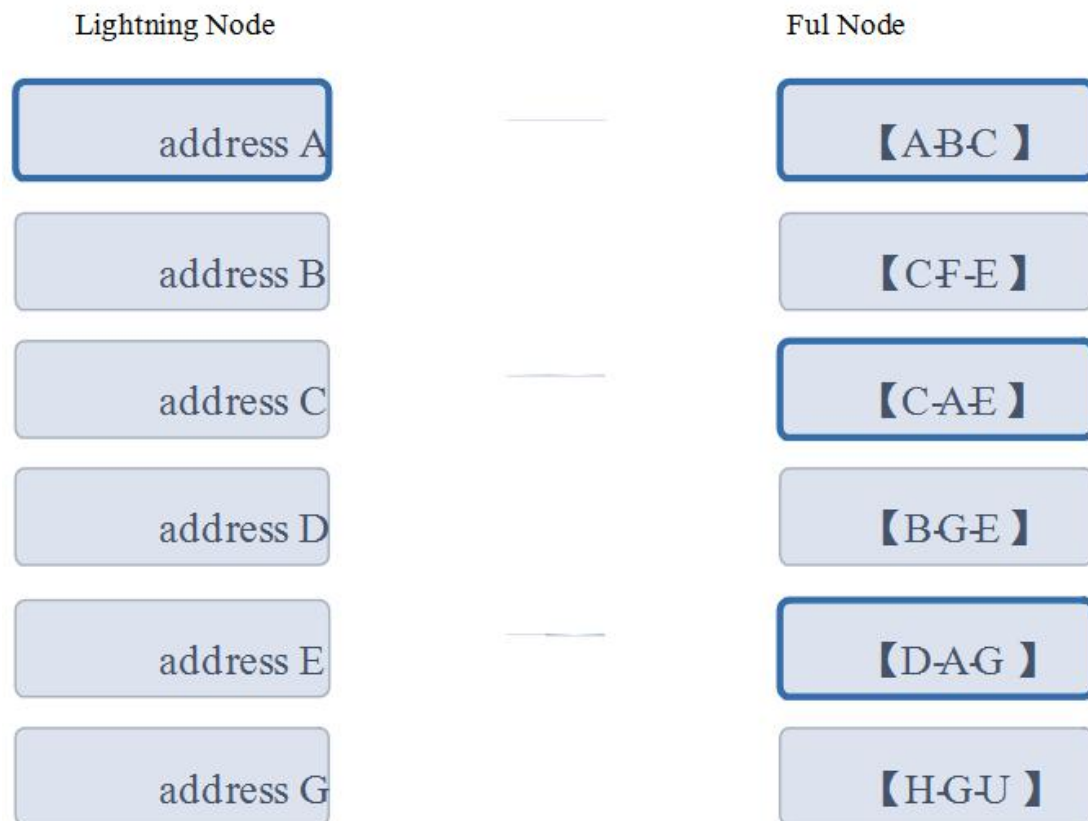
The KarlBenz system defines data structures and standards, and we use distributed database services to improve the system's IO performance.



Picture 5.3: User interface

Light node

Each node in KarlBenz only processes the system information corresponding to the address, making the client more portable.



Picture 5.3.1: Light node wallet

Data snapshot cleaning

KarlBenz uses timing snapshot block information and directs storage. Because it is difficult to store due to the large amount of data, the system will be able to discard some data according to the time period. Thereby ensuring the performance of the entire system. And the focus of the system should be based on new data processing

Detailed of MPOI

The core mechanism of MPOI is that from many nodes, some nodes become BP. BP is often a team with great influence in the industry, such as exchanges, well-known enterprises, etc. Block generation can only be done by BP. As shown in Figure 1.8, MPOI mainly needs to complete BP election and block generation.

```
do { //分成很多个round, round无限持续
    blockProduce = get N delegates sort by votes //投票选举BP
    blockProduce = shuffle(blockProduce) //随机改变顺序

    for (BlockProduce blockProduce:blockProduce){ //本轮round完了, 退出循环
        generateBlock(keypair of blockProduce) //产生block
    }
} while (true)
```

Picture 5.3.2: Implementation of MPOI mechanism pseudo code

BP election

The initial BP of the KarlBenz system is $100N+1$, $N=6$, which is enough to support KarlBenz

Early projects in the system. After that, according to the development needs of the actual business, the number of BPs can be added. To participate in BP's campaign, you need to pledge with a certain amount of ETH tokens, which can increase the cost of BP's evil. In each process of generating blocks, BP is first

selected by node voting, and then BP is sorted by pseudo-random number. Then, block generation is performed in order according to the order. This ensures that only one BP is generating the block at any time.

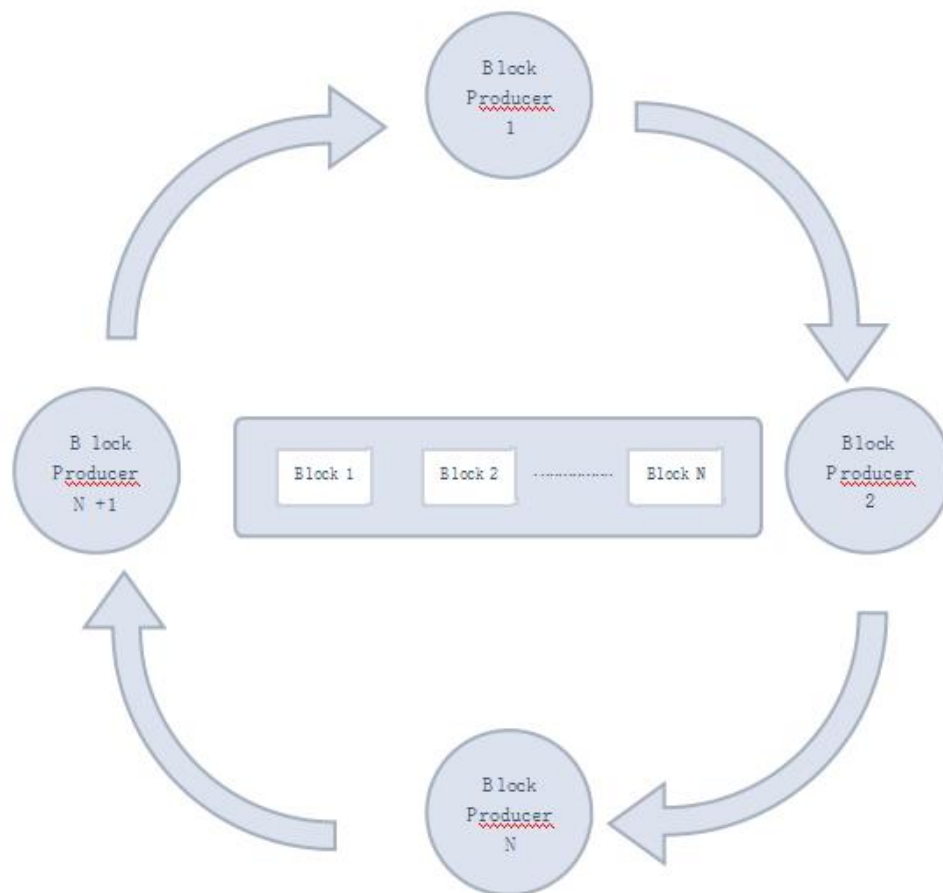
BP block

KarlBenz uses 3s to generate a block by default, if the BP does not generate a zone at a given time.

Block, there is a block loss, if there are multiple block loss, the system will be upgraded to 6s by default to generate blocks, to avoid the impact of block loss caused by delay between distributed BP. In theory, KarlBenz's BP is a very influential team, the team's information is open and transparent, while using the pledge XNT and the sequential generation of blocks

This greatly increases the cost of BP's evil. Therefore, in general, the KarlBenz system does not experience any forks. Even if a BP is out of order due to individual reasons, the block will switch to the longest according to the principle of the longest chain consensus mechanism. On the chain.

Picture 5.3.3: BP generation block



5.4 Team introduction



Yang Sung Hun(CEO)

He is a Ph.D. in computer applications at Seoul National University and a high school student at Seoul Science High School, studying science and computer applications. He has 5 years of IT technology planning and 10 years of IT management experience. He has been responsible for the technical system planning work of the Securities and Futures Exchange directly under the Korea Securities Regulatory Commission. He has long been working with the leading international exchanges such as the Nasdaq Stock Exchange, the New York Stock Exchange and the Euronext Exchange to carry out technical projects with the European and American technical framework. The division has conducted in-depth cooperation and exchanges, with a profound background in financial technology and a global perspective.



Park Sun Sing(CMO)

He has 8 years of active marketing experience, internet marketing or marketing related work experience. He helped NAVER to have brand marketing thinking, event planning and marketing communication capabilities to maintain creativity. And he has a certain influence in the blockchain industry in South Korea.



Jun Ki Bum(COO)

He has been engaged in many years of business experience in the e-commerce platform of LG's first search engine in Korea. He has more than 8 years of experience in the operation and management of e-commerce and social platforms in South Korea, and is familiar with all aspects of e-commerce operations. Jinqican has multi-platform (PC, mobile, third-party) collaborative operation, promotion, management experience. Familiar with e-commerce financial laws and regulations, regulatory policies and global industry and industrial policies, with rich financial business knowledge and practical experience.

6 Project timeline

In March 2018, KarlBenz Centralized Intelligent Technology Promotion Center was established.

In May 2018, KarlBenz smart car market research was launched;

In June 2018, KarlBenz product concept and logic were initially constructed;

In July 2018, KarlBenz began planning for vehicle intelligence based on block-chain technology;

In January 2019, the basic technical framework and business framework of KarlBenz's tokens were completed.

In April 2019, the KarlBenz token was traded on the exchange, and the Ethereum cross-chain smart contract was launched;

In May 2019, KarlBenz's platform partners began recruiting; the KarlBenz white paper 1.0 was released, the APP beta, the block-chain browser was launched, and the wallet was launched;

In July 2019, he entered the East Asian market in South Korea, Japan, Singapore, Malaysia, etc., and launched online English, Korean, and Japanese versions of APP, signing local partners;

In August 2019, KarlBenz's annual ecological conference was held, and 10 technical service companies, 6 industry associations, and 10 applications were fully signed;

In October 2019, KarlBenz 2.0 version of KarlBenz was released, providing more development modules to enter the European and American markets;

In December 2019, the partner conference was held, and 30 technical service companies were signed, covering the major provinces of Korea, with 20 applications and more than 10 overseas partners.

7 Risk statement

7.1 Risk assessment

As a new investment model, digital asset investment has various risks. Therefore, investors need to carefully evaluate the investment risk and their ability to withstand the risk, and then carry out specific operations.

Policy risk

Based on the current regulation of block-chain projects and digital asset swaps in some countries, it is not clear that there may be certain possibility of loss of participants due to policy reasons.

Regulatory risk

At present, digital asset trading has certain uncertainties. As digital assets are currently lacking strong supervision, digital asset tokens may have a sharp rise and fall. If individual participants lack experience after

entering the market, they may be difficult to resist instability. The impact of assets and psychological pressure. It is undeniable that in the foreseeable future, there will be regulations to introduce and regulate the blockchain and electronic token fields. If the regulatory body regulates the field, the tokens purchased during the swap period may be affected, including but not limited to fluctuations or restrictions on price and ease of sale.

Market risk

In the digital currency trading market, if the overall value of the digital asset market is overvalued, the investment risk will likely increase, participants may have too high expectations for the growth of the swap project, and the expectations for excessive high may not be realized.

Competitive risk

With the development of information technology and mobile Internet, digital assets represented by “bitcoin” are gradually emerging, and various decentralized applications will continue to emerge, and competition in the industry is becoming increasingly fierce. However, with the emergence and expansion of other application platforms, the community will face continuous operational pressure and certain market competition risks.

Risk of hacking or theft

Hackers and other organizations or countries have the possibility to attempt to interrupt the functionality of the KarlBenz platform in any way, including but not limited to denial of service attacks, Sybil attacks, guerrilla attacks, malware attacks and other attacks.

Risk due to loss of private key

The relevant registration credentials of the owner of the KarlBenz currency must be carefully preserved by the holder. Losing these credentials will result in the loss of the KarlBenz currency. The best way to securely store the login credentials is for the holder to have the key in one or several A safe place to store, and preferably not stored on a public computer. After the C

KarlBenz currency is picked up into its own digital wallet, the only way to include it in the operation address is the holder-related key (ie private key or wallet password). The user is personally responsible for protecting the relevant key for signing the circulation of the ownership of the asset. The user understands and accepts that if his private key file or password is lost or stolen, respectively, the obtained KarlBenz coin associated with the user account (address) or password will be unrecoverable and will be permanently lost.

Holder voucher related risk

Any third party obtains the holder's login credentials or private key, which means that it is possible to directly control the holder's KarlBenz currency. In order to minimize this risk, the holder must protect his electronic device against unauthenticated access requests. Pass and access device content, resulting in the theft of personal private keys, digital assets, etc.

The application or product does not meet the risks expected by itself or the holder

The KarlBenz platform is currently in an iterative development phase, and any KarlBenz currency or holder's expectations of the function or form of the KarlBenz platform or the KarlBenz currency (including the participants' behavior) may not meet expectations. Any erroneous analysis, a design change, etc., may cause this to happen.

Risk of uninsured losses

Unlike the bank account or other financial institution's account, the KarlBenz platform is usually not covered by insurance on the KarlBenz platform account or the relevant block-chain network. In any case, there will be no public organization of any loss. Your loss is underwritten.

Systemic risk

The risk of neglected fatal flaws in the KarlBenz platform software or the large-scale failure of the global network infrastructure, although some of the risks will be greatly reduced over time, such as repairing

vulnerabilities and breaking the computational bottleneck, but other risks remain Unpredictable, such as political factors or natural disasters that may cause partial or global Internet disruption.

Other risks

Cryptographic-based digital tokens are a new and untested technology. In addition to the risks mentioned in this white paper, there are risks that have not been mentioned or anticipated by the founding team, and other risks may suddenly appear. Or appear in a combination of multiple risks.

7.2 Supplementary explanation

Except as expressly provided in this Agreement, the Projector will not make any representations or warranties regarding the KarlBenz currency in this White Paper. Each participant's decision to obtain any KarlBenz currency shall be based on their own information on the KarlBenz platform, the KarlBenz coin and the information disclosed herein.

No liability statement

The Foundation hereby declares that it is not responsible for the following:

- (1) the use of sales revenue of KarlBenz coin;

- (2) Early termination of the sale of the KarlBenz currency for any reason;
- (3) Anyone who circulates or speculates on KarlBenz;
- (4) Failure to fully disclose any information about the development of the Karl Benz platform in a timely manner
- (5) Any failure, crash, rollback or hard fork of the KarlBenz platform source code;
- (6) any application, smart contract or other program on the KarlBenz platform;
- (7) list or withdraw from KarlBenz in any encrypted digital asset exchange;
- (8) Postponing or rescheduling the development of the KarlBenz platform, resulting in failure to meet any expected milestones;
- (9) Any KarlBenz sales participant's private key that reveals, loses or destroys his/her KarlBenz wallet;
- (10) The KarlBenz platform or the KarlBenz currency fails to meet any specific purpose or is not suitable for any particular purpose;
- (11) The failure or withdrawal of the development of the KarlBenz platform resulted in the failure to deliver the KarlBenz coin subscribed by KarlBenz coin to the holder;

(12) Anyone involved in the sale of KarlBenz coin violates any anti-money laundering, counter-terrorism financing or other regulatory requirements in any jurisdiction;

(13) KarlBenz is classified or considered by any government, quasi-government, authority or public agency as a currency, securities, commercial paper, negotiable instrument, investment or otherwise may be prohibited, regulated or restricted by certain laws Terms;

(14) Any person who violates any representations, warranties, obligations, deeds or other provisions of the Program to participate in the activity, and the resulting failure, and the inability to retrieve the payment or request the relevant purchase of the KarlBenz coin;

(15) Any risk factors disclosed in this plan, as well as any damages, losses, claims, liabilities, costs and other adverse effects associated with such risk factors.

7.3 legal Affairs

In the legal affairs cloud, KarlBenzl Centralized Intelligent Technology Promotion Center, if there is a need to seek legal advice, it needs to be confirmed by the Centralized Intelligent Technology Promotion Center.

Disclaimer

This document is for informational purposes only and does not constitute an opinion on the purchase or sale of digital assets. Any similar proposal or suggestion will be made under a trusted provision and with the applicable applicable laws, the above information or analysis is not Form investment decisions, or specific recommendations.

This document does not constitute any investment advice, investment intention or investment in investment in digital assets.

This document does not constitute or be construed as providing any purchase or sale, or any invitation to buy or sell any form of digital asset, nor is it a contract or commitment of any kind. KarlBenz does not assume any direct or indirect damages resulting from participation in the KarlBenz co project, including but not limited to:

This document provides the reliability of all information;

Any errors, omissions or inaccuracies arising from this;

Or any resulting behavior.

In addition, users who do not use the KarlBenz currency correctly, if they lose the wallet private key, may lose all rights to use the KarlBenz currency, and may even lose their KarlBenz coin. The KarlBenz currency is not a property of ownership or control. The ownership of the KarlBenz currency does not represent the ownership of the relevant personnel of the KarlBenz decentralized platform. The KarlBenz currency does not grant

any individual participation, control or anything about KarlBenz.

Decentralized platform decision-making rights.

Exemption

The Company's failure to require or enforce any of the terms of the KarlBenz Coin Sales Compliance, or the Company's failure to exercise this Agreement, shall not be construed as a waiver of the Company's rights or reliance on any such terms. The express waiver by the Foundation of any conditions or requirements of the Program does not constitute a waiver of conditions or provisions that are obligated to comply with the provisions in the future.

Title

The headings used in this plan are for reference only and will not be considered in the interpretation or interpretation of this plan.

Interpretation of the right to the final interpretation of this plan by KarlBenz's KarlBenz Centralized Intelligent Technology Promotion Core.