
METACOIN

METACOIN IS
A CRYPTO CURRENCY
BASED ON
HYPERLEDGER.

CONTENTS

ABSTRACT

The Metacoin Network is a blockchain platform based on Hyperledger Fabric using Chaincode, providing a Mainnet built with its own technology and an ecosystem that can be used in various industries.

The ecosystem that has been created by the Metacoin team is now ready. Blocks are created and nodes are now operational in the Metacoin network. This is an environment where partners, cryptocurrency exchanges and various companies can participate in.

The game project 'BitPet', created by the Metacoin team in 2018 through Hyperledger, has shown the possibility of creating the Metacoin ecosystem. It also has secured a large number of users in the Japanese market, the gaming hub, enabling a blockchain service and cryptocurrency transaction.

Metacoin will create an environment in which projects with high potential in various industries can grow together. We will find a blockchain team with a skill-set and innovative ideas, and support the resources they need and fall short of, in order to provide a blockchain service environment to potential planners and developers, helping them build their fair value in the marketplace. We will expand the ecosystem through cooperation with companies that have outstanding skills and ideas, who are struggling to achieve their goals due to lack of manpower or financial resources.

Using the Mainnet, Metacoin can implement the hyperledger ecosystem comparable to that built by Ethereum. Services required by various industries including games, finance, entertainment, logistics, and so on, can be easily developed, and cryptocurrencies can also be issued for each purpose. We intend to create an ecosystem that enables various services to be used in Metacoin and deliver the Metacoin's value to the users.

METACOIN OVERVIEW

1. Hyperledger
2. Metacoin – Hybrid Blockchain
3. Mainnet 2.0
4. Consensus algorithm

HYPERLEDGER

1

Hyperledger

Metacoin based on a Hyperledger uses blockchain technology unlike existing blockchain projects. Hyperledger is blockchain solutions developed by global IT companies and the Linux Foundation, as an open-source, with greater general purpose and reliability than a blockchain developed by an individual company. This includes a management system that can restrict users and control authority unlike public blockchains.

Hyperledger has several specialized frameworks depending on the purpose of use. There are 6 frameworks and 8 dedicated development tools, including Hyperldeger Fabric, a permissioned blockchain that allows only authorized users to participate.

There are frameworks such as Hyperledger Sawtooth, a platform for building a distributed ledger and distributing, and the Hyperledger Burrow for Smart Contracts. Also, tools for encryption and security, and tools to standardize Smart Contracts help develop Hyperledger.

Hyperledger-based Metacoin has the practical advantages as follows.

Permissioned Blockchain

Hyperledger is a permissioned blockchain, and it grants membership management and differential data access rights in the system. Therefore, the problem of obscuring responsibility that occurs in permissionless blockchains doesn't arise in Hyperledger. This makes it possible to identify the cause of the problem clearly, providing the advantage of increasing the security of the data.

Rather than using the existing Proof of Work or Proof of Stake, Hyperledger maintains the network governance through a consensus method based on a voting system that can maximize the efficiency of the network. This enables Hyperledger to complete transactions unlike existing blockchains where the problem of finality, which cannot complete a transaction even after a long time.

Support for Development-friendly Programming Languages

Hyperledger can build a Chaincode (similar to Smart Contracts) by using a development language used in the past. Hyperledger's Chaincode lowers the barriers to use and provides higher degrees of freedom for developers.

For instance, Ethereum use Solidity as a Smart Contract language, but Solidity's disadvantage is that in order for a developer to write a code, the learning and implementation environment for the language must be prioritized. On the other hand, Hyperledger supports the popular Go-lang, Java, Node.js, etc. as development languages, lowering the barrier to participation in development.

Reasonable Network Fees

Hyperledger provides an environment for chain participants to use the network at a reasonable cost.

Hyperledger does not incur a transfer fee theoretically as the pre-designated endorsed peer executes the Chaincode transmitted from the network. In the case of Ethereum, a fee in the form of Gas is charged as a network fee, and the fee rises rapidly as the number of network users increases. On the other hand, for Hyperledger, an endorsed peer is formed during the initial network setup process, and there is no concern about the increase in the user's network fee.

High Performance

Unlike the transaction process of existing blockchains, Hyperledger processes transactions in parallel by pre-designated endorsed peers. The parallel transaction process enables high performance by dealing with a large number of transactions at the same time. Transaction is carried out in a more efficient way with the EXECUTE-ORDER process than the existing ORDER-EXECUTE process.

Replaceable Module Structure

Hyperledger has the advantage that the entire system is designed in a modular structure so that it can be partially replaced if necessary. In case of the existing protocol, the protocol should be replaced with the corresponding module to change the consensus structure. The initial algorithm can be set so that module replacement is made depending on the consensus of all members or representative's intention according to network governance. For several projects implemented on Metacoin, structure replacement into an efficient algorithm module, or other sub-module changes/replacements will be supported under the agreement of network members.

Multi-blockchain Support

Hyperledger has a multi-blockchain function — multi-blockchain is divided into multiple channels, so independent governance can be maintained for each channel. Participating nodes can select and participate in the blockchain they want to share after signing up for membership in a specific channel and can also subscribe to multiple channels.

Therefore, users can individually subscribe to required channels and participate as network members. The features of Hyperledger provide compatibility for development and flexibility for users.

Hyperledger 2.x

Version 2.0 of Hyperledger Fabric is released in 2020, with enhanced decentralization by adding a new management system for Chaincode. Once multiple participants agree on a decision through the Chaincode, it can be shared on a shared ledger.

With an improvement of Hyperledger Fabric, data sharing and security have also improved. As participants in the authorized network know each other, they are interested and involved in the consensus process. Many participants want to share their data with a higher level of security and moreover, fast decision-making and transaction processing are important in corporate services. Hyperledger can process transactions without slowing down the platform by rapid consensus unlike other blockchains.

Since the release of version 2.0, it implemented decentralization and functions of the public blockchain, maintaining the identity of the private blockchain. With Hyperledger Fabric, the advantages of both public and private blockchains can be combined to create a more advanced blockchain platform.

METACOIN

HYBRID BLOCKCHAIN

2

Metacoin

Hybrid Blockchain

Metacoin is an innovative cryptocurrency based on Hyperledger. It helps solve and improve the problems that existing cryptocurrencies have. Currently, Bitcoin and Ethereum referred to as the first-generation and the second-generation cryptocurrency respectively, have several limitations, such as slow-speed transmission and limitations of smart contracts with the limitations of scalability, and high fees.

Based on Hyperledger, a private blockchain, Metacoin will provide the following solutions with differentiated technology introducing LinuxONE as the first cryptocurrency based on Hyperledgers.

	Bitcoin	Ethereum	Metacoin (Hyperledger)
Classification	Public Blockchain	Public Blockchain	Private Blockchain
Participants	Any node can participate in	Any node can participate in	Only nodes approved for membership service. Issues PKI certificates
Consensus Algorithm	PoW	PoW (Planning to convert PoS)	RAFT
Completeness of Transactions	N/A	N/A	Available
Performance	Block time: 10 minutes	Block Time: 12 seconds	Consensus required for renewal/ Quick transaction
Transaction Disclosure	Discloses transactions	Discloses transactions	Two Options: Transaction Disclosure vs Transaction Encryption
Smart Contract	Almost none / Only available for a limited purpose	Implementable in Ethereum Virtual Machine (EVM) / Developed in Solidity	Implementable through Chaincode / Easy development with Go and Java
Minimum Configrura-tion	Minimum Config: 1 Minimum Config: 2 in case of obstacles in the configuration	Minimum Config: 1 Minimum Config: 2 in case of obstacles in the configuration	Minimum Config: 4 in case of obstacles in the configuration

Metacoin is not a blockchain for businesses, but a platform that supports various B2C blockchain services such as games and finance. Tokens from various services can be issued on the Metacoin network just like Ethereum's DApp.

Metacoin is a project that aims to expand the ecosystem. Many decentralized blockchain projects today, have created problems that conflict with real business in terms of structure. Our team Discovered these issues at the beginning of development, and developed Metacoin, taking both technical compatibility and user convenience into consideration. Metacoin that provides both B2C and B2B services, can set up token issuance or blockchain environment according to needs and purposes

MAINNET 2.0

3

Mainnet 2.0

With Hyperledger Fabric upgraded to version 2.0, the “Metacoin Network” also made technological improvements. In the past, Hyperledger Fabric had difficulty in configuring as a private blockchain, but it is now possible to configure distributed nodes and decentralize nodes in the Metacoin network, which is the first commercial Mainnet based on Hyperledger Fabric. It is also possible to distribute the qualifications of node operating authority, enabling more reliable network operation.

Metacoin reinforced security by installing a cold wallet for storing cryptographic assets and nodes essential for Mainnet operation on LinuxONE of IBM. Metacoin's security level corresponds to the International Common Criteria (CC) EAL5+.

Inblock has made the “Metacoin Network” the world's top blockchain and will increase its value with its users.

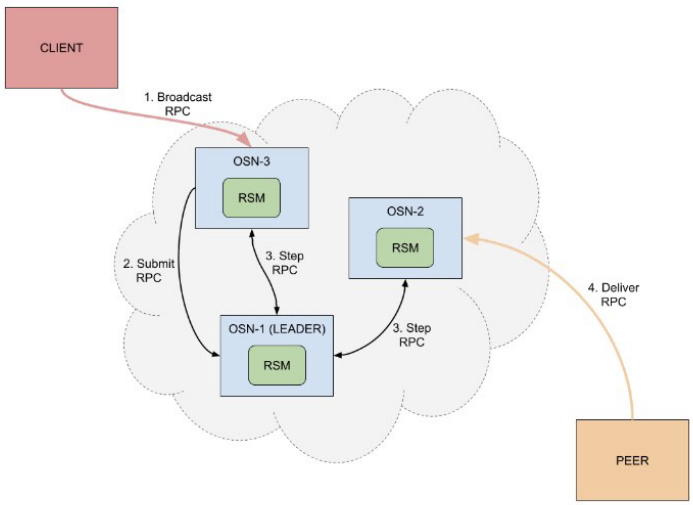
CONSENSUS ALGORITHM

4

Consensus Algorithm

The existing consensus algorithms, POW and POS, have the advantage that anyone can participate in the consensus process at the beginning, but there are problems with excessive resource use and fees. RAFT, the consensus algorithm of Hyperledger Fabric used in the Metacoin network, responds to conflicting blockchain changes by overcoming obstacles with minimal resources, which allows to maintain a stable blockchain network without wasted resources.

Basically, RAFT has a replicated state machine structure, allowing a single leader node to process a client request and update the log. It operates in a form that enables the log to be reflected in other replicas. When an issue is found in the leader node, a new leader is elected according to the leader election protocol. If only one node with authority creates blocks in a closed environment, it can provide better performance than the PoW mechanism of Bitcoin, which requires consensus of multiple nodes.



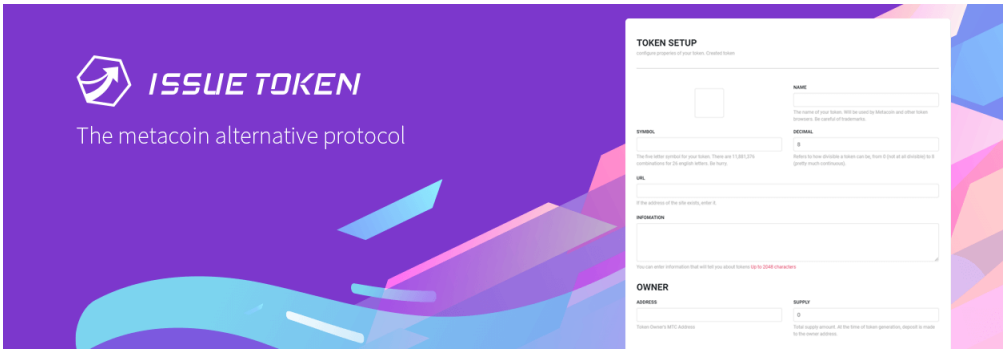
METACOIN MAINNET

1. ISSUE TOKEN
2. METAWALLET
3. METASCAN
4. DokkaebiONE

ISSUE TOKEN

Anyone can easily create and issue cryptocurrencies using issue tokens. Starting with the MRC-10 protocol, Metacoin can issue various tokens on the Metacoin Mainnet. For example, separate protocols are provided for each purpose, such as issuing tokens for voting as MRC030 and tokens for NFT as MRC400.

Chaincode allows you to quickly generate tokens in the desired form. By setting basic information and conditions, users can issue cryptocurrencies according to their purpose. Tokens based on the Metacoin network are transmitted through its own Mainnet and protocol layer, enabling fast transactions.



METAWALLET

Metacoin provides users with a safe and convenient Meta Wallet, allowing users to send all types of cryptocurrencies issued on the Metacoin network to the Meta Wallet. Meta Wallet allows users to divide and manage assets using multiple addresses. This has the advantage that even with one account, users can have more than one wallet address. Coupons, tickets and cryptocurrencies issued by Issue Token are safely stored in Meta Wallet. Holders of cryptocurrency and other cryptoassets have the right to incinerate and issue additional items.

Users can access Meta Wallet using PC or smartphone. Meta Wallet for web browsers is now available. It can be easily installed as an extension in Chrome, MS Edge, and Naver Whale browsers.

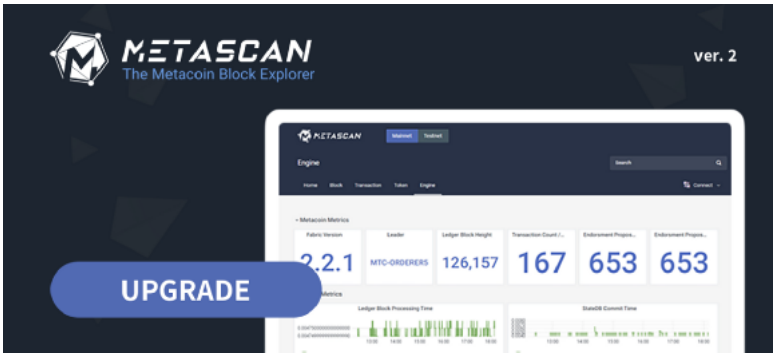
*Currently available in English, Japanese and Korean. Other languages will be available soon.

The private key for the Metacoin address is stored in Inblock KMS running in LinuxONE environment, which is safe from external attacks. It automatically switches to the locked state after a certain period of time, preventing unauthorized access. Meta Wallet can be used in multiple PC environments with a 12-word recovery phrase.

METASCAN

Metacoin provides METASCAN that allows to check the Metacoin network data. Users can check detailed data and transactions history on the Metascan that has a function similar to Etherscan, a derivative service of the Ethereum network.

Metascan provides results for all transactions and logs that occurred in the Metacoin network, not tampered or modified information. Whenever a user checks the quantity of tokens or transaction history in all transactions including Metacoin, data is provided in real time.



DokkaebiONE

Metacoin has installed the security engine 'DokkaebiONE' in Hyper Protect Virtual Servers (HPVS) of IBM LinuxONE to strengthen the security of the digital asset storage 'Meta Wallet'.

In the case of issuance and distribution of cryptocurrencies, Metacoin follows an open coin economy system like a public blockchain; when it comes to digital asset protection, it aims to achieve centralized control like a private blockchain. It also established a separate wallet and security system that can protect digital assets to respond equally to internal forgery and intrusion threats as well as external hacking threats.

IBM LinuxONE with DokkaebiONE is encrypted simultaneously once it is transmitted, while being encrypted several times during transmission. LinuxONE is a server that supports hardware-based encryption on both on-chip or CryptoExpress cards, and can encrypt both stored data and data in transit.

LinuxONE allows authorized users to access data through digital asset managers, issuing providers, and exchange functions to protect private keys and data. With up to 190 cores and 40 terabytes of memory, the increase in blockchain transactions does not cause performance degradation with scale.

If an attempt to hack cryptocurrency is detected within the Metacoin platform, external threats are blocked to prevent data leakage. For high safety, all data is encrypted, and even with a key, decryption is possible only in the HPVS environment of IBM LinuxONE.

In the case of insider data theft and threats, they can be managed through the DevSecOps pipeline, enabling more thorough security against internal threats.

TANGIBLE ECOSYSTEM

1. Metacoin-Based Service
2. Expanded Business Model

Metacoin-Based Service

Metacoin has developed various services based on Hyperledger.

Game Service

Starting with BitPet, a hyperledger-based game service developed in 2018, we have planned and developed game-related services such as Paradise Club and PlayPang, the game platform.

After the service ended at the beginning of 2021, we developed game services and implemented a token economy that provides incentives to users by using Hyperledger's Chaincode. Based on the advantages of Hyperledger, fast block generation and transaction processing, the possibility of game service was discovered.

The result of the service development will be used to develop new game services, make game items real assets, and game activity history that cannot be forged.

Entertainment Service

For entertainment services, there are two things we are developing: Filmsdaq allowing users to directly participate in movie production through crowdfunding, Entersdaq for trading tokenized IPs of artists and entertainers, and IP of movie contents.

It includes an internal exchange function that allows entertainment content to be created as tokenized assets and traded in the form of assets such as securities (stocks).

In the future, we are planning to secure IP of entertainment content through partnership and create NFT to activate blockchain-based asset

Expanded Business Model

NFT and De-Fi

NFT

NFT (Non-Fungible Token) is unique and non-replicable with its scarcity to be fully recognized. For digital assets created with NFT, the user's transaction history is recorded on the blockchain, which cannot be forged or tampered. As duplicated digital asset may look different from the original NFT, it's easy to see if it's authentic.

NFT is applied to assets with a specific value as each asset is an irreplaceable token. Not only works of art, but also various objects such as game items and limited-edition products can be created with NFT.

NFT Protocol

Metacoin provides a protocol for NFT. The NFT-dedicated token for managing NFT generation and fees is defined as MRC400. The MRC400 token generator can designate and generate tokens to be used for transactions, and an MRC401 token is created under the MRC400 token. The MRC400 token is used to store common information of the MRC401 token, and the MRC401 token is used for NFT transactions.

MRC401 tokens can be sold as one NFT and sent to others. When NFT transactions are made with MRC401 tokens, certain Metacoins are deposited. As the transaction progresses in the future, the Metacoins pays a fee to the original NFT creator and establishes an NFT-based trading ecosystem.

When using game services on the Metacoin network, items are actively traded as more users use the game. The token used for item transaction can be specified by the service provider, and the original creator of the item can generate a lot of profits with fees.

A new economy can be created by utilizing the features of NFT, which can be expected to increase the main token transaction volume and increase the value of Metacoin. It also provides an auction service to activate NFT trading. The NFT auction service transparently provides bidders' details and bid amounts, enabling safe NFT transactions. Currently, the auction service is available on Testnet, and we plan to provide a formal service after moving to the Mainnet in the future.

De-Fi (Decentralized Finance)

De-Fi is a decentralized finance, suggesting a new financial industry where blockchain-based cryptocurrencies are commonly used. It enables all financial transactions, such as payments, remittances, deposits, and loans on the blockchain. Users can receive loans with cryptocurrency as collateral or interest on deposits by depositing tokens.

De-Fi promotes international financial transactions so that anyone in the world can access a variety of financial products. This helps save time and money in international financial transactions, and can be used in countries that do not have a financial system, such as developing countries.

It is possible to create new products by combining existing financial products and blockchain. Its security level is superior to existing financial transactions in terms of identity authentication and asset management. Even without a financial institution, it provides financial services using the Smart Contract (Chaincode) of the blockchain based on trust and transparency.

Metacoin is considering financial services of digital assets and cryptocurrency to provide DeFi service. It is expected that financial services will be available across digital assets, including cryptocurrency deposits, loans, and interest, as well as NFTs. Various types of financial services that can generate financial profits by creating new P2P loan products with NFT as collateral or by borrowing NFT with cryptocurrency deposit, will be possible.

TOKEN ECONOMY

1. The Value of Metacoin
2. Coin Issuance & Purpose of Use

The Value of Metacoin

The Metacoin team intends to create a new blockchain ecosystem through Metacoin. Metacoin is more advanced than the cryptocurrency we experience today, and it is elaborately designed to embed various economic values, so it will be able to be used in multiple service areas. Metacoin will play an essential role in our ecosystem as follows.

Cryptocurrency for Protocol Service

Metacoin is a cryptocurrency that provides platform services. Metacoin allows users to create hyperledger-based blockchain networks and create Dapps (Decentralized Applications).

Metacoin also has a function as a currency. It performs as a commonly known means of storing and exchanging value. The transaction price of Metacoin is formed by supply and demand in the market, and Metacoin holders can contribute to the formation of the commodity value of Metacoin by trading activities within the cryptocurrency exchange.

Seed for Incubating Blockchain Developers

Metacoin will serve as a bridge to introduce blockchain technology and institutions into the blockchain ecosystem, which is differentiated from existing protocol coins and exchange-issued coins. Metacoin and In-Block will cooperate with blockchain companies with potential through more active participation in the blockchain ecosystem.

Metacoin will invest directly or indirectly to expand the Metacoin ecosystem, and the target of investment will be individuals and institutions that can contribute to the ecosystem. Metacoin will work with both individuals and groups from different backgrounds, such as a blockchain company that wants to share the value of Metacoin or a cryptocurrency exchange that shares the purpose.

Coin Issuance & Purpose of Use

MTC is a cryptocurrency based on Hyperledger. Details about coin issuance, raising, distribution are as follows.

Issuance of Coin

- ☐ SYMBOL: MTC (Meta Coin)
- ☐ Initial Price: MTC = $0.1
- ☐ $1 = KRW 1,130 (he USD/KOR currency conversion on March 25, 2021)
- ☐ Total Issuance : 2 billion (2,000,000,000 MTC)

Metacoin usage and distribution

Since the initial issuance in 2018, the current distribution, future unlocking, node rewards, etc. are as follows.

According to the initial coin distribution plan, sales account for 30% of the total quantity and are distributed to 23% reserve, 16% partnership,10% for node,10% for marketing, 6% for the ecosystem, and 5% for teams.

Currently, about 611 million metacoins are distributed by sales and other compensation purposes. About 31% of the total volume is in circulation, and 69% of the volume is managed according to lock-up and future release plans.

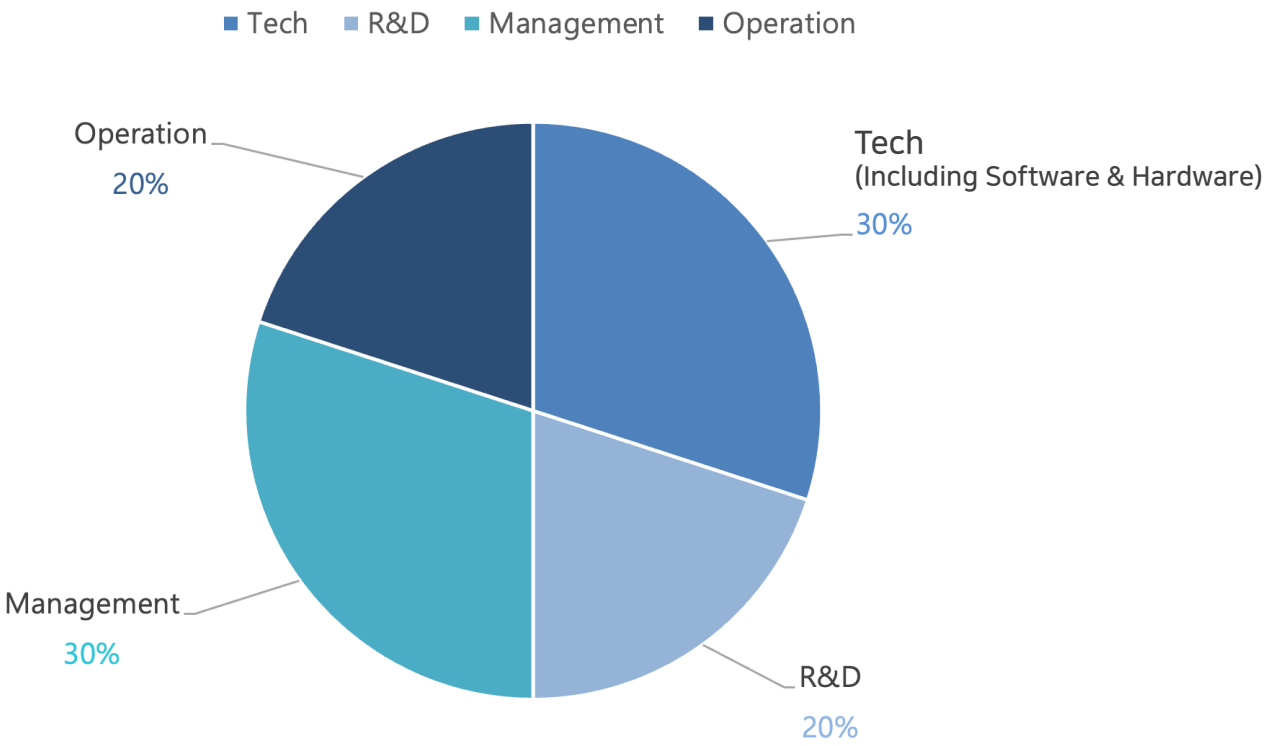
Metacoins, locked up in Inblock Limited, are issued according to the issuance plan. Unlocked Metacoin will be used for ecosystem operation through node and partners rewards.

Metacoin is unlocked according to the issuance plan every month, and the node reward for the operation of the Metacoin network is also unlocked according to the plan.

Node rewards

Metacoin has 5 main operating nodes, the total amount of rewards distributed to nodes is 200 million MTC. Each node receives 3,124,000 MTC rewards for node operation per month. Node assignment will be checked after internal review according to the security and development capabilities of each project.

Fund Plan



□ Tech: Cost for blockchain engine and Dapp development.

□ R&D: Expenses to activate the Metacoin Network and Rewards for AirDrop, NFT staking of new services. It will be mainly used for compensation and development of network users.

□ Management: Costs required to operate Inblock Limited and Metacoin Network.

□ Operation: Costs for operating the Metacoin ecosystem and expanding globally.

PARTNERSHIP

PARTNERSHIP

Disclaimers

Disclaimers