

D C l e a r

Digital Clearing House Whitepaper

Creating a secure, transparent and credible digital asset trading and clearing ecosystem.

DClear

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Abstract

DClear Digital Clearing House, as the first digital clearing house using DLT in the world, aims to create a secure, transparent and credible digital clearing ecosystem, and promote the process of compliance for global digital asset trading market.

DClear creates the concept of Detripling among trading, clearing and asset storing, which will secure digital assets, minimize trading risks and protect the rights and interests of digital asset owners.

DClear develops Hyperledger DClear consortium chain and unites exchange partners globally to manage and maintain the clearing infrastructure of token economy jointly. This whitepaper will introduce the importance of clearing house in the developing process for token economy, and explain how DClear team construct a new digital asset trading and clearing ecosystem by building DClear Digital Clearing House, and analyze the value of the new ecosystem for every participant.

Key Contents

The Detripling System of DClear Clearing House
Construction of Hyperledger DClear consortium clearing chain

Joint management and operation based on consortium chain to ensure the security and effectiveness of trading, clearing and asset storing.

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| Background

Digital Asset Trading Market

Since Satoshi Nakamoto published the Bitcoin Whitepaper in 2008, the digital asset trading market has been developing in twists and turns for more than ten years. It has become a global emerging market with a total scale of over 200 billion dollars and daily trading volume of over 100 billion dollars. It has gradually stepped onto the right track with governments actively planning for regulatory policy.

At present, there are more than 10,000 digital asset exchanges around the world, providing spot, futures and derivatives trading products. Exchanges are responsible for the whole process from trading, clearing to asset storing and so on. However, that intensive development model may improve efficiency at first, it gradually exposed many drawbacks in the long term.

Asset storing issue

Hacking problem

According to incomplete statistics, at least 22 large exchanges have been attacked by hackers, with a total loss of more than one million bitcoins and other digital assets worth 800 million dollars. Some exchanges, such as Mt. Gox in Japan and Cryptopia in New Zealand, declared bankruptcy, resulting in huge losses of digital assets.

Systematic risk

Due to the characteristics of the digital asset market, there is a general lack of government supervision and third-party auditing on exchanges. Under severe circumstances such as hacker intrusion, business loss and policy closure, exchange might become irresponsible and shut down the platform directly, taking away users' digital assets.

Black box problem

The internal operating mechanism of exchange is various and opaque, and the chaos of digital assets trading leads to frequent disputes. The market lacks the support of public trust mechanism, which easily causes digital asset owners to encounter unfair losses.

Fake assets

Because of the black box problem of exchange, the exchange might take the advantage for its benefits. For example, exchange might maliciously issue new fake tokens while close the withdrawal channel and use those fake tokens to push the price of other listed tokens. Such deeds will extremely disturb the market order and cause great losses to exchange users.

Fake data

Because of the black box problem, ordering, matching, rollback, index, and trading volume can be manipulated. Thus, users' benefits is at stake. For instance, some exchange with dividends mechanism might exaggerate its trading volume to reduce users' dividend.

Liquidity problem

Liquidity refers to the speed at which assets are traded when market prices are stable. In the digital money market, liquidity is negatively correlated with volatility (price volatility). At present, there are more than 10,000 exchanges in the global market, and there is a general problem of insufficient liquidity.

Liquidity issues among exchanges

Traditional trading markets provide liquidity services among trading markets through clearing houses. However, the lack of liquidity services among exchanges in digital asset trading markets leads to inefficient trading, which makes it difficult to meet the needs of users with large transactions.

Market Maker Liquidity Problem

At present, the exchange generally lacks a stable and effective market-making mechanism to ensure the liquidity of the trading market. When there is a unilateral market, the lack of liquidity of the exchange itself leads to the impossibility of trading orders. Some exchanges can only choose themselves as market merchants to bear the corresponding risks. If there is a huge loss, it may trigger the systemic risk of the exchange.

Clearing House

Similar problems have arisen in the development of traditional trading markets. Because of the market demand, the exchange, clearing house and the third-party fund depositor jointly constructed the trading and clearing ecosystem. It is because of the liquidation system of the clearing house that the exchange operates safer, transparent, compliant and guarantees enough liquidity.

Development history

The birth of clearing house belongs to market behavior, which is a concentrated reflection of the new stage of the development of trading market. The 17th century was the "golden age" of the Dutch tulip market. Fanatics and speculators set up trading clubs in the location of the hotel to liquidate the tulip bulb trade, forming the rudiment of the clearing house. At the beginning of the 18th century, the rice warehouse invoice trading rules were promulgated in Japan's Tangdao rice market, similar to the modern futures exchange rules, which also included the necessary composition of the clearing house as the market infrastructure. In the 19th century, the whole trading market and liquidation proceeds developed by leaps and bounds. From the futures and clearing markets in Chicago to the cotton trading and clearing markets in Liverpool, the London Agricultural Products Clearing House (the predecessor of the London Clearing House) was officially established on February 22, 1888. The Clearing Structure of the world is improving day by day.

Market Volume

London Clearing House (LCH), American Options Clearing Company (OCC) and New York Clearing Company (NYCC) are three representative clearing houses of the world. According to LCH2018, its OTC Clearing exceeded \$1 trillion, including SwapClear: \$1 trillion, ForexClear: \$1.7 trillion and CDSClear: \$600 billion; non-OTC Clearing exceeds \$10 trillion.

The representative domestic clearing institutions are Shanghai Clearing House, CSD and Guangzhou Clearing Center. Established on November 28, 2009, Interbank Market Clearing House Limited (hereinafter referred to as "Shanghai Clearing House") is an important infrastructure of Chinese financial market system under the supervision of the People's Bank of China.

It is the first central counterparty clearing institution in the off-site financial market and one of the bond registration and trusteeship clearing institutions in China's financial market. In 2018, the total clearing business of Shanghai Clearing House was 349.5 trillion yuan. Among them, the liquidation amount of the central counterpart is 124.6 trillion yuan, and that of the non-central counterpart is 224.9 trillion yuan.

DClear Trading & Clearing System

Trading System	Trading	Clearing	Asset Storing
Stock trading system	exchange	clearing house	bank
Centralized trading system	exchange	exchange	exchange
Decentralized trading system	smart contrac	Clearing Blockchain	User's digital asset wallet
DClear Trading & Clearing System	DClear member (exchange)	DClear Clearing House	Third party digital asset storing organization/ DClearbank

In the clearing and settlement system of stock exchanges, exchanges are responsible for transactions, clearing houses are responsible for clearing and settlement, and banks are responsible for storage of assets. For example, the Shanghai Stock Exchange is responsible for transactions, Shanghai Clearing House takes charge of clearing and settlement, and banks are responsible for storing assets. Each of the three main parties has its own duties and clear division of labor, so as to ensure the market run smoothly. At present, the mainstream of the digital asset trading market is the centralized trading system, which means exchanges are unilaterally responsible for trading, clearing and depositing of digital assets. Due to the centralization of the trading system, central exchanges are facing problems as mentioned above. Nowadays, decentralized exchanges are still in the primary stage of development, and various models have been developed, such as IDEX, Kyber, WhaleEx, etc. The common problems are low transaction efficiency, high transaction cost, poor transaction experience, liquidity problem, poor inter-chain support and so on.

DClear believes that the centralized trading system is cope with the trend of compliance and centralization of objective laws of financial development. However, there are also many problems mentioned above. The DClear team has created a new DClear trading and clearing system, enabling the exchange to develop by leaps and bounds under the new pattern.

In DClear clearing system, the division of labor is clear, the clearing members (i.e. the exchanges connected to DClear clearing system) are responsible for the transaction matching, the DClear clearing house is responsible for the clearing, and the third-party digital asset depositors (including DClearBank as a product of DClear) provide the digital asset depository services.

| DClear

Introduction

DClear Digital Clearing House aims to unite participants of digital asset trading market, to create a secure, transparent and credible clearing ecosystem by combining innovative clearing mode with distributed ledger technology, to promote the compliance process of the digital asset trading market in the long run.

DClear uses financial-level micro-service architecture to achieve microsecond clearing processing capability and hyperledger DClear consortium blockchain hosting open sourced chain code as enterprise-level sampling detection intelligent contract, as well as Telecom-level data verification capability through hash blockchain storing of gateway data. DClear serves the global digital asset trading ecosystem through a liquidation ecosystem composed of financial, enterprise and telecommunication technologies.

DClear Digital Clearing House provides diversified services such as product registration, clearing, settlement, liquidity, risk control, index and so on. DClear ensures the separation of transaction, settlement and asset storage, which prevents transaction risks and protects the rights and interests of digital asset owners. In the future, DClear will provide innovative derivative services, and promote the development of token economy on the basis of a safe, transparent and credible clearing ecosystem.

Ecosystem Structure

Exchange — DClear Clearing member

Exchanges in DClear ecosystem will provide user account management, market information and transaction services. It will transfer transaction data to DClear Clearing House for clearing, while ensuring the authenticity, effectiveness and security of data transmission.

DClear Digital Clearing House

DClear Digital Clearing House is responsible for clearing and settlement of the transaction data provided by the exchange. DClear will also verify the transaction data and store the merkle root in blockchain.

Digital Asset Depositing Organization—DClear Omnibus Member

The digital asset depositing organization is responsible for separating the digital assets of DClear exchanges, checking and transferring the digital assets on blockchain according to the clearing instructions of DClear Digital Clearing House

Detripling

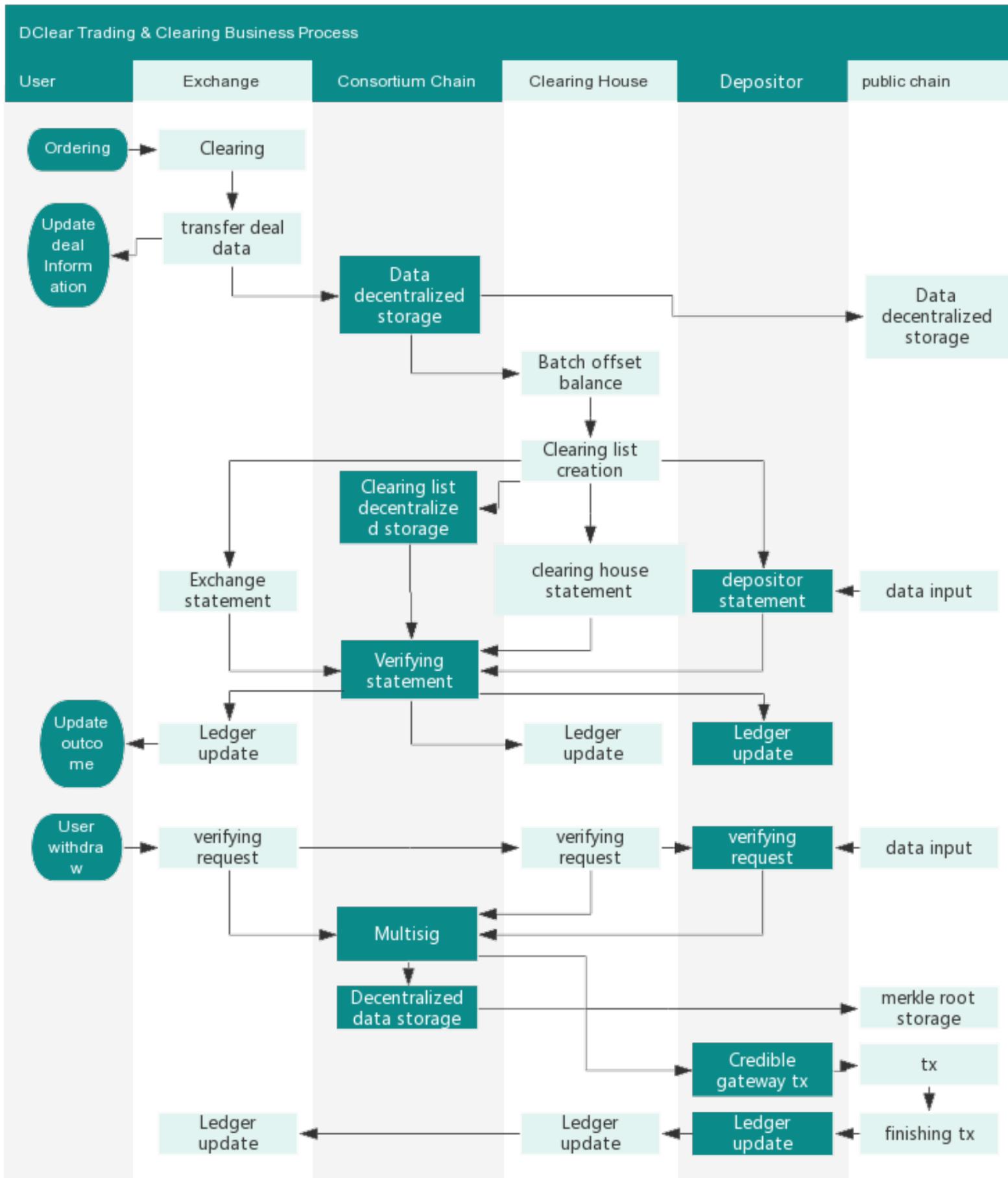


The concept of detripling is the guiding ideology of DClear's digital assets trading and clearing system, which aims to break the drawbacks of "all-in-one" and bring a safe, transparent and credible new token economic ecology to the industry. The concept of detripling emphasizes that all parties cooperate with each other, in the meantime, all parties are independent. Thus, efficiency can be achieved with adequate supervision.

Business Processes

1. Announcement storage decentralized

DClear clearing house's "Digital Asset Transaction and Settlement Business Guide", "Digital Asset Deposit Account Management Measures" and other business operation standards and risk management standards will be published in a decentralized manner, and will be directly monitored and implemented by the clearing member alliance. "DClear development plan" and the White Paper of DClear Clearing House, the Ecosystem Development Plan of DClear Clearing House, and the Monthly Report of DClear Development, will be stored decentralized and subject to the supervision of the token economy.



2. Standard preparation process

Exchanges that meet the access qualification of DClear Clearing House and become its clearing member will complete the preparation of APIs, establish a two-way verification mechanism, register products, and open cross-chain accounts for digital assets, stress testing, clearing management panel, digital asset transfer, etc. After the access processes are completed, the clearing members of DClear Clearing House will complete the detripling of digital assets transaction, liquidation and asset storage.

3. Clearing and Settlement

The DClear clearing house will provide clearing services to its members. For spot transactions, DClear will liquidate the difference between the purchase and sale of customers' digital assets on the exchange, and then settle the net difference, while calculating transaction fees and so on. For futures and derivatives, DClear will select the corresponding liquidation model to complete the clearing process. For clearing of liquidity products provided by DClear, DClear will liquidate the net difference between exchanges by appropriate liquidation model and margin rules. DClear clearing house will generate and supplement the clearing list, and confirm with the clearing results of the exchange itself, according to the clearing list, carry out the transfer of digital assets of mapping account and update the clearing list. The clearing and settlement list will be stored on blockchain. While backing up the clearing and settlement data, the merkle root hash will be published to ensure the consistency of the data.

4. Risk management

Risk management runs through all business processes of DClear clearing house, and integrates risk control from a higher dimension, which provides a guarantee for the stable operation of DClear clearing ecosystem as a whole and the security of assets.

5. Digital assets transaction

According to the instructions of clearing members and their customers, the credible gateway of third-party digital assets depository organization is invoked to complete cross-chain transfer.

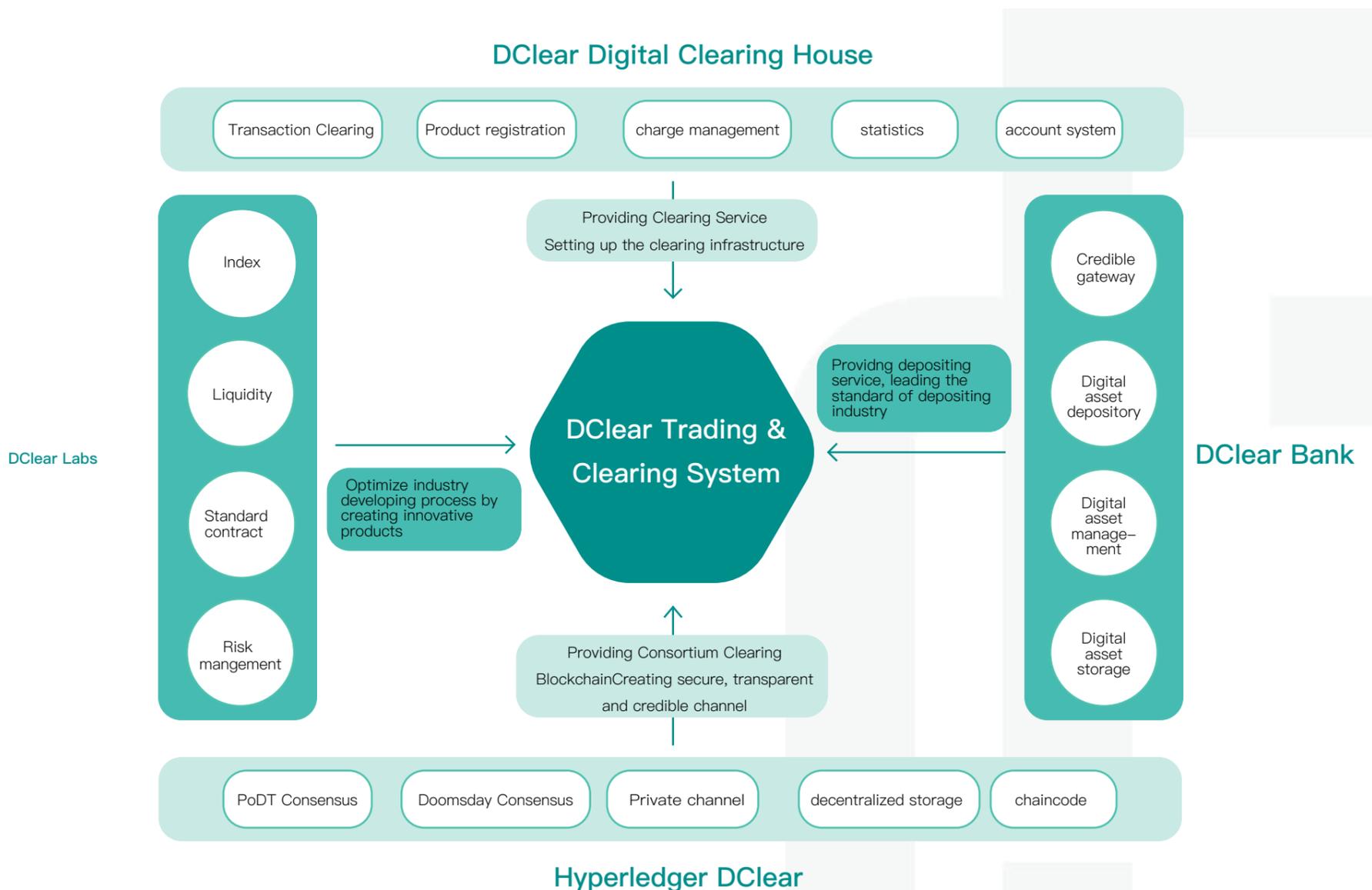
6. Data insight

According to the real-time status of digital assets transaction and settlement in DClear ecosystem, DClear will provide three levels of data reports to provide data support and data insight services for clearing members and customers. Firstly, the basic data extraction window can extract the details of each transaction data and output standard structured data files by object-oriented data query. Secondly, the comprehensive data report window can synthesize the original multi-dimensional data and output the report results and data visualization conclusion according to the object query. Thirdly, base on the index model and risk management model of DClear, output macro market status report.

7. Clearing verification

For disputing or missing clearing result, DClear Clearing House will carry out special checks to settle the problems.

DClear Products



Around the innovative DClear digital asset trading and clearing system, DClear provides products to energize the participants of the system. DClear Digital Clearing House, as a horizontal clearing house, will provide infrastructure support such as transaction and inter-bank clearing for business use such as exchanges and depositors in the digital asset trading ecosystem; DClear Bank, as a depository service product, aims to provide more choices for the market and promote the depositor industry at the same time. DClear Labs mainly export value-added services for DClear clearing system, including liquidity products, index products, standardized contracts, risk control system, etc., in order to expand the dimension of the development of digital assets market and provide innovative products for the overall development of digital assets; Hyperledger DClear serves as the clearing consortium chain. It provides a blockchain platform for DClear transaction clearing system as the basis of common management and daily operation.

DClear Clearing

Liquidation and settlement are the two main links in the post-processing of transactions in the digital asset market, including transaction matching confirmation, mapping account liquidation, issuance of settlement instructions, transfer of digital assets and account arrival confirmation.

The core business of DClear Clearing House is to provide digital asset clearing services. Digital currencies, futures and derivatives can all be cleared and settled in real time by DClear Clearing House. DClear Clearing House provides product registration, access management, billing management, membership management, operation management, transaction settlement, asset clearing, log management and information submission services. Specific business processes include:

Transaction data delivery: DClear Clearing House (7*24h) receives transaction data in real time;

Compliance verification: After receiving transaction data, DClear Digital Clearing House will conduct factor compliance checks on the data: firstly, whether if the transaction data comes from relevant institutions with DClear clearing membership qualification; secondly, whether if the transaction data conforms to the requirements of DClear clearing business product elements. After checking, the transaction data will be processed. For the transaction data that fail to pass the factor compliance check, the reason will be displayed through the transaction data notes column of the client of DClear Digital Clearing House for the clearing member to inquire.

Clearing confirmation: If there are any disputes, exchanges may apply to DClear Clearing House for checking and inquiring. If no objection has been raised before the clearing process, it shall be deemed to have no objection and shall be confirmed by default.

Clearing data inquiry : The clearing members can query the clearing data in real time through the client, and support data export in various formats.

Settlement List: DClear Digital Clearing House calculates the digital assets receivable and payable by both sides of the transaction in real time, and generates the settlement list based on the results of clearing roll gap. The settlement list is the valid voucher for the settlement of DClear Digital Clearing House and members' digital assets. DClear clearing members can query and download lists through the client. The clearing member checks the roll gap results. If the data is correct, the DClear Clearing House prepares to settle the digital assets according to the clearing list. If the data are inconsistent, the clearing member should notify the DClear clearing house. Both parties should check the reasons for the discrepancy and make timely amendments according to the transaction records.

Settlement process: DClear Digital Clearing House will complete the transfer of digital assets in DClear mapping account according to the settlement list.

Withdraw process: DClear clearing members and customers can apply for digital assets withdrawal and transfer to designated addresses.

DClearBank

DClear supports access to third-party digital asset depository institutions, and provides digital asset depository solutions for exchanges and users itself. DClear sets up designated accounts for the settlement of digital assets for clearing members. DClear's designated account for digital assets is divided into three layers. The first layer is mapping account. DClear changes the balance of user's account according to the registration and clearing records. The second layer is the cross-chain account system for digital assets, which stores a certain amount of multi-category digital assets to ensure the efficiency of withdrawal processing. The third layer is treasury account, It is a special account for the safe storage of digital assets, which is composed of the cold wallet of digital assets and the safety management and operation criteria at the bank level.

Among them, the first tier of the special account system will carry out two-way verification with clearing members at any time to ensure the correctness and security of the registration and change of digital assets; the second tier of the special account system will be at any time.

Block chain browser in DClear open platform is open to ensure public trust mechanism. When dealing with the application for withdrawal of money, the third layer of special account system needs multisig of digital assets depository institution, exchange and clearing house to solve the security problem of user's digital assets depository.

DClear risk management



DClear clearing house digital assets trading risk control system includes four core modules: data risk control, system risk control, asset risk control and transaction risk control. It forms an effective system guarantee to measure, monitor, manage and dispose of potential risks, and ensures that there is enough risk resolution in the normal fluctuations and extreme situations of digital assets trading market.

Measures should cover the potential risks of clearing and settling business, prevent the spread of risks, and ensure the ecosystem stability of DClear digital asset transactions.

Data risk control includes decentralized data storage mechanism; system risk control includes multi-machine hot standby clearing array, fault-tolerant and real-time verification mechanism clearing system; asset risk control includes wallet system, secret key system, asset management system, and attack prevention. The transaction risk control system includes the transaction index, the data risk control model and the transaction wind control system integrated with the third-party block chain security research institute.

DClear liquidity

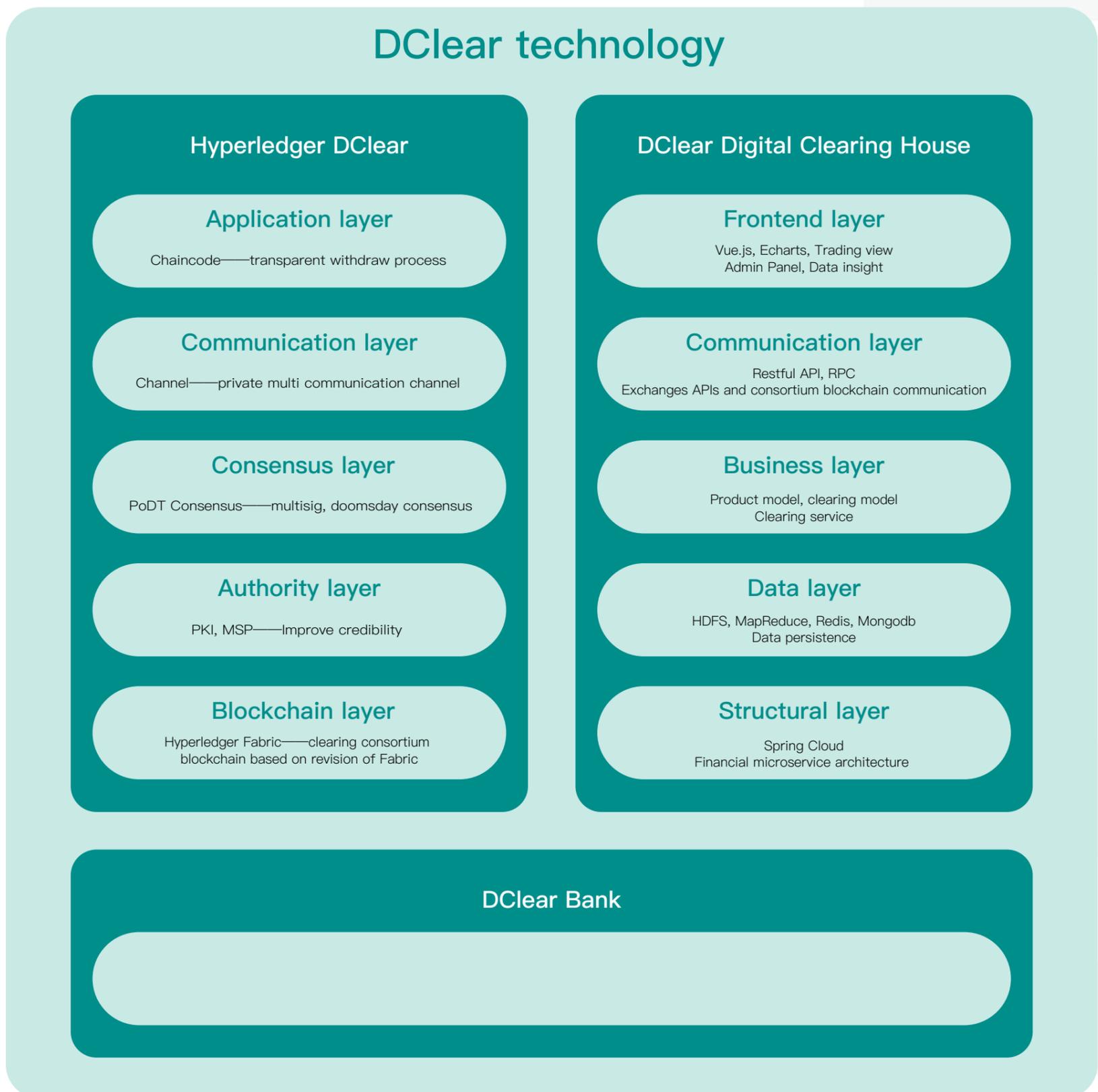
The clearing members connected to DClear form a market alliance with deep trading depth. DClear clearing house integrates the circulation channels among clearing members through precise technology, matches the transaction needs among cross-clearing members according to the needs of clearing members, and provides exclusive liquidity support for members of DClear Digital Clearing House. DClear clearing members can selectively access liquidity services.

DClear data insight

DClear report service includes index report, query report, real-time report, etc. It serves DClear members and customers with data insight and data visualization system. Among them, index services include global digital currency index, chain index, risk index, etc. Query report service generates multi-angle and multi-level data reports from related data of query objects. Real-time report service is oriented to DClear members and customers, and provides reports for related transaction and asset data.

DClear technology

Introduction



DDClear provides three technological foundations for building a clearing ecosystem of digital assets transactions: 1. a reliable platform that unites exchange, clearing house and depository organization (consortium chain); 2. a high availability, high concurrency clearing core; 3. a secure and reliable technical solution for digital assets depository.

Clearing Core

As an important infrastructure of transaction clearing ecosystem, how to ensure the high availability of DClear clearing core in the face of a global 24-hour, uninterrupted and huge complex transaction of digital assets trading market? How to protect the zero capital loss of digital financial business? Based on the technical experience of national clearing houses and according to the characteristics of digital trading market, DClear team builds a core technology system of intelligent and refined clearing, including capacity elasticity control, change risk prediction, capital risk identification and fault intelligent decision-making and other technical risk prevention and control measures.

99.999% availability

DClear with financial-level micro-service architecture Spring Cloud and financial-level distributed database HDFS, provides all-round continuity and high availability for the clearing core. DClear clearing core has a global multi-site and multi-active disaster recovery architecture, which can ensure that all the traffic flow of fault liquidation business is transferred in time, ensure data consistency and zero loss, and achieve recovery point target (RPO) close to 0, recovery time target (RTO) less than 60 seconds. At the same time, through the analysis and adjustment optimization of full-link stress testing, we can ensure that the clearing core can maintain availability and robustness even when the global trading market is very active.

Real-time clearing of billions of transactions

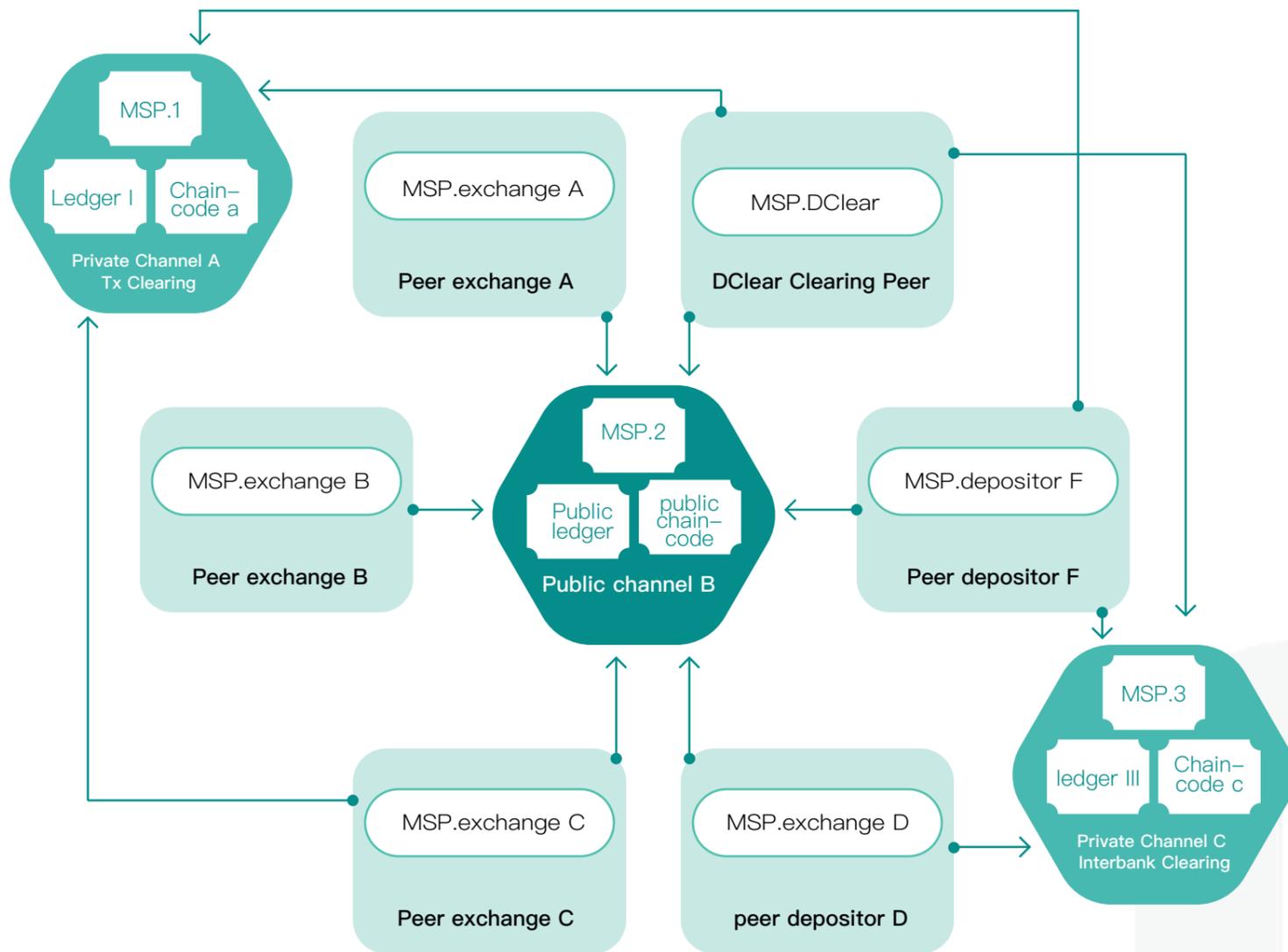
The premise of efficient clearing of digital assets trading is that there is no error in the whole process of the amount of assets, rather than talking about how high the TPS of the system is under ideal conditions. Therefore, DClear clearing core continuously improves the five capabilities of fault emergency, data support, risk measurement, testing and risk identification through offensive and defensive drilling.

From T+1 of traditional clearing capability to T+H, then to real-time clearing of DClear, the functions of change control, automatic regression, flow simulation, asset safety monitoring, emergency plan, abnormal management, fuse decision and so on are gradually added to the core technology system of DClear clearing.

Efficient maintenance

With the rapid development of the digital asset trading market, the core of DClear clearing adopts agile and intelligent operation and maintenance to control the exponential growth of business volume with the logarithmic growth of cost. For example, DClear clearing core not only provides dozens of liquidation models to meet different contract transaction settings of exchanges, but also speeds up the registration process of new clearing products through DevOps CI/CD model; reduces the interference of data noise by introducing AIOps, locates the problem accurately in time and intelligently heals itself.

Hyperledger DClear



Hyperledger is a cascade of corporate alliances created by global technology and financial giants including IBM, Intel and Goldman Sachs. Hyperledger belongs to the Linux Foundation, a team of top computer technology experts. Its professionalism and professional ethics are far better than the young geeks behind ETH and EOS. Compared with ETH with only tens of TPS and EOS with 3000 TPS, Hyperledger's TPS can easily break through 20000. Moreover, using ETH as production environment consumes Gas costs, and using EOS consumes RAM, which means that neither of them is suitable for long-term large-scale applications. However, Hyperledger is completely open source and does not need to consume a certain digital asset to use. Hyperledger's Fabric modular framework provides block chain infrastructure for specific industries such as finance. The cost of deploying financial-grade solutions based on the Hyperledger Fabric consortium chain is economic friendly.

Hyperledger DClear is based on Hyperledger Fabric. It inherits the advantages of Fabric such as strong scalability, pluggable consensus algorithm, containerization and strong compatibility. At the same time, Hyperledger DClear is also specialized in clearing application scenarios at consensus level and chain code level. Hyperledger DClear has the following advantages:

- Processing speed of clearing business exceeding 20000TPS;
- Financial level, bank level stability and availability;
- Node access cost economic friendly.
- It has high security and authority control ability.
- Practical, support rich application scenarios;
- Hyperledger team cooperation.
- Hyperledger DClear test network has been put on line and the related consensus mechanism and chain code development have been completed.

DClear Digital Clearing House insists on choosing the industry's leading technology system in all aspects, and insists on the professional transformation of the advanced technology system based on the characteristics of application scenarios. The Hyperledger DClear will eventually be open-sourced.

PoDT Consensus

Through the PoDT consensus mechanism of Hyperledger DClear and smart contract of digital asset management, the transparency and credibility of DClear's digital asset clearing ecosystem are comprehensively strengthened. The PoDT consensus mechanism, Proof of DeTripling, is a three-part consensus. DClear clearing business is recognized and authorized by exchanges, clearing houses and third-party asset depository institutions respectively.

In the DClear technology system, the PoDT consensus not only exists in the consensus layer of block chain, but also in the concept of application layer. On the one hand, the PoDT consensus is a modification of PBFT consensus, and the allocation of common access nodes to ensure the detripling mechanism on the fundamental level; on the other hand, the PoDT consensus is a multi-signature mechanism running by smart contract (Chaincode) to remodel the business scenarios of clearing and withdrawing.

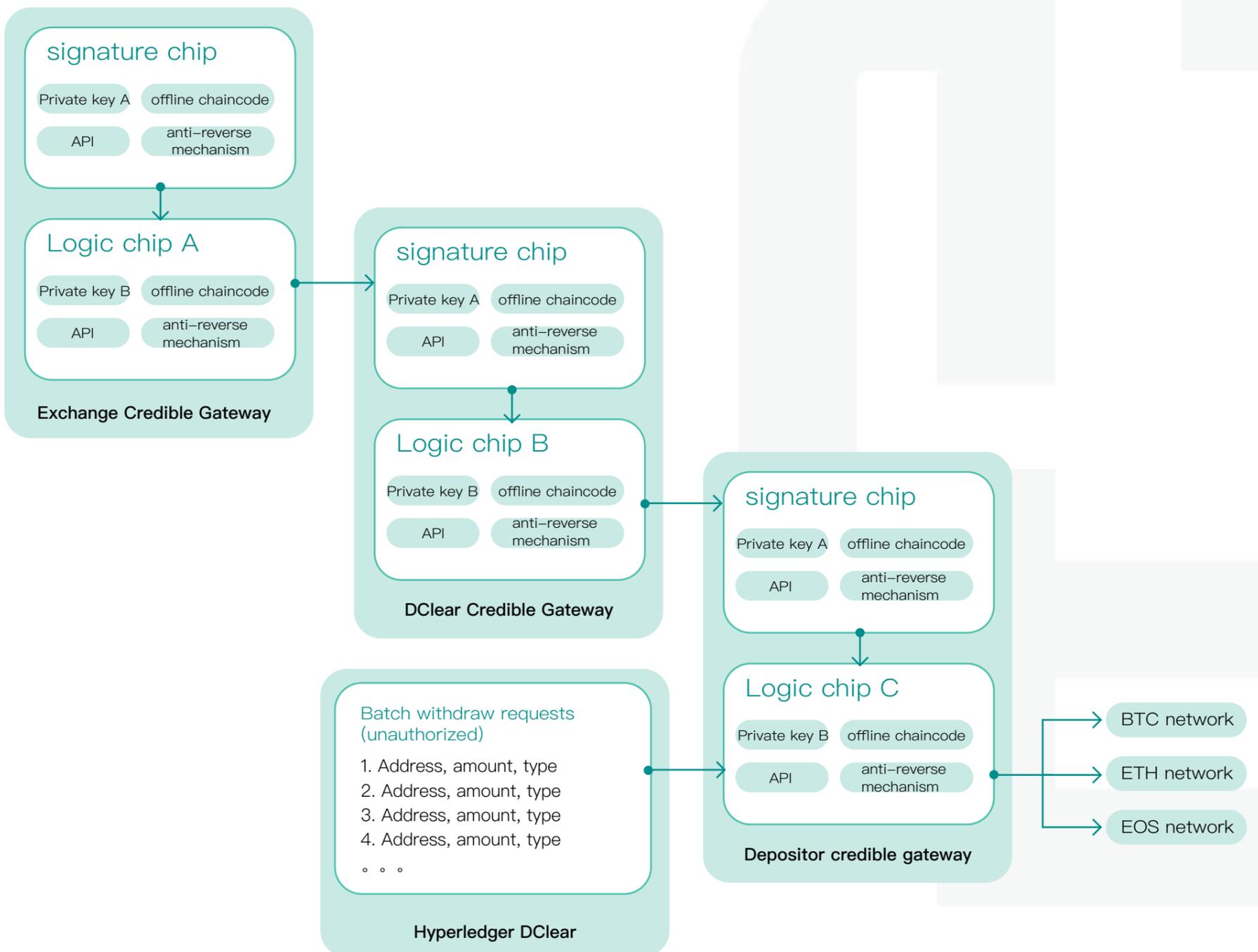
Decentralized Storage

There are three dimensions of decentralized storage in DClear: Firstly, merkle tree root of crucial data that need to be shared or archived by exchanges, clearing houses and depository parties, such as hashes of clearing lists, will be publicly shared within Channel of all nodes of the consortium chain; on the other hand, root hashes of key data that need to be shared or archived will be publicly shared within Channel of all nodes of the alliance chain. Secondly, the complete data of withdrawal application queue and other data will be uploaded to the corresponding Channel, which were set up by the processing and sharing rules of Channel's MSP. Thirdly, some key data root hashes will be uploaded to the Ethereum network to further enhance the transparency and credibility of the whole system.

Credible Gateway

Credible Gateway aims at eliminating the technical risk of hacker attack and the systemic risk of depository running. Credible Gateway is composed of signature chip and logic chip. By setting up anti-reverse mechanism, it ensures that the data in the chip cannot be read externally in any ways.

As the hardware foundation of PoDT consensus mechanism, Credible Gateway ensures that any party and a few parties cannot collude to steal digital assets. Even the depositor itself cannot unilaterally misappropriate the user digital assets stored in it. The core idea of Credible Gateway is to share risks and responsibilities, and to ensure the stable operation of the whole process through the logic that the underlying hardware cannot be broken down.



| DClear advantages

Detripling

DClear ecosystem implements the concept of detripling in many ways:

Ecosystem management: detripling of trading, clearing and digital assets depository;

Decentralized data storage: detripling data storage of exchange, clearing house and digital assets depositor;

digital assets transfer: exchange, clearing house and digital assets depository authority detripled;

private key internal management: three departments are separated.

Secure, transparent and credible

DClear digital asset trading and clearing ecosystem ensures the separation of trading, clearing and depositing, prevents transaction risks and protects the rights and interests of digital asset owners.

Combination of centralization and decentralization

DClear combines the security, transparency of decentralization and efficiency of centralization as follows:

Clearing process

Tx data decentralized storage, digital asset transfer(decentralized), product registration, clearing, settlement(centralized);

Digital asset management

Digital asset storage and transfer(decentralized), digital asset mapping account(centralized);

Information management

Clearing list, whitepaper data decentralized storage(decentralized), risk management, KYC(centralized)

Cooperative

DClear aims to integrate into the current market system and avoid any impact. For all related partners, DClear's foothold is that to serve and enable partners, especially exchanges, without changing their system, nor increase their technological costs, but all with the goal of cooperation. DClear will integrate as smoothly as possible for compliance, support a diversified membership system, ensure DClear's decentralized regulatory capacity, make clearing more credible and transparent.

Inter-chain supportive

DClear Digital Asset Liquidation Ecosystem, as an ecosystem that includes all exchanges, all chains and all digital assets, supports clearing and settlement and the storage of digital assets in all kinds of exchanges based on each chain. DClear's cross-chain solution will be published in the DClear technical white paper by September 2019.

Liquidity

With the development of DClear clearing system, DClear Digital Clearing House will provide professional clearing services for global digital asset trading partners. In business logic, through alliance chain privilege and semi-open liquidity matching rules, liquidity services maximize exchange profits while guaranteeing the interests of exchanges; For transaction efficiency, based on the processing capability of 20000TPS Hyperledger, DClear will increase the transaction rate of digital assets as much as possible.

In terms of transaction depth, DClear provides global liquidity services, hedging risks and exposing to international markets to meet the transaction needs of trading partners in DClear ecosystem in the broadest market

Compliance

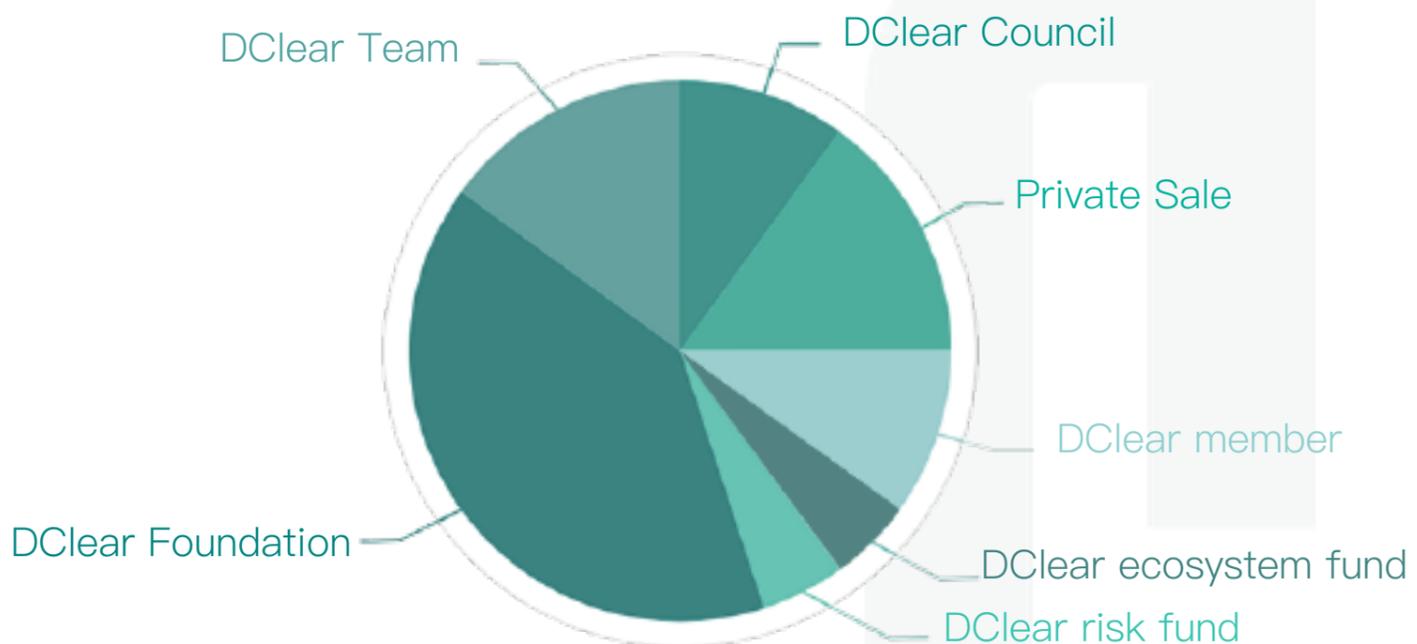
DClear will provide innovative derivative services on the road of compliance and promote the development of the token economy on the basis of a secure, transparent and credible clearing ecosystem.

DClear Token

DCH

DClear Digital Clearing House token (DCH) is published on Ethereum network following erc20 standard. The total amount of DCH is 1 billion, with 1% of mint rate annually for DClear community.

Allocation



Stakeholder	allocation(%)	vesting plan
DClear Foundation	40	freezed, unlock on certain circumstances
DClear Council	10	unlock 10% initially, the rest will unlock gradually in 18 months
Private Sale	15	unlock 20% initially, the rest will unlock gradually in 12 months
DClear member	10	unlocked
DClear Team	15	unlock 10% initially, the rest will unlock gradually in 24 months
DClear ecosystem fund	5	unlocked
DClear risk fund	5	freezed, unlock on certain circumstances

DClear Ecosystem construction

DClear Ecosystem fund

DClear Ecological Fund will be mainly used for project incubation in DClear Digital Asset Clearing Ecosystem.

DCH Usage

DCH is a non-refundable functional utility token which will be used as the medium of exchange between participants on DClear. The goal of introducing DCH is to provide a convenient and secure mode of payment and settlement between participants who interact within the ecosystem on DClear. DCH does not in any way represent any shareholding, participation, right, title, or interest in the Foundation, the Distributor, its affiliates, or any other company, enterprise or undertaking, nor will DCH entitle token holders to any promise of fees, dividends, revenue, profits or investment returns, and are not intended to constitute securities in Singapore or any relevant jurisdiction. DCH may only be utilised on DClear, and ownership of DCH carries no rights, express or implied, other than the right to use DCH as a means to enable usage of and interaction within DClear. DCH are designed to be consumed/utilised, and that is the goal of the DCH token sale. In fact, the project to develop DClear would fail if all DCH holders simply held onto their DCH and did nothing with it.

1. Institutions on DClear would be required to hold DCH to indicate membership status, in order to access the collateral safekeeping and/or deposit services provided within the clearing system;

2. Member institutions would be required to pay DClear for clearing service fees;

3. Holders of DCH may vote in the DClear ecosystem (for the avoidance of doubt, the right to vote is restricted solely to voting on features of DClear; the right to vote does not entitle DCH holders to vote on the operation and management of the Foundation or its affiliates, or their assets, and does not constitute any equity interest in the Foundation or its affiliates).

In particular, it is highlighted that DCH: (a) is non-refundable and cannot be exchanged for cash (or its equivalent value in any other virtual currency) or any payment obligation by the Foundation, the Distributor or any affiliate; (b) does not represent or confer on the token holder any right of any form with respect to the Foundation, the Distributor (or any of its affiliates), or its revenues or assets, including without limitation any right to receive future dividends, revenue, shares, ownership right or stake, share or security, any voting, distribution, redemption, liquidation, proprietary (including all forms of intellectual property or licence rights), or other financial or legal rights or equivalent rights, or intellectual property rights or any other form of participation in or relating to DClear, the Foundation, the Distributor and/or their service providers; (c) is not intended to represent any rights under a contract for differences or under any other contract the purpose or pretended purpose of which is to secure a profit or avoid a loss; (d) is not intended to be a representation of money (including electronic money), security, commodity, bond, debt instrument or any other kind of financial instrument or investment; (e) is not a loan to the Foundation, the Distributor or any of its affiliates, is not intended to represent a debt owed by the Foundation, the Distributor or any of its affiliates, and there is no expectation of profit; and (f) does not provide the token holder with any ownership or other interest in the Foundation, the Distributor or any of its affiliates. The contributions in the token sale will be held by the Distributor (deposit services provided within the clearing system) and the contributors will have no economic or legal right over or beneficial interest in these contributions or the assets of that entity after the token sale.

1. Institutions on DClear would be required to hold DCH to indicate membership status, in order to access the collateral safekeeping and/or clearing services provided within the clearing system.

2. Member institutions would be required to pay DClear for clearing service fees;

To the extent a secondary market or exchange for trading DCH does develop, it would be run and operated wholly independently of the Foundation, the Distributor, the sale of DCH and DClear. Neither the Foundation nor the Distributor will create such secondary markets nor will either entity act as an exchange for DCH.

Na plan

DClear will launch an ecosystem plan called "Na Plan", which implies that DClear will exert the characteristics of Na element (Na element cannot exist alone, usually in the form of various compounds, and plays a huge role in it), consolidate the "iron triangle" of "trading + clearing + depositing", and guarantee the ecosystem balance of the token economy. At the same time, 11 protons in Na element symbolize 11 super nodes in DClear ecosystem. DClear will provide support for the development of DClear and co-construct DClear global ecosystem with the community through the cohesion of community forces.

| Roadmap

DClear 1.0 —ecosystem construction

Establish a sound clearing technology system; create a secure, transparent and credible new ecosystem clearing of digital assets transactions; build a board structure; develop clearing business members.

DClear 2.0 —globalization

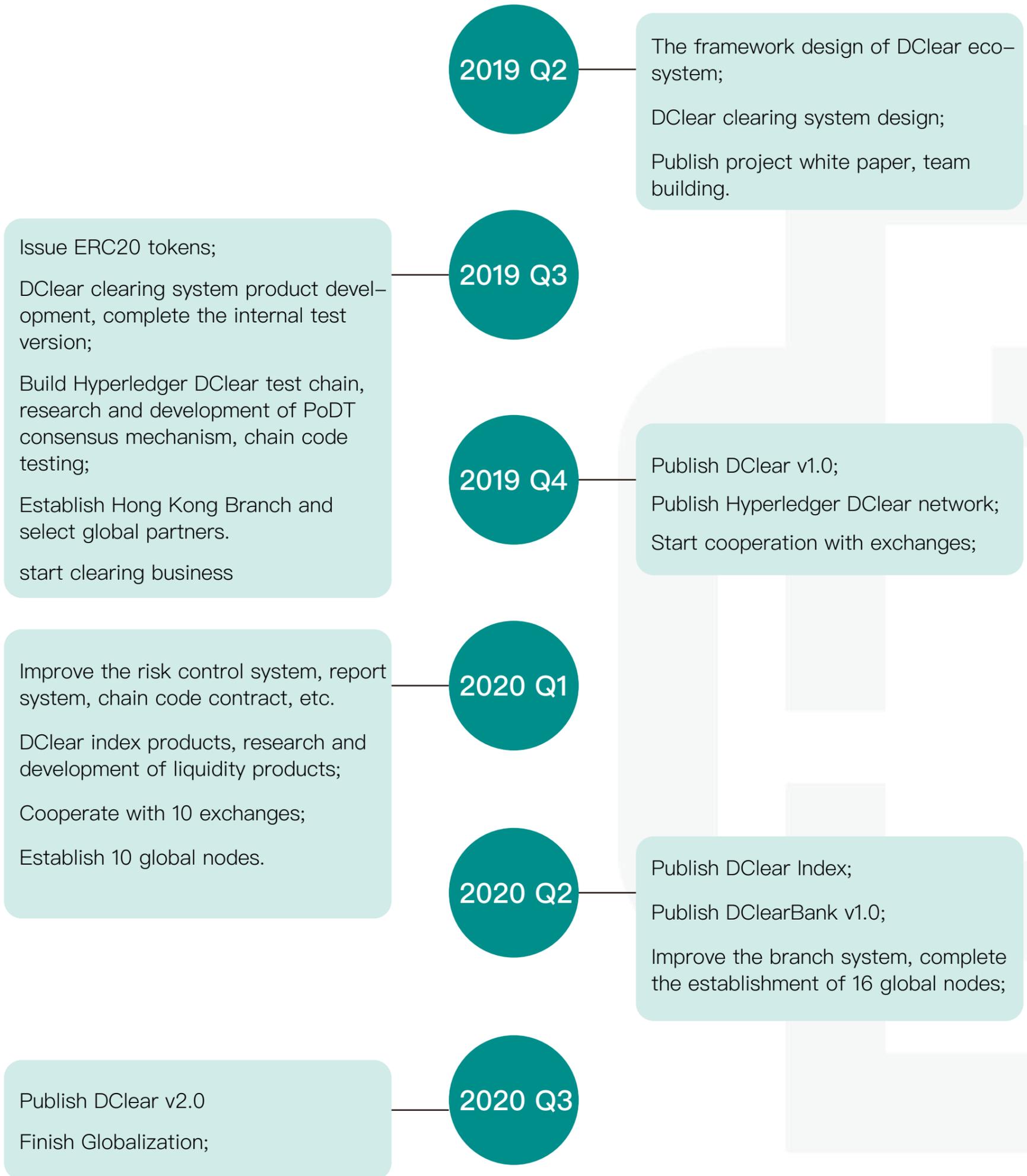
Transaction data and asset data decentralized storage. DClear Research Institute publish price index, risk control model, liquidity products, KYC certification.

Globalization process, establishing 7 branches, 16 nodes.

DClear 3.0 —Compliance

Research and development of clearing ecosystem public chain to create a new clearing ecosystem.

Promote the process of compliance and regulatory system building in digital asset trading market.



| Team



Amos Genish CEO

Experienced expert of commodity trading in Europe. Former director of Eurex Clearing. The Clearing Channel protocol he initiated promote the integration and development of global clearing market. He is the deputy secretary general of EACH.



Rob Monical CTO

Phd in Computer Engineering of University of East Anglia, Member of the UK financial Council block-chain Association, Former system architect of LCH. Multiple years of experience in leading fintech and blockchain R&D teams.



Jack Stoddard COO

Former Partner of BlockT Ventures, Former TAC Europe regional executive. Experienced and expertise in crypto trading, investment and operation, especially in merging resources to improve synergy.



Daniella Pierson CPO

Doctor of finance, Autonomous University of Madrid. Published several research papers on clearing in JFE. Years of experience in CCPs and clearing banks. In the event of the collapse of Lehman Brothers Group, he worked in the London Clearing House for position management and transfer, and had profound knowledge of the value of the clearing house for the safety and efficiency of financial trading market.



David Harrison Advisor

Former CBO of Fortuna, Former Time Space Chain CMO. Familiar with the operation modes of crypto exchanges, investment institutions, project parties, media with senior experience in crypto market operation and resource integration.



George Condous Advisor

Ph.D. in cryptography, University of Zurich. He presided over and edited four international conferences on cryptographic applications and information security. One of the German trusted computing standard setters. He has published dozens of papers in cryptography, blockchain and information security. At present, he mainly research in upgrading various cryptographic infrastructure to meet the industry challenges brought by the advent of quantum computers in the future.

| RISKS

You acknowledge and agree that there are numerous risks associated with purchasing DCH, holding DCH, and using DCH for participation in DClear. In the worst scenario, this could lead to the loss of all or part of the DCH which had been purchased. IF YOU DECIDE TO PURCHASE DCH, YOU EXPRESSLY ACKNOWLEDGE, ACCEPT AND ASSUME THE FOLLOWING RISKS:

1. Uncertain Regulations and Enforcement Actions

The regulatory status of DCH and distributed ledger technology is unclear or unsettled in many jurisdictions. The regulation of virtual currencies has become a primary target of regulation in all major countries in the world. It is impossible to predict how, when or whether regulatory agencies may apply existing regulations or create new regulations with respect to such technology and its applications, including DCH and/or DClear. Regulatory actions could negatively impact DCH and/or DClear in various ways. The Foundation, the Distributor (or its affiliates) may cease operations in a jurisdiction in the event that regulatory actions, or changes to law or regulation, make it illegal to operate in such jurisdiction, or commercially undesirable to obtain the necessary regulatory approval(s) to operate in such jurisdiction. After consulting with a wide range of legal advisors and continuous analysis of the development and legal structure of virtual currencies, a cautious approach will be applied towards the sale of DCH. Therefore, for the token sale, the sale strategy may be constantly adjusted in order to avoid relevant legal risks as much as possible. For the token sale, the Foundation and the Distributor are working with Tzedek Law LLC, a boutique corporate law firm in Singapore with a good reputation in the blockchain space.

2.Failure to develop

There is the risk that the development of DClear will not be executed or implemented as planned, for a variety of reasons, including without limitation the event of a decline in the prices of any digital asset, virtual currency or DCH, unforeseen technical difficulties, and shortage of development funds for activities.

3.Security weaknesses

Hackers or other malicious groups or organisations may attempt to interfere with DCH and/or DClear in a variety of ways, including, but not limited to, malware attacks, denial of service attacks, consensus-based attacks, Sybil attacks, smurfing and spoofing. Furthermore, there is a risk that a third party or a member of the Foundation, the Distributor or its affiliates may intentionally or unintentionally introduce weaknesses into the core infrastructure of DCH and/or DClear, which could negatively affect DCH and/or DClear.

Further, the future of cryptography and security innovations are highly unpredictable and advances in cryptography, or technical advances (including without limitation development of quantum computing), could present unknown risks to DCH and/or DClear by rendering ineffective the cryptographic consensus mechanism that underpins that blockchain protocol.

4.Other risks

In addition, the potential risks briefly mentioned above are not exhaustive and there are other risks (as more particularly set out in the Terms and Conditions) associated with your purchase, holding and use of DCH, including those that the Foundation or the Distributor cannot anticipate. Such risks may further materialise as unanticipated variations or combinations of the aforementioned risks. You should conduct full due diligence on the Foundation, the Distributor, its affiliates and the DClear team, as well as understand the overall framework, mission and vision for DClear prior to purchasing DCH.



Doclear