



## HEALTH OPERATION SYSTEM(HOS) White Paper

IoT Entity-based health-care

Data Service Platform

Health Operation System(HOS) Project Team Jun 2019

## Project Abstract:

Health Operation System(HOS) uses ultra-high continuity health data to establish evolving intelligent health-care AI. It is the world's first decentralized rehabilitation application based on blockchain technology focused on medical care and rehabilitation. The project includes the underlying blockchain system, offline physical health stations, rehabilitation Health Operation System(HOS)pitals and other medical institutions, as well as the online medical data + IoT system, using proprietary Token to motivate users to provide highly continuous, privacy-protected, traceable, irreversible and extensible medical data.

By securely sharing health data with the global health-care industry through blockchain technology and digital assetization, Health Operation System(HOS) is to become the world's No.1 health data sharing service provider. It has built a universal digital asset (HOS) for the global health-care industry, which can be used to pay for global wisdom, super health-care, health data, and super technology. The Health Operation System(HOS) team has 7 software copyrights and 6 patents in the field of pension health, and has become a blockchain technology partner for technology companies such as Panasonic, Hitachi, and ChinaSo. Health Operation System(HOS)'s Smart Medical Care System has gained extensive attention and recognition from multinational governments, the industry, the public and the media after 500 days of good operation and rapid growth, allowing the elderly to fully enjoy the convenience, comfort and well-being brought about by technological revolution.

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## I. Project Overview

### 1.1 Project Background

With the baby boom, increased health-care and growth in life expectancy after World War II, the trend of population aging has become a long-term problem faced by all developed economies in the world. In recent decades, there has been a new trend in the issue of aging: the higher the level of economic development, the lower the desire for fertility, and fertility rates are below 2.0 in all mainstream countries, and below 1.5 in many developed countries, which further exacerbates the problem.

Aging will make a country fall into a decade-long slow development or even a recession instead of a violent subversive crash. Therefore, mainstream economies have put the issue of addressing population aging as a long-term strategy that requires extreme attention.

The United Nations has recently released the 2017 revision of the "World Population Outlook" report, which shows that the growth rate of women' s fertility in

the world is modest, and the relatively low fertility rate leads to a clear trend of population aging. Globally, the life expectancy of the population from the year 2000 to 2005 was 65 years for men and 69 years for women, which rose to 69 years for men and 73 years for women from 2010 to 2015. If you use 2017 as a basis, the current global population aged 60 and over is 962 million people. By 2050, the population of this age group will be more than double that of today, reaching 2.1 billion people. In 2100, it will be more than three times today and will reach 3.1 billion people.

Aging of the population in some countries has continued for a long time. Among them, Japan's population aged 60 and above has accounted for 33% of its total population, Italy 29%, and Portugal, Bulgaria and Finland accounted for 28% respectively, all of which rank the top countries in the world with the most serious problems of population aging. The trend of population aging in China is also accelerating, with 16% of the population aged 60 and over. The report predicts that by 2050, the elderly population will account for 35% of the total population.

In addition, as the average life expectancy of the world's population increases, the ageing population of the LDCs will gradually increase. The huge population base needs more massive natural resources and government public services to support, which is an unbearable burden for these countries. This makes medical care needs become the future sunrise industry, and new-type smart medical care will undoubtedly become the new favorite of the health-care industry. At present, the market capacity of the Chinese medical care industry alone is as high as 20 trillion.

## 1.2 Market Pain Points Analysis

### **1.2.1 With the pension burden, the limited health resources are stretched under the combined effects of "nurturing" and "medicare".**

Retirement, no matter for the individual, family or government, is undoubtedly a tremendous pressure. From the government's point of view, the old-age pension policies and capital reserves formulated decades ago were based on the current level of consumption and average life expectancy, and it is obviously out of place right now. With the intensification of aging, fewer and fewer working population have to bear more and more public welfare benefits for the elderly population, and the funding gap is getting larger and larger. From an individual and family perspective, the inverted pyramid's family structure leads to increasing pressure on providers, and the slowdown in the global economic growth has limited the growth of household income. In addition to meeting the needs of the elderly for normal life, the provider often needs to consider the medical burden of regular physical examinations, chronic diseases, and other diseases. Therefore, it will become an urgent problem to be solved whether it is possible to effectively reduce the proportion of the elderly's health-care costs that individuals and families bear, and whether it is possible to innovate mechanisms, effectively integrate industrial resources and dilute individual pressure to bear the burdens.

### **1.2.2 Nurturing without medicare, or medicare without nurturing, makes services deviating from user experience**

Many pension institutions around the world can only provide old-age care services and cannot provide medical services, while Health Operation System(HOS)pitals

can only provide medical services but cannot provide old-age care services. Old people lack the freedom and care of the family in the old-age care institutions. This situation makes the elderly in nursing homes often go between families, nursing homes and Health Operation System(HOS)pitals, not only fail to get timely treatment, but also cause great burdens on family members and the community, causing the elderly to experience depression and suffering in their later years. On the other hand, due to the inability of the nursing home to provide specialized rehabilitation care services, many elderly people regard the Health Operation System(HOS)pital as a “pension home” . Even if they are cured, they will still occupy beds and not be discharged from the Health Operation System(HOS)pital. This will result in a serious "pressing bed" phenomenon, so that the Health Operation System(HOS)pital's high-quality medical resources cannot maximize its effectiveness.

### **1.2.3 Lack of standardization in health-care facilities and service systems**

Due to a lack of overall planning for a long time, the entire health-care industry is in a state of fragmentation and disorder. Products, service items, service levels, and fee standards are uneven, and there are even illegal operators maliciously defrauding money and threatening the lives and safety of the elderly, making it difficult for consumers' interests to be guaranteed. On the one hand, it requires the government to formulate strict laws and regulations to restrict it. On the other hand, it also needs industry pioneers to give full play to their industry influence and use the advantages they hold to formulate relevant service procedures, service specifications, charging standards, service outlet density, industry access qualification, and other standardized



regulations, so as to regulate the industry to enter the healthy track of self-regulation and self-management.

#### **1.2.4 Poor collection and circulation of industry data, lack of data accumulation mechanisms for making scientific decisions**

Due to the lack of standards, decentralization and independence, together with the data barriers set by traditional medical institutions, the basic data of the health-care industry are in fact isolated forms. Without sufficient basic data accumulation, it is impossible to establish a sound industrial database, and it is impossible to guide industry operators to scientifically and effectively develop new products and services that meet consumer needs. Therefore, it gradually becomes the consensus of the development of health-care industry to establish scientific data collection methods and management mechanisms, to develop safe and standard data sharing and circulation mechanisms, and eventually settle out the completed industrial database platform.

#### **1.2.5 Insufficient protection of user privacy data**

Since entering the Internet era, the game between the progress of IT technology and the protection of user privacy has been a subject of great concern. New products and new services cannot be sacrificed at the expense of user privacy. Traditional user service scenarios often involve illegal collection, use and dissemination of user privacy data, which results in unknown identity of the data user as well as unknown data usage, collection scope, usage method and diffusion scope. More importantly, the process of using user-sensitive data is not perceptible or uncontrollable to the user. As the commercial value generated by the user data cannot be transferred back to the user

itself, how to use the emerging technological means to construct controllable use and dissemination mechanism of data has become crucial to building mutual trust between enterprises and users and promoting the rapid growth of industry data services.

### **1.2.6 The lack of third-party credit accumulation and monitoring methods in the entire industry ecosystem**

Due to the lack of a credible third-party industry credit data platform, it is impossible to achieve effective supervision and information disclosure as to whether the enterprises in the business process are trustworthy and whether they fulfill their commercial commitments. This requires not only companies with a sense of social responsibility to come forward, but also more attempts and innovations in platform implementation and technical protection, to use multidimensional means to ensure that credit data are obtained legally, conveniently, objectively and comprehensively.

## **1.3 Solution**

The project team keeps pace with the development of cutting-edge technologies, and establishes a shared community ecosystem Health Operation System(HOS) based on the underlying technology of blockchains for health data management from the perspectives of user experience and industry development. The decentralized structure enables data information to be controlled and transparently distributed, so that all data is distributed in the bookkeeping and storage, business rules are combined with smart contracts, and the data platform is globally integrated. It effectively communicates credit and value within the community ecosystem and creates a new type of user health life experience.

Health Operation System(HOS) Smart Medical Care is a new model of healthy living and happy old age. The combination of medical care and health-care is an effective combination of modern medical service technology and endowment security model, which has achieved the innovation of old-age security model of “disease treatment and diseasefree nurturing” , and has become a hot issue that the government’ s policy-making departments and scholars are paying attention to. The Smart Medical Care is based on the combination of medical care and health-care, to provide sensor network systems and information platforms for home-based seniors, communities, and elderly care institutions, and on this basis, it provides real-time, fast, efficient, low-cost, materialbased, interconnected and intelligent elderly care services. Health Operation System(HOS) has a unique intelligent medical care model, a physical+integration incentive model and a community IoT station that provide high-quality health-care service experiences for seniors and families.

## II. HEALTH OPERATION SYSTEM(HOS) and HOS

### 2.1 Health Operation System(HOS) Community Platform

Health Operation System(HOS)'s community platform will be based on blockchain and distributed applications, and will enable low-cost, high-yield, high-performance data storage and data analysis operations by building a distributed cloud infrastructure. At the same time, Health Operation System(HOS) will use the HOS to carry ecological value and transmit and share the value of ecological growth according to the different contributions of various community ecological roles.

A blockchain-based distributed cloud computing infrastructure will allow

ondemand, secure and low-cost access to the most competitive computing infrastructure. DApps will automatically retrieve, find, provide, use and release all computing resources such as applications, data interfaces, health data and servers through Health Operation System(HOS).

As a result, we have built a new ecosystem through Health Operation System(HOS) that allows companies, computing plants, data providers, virtual Health Operation System(HOS)ts, and SaaS applications that provide storage space to securely share health data and conduct business activities with each other.

## 2.2 HOS

KANGB INTL (hereinafter referred to as HOS) is the value delivery tool that is distributed and uniquely recognized in the Health Operation System(HOS) ecosystem. The total number of issuances is 6 billion, and will never increase. Ecological roles can receive HOS awards based on their own contributions to ecological development. They can also use HOS to purchase data products, health-care products and services in ecological communities, so as to reduce personal pension burden, and organically connect various roles to form a unified ecological common interest and value chain.

## 2.3 Health Operation System(HOS) Community Service Features

- Offline entities: focused on the practical application scenarios, Health Operation System(HOS) will independently build 10,000+ offline stations and jointly develop 35,000+ joint stations, opening data interfaces that can be shared by 100,000+ medical institutions and applying Health Operation System(HOS) to elderly people.

- Medical care entrance: Health Operation System(HOS) combines traditional

pension institutions and medical institutions, and takes health data as the core to create an affiliate model for health stations + smart IoT + professional medical institutions to provide a new type of diversified, full-cycle medical care service for the elderly.

- Technological services: the blockchain-based data technology is applied to intelligent hardware, AI systems, rehabilitation centers, smart language partners and silver media to provide continuous medical care services and effectively improve the elderly's old age quality of life.

- Silver Age media: a multi-faceted exclusive media channel with new TV + new paper media + new retail + new broadcast + new radio will be created, to form a new ecology of Silver Age media, with the aid of AI language partner system, to realize all-weather warmhearted companionship and become a strong entrance for human endowment. It provides hypermedia services to service companies in all sectors of the health-care industry and the entire industry chain.

- Filial Heart Mall: Health Operation System(HOS) has also considered the characteristics of passive shopping, physical consumption, companionship needs, security assurance, and simple operations of the elderly. It has developed a full-screen, full-voice, one-click shopping mall, specifically designed for 1 billion elderly people.

- Medical Road with You: Health Operation System(HOS) adopts a high-viscosity, high-precision IoT member model to continuously record the behavioral data and health data of health-care for the elderly, which provides consumers with the ability to retrospectively reconstruct health data, and provides the basis for accurate medical support for medical institutions and rehabilitation institutions.

## 2.4 Health Operation System(HOS)' s Existing Products and Landing Services

### 2.4.1 Health Operation System(HOS) portable health monitoring equipment

Health Operation System(HOS) has developed health detectors and other hardware devices and packages, which are embedded in Health Operation System(HOS)'s default applications and can automatically upload collected health data. Health Operation System(HOS) automatically issues corresponding HOSs to collectors as incentives based on the user's data contribution.

### 2.4.2 Elderly behavior acquisition terminal

### 2.4.3 Ecological community foundation cloud platform

Health Operation System(HOS) addresses the needs of all distributed computing system participants in the ecological community:

2.4.3.1 DApps providers can perform out-of-chain calculations as needed and introduce more health-care developers to participate.

2.4.3.2 Application providers can fundamentally reduce the operational costs of distributed applications by using a secure, robust, and reliable Health Operation System(HOS) infrastructure.

2.4.3.3 Data providers can expand their potential market scale by integrating their services with the Health Operation System(HOS) cloud computing platform, and expand the volume of health data in batch systematically to improve the value of medical health data.

2.4.3.4 Server providers can leverage underutilized computing resources and

increase the return on investment of existing infrastructure by seeking higher profits in providing servers to the Health Operation System(HOS) distributed cloud.

2.4.4 Health-care service station network spreading over living communities

Health Operation System(HOS)' s Smart Medical Care Team has collaborated with more than 10,000 landing health stations to provide protection for terminal data collection. Health Operation System(HOS) is a smart health-care sharing operator. Currently, the business of landing projects covers intelligent communication services for the elderly, home terminals, health management services, aging adaptation and home services. Health Operation System(HOS) has launched smart monitoring devices, set-top boxes and mobile applications to provide digital services and information across the screen for the elderly; the Health Operation System(HOS) team develops the medical care platform chain services through direct participation, cooperation and embedding, and allows users to open up and share with industry chain partners to provide flexible blockchain services for the global development of the aging industry.

### III. Ecological Composition and Business Logic

#### 3.1 Overview

With the advent of the era of big data and blockchain, the traditional medical care industry is facing a huge impact. The new round of global smart health-care revolution in 2018 clearly puts forward the prospect of using blockchains to “establish a practical and shared health-care system” . Health Operation System(HOS) will use blockchain technology and smart contracts to make solutions to the challenges of health, retirement, and smart health-care. It will use smart medical data as its core engine to

accelerate the development of global smart health/smart medical care industry. By 2020, in the world leading countries such as Japan, China, and the United Kingdom, a smart health/smart medical care industry system covering the whole life cycle will be basically established, and more than 10,000 smart health/smart medical care application demonstration bases will be established to accelerate offline service stations into a network. Currently, there are more than 10,000 service terminals in contracted stores, directly serving 25 million elderly people, and serving 150 million elderly people through the Open Chain Access Protocol, achieving the application of safe, anonymous, editable, open, distributed, irreversible, traceable and highly continuous smart medicare data to the health of 2 billion people worldwide, becoming the world leader in health data, and creating a group of world-class smart medicare service brands.

### 3.2 Health Operation System(HOS) Eco Service Objects

Health Operation System(HOS) Community Ecology serves the following roles:

**3.2.1 Health-care population:** The main service groups for ecological healthcare services are also major contributors to the health data in the community. On the one hand, this group of people can use HOS to purchase health-care equipment and services to meet their own pension, health and medical needs. On the other hand, they can rely on their contribution of personal health data to the ecological community to obtain HOS awards, thereby reducing personal consumption burden.

**3.2.2 Data buyers:** Institutions that have practical needs for basic health data include health-care equipment producers, drug developers, service agencies, medical institutions, research institutions, analytical information agencies, government agencies,



etc. For the purpose of developing or improving the quality of their products or services, data buyers consume a large amount of HOS, to purchase personal health data contributed by the health-care group, and use the data legally to perform relevant analysis on the premise of ensuring the privacy of users. The HOS consumed by data buyers will be returned to the health-care population who contributes the data in accordance with the provisions of the smart contract, achieving an effective transfer of the data value.

**3.2.3 Service providers:** refer to the service providers who depend on the community ecology to provide users or customers with specific problem solving capabilities in return for compensation, such as the interpretation of the user's medical examination report, the interpretation of personal health data, personal care service, health-care counseling service, network quality inspection, random user interviews, etc.

**3.2.4 Marketing channels:** refer to institutions that have the ability to expand the purchasing population and improve sales efficiency for health-care products or services in the ecology, including multi-level sales agencies, ground promotion, media, node users, etc. The marketing channels will receive HOS incentives based on the development of customers, the volume and quality of orders.

**3.2.5 Investors:** the top role of the ecological food chain, who select a financing project worth attention according to the ecologically accumulated marketing data and credit data, use the held HOS to invest in the project and receive the share return of project sales.

### 3.3 Detailed Business Logic

3.3.1 Data buyers need large amounts of real and effective personal health data for big data analysis based on the need to develop or improve their own products and services, and guide themselves to optimize your product operations strategy. After purchasing HOS on a third-party trading platform, data buyers can purchase platform big data analysis products, and request to purchase user's personal health data on the premise of ensuring user privacy.

3.3.2 The health-care group will receive a personal data use application, which contains clear information such as the applicant's identity, the application data range, usage, mode of use, diffusion scope, etc.

3.3.3. If the user is willing to authorize the use of personal information, he may sign the private key and approve the use application. The use of such a mechanism can protect the personal privacy of users to the greatest extent and prevent the misuse and misappropriation of personal health data.

3.3.4 Users who authorize the use of their personal health data will receive HOS awards based on the quantity and quality of contribution data.

3.3.5 After obtaining sufficient data, the data buyer can develop a better product or service and submit a sales application.

3.3.6 At the same time, each service provider can also standardize their respective service capabilities, open it to the platform community and submit applications for sales.

3.3.7 Products or services submitted to the platform will be approved for sale on the basis of the ecological regulations after being reviewed by the operation team, and will be officially presented to the health-care group.

3.3.8 The health-care population can use HOS held in their hands to purchase products and services that meet their own needs. HOS can be obtained by contributing personal health data, or by participating in award-winning interactions (such as prize surveys, product trials, etc.), and can be purchased directly at a third-party trading platform. All users' purchase order data will be stored in the underlying blockchain account as a basis for user rights and merchants' sharing reconciliation. After using the product or service, the user may submit the use evaluation to the community platform and record it into the underlying blockchain account book as an important component of the credit data of the service organization.

3.3.9 After purchasing a large amount of HOS, marketing channels can bid for a certain product or service, and can also purchase goods.

3.3.10 Marketing channels can use their own advantageous resources to bring more consumer users to the ecosystem. They can also optimize sales efficiency and increase sales of goods or services.

3.3.11 After receiving the order, the product or service provider delivers the product or provides the service in compliance with the promise.

3.3.12 The HOS paid by the user will be automatically distributed to each role's wallet in accordance with the smart contract agreement. The merchant can perform reconciliation at any time according to the transaction data recorded in the underlying account.

3.3.13 After holding a large amount of HOS, investors can filter out projects with investment value to support based on historical data and credit scores of data buyers or

service providers. The investment income distribution contract will be written into the platform blockchain using smart contracts.

3.3.14 After the investment project has been put on the market, the fees paid by the users will be automatically allocated to the investor's wallet according to the agreed percentage in the smart contract, and the investment recovery will be completed.

### **3.4 Overview**

Health Operation System(HOS) eco-community integrates the roles of manufacturing companies, service providers, research institutions, government departments, investment institutions, terminal consumers, media and agency channels of the health-care industry to open up the interests of each role with HOS and establish a value transmission chain. Blockchain technology is used to build a controlled information synchronization mechanism to enhance mutual trust and enhance the freedom of ecological operations. With interest feedback and effective privacy protection mechanisms, a large number of personal health data are collected, and a global data service cloud platform is built to provide the basis and prerequisite for the big data application in the health-care industry. Health Operation System(HOS) believes that through the brave innovation of new technology and new mechanisms and the unremitting efforts of the project team, we can create a new smart health-care model and become the de facto standard for the new generation of health-care industry.

## **IV. Platform Economic System and Token Demand Estimation**

HOS is used as the only value delivery tool in Health Operation System(HOS) eco-community. As the entire eco-environment matures, HOS will have more and more

application scenarios, and will be recognized by all parties due to its cross-regional, intermediary, transparent and automated value transmission. The overlapping of multiple demands will lead to the market's demand for HOS much greater than the total supply of circulation. Accompanied by the rapid growth of the entire market environment will be the clear appreciation trend of HOS.

#### **4.1 Analysis of HOS Application Scenarios**

**4.1.1 Purchasing products and services in ecological community** When using HOS to purchase health-care products and services, health-care end users only need to pay for the gap as they can obtain HOS awards by contributing personal health data or participating in the community's award-winning interaction, which effectively reduces their economic burdens. The use of HOS can obtain much greater preferential margins than direct currency payment, resulting in a strong sense of identity with HOS among health-care groups. At the same time, HOS has the ability of intermediary transfer, so that end users with health-care needs can easily purchase cross-regional or multinational products or services they need, and eliminate unfavorable factors such as frequently changing foreign currency, assuming exchange rate losses and high commissions in traditional payment scenarios. When the community's ecology covers a large enough number of people in health care, it will form a large and fixed HOS buyer's market.

**4.1.2 Purchasing the right to use health data** Data buyers in the eco-community will form another large-scale stable HOS buyer's market. The service platform with a large amount of complete data is undoubtedly attractive to commercial organizations

and research institutions. Regardless of whether it is for commercial purposes or research purposes, Health Operation System(HOS) is an eco-system worthy of these data buyers to invest a lot of resources in purchasing data products and data services.

**4.1.3 HOS-based interactive activities** The community interactions such as prize surveys, special mission rewards, product trials and prized promotion activities will further increase the community activity generated by HOS stimulus, making the position of HOS as the only value in the ecological community unshakable.

**4.1.4 Profit distribution and value transmission under the constraints of smart contract** The combination of blockchain + smart contract + Token has resulted in a completely new method of smart flat rights benefit distribution and value transmission. Obviously different from the traditional funnel-type or pyramid-type value transmission model, this distribution method removes the moral hazards and financial risks that may occur in the intermediate links, and avoids the break of the value transmission chain. As a result, the roles within the ecosystem are increasingly inclined to directly accept HOS as a means of payment.

**4.2 Ecological Growth Forecast and HOS Demand Estimation** In the next 30 years, the global health-care market will usher in the development of blowout opportunities. At present, the global population aged 60 and over is 962 million. By 2050, the population of this age group will be more than double that of today, reaching 2.1 billion people. Health Operation System(HOS)'s development goal is to form a service network covering major economies in the world by joining community service stations and cooperative medical services by the end of 2020, covering and serving 150 million

people.

Assuming that the proportion of paying users in the user population is 10%, with ARPU calculations that generate \$1,000 per user per year in the ecosystem, the total transaction amount generated by end users will be as much as \$15 billion by 2020:

$$\text{Transaction amount} = \text{total number of service users} \times \text{percentage of paying users} \times \text{single-user annual ARPU}$$

The amount of data purchase transactions derived from the health data contributed by such a large end-user group will also reach astronomical figures. The total amount of HOS demand caused by such a large transaction amount will far exceed the total amount of circulation provided by the secondary market.

## V. Future Development Space

After meeting the users' basic health-care needs, the ecology will actively open up broader business scenarios, including:

### 5.1 Big data combined with artificial intelligence personal health assistant

Based on the massive user health data accumulated by Health Operation System(HOS), the ecology will quickly train AI products that use real-time interpretation of personal health data and maintenance advice as the main application scenarios. As a virtual personal health assistant for the health-care user, it will give full guidance and assistance for the user's diet, rest, exercise, rehabilitation, medication, etc.

### 5.2 Development of Insurance Market

The difficulty and the high price of buying life insurance for the elderly has always

been a pain point in the market. Insurance is a financial product based on actuarial and risk control. The old-age life insurance market has always been the difficulty in product development for commercial insurance companies, for which the reason is that the elderly are in a state of unstable physical health and have a high probability of encountering malignant diseases. The more important reason is the lack of accurate basic mass data, making it impossible for the insurance company's actuarial to develop risk-controllable products and business models. By joining the Health Operation System(HOS) ecosystem, insurance companies will be given the ability to access massive, continuous and accurate user health data in real time. This will help them establish an elderly health data model and use platform data for ongoing calibration. It is believed that the development of old-age life insurance products will have a decisive boost.

### 5.3 Tourism and Wellness Business

With the development of the global tourism market, more and more consumers have begun to accept the concept of tourism consumption, making the tourism market gradually become a component that cannot be ignored by all countries. However, the existing tourism market and teams are mostly based on sightseeing. They have complicated and compact settings, and the sense of fatigue is much higher than that of pleasure. It is difficult to relax the mind and body. Health Operation System(HOS) will make full use of its own resources and the convenience of HOS payment, actively open up partnerships with convalescence conditions, and develop tourism routes and products with the main purpose of body rejuvenation, so as to make users truly stay away from the hustle and bustle and fully release their burdens, and to provide travel



solutions that are closer to needs for the health-care population.

## VI. Technical Features of Health Operation System(HOS) Platform

### 6.1 Health Operation System(HOS) Platform Infrastructure:



### 6.2 Key Technical Advantages of Health Operation System(HOS)

6.2.1 The development of a robust distributed computing market network requires breakthroughs in the following technologies:

6.2.1.1 Development of Contribution Proof Agreement to provide provable consensus, traceability and credit;

6.2.1.2 Develop of smart contracts to achieve the acquisition and provision of computing resources and automatic implementation of post-payment;

6.2.1.3 Development of technologies that allow distributed applications to access out-of-chain computing resources on demand;

6.2.1.4 Development of technologies for the promotion and use of computing resources on the market network;

6.2.1.5 Development of solid, systematic, secure, private, irreversible, highly continuous and quality data services;

6.2.1.6 Verification by tracking resource usage and providing Service Level Agreements (SLAs) to customers and suppliers to support SLAs for resource utilization.

6.2.2 Health Operation System(HOS)'s upcoming health data management solution will enable it to rapidly develop into the world's leading distributed computing market. Its current concept verification system and data collection sequencing system have been successfully developed and operated, and will be applied to at least 30 items for highly continuous data, including basis health data such as height, weight, BMI, hemoglobin, uric acid concentration, blood glucose concentration, cholesterol, TCM constitution, heart rate, pulse rate, high pressure, low pressure, body temperature, oxygen saturation, basal metabolism, body mass index, fat content, body type judgment, etc., as well as continuous medical data on the elderly, such as medical data, activity data, fox data, etc.

### **6.3 Health Operation System(HOS) Features**

Health Operation System(HOS) provides health data services to decentralized app developers for health care. To ensure the highest levels of performance, reliability and scalability, Health Operation System(HOS) applies clustering technology. A cluster is a large group of nodes (computers) that can collectively store and manage data. Some nodes in these groups may stop running, and new nodes can appear with minimal impact on the network. In general, Health Operation System(HOS) is a large cluster of multiple clusters.

6.3.1 Performance: Health Operation System(HOS)'s unique and proprietary clustering technology is designed to achieve the highest system performance. Health

Operation System(HOS) can reduce latency by retrieving data from the nearest node in the leaf group, and dramatically increase speed by retrieving data in parallel with the fastest nodes in the leaf group, just like torrents and seeds. Since the data requests and the process of requesting data fragments from all the different clusters containing these fragments are parallel, and these fragment retrieval requests are parallel, the performance index can meet the required requirements.

**6.3.2 Reliability:** Using the concept of a fog algorithm or clustering algorithm, Health Operation System(HOS) follows a model where 100% of the data for each cell is copied to the leaf group in the cluster. Therefore, although the data is only in one cluster, due to the large number of nodes in the cluster and geographical dispersion, it is protected from local interruptions caused by natural or human-related events.

**6.3.3 Extensibility:** The Health Operation System(HOS) database is extensible both horizontally and vertically. Health Operation System(HOS) manages various strategies and considerations for each use case that needs to be expanded. Horizontal expansion is the cornerstone of the Health Operation System(HOS) architecture, and each cluster is a horizontal extension of another "unit" at the big cluster level. In each leaf group, each node becomes another agent that horizontally expands at the leaf group level.

## **VII. Governance Structure**

**7.1 Kang Foundation** The Kang Foundation (hereinafter referred to as the "Foundation" ) is a nonprofit entity established in Singapore and aims to establish a global shared ecology of elderly health care. The Foundation will serve as an advocacy entity for the Health Operation System(HOS) project and will work hard to advocate and

promote the Health Operation System(HOS) project's development and governance transparency, so as to promote the safe and harmonious development of the open source ecological community of health data.

**7.2 Governance Principles** The design goals of the Foundation governance structure mainly consider the sustainability of Health Operation System(HOS) project development, the effectiveness of strategy formulation, management effectiveness, risk management and control, and the efficient operation of project. The following principles are proposed in the governance structure:

**7.2.1 Integration of Centralized Governance and Distributed Architecture** Although there have been arguments to promote blockchain as an autonomous community system with “decentralization” or “distribution” as its core, we believe that full decentralization may result in absolute “fairness” or even more “inefficiency”. Therefore, the Kang Foundation will still absorb the core ideas of a certain centralized governance in the management structure, including the highest decision-making authority of the strategic decision-making committee and the centralized deliberation power of major issues, etc., in order to improve the efficiency of the entire system operation.

**7.2.2 Coexistence of Functional Committees and Functional Units** The Foundation will establish resident functional units, such as R&D department, market development department, operations departments, financial & HR department, etc., in order to deal with current affairs. At the same time, a professional functional committee is set up to make decisions on the important functional aspects of the foundation. Unlike functional

units, the functional committee exists in a virtual architecture, of which the members may come from all over the world and do not need to work full-time, but they must meet the requirements of the committee's expert qualifications and be able to promise to attend and express opinions when the committee needs to conduct the proceedings. The functional committee will also set up a regular meeting system to ensure the effective advancement of major decision-making matters.

**7.2.3 Risk-oriented Governance Principles** In the process of studying and defining the strategic development and decisionmaking of the Foundation and Health Operation System(HOS) project, risk management will be set as the first important element. As a computer technology with great transformational significance, the development of blockchain is still in its infancy, so grasping its development trend is particularly important. The principle of risk management is to ensure that when the Foundation makes important decisions, they fully consider risk factors, risk issues, and the likelihood and impact of their occurrence, and formulate corresponding coping strategies through decision-making. This will ensure that Health Operation System(HOS)'s development and iteration are on the right path.

**7.2.4 Coexistence of Technology and Commerce** The Health Operation System(HOS) project adheres to the tight integration of technology and commerce to promote the implementation of blockchain technology in the field of medical care. The establishment of the Kang Foundation also follows this principle. Even if existing in the form of a non-profit organization, the Foundation hopes to maximize the recognition of the business world, gain the benefits of commercial applications, and feed back into the

Foundation and the entire ecosystem to further promote the development and upgrade of the Foundation and Health Operation System(HOS) project.

7.2.5 Transparency and Supervision The Foundation will publish a unified information collection window while ensuring the privacy protection of the reporter's information. At the same time, it also discloses and reports on the operation of the Foundation and the progress of the Health Operation System(HOS) project business to all parties involved in the community through regular reports and occasional press releases.

### **7.3 Digital Asset Management and Disclosure**

The digital assets belonging to the Kang Foundation are authorized by the strategic decision committee to be assigned by full-time financial personnel. Both digital assets transactions and legal currency transactions are arranged with independent and timely financial accounting, following the best practices of financial internal control. The Foundation takes multiple signatures to ensure the safety and accuracy of the assets. All collected legal currencies are converted into digital assets in time and deposited in digital wallets.

Based on the principle of independence, Kang Foundation' s wallet takes multiple signatures. Adding signature must be authorized by the strategic decision committee. Big tokens are stored cold; small tokens use multiple signatures.

Each year, the Foundation will disclose to the participants in the system the development, operations and business promotion of the Health Operation System(HOS) project and the operation of the Foundation. The Foundation has established the Public

Relations Committee as an external window, regularly and occasionally convening conferences to announce to the public the important news items of the Foundation.

## **VIII. Team Introduction**

### **8.1 Core Team**

Tomas Jeams, Health Operation System(HOS) CMO, executive partner of the Beijing Institute of Smart Elderly Care, served as Director of Public Relations of Amazon China, Director of Public Relations of Uber China, and Managing Partner of UCommune; has been focused on brand public relations communications for 18 years; one of the 100 most influential corporate news spokesperson in 2009; guest lecturer in the New Media Marketing Elite Club of the China Business School, the University of Hong Kong.

Marrk Yadans Zuckerty, Product Director of Health Operation System(HOS), specializes in research on IoT, data interaction, wireless positioning and mobile internet after graduating from Nanyang Technological University, with 15 years of experience in network product development and research and development experience in logistics network, hazard management, smart home, health network, intelligent terminals, robots and other products.

York Lee, Chief Architect of Health Operation System(HOS), with more than 20 years of uninterrupted software development and team management experience, including 4 years of foreign work experience (1 year in Singapore, 3 years in Ireland); participated in EUROVET development of EU large-scale project, with management experience and development capability. Having more practical experience in the analysis, design, construction, operation and maintenance and even online

development and upgrading of large-scale application system, mainly using C# language and ASP.NET platform, and JAVA J2EE platform in some projects.

Bennett Kelvin, Health Operation System(HOS) Architect, graduated from Carnegie Mellon University in the United States, with a master's degree in computer science and a bachelor of applied mathematics; proficient in high-level programming languages such as BASIC, PASCAL, C, COBOL, FORTRAN, LOGO, VC and VB, etc. He used to be a cofounder of three Internet start-up companies in Silicon Valley, HC&BBT, Lateral Ds and HDIK, and has in-depth research and development experience in the Ethereum low-level code and system architecture.,

## **8.2 Investment and Advisory Team**

Jack Williams, President of the China Health Care International Exchange Association Elderly Health Care Branch, a member of the Expert Committee on the Elderly Services of the Ministry of Civil Affairs, a doctor of medicine from Monash University in Australia, and a senior consultant in the pension industry of Life Times.

Jerry Lucy, Postdoctoral Fellow of the Institute of Intelligent Robotics, Beijing Institute of Technology, a well-known expert in artificial intelligence and big data, and Deputy Secretary-general of Zhongguancun Rongzhi Robot Alliance.

Niu Shengli, Vice President of China Health Care Association, served as the Director of the International Cooperation Department of the Ministry of Health, the Head of the Foreign Aid Office of the Ministry of Health and the Deputy Director of the International Exchange and Cooperation Center of the Ministry of Health. He has long been engaged in China's foreign affairs, foreign medical assistance, international



exchanges and cooperation.

## IX. HOS Distribution Plan

In order to meet the needs of future ecological construction and operation, the total HOS issued (hereinafter referred to as the total amount) is 10 billion, and will never increase. All HOS are allocated in the following forms and ratios:

9.1 Sale 10% Under the guidance of the Kang Foundation, some HOS will be allocated to the community in batches through sales according to the progress of project development, to raise enough funds to support the development and improvement of the project. The distribution plan is as follows:

9.1.1 Cornerstone Round Sale 10%: The cornerstone strategic investment partners that are willing to take high risks for the project start-up phase are allocated at a ratio of 10% of the total, a total of 200 million pieces.

9.1.2 Seed Round Sale 15%: For the very early community influence investors and strategic investment partners, the distribution ratio is 15% of the total, totaling 300 million.

9.1.3 Targeted Sale 25%: For the global community's early investors, major players, industry partners and commercial customers, the distribution ratio is 25% of the total, totaling 5 billion.

9.2 Founding & Development Team 10% The founding team of the Kang Foundation has done a lot of work in terms of project design, resource organization and incubation of the business environment in the early stage. In the process of shaping the ecological environment, it has continuously made input in human, intellectual and

material resources. Therefore, in the token distribution plan made by the Foundation, 20% of the HOS shares will be reserved as team rewards. This section of HOS will initially be lifted by 4%, with the remaining 6% locked, to be lifted by two years and banned by 6% annually.

9.3 Operation and Ecology 10% In order to maintain the rapid development of the community and the entire ecological environment, and follow-up healthy and sustainable development, the Foundation has reserved a 30% share for ecological incubation, marketing, commercial development, legal compliance, late institutional investor access, etc., specifically including:

- Ecological incubation, promotion, etc.: 5% of the total;
- Operating costs and expenses: 3% of the total;
- Liquidity plan and late investors: 2% of the total. In summary, the overall allocation strategy is as follows:

## **X. Fund Use Plan**

### **10.1 Technical R&D 10%**

Given that Health Operation System(HOS)'s platform plans to develop its own underlying technology for intellectual property, which is required to be used in a comprehensive, high-use, high-availability and high-security commercial platform, there are a number of feature requirements that make it difficult to implement. In addition, in order to promote the rapid formation of the business ecosystem, it is necessary to use mature shelf technology products or solutions as much as possible, and the development of a large number of middleware, interfaces, SDKs, secondary

development tools, APPs, and DAPPs will also consume a large amount of research and development power. Therefore, the Kang Foundation will invest a lot of money for the development of the basic technology platform.

#### 10.2 Operation Maintenance and Security 5%

The real-name information of commercial projects, user transaction data, and clearing tokens borne by the Health Operation System(HOS) platform involve the vital interests of customers, so it is necessary to ensure high security of the system. This places high demands on the platform's hardware performance, bandwidth and security protection, which must carry out targeted optimization and investment, and establish a scientific management mechanism.

#### 10.3 Marketing and Commercial Operations 5%

To build a scaled platform ecosystem in a relatively short period of time and be compatible with more end-users' usage scenarios, Health Operation System(HOS) faces complex business scenarios and diverse compositional roles that require a diversified strategic layout. In order to promote the rapid formation of the ecological environment, and provide endusers with initial closed-loop service capabilities, it is necessary to maintain a relatively large proportion of investment in the introduction of commercial projects, the promotion of the overall platform, the expansion of commercial customers, and the design of operational service capabilities.

#### 10.4 Emergency Response 5%

A small amount of funds are reserved for the handling of emergencies and other financial planning expenses in addition to the above items.

## **XI. R&D Deployment and HOS Sales Time Planning**

### **11.1 R&D Deployment Plan**

- In October 2017, the project was started with preliminary investigation and concept design;

- In December 2018, the hardware development of health-care end products was completed and smart end products were launched;

- In March 2019, the development of Health Operation System(HOS) was started;

- In May 2019, the project officially launched a commercial white paper;

- In December 2019, the DEMO platform that integrates underlying blockchain technology will be launched;

- In March 2020, the Version 1.0 platform will be launched.

## **XII.Contact Information**

12.1 Official Website: [www.Health Operation System\(HOS\).one](http://www.HealthOperationSystem(HOS).one)

12.2 Telegram Groups

Telegram: @HealthOperationSystem(HOS)token

Email: [maketoken@hotmail.com](mailto:maketoken@hotmail.com)

## **XIII. Project Risk Description**

This project has the following risks, so investors should pay attention:

13.1 Compliance and Operational Risk

Compliance and operational risk refers to the risk of violating local laws and regulations in the process of token sale and the conduct of business operations, and resulting in the inability of operations to continue.

The hedging methods adopted by the operating team for compliance and operational risk are:

- The operating team and the decision-making committee will adopt a distributed operation mode to eliminate single point of risk;
- In the local area where the business is conducted, professional lawyers are hired to design digital assets distribution, digital assets transaction, blockchain finance, blockchain application, etc. in the legal framework.

### 13.2 Market Risk

Market risk means Health Operation System(HOS) is not accepted by the market, or there is not enough users, business development is stagnant, and there is not enough profit to support it. The hedging approach adopted by the operating team for market risk is:

- Confirm the existence of market pain points after nearly one year of market research feedback;
- Share the Health Operation System(HOS) concept with the industry, learn from similar product operating experience, and optimize Health Operation System(HOS);
- Using the experience accumulated by the founding team in transnational resource development, Internet, investment and financing, business incubators and other services, incubate the platform ecosystem quickly and generate profits.

### 13.3 Technical Risk

Technical risk refers to major problems with the underlying technology that cause Health Operation System(HOS) to fail to achieve its intended function and that critical

data have been tampered with or lost.

The risk aversion approach adopted by the operating team for technical risk is:

- Based on the mature, open-source and secure blockchain technology, select a technology development team with appropriate strength as a partner to develop a Health Operation System(HOS) system that has been approved and verified by commercial customers;

- After recruiting sufficient resources, the project team will attract more high-level talents from the industry to join the development team, so as to lay a solid foundation, enrich the power, and draw on mature development experience.

#### 13.4 Capital Risk

Capital risk refers to the major loss of the project funds, such as theft of funds, loss of funds, sharp depreciation of reserves, etc.

The risk aversion approach adopted by the operating team for capital risk is:

- The multi-signature purse + cold storage method for reserve funds is jointly controlled by the decision-making committee. Under the 5-7 multisignature approach, reserve funds will only be at risk when three directors cannot perform their duties at the same time.

The operating team has been serving the financial industry all year round with a wealth of experience in risk control. Liquid funds will only lose money if there is a sharp price fluctuation (more than 50% decline) in the market.

#### **XIV. Disclaimer**

This document is for information purposes only. The contents of this document

are for reference only and do not constitute the relevant opinions regarding the sale and purchase of HOS. It does not constitute any sale, offer or invitation to sell shares or securities in Health Operation System(HOS) or its related companies. This document does not constitute or understand to provide any sale or purchase, nor is it a contract or promise in any form.

Due to unpredictable circumstances, the goals outlined in this white paper may change. Although the team will do its best to achieve all the goals of this white paper, all individuals and groups buying HOS will be at their own risk. Some of the contents of the document may be adjusted accordingly in the new white paper as the project progresses. The team will publicize the updated content through announcements or new white papers published on the official website.

Health Operation System(HOS) has made it clear that it does not assume direct or indirect losses caused by participants, including:

- contents relying on this document;
- wrong, negligent or inaccurate information in this document;
- any behavior caused by this document.

The team will strive to achieve the goals mentioned in the document, but based on the existence of force majeure, the team can not completely fulfill the commitment.

HOS is a tool for the distribution performance of the Health Operation System(HOS) platform and is not an investment product.

HOS is not a type of ownership or control. The control of HOS does not represent ownership of the Health Operation System(HOS) platform or the Health Operation

System(HOS) platform application, HOS does not grant any person any right to participate in, control, or make any decision about the Health Operation System(HOS) platform and the Health Operation System(HOS) platform application. HOS is a digital token that takes the Health Operation System(HOS) platform as one of its usage scenarios. We cannot guarantee that the HOS will increase its value. It is also possible that prices will fall under certain circumstances.

To the fullest extent permitted by applicable law, the team is not responsible for damage and risks arising from participation, including but not limited to direct or indirect personal damage, loss of commercial profits, loss of business information, or any other economic loss.

The Health Operation System(HOS) platform has clearly communicated possible risks to participants. Once the participant participates in the HOS issuance, it means that he has confirmed and understood the terms and conditions in the detailed rules, and accepts the potential risks of the platform at his own expense.