



The introduction of GACHain

Catalog

I、 Overview	1
II、 Features and Advantages.....	2
III、 Project Description	4
1、 Online administrative examination and approval service platform of Government of Nansha ,Guangzhou.....	4
2、 A convenient social life service for Netease(Tokyo)	4
IV、 Implementation Scenarios.....	5

I. Overview

GACHain, as a primary project being researched and studied by the Ministry of Industry and Information Technology of China and written in the “White Paper of China’s Blockchain Industry in 2018” .

GACHain is the first public blockchain in the world that owns sovereign hierarchical management ecosystem , realizing decentralization and centralization management in transaction.

GACHain is operated based on DPoVE (Delegated Proof of Value Ecosystem) consensus mechanism.

In order to meet the requirements of government, business, and regulator, the unique “smart contract” mechanism is created to place them in the framework of law. The authorization of the formulation of smart contract is owned by various government departments and respective agencies, making a blockchain a ecosystem of commercial and businesses, guided and supervised by the government.

GACHain has applied for more than ten intellectual property rights and soft copyrights.



GACHain is a distributed public blockchain underlying protocol and also an innovative blockchain operating system.

In May 20, 2018, China's Ministry of Industry and Information Center, published "White Paper of 2018 China Blockchain Industry" at the China Blockchain Industry Peak Forum. The Industrial Economic Research Institute organized a joint research, covered the cities of Beijing, Hangzhou, Shenzhen, Guiyang, etc. The field investigation of nearly 100 blockchain enterprises in many cities in China has been deep in blockchain technology, and listed typical models and cases. In the field of e-government, "GACHain", which is the priority of the Ministry of industry, being listed as a "typical case", it is the first public chain officially obtained reward from Chinese government.



II. Features and Advantages

After four times of large-scale technical iteration of GACHain from the early 2017 to September 2018, the main network is officially launched on September 19, 2018. GACHain always keep to high technology standard, top technical solutions, innovation pattern to build a public infrastructure, self-independent development Language and integrated development environment with complete smart contract Language - G Language, and user interface development template Language - Chain Language, an integrated development environment as Molis client, combined with GACHain's smart contract automatic-matching framework/the test framework templates, helping developers easily create any DApp on GACHian without rich knowledge of blockchain. Moreover, VDE technology supports any third-party system smoothly connect to the data on the chain/cross-chain and other existing system data, so that users have full authorization to determine what data to be stored on GACHain.

Data backup and disaster recovery are realized by GACHain's decentralized multiple full nodes. Block data is stored in the database, which improves the efficiency of search. The ECDSA algorithm(Elliptic Curve Algorithm) is used in transaction to secure the data . Users can create their own sovereignty ecosystems and perform their activities.

In addition, all ecosystems created on GACHain achieve 'zero token' consumption in daily transaction. The user can create one or more tokens in their ecosystems for internal billing, settlement and statistics.

GAC is a functional token, which is used by business users to create platform, business ecosystem, injection contract and other DApps independently, which is equivalent to platform or space rent.

Being the world's first public chain that suitable to whole industry, business users can independently create their own ecological environment, manage the business and back-end operation, also realize smoothly docking data with exiting system. It



is non-mandatory requirement for the consumer users to the use of GAC token, really achieved ‘zero token’ consumption for DApp.

In each ecosystem, the creation of DApp consists of database tables, smart contracts, and pages, with a token consumption as follow:

Create/modify database table: 25GAC/table

Create/modify data field: 25GAC/field

Create/modify smart contract: 25GAC/contract

Create/modify page: 25GAC/page

The storage cost is 15GAC/Mb when the data stored in GACHain

Four innovation key-points of GACHain:

1. Sovereign hierarchical management: GACHain pioneered the architecture concept of ‘management centralization and business decentralization’, so that any project created on GACHain can achieve complete sovereign hierarchical management and control just like the exiting system and application, which is fully compatible with the existing organizational architecture.

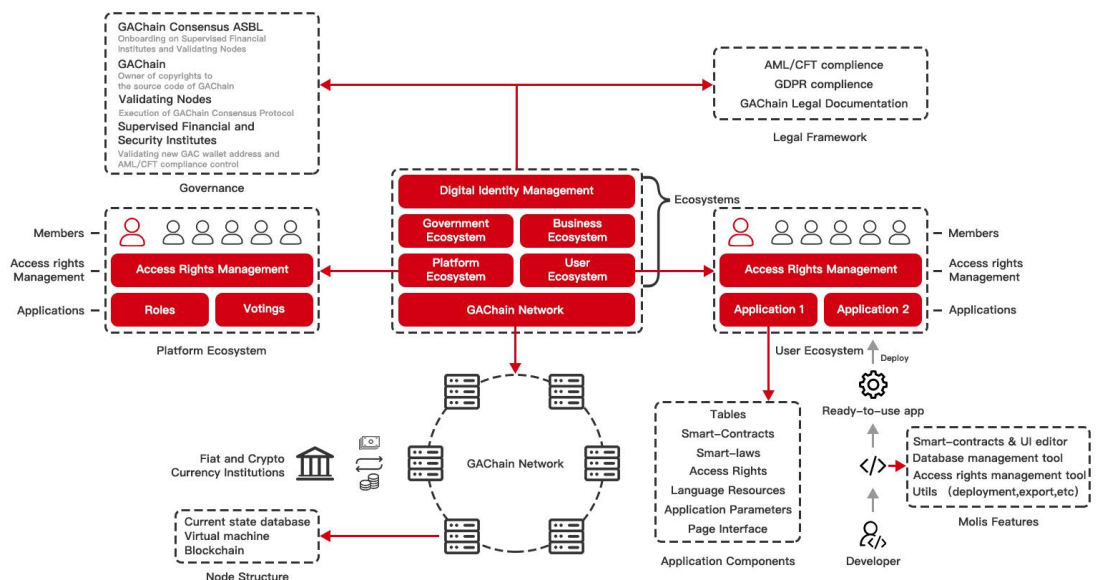
2. Data encryption controllable sharing: being different from the popular way of blockchain synchronous sharing, users can create ecological data for sharing on mutual authorization for any size of data transmission, and the process of transmission can utilize GACHain’s encryption or national or other encryption methods, guarantee the confidential business data of the ecological system in secure, and prove data transmission efficiency.

3. Intelligent processing mechanism: intelligent processing mechanism is a new set of contract mechanism that GACHain reconstructs on the basis of the popular blockchain smart contract. Each smart contract of the existing blockchain is the processing unit of a single transaction, however, GACHain’s intelligent processing mechanism plays a complex and multiple transaction processing role. While the popular smart contract deals with one transaction one time, the intelligent processing mechanism can automatically deal with multiple comprehensive



transactions in parallel, which greatly improves the efficiency/security and intelligence.

4. VDE virtual ecosystem: each GACHain's individual ecosystem can be implemented with its own VDE virtual ecology. VDE is a confidential environment of the independent ecosystem on the GACHain. Users can input the most confidential business data into VDE, which not only ensures the comprehensive ecosystem and the complete business operation, but also guarantees the operation of the core business going smoothly in the independent and safe environment. In addition, thanks to VDE technology, the ecosystem can be connected with existing system outside the GACHain. Therefore, the cross-chain and cross-system problems are perfectly solved by the architecture of GACHain. And in order to comply with confidential policy between the different organization and the company, VDE works for data transmission and business transaction, the whole process does not reflect on GACHain, but still remains part of the overall ecological, the final data will be reflected on GACHain. Which means, it guarantees the transmission for confidential business and data, as well as the integrity of business data and procedure.



III. Project Description



1、Online administrative examination and approval service platform of Government of Nansha ,Guangzhou

Nansha administrative examination and approval service platform is a unified platform built on ‘Five One’ governmental policy . The platform has completed the basic structure of supporting platform from the aspects of customer archive, electronic database, electronic certificate database, payment service, logistics service, message center, digital identification, data exchange and sharing. The platform has basically realized online service. Among the 812 online booking items, 615 are served by the platform, 80 items can be reserved and applied by WeChat; Legal person items can be applied online through the enterprise exclusive website; license application and approval as well. The ‘One Window’ operation system realizes the function of ‘comprehensive reception at the front and classified examination and approval at the back-end’ , and realizes the separation of collecting files and approval. However, official clerks still need to input data in two systems, and data interconnection is still not fully realized

The improvement by GACHain for Nansha administrative approval platform:

1. One-net office: administrative approval services are more transparent and enhance public credibility
2. Intelligent circulation: the organizational structure of government departments is more flat
3. Intelligent collaboration: administrative approval service is more intelligent and efficient
4. Block storage: governmental data is more secure
5. Government ecology: national government affairs data opening and sharing

2、A convenient social life service for Netease(Tokyo)

GACHain and Netease(Tokyo) has achieved a formal cooperation for developing a WeChat Mini Program , fully developed by GACHain’ s technology. It is a local life



深圳智乾区块链科技有限公司
SHENZHEN GACHAIN TECHNOLOGY CO.,LTD.

services platform specifically designed for overseas Chinese in Japan, for convenient/fast/trustworthy local information service.

www.block.vc | www.gachain.org

广东省深圳市前海深港合作区青年梦工厂七号楼 115/220/221 室
115/220/221 RM, 7th Bld, Qianhai Shenzhen-Hongkong Youth Innovation &
EntrepreneurHub.Shenzhen GD, P.R.China



IV. Implementation Scenarios

GACHain is technically an embedded platform as well as a blockchain operating system combined with mechanisms of creating and utilizing smart contracts and smart laws. So GACHain can be applied successfully in a variety applications of financial, supply chain, intelligent health, intelligent transportation, the traditional business entities and cultural copyright protection, government service center, ministry of public security, traffic management bureau, stock exchange, commercial banks, insurance and credit organization, accounting and management systems, cross-border payments, medicine and health care, real estate trade and registration, etc., as well as BaaS service for the society.

Being the world-first public chain realizes ‘management centralization and transaction decentralization’ in the world, GACHain aims to build the first and top underlying blockchain technology in China and serve e-government and society. In this case, China has its own strong and powerful technology support in the world from now on.