

# RIGO WHITE PAPER

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## 01 Overview

**Project RIGGO aims to become an interchain standard for private blockchains that will be popularly used in digital asset and financial markets.** It creates an ecosystem where data, digital assets, and services originating in different private blockchains can be linked and interoperable. This will provide users with a variety of digital asset-related services, and offer project companies opportunities to lower barriers to entry and invigorate their businesses.



In the rapidly changing industrial market of technological advancements, businesses between companies and services provided to customers have continuously faced issues with security and transparency, which has led to a rapid transition from a centralized structure to the decentralized system of blockchain. In particular, in the financial market where safe asset management and information protection are essential, a number of companies are already preparing for decentralized services by adopting private blockchains. Among them, Hyperledger Fabric, a representative private blockchain, is considered suitable for application to the financial market.

In the future, private blockchains are expected to be widely used for a range of services that can utilize financial and digital assets, and the demand for interchains that can serve as bridges between private blockchains will gradually increase. In addition, if private blockchain-based decentralized financial systems and digital asset services are applied across the existing financial market, the entire blockchain market is expected to grow rapidly beyond its current market size.

The public blockchain market already has a number of interchains for interoperability and service expansion between different blockchains. Through these interchains, blockchain-based businesses and services can compensate for the limitations of different blockchains, thereby enabling convergence and continuous growth of the ecosystem. Therefore, **private blockchains, which will emerge across the industry in the future, will expand blockchain-based businesses and services in the financial and digital asset markets, and interchains are expected to play a pivotal role in interconnecting blockchains within the ecosystem.**

※ RIGGO: To make a waterway, let something flow (Latin dictionary meaning).

## 02 Market Trend

# Market Overview

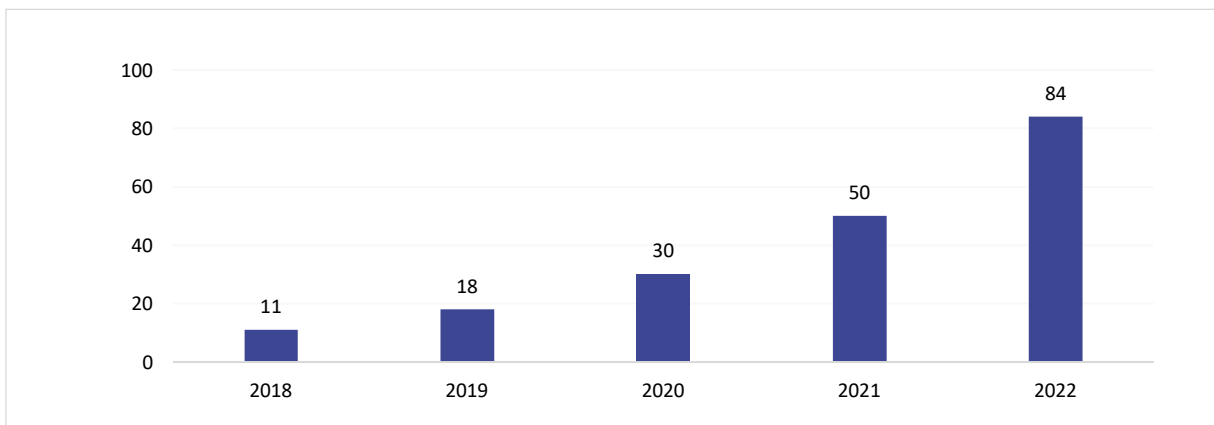
With the launch of Ethereum in the footsteps of Bitcoin, a number of projects have actively formed an ecosystem in the blockchain market, and this market led by virtual assets is growing rapidly, with a market cap exceeding USD 1 trillion (approximately KRW 1,300 trillion).

The blockchain market is composed of both public and private blockchains. In particular, public blockchains occupy a large portion of the current market, with Bitcoin and Ethereum accounting for more than 70% of the public blockchain market. On the other hand, the size of the private blockchain market is relatively small, but as the blockchain business is being incorporated into the institutional system, private blockchain businesses that can meet the needs of corporate clients are expanding. According to KPMG's Market Trends Report, the **technology industry driven by private blockchains has grown nearly eightfold over the past five years**, from USD 1.1 billion (approx. KRW 1.44 trillion) to USD 8.4 billion (approx. KRW 11 trillion), with an **average annual growth rate of 60%**.

< Global Blockchain Technology Market Size as of July 2022, estimated by KPMG >

CAGR (Compound Annual Growth Rate): 60%

Unit: USD 100 million



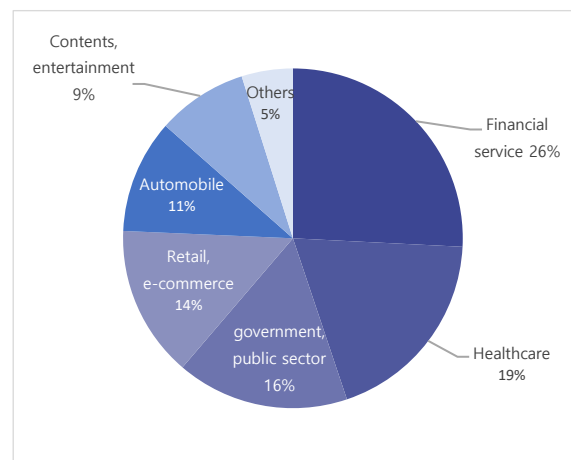
**As the financial market moves toward decentralization in Korea as well as abroad**, companies are moving forward with their projects for decentralized computer systems and services by adopting private blockchains, which are characterized by privacy and fast transaction speeds. **If private blockchains**, which are suitable for financial information and asset management, **expand into the existing financial market of USD 106 trillion, their growth potential is predicted to exceed 100 times the existing virtual asset market, worth USD 1 trillion.** According to the enterprise blockchain report published by CasperLabs in 2023, **about 500 companies, or about 86% of the total 604 companies** promoting blockchain projects, have announced that they are **willing to adopt interchains** that enable the secure transfer of assets and data between private and public blockchains. This is a clear indicator that market demand for interchains is increasing across industries, and now the acquisition of interchain technology is becoming a necessity rather than an option.

## 02 Market Trend

# Prospects

The crucial keywords to keep an eye on in the future blockchain market are **expansion and synergy**. The blockchain market, which has been expanding along with the public blockchain-based virtual asset market, is expected to grow significantly in the future as private blockchains are applied to traditional industries and interchains enable service expansion and provide liquidity of digital assets for seamless business linkage.

According to the Global Blockchain Report released by KPMG, the future growth of the blockchain industry can be divided into 7 areas, the largest of which is financial services (26%). **Private blockchains are expected to play a key role in the growth of the blockchain industry across all sectors, not just financial services, which account for the largest share.** In addition, as the financial sector shows an active interest in private blockchain-based security token businesses based on the STO guidelines announced in early 2023, rapid changes in the blockchain market are expected in Korea as well.



< Blockchain Market Size by Sector >  
Source: KPMG

In the case of security tokens, which are attracting the most attention in the financial market in 2023, various types of assets such as financial products, large-scale assets (ships, real estate, etc.), artworks, and copyrights are being tokenized and listed on the market, lowering the barriers to entry for individual investors. **The financial market recognizes the need to apply blockchain-distributed ledgers for transparent and stable management, and tends to adopt private blockchains as they are the most suitable.**

Private blockchain-based services are expected to be actively used in other markets as well. The healthcare sector can issue medical data and patient information as NFTs to ensure safe information sharing and transactions, and the e-commerce sector can issue product-based NFTs to enable safe and transparent transactions.

As the blockchain market expands with a rising number of services in the ecosystem, the number of private blockchain-based digital assets will also increase, and accordingly, the demand for customized interchains that can provide scalability and liquidity will skyrocket. **The role of interchains in connecting multiple private blockchain services and ensuring the smooth and safe transfer of various digital assets such as all NFTs (real and digital assets, etc.), data (transaction information, personal information), and financial assets (stocks, bonds, etc.) existing in the ecosystem will become ever more important.**



### 03 Project RIGO

# About

The core technologies and services of Project RIGO consist of **RIGO Core**, **RIGO Bridge**, and **BYFFIN DApp**. RIGO Core stores digital assets and data, RIGO Bridge controls digital asset transfer through linkage with individual private blockchains, and BYFFIN DApp. provides services to manage and utilize digital assets.



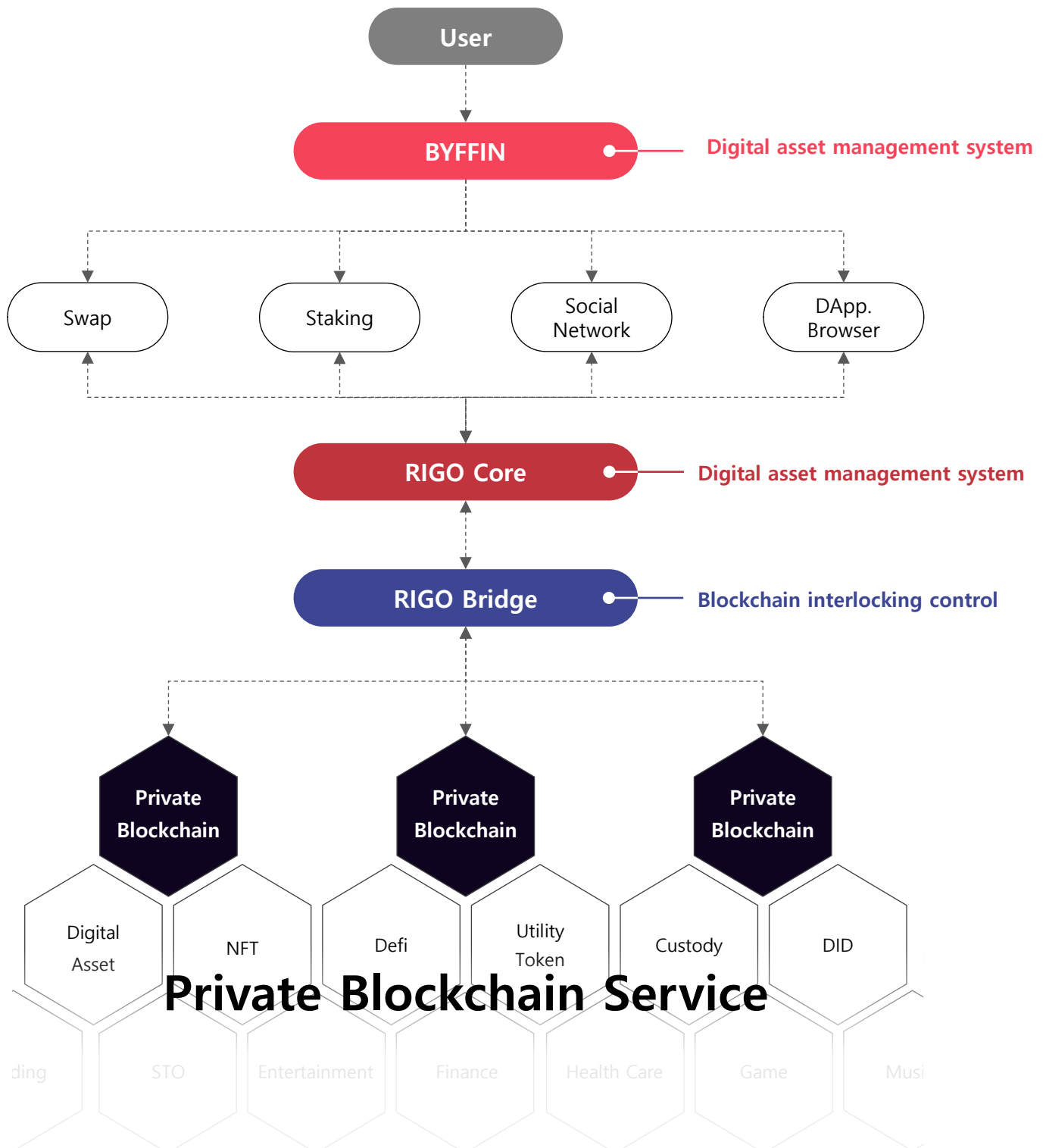
## RIGO SWAP System for Private Blockchain



### 03 Project RIGO

# Ecosystem

RIGO Ecosystem is designed to create an ecosystem with individual private blockchains and provide users with various services related to private blockchain digital assets, as well as provide private blockchain project companies with opportunities for project activation and various business expansions.



## 04 Product

# RIGO Core & RIGO Bridge

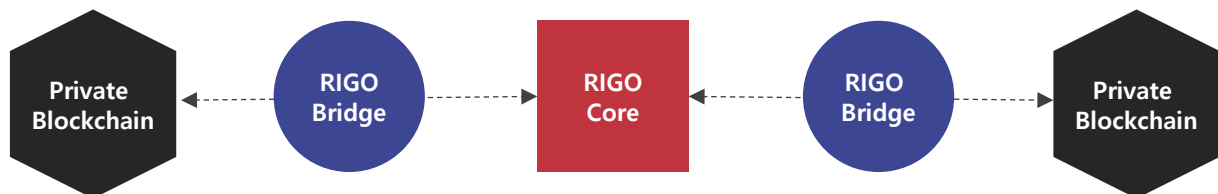
The blockchain products of Project RIGO are **RIGO Core** and **RIGO Bridge**.

### RIGO Core

Development Language: GO  
 Smart Contract : EVM (Solidity)  
 Tendermint-based  
 Ledger Model: Account Model  
 Consensus: DPoS  
 Block Time: 1 sec  
 Target TPS : 2,000 ~ 3,000 TPS  
 Default OS : Ubuntu 18.xx

### RIGO Bridge

Development Language: GO  
 HyperLedger Fabric supported  
 HyperLedger Fabric asset exchange supported  
 ERC- 20 asset exchange supported  
 STO (ERC-1400) exchange supported  
 NFT (ERC-721) exchange supported



**RIGO Core is a public blockchain network independently developed by the RIGO Foundation with the core goal of building an ecosystem that includes both public and private blockchains for the scalability and convenience of private blockchains.** The private blockchain token transferred to RIGO Core can be swapped with other private blockchain tokens or staked to link services and businesses.

**RIGO Bridge interlocks and controls blockchains to ensure the seamless transfer of tokens between RIGO Core and individual private blockchains.** When tokens are withdrawn from an individual private blockchain, tokens equal to the withdrawn amount are locked up in the private blockchain network, and tokens corresponding to the deposited amount are issued in RIGO Core. Conversely, when tokens are withdrawn from RIGO Core, tokens equal to the withdrawn amount are locked up or burned in RIGO Core, and tokens corresponding to the deposited amount are unlocked in the private blockchain.



## 04 Product

# BYFFIN DApp.

Users can use swap and staking services for digital assets issued in individual private blockchains through BYFFIN, exchange information, and communicate with each other using social networking functions, as well as easily access individual private blockchain services from the DApp. Browser.

### Wallet

- Digital asset verification and management service
- RIGO Core / Private Blockchain  
Multi-chain service available by selecting a network
- All or RIGO Core and private blockchains  
Balance check of each blockchain network and free deposit and withdrawal available

### Staking

- Various reward services
- Single staking  
Single staking of RIGO or RIGO series private blockchain tokens
- Paired deposit

### Swap Service

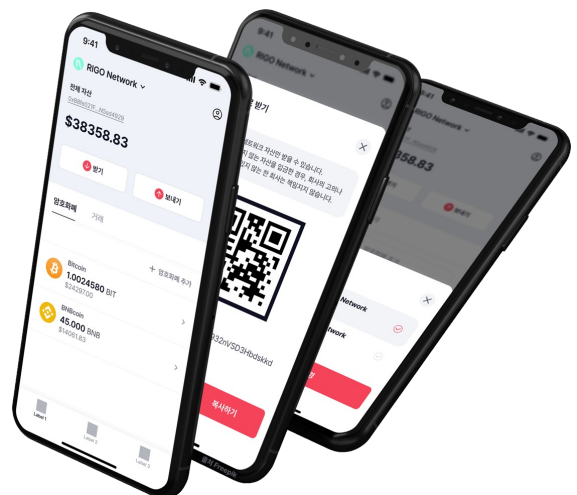
- Asset exchange service for service ecosystem exchange
- Exchange between RIGOs and RIGO series private blockchain tokens
- LP Pool service rewards users who provide the amount required for asset exchange, and offers sufficient liquidity to users who need to exchange various assets.

### DApp Browser

- Introduction of private blockchain services and businesses to support smooth interaction with users
- User guide for convenient access to private blockchain-based services
- Private blockchain in-app service through API integration

### SNS

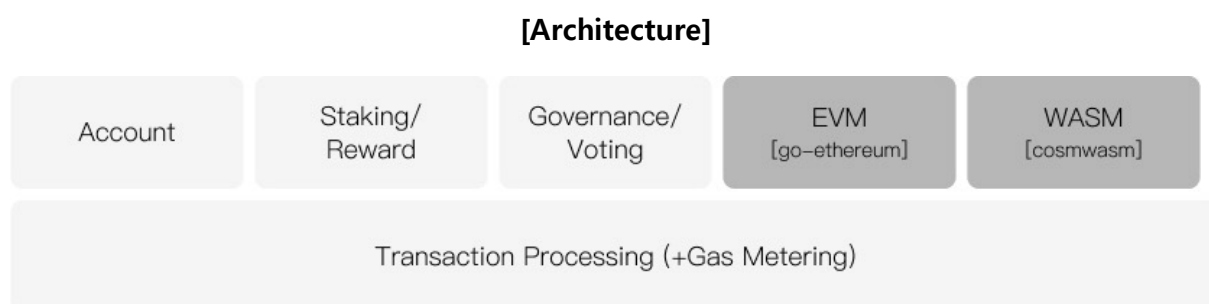
- Information exchange and communication between RIGO and private blockchain service users
- A place for users and companies to activate the ecosystem by sharing information and content in the blockchain and digital asset markets
- Posting and messenger services



## 05 Development

# RIGO Core

### State Machine



#### Account

The account is responsible for asset ledger and balance management, asset transfer, validation, inquiry, reward payment, etc. Nonces are used to ensure the correct order of transactions and prevent double spending, and block producers (proposer addresses) are paid fees as rewards.

#### Staking / Reward

Responsible for managing staking, delegatee and rewards. It consists, among others, of transaction verification, reward payment, staking, delegating and withdrawal, and establishes a block reward system.

Staking and delegation have a minimum amount limit according to `amountPerPower`, which is defined in the governance rules. Minimum quantity units are explained in the reward rules below.

Power is calculated in proportion to the amount staked and delegated, and this proportional value is governed by the governance rules. The power value is calculated for each `amountPerPower` value unit defined in the governance rules, and the rewards are calculated based on the value defined in `rewardPerPower`.

Staking and delegated withdrawal can be canceled one-to-one with the executed transaction, and withdrawal transactions require the hash value of the staking and delegated transactions. Based on the hash value, the quantity is converted into usable coins.

In order to execute the conversion to usable coins, a return grace policy is applied based on the `lazyRewardBlocks` defined in the governance rules. This is for the stability of the RIGO network.

## 05 Development

# RIGO Core

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### State Machine

#### Governance / Voting

The governance rules of RIGO consist of `maxValidatorCnt`, `amountPerPower`, `rewardPerPower`, `lazyRewardBlocks`, `lazyApplyingBlocks`, `minTrxFee`, `minVotingPeriodBlocks`, and `maxVotingPeriodBlocks`.

The rules are set initially and can be changed through proposals and voting.

In the proposal transaction, the voting start block height and block period should be set accurately, with the voting block period required to be set to a value between `minVotingPeriodBlocks` and `maxVotingPeriodBlocks`.

The voting transaction includes the hash value and the choice value of the proposal transaction, and if a proposal is approved by a two-thirds majority, the proposal is accepted and becomes effective at a set time.

Once voting has concluded, the application time is determined according to the value set in `lazyApplyingBlocks`.

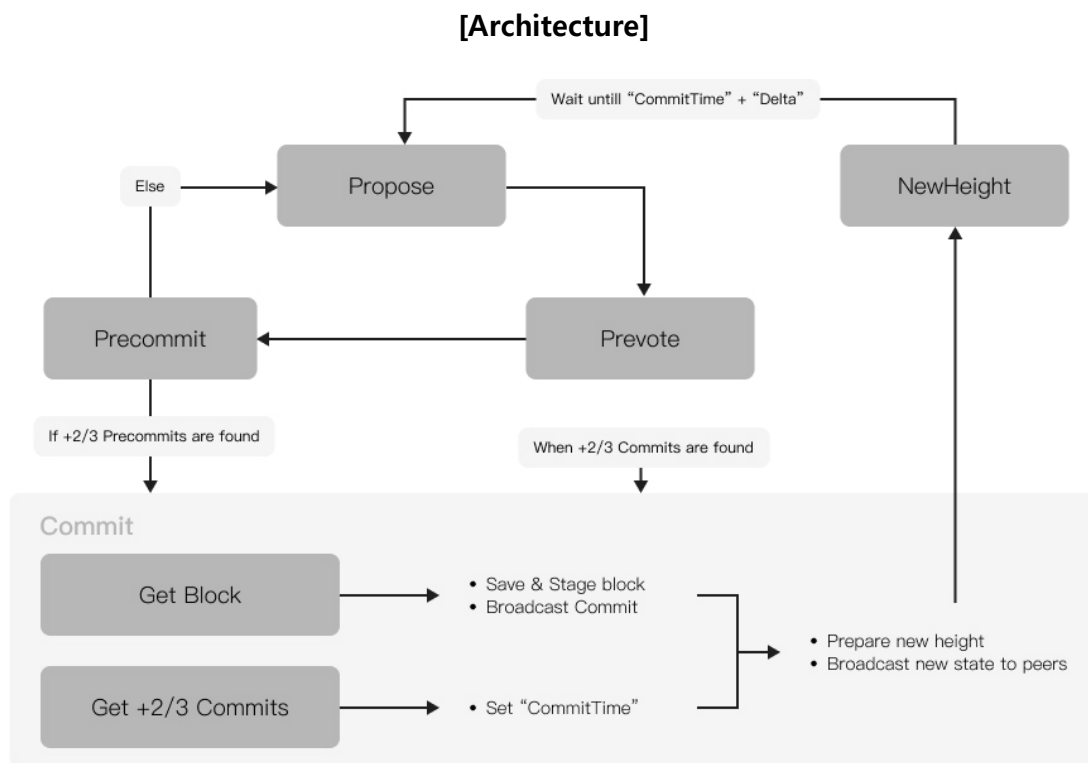
#### Transaction Processing

The RIGO blockchain supports parallel processing, reducing response time and increasing overall transaction throughput (TPS).

## 05 Development

# RIGO Core

### Consensus Engine



### Consensus Algorithm

RIGO is based on the Tendermint consensus algorithm. This consensus algorithm combines the Practical Byzantine Fault Tolerance (PBFT) algorithm with the Delegated Proof of Stake (DPoS) concept to enable block chain construction, with the main goal of achieving consensus while limiting the influence of malicious validators such as Byzantine failure.

**Proposal Phase:** The leader proposes a new block. This proposal will be broadcast to other validators.

**Prevote Phase:** Each validator casts a pre-vote, choosing to accept or reject the proposal.

**Precommit Phase:** Validators verify the pre-voting results of other validators, and if there is a sufficient number of agreements, they confirm and precommit the pre-voting results.

**Commit Phase:** Once the precommit is complete, the validators commit the block formally. At this stage, the block is guaranteed not to change.

## 05 Development

# RIGO Core

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### Consensus Engine

#### **P2P (Peer-to-Peer)**

The RIGO network uses a P2P network model to interconnect validators and propagate blockchain data. This achieves distribution and decentralization, allowing validators to communicate and share data independently.

#### **RPC (Remote Procedure Call)**

In RIGO, validators can use RPCs to send messages to different nodes in the network, execute procedures on those nodes, and receive results in return. With RPCs, validators can perform tasks such as block proposal, voting, and consensus-related message transmission. RPCs enable smooth interaction between validators in the network as well as internal communication of the engine.

## 05 Development

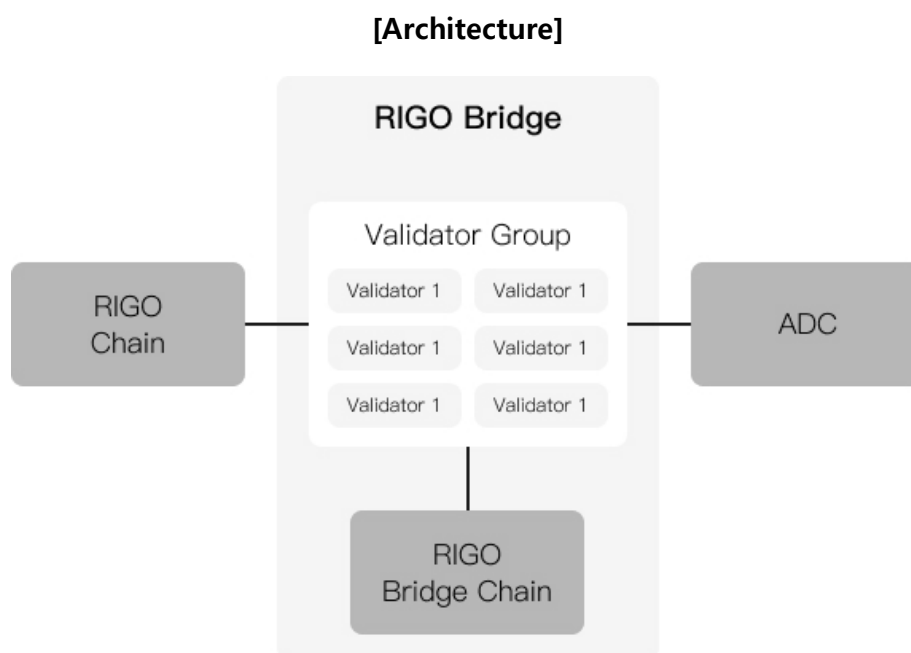
# RIGO Bridge

### Overview

RIGO Bridge is a system for exchanging assets issued via public and private blockchains, which supports safe and reliable asset exchange through multi-sig transaction agreements.

### RPC (Remote Procedure Call)

RIGO Bridge safely exchanges assets by the lock-and-mint and unlock-and-burn methods. When the validators verify the lock and burn results from the "from Chain" and reach an agreement, the asset is exchanged through a mint or unlock process in another "to Chain". The entire asset exchange process is recorded, making it transparent and reliable.



RIGO Bridge consists of the Validator Group and the RIGO Bridge Chain. Each validator verifies the asset from the "from Chain" and safely transfers the asset to the "to Chain", requiring the consensus of multiple validators. If verification fails, no assets will be exchanged.



## 05 Development

# RIGO Scan

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### Overview

RIGO Scan is a RIGO Blockchain explorer that provides transaction, address and block information of the RIGO network, as well as validator and proposal information. This allows users to check the network status in real time, verify the details and validity of transactions, and inquire about validators and governance rules.

# BYFFIN DApp.

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### Overview

BYFFIN Wallet is a mobile application that interacts with the RIGO Blockchain network, providing secure and convenient RIGO wallet management. Users can create wallets, manage assets, perform staking and delegation functions to check returns, and delegate their assets to validators.

## 06 Token

# Information

## Connection of Private Blockchain Digital Assets

RIGO Symbol



RIGO Wordmark



RIGO Logo




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### RIGO Basics

Token Name	RIGO (Korean: 리고)
Symbol (Ticker)	RIGO
Blockchain	RIGO Core (Public Blockchain)
Project Name	Project RIGO
Max Supply	1,000,000,000 RIGO

# 06 Token Economics

## Rewards

- | RIGO Staking Reward
- | RIGO Paired Deposit Reward
- | Liquidity Supply Reward
- | Airdrop Reward
- | Event Participation Reward

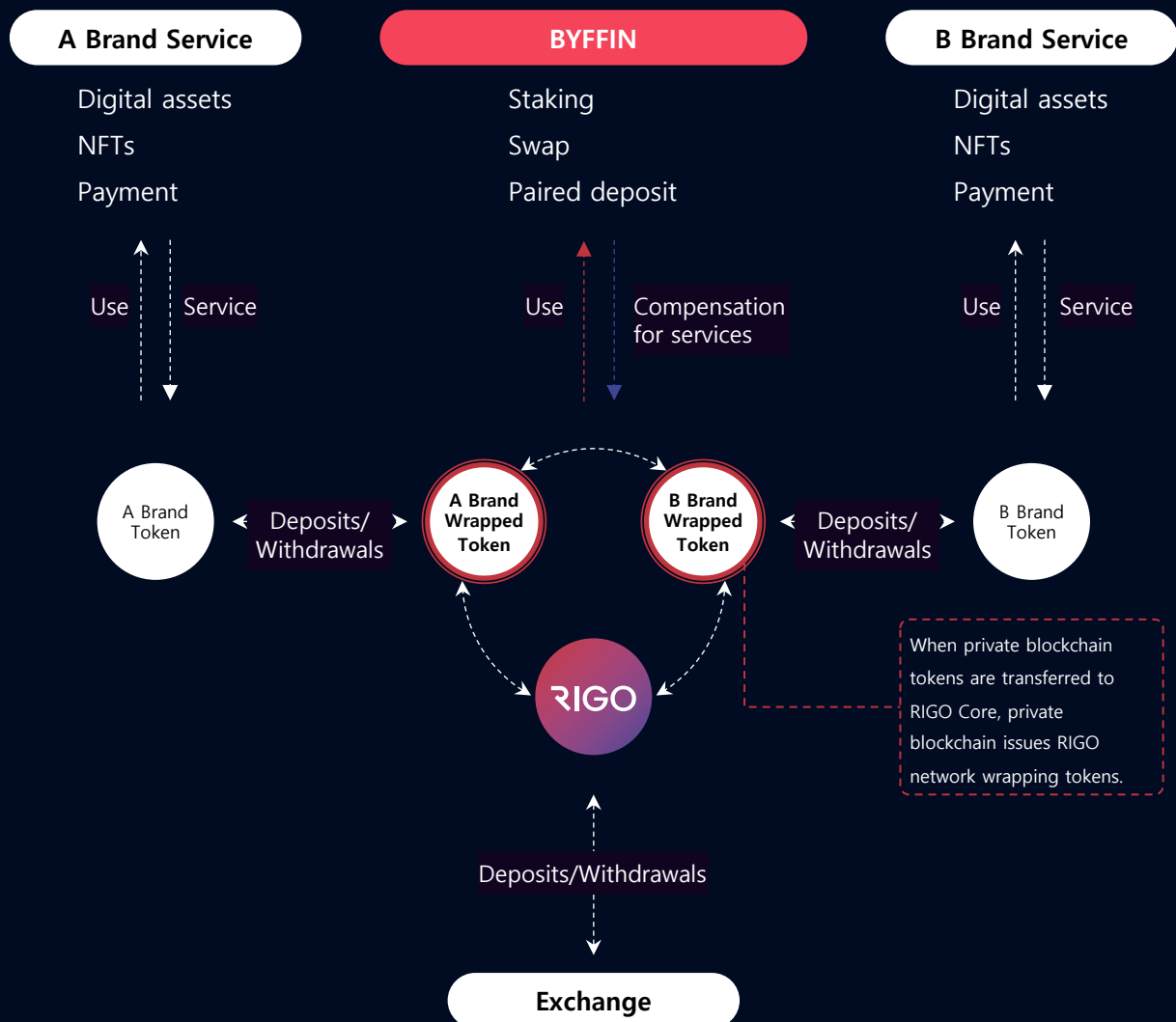
## Use

- | RIGO  $\leftrightarrow$  Wrapped Token Swap
- | RIGO Staking
- | RIGO +Private Token Paired Deposit
- | Participation in Governance
- | Use of Private Blockchain Service

## Burn

- | A Portion of the Network Usage Fee
- | Buyback

## RIGO Economic Structure



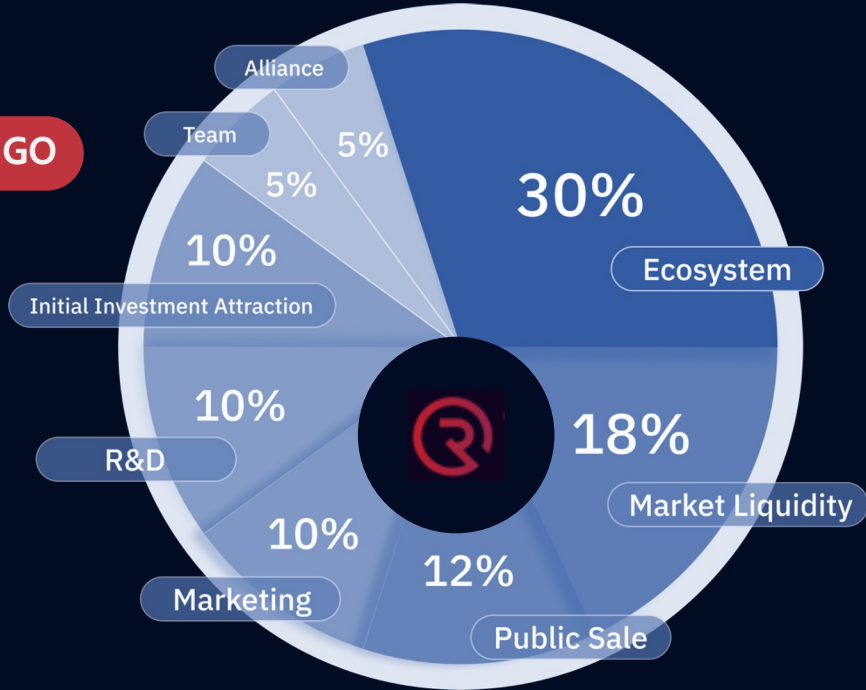
## 06 Token

# Distribution

### RIGO Distribution Plan

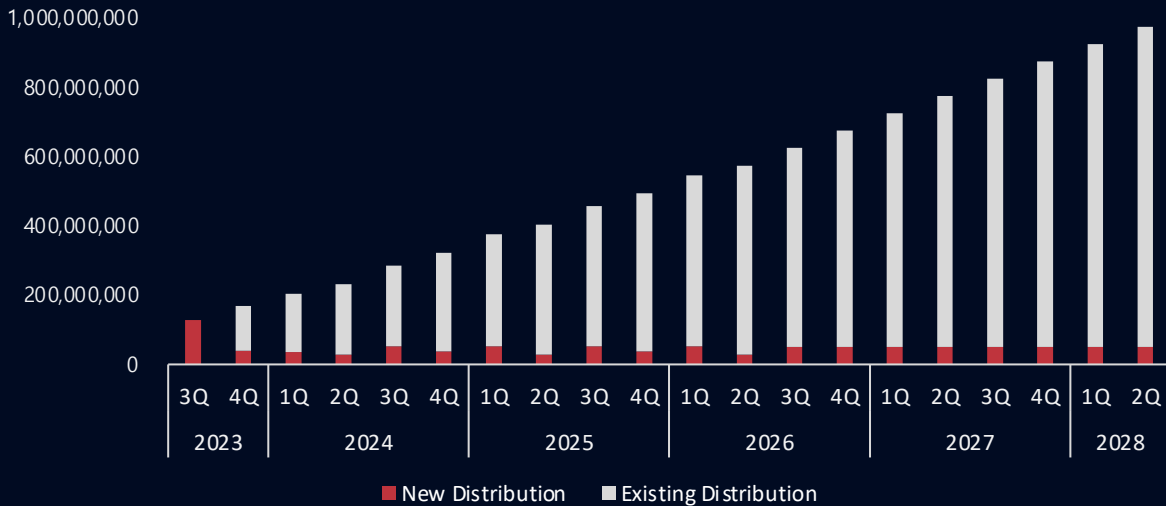
**Max Supply 1,000,000,000 RIGO**

Ecosystem	300,000,000
Market Liquidity	180,000,000
Public Sale	120,000,000
Marketing	100,000,000
R&D	100,000,000
Initial Investment	100,000,000
Team	50,000,000
Alliance	50,000,000



### Estimated RIGO Circulation

- 120 million in the first quarter, then an average of 50 million per quarter according to the market overview / approx. 1 billion for 5 years



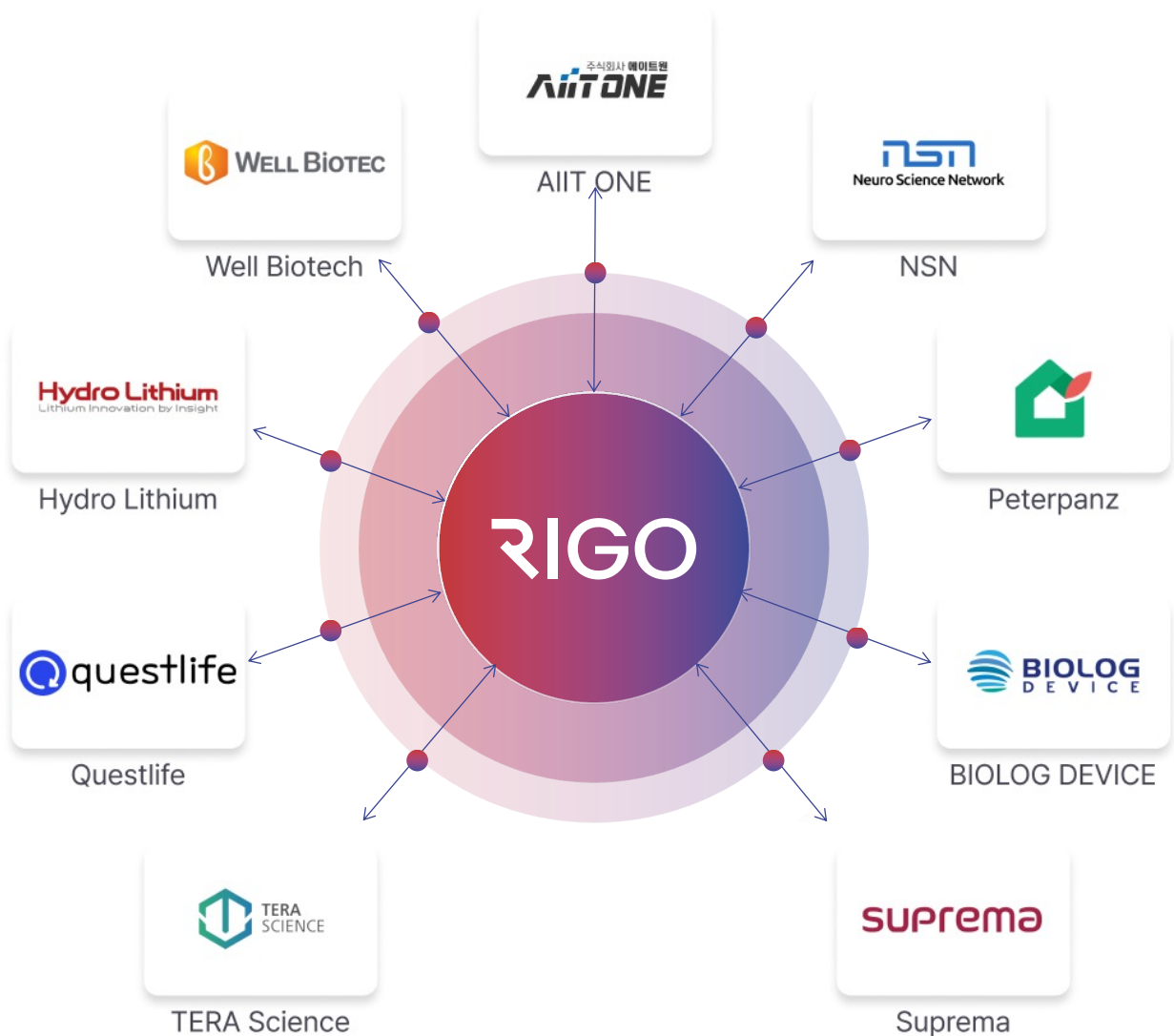
### RIGO Token Inflation

- Inflation of 5 to 15% per year based on the initial issuance of 1 billion (50 million to 150 million RIGOs)
- Depending on the number of transactions, the block reward rate will change, but inflation will remain within the range of 5% to 15%.
- Depending on future market conditions, we are considering a plan to lower the inflation rate according to governance decisions from the 1st or 2nd year.

## 07 Governance

RIGO adopts and operates the Delegated Proof of Stake (DPoS) consensus mechanism to increase the efficiency and speed of the network. The initial governance consists of a total of 9 participants, and the governance members will operate and expand the ecosystem by performing roles such as block verification, agenda proposal, and voting.

In the future, the RIGO ecosystem will form a governing body with major players in various industries such as finance and healthcare, as well as government agencies, and provide user-friendly services through participatory decision-making on major business decisions and various collaboration projects.



## 08 Roadmap



### 2022. 3Q-4Q

- Team Set up
- Project RIGO Kick-Off
- RIGO Core Development
- RIGO Bridge Development



### 2023. 1Q

- Project RIGO White Paper Ver 1.0 Release
- RIGO Scan Development
- BYFFIN DApp. Development
- RIGO Foundation Establish



### 2023. 2Q

- RIGO & BYFFIN Official Page Launch
- RIGO Core & Bridge Audit
- RIGO Core & Bridge Alpha & Beta Ver. Launch
- RIGO Scan Launch (Explorer)
- BYFFIN DApp. Alpha Ver. Launch
- Social Media Launch



### 2023. 3Q

- Domestic Exchange List
- RIGO Core & Bridge Official Ver. Launch
- BYFFIN DEX. V1. Service Release
- BYFFIN Swap Service Release
- BYFFIN Single - Staking Release
- Private Blockchain Domestic Alliance Expansion



### 2023. 4Q

- Overseas Exchange List
- RIGO Swap & Single Staking API Release
- BYFFIN SNS Service Release
- BYFFIN DApp. Browser Service Release
- Private Blockchain Global Alliance Expansion



### 2024. 1Q – 2Q

- BYFFIN Dex. V2. Service Release
- BYFFIN Pair Deposit Release
- STO, NFT to RIGO Swap Service Release



## 09 Team & Partner

# Team

### **Youngho Jung** RIGO CEO

Chief Executive Officer

Representative of RIGO in charge of overall business  
Business expert who has been involved in strategic planning including long-term and short-term business plans & sales, and has experience in managing various types of businesses both online and offline.

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### **Ryan Lee** RIGO CSO

Chief Strategy Officer

Head of Strategic Planning  
Strategic planner of the RIGO project with experience in the finance and IT platform industries, including multiple projects in the fields of finance, blockchain, and virtual assets

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### **Ryan Park** RIGO CTO

Chief Technology Officer

Head of Technology  
Technology development expert who developed backend systems, blockchain core technologies, and bridge systems for exchanging assets between different mainnets  
Currently in charge of developing RIGO's blockchain core and a bridge system that interconnects private and public blockchains.

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### **Youngmin Kim** RIGO CFO

Chief Financial Officer

Head of Finance  
Finance and accounting expert with many years of experience in the game and blockchain industries. Currently in charge of RIGO's overall service and financial accounting.

## 09 Team & Partner

# Partner



### AIIT ONE

Games, VR/AR/MR solutions, etc.



### Peterpanz

Real estate direct trading platform



### NSN

Treatment device development, procurement/distribution, etc.



### Well Biotech

EV chargers, Biopharmaceuticals, etc.



### Hydro Lithium

Lithium, Engineering, etc.



### BIOLOG DEVICE

Fingerprint recognition solution development, etc.



### TERA Science

Vaccine development, production of parts and materials, etc.



### Suprema

Development of original biometric technology, etc.



### Questlife

Self-healthcare shopping mall

## 10 Compliance

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PLEASE READ THIS DISCLAIMER CAREFULLY.

This white paper is a document describing the plan and vision for Project RIGGO's business and was written and distributed exclusively for the purpose of providing information. It does not offer promises or guarantees regarding the content contained therein. This white paper is not provided as a business plan, business prospectus, or proposal, and it should not be interpreted as an investment proposal or solicitation, such as securities, business trust units, or collective investment plan units, in any jurisdiction.

The contents described in this white paper are based on the best possible information available at the time of writing and may be modified, augmented or abridged at a later date. Thus, no guarantee can be provided that the contents will not change in the future. Accordingly, nothing regarding Project RIGGO's business plans, future projections or achievement of goals shall be considered a guarantee or a promise for the future.

No guarantee is provided for the completeness or accuracy of the information (market prices, size, etc.), charts, and graphs contained in this white paper, and any and all forecasts, projections, and estimates contained herein are speculative in nature and based on certain assumptions. Forward-looking statements may turn out to be incorrect and may be affected by inaccurate assumptions, known or unknown risks, uncertainties and other factors beyond our control. In addition, some or all of the forward-looking statements may not materialize or may differ materially from the actual results.

This white paper is not written for the purpose of soliciting or recommending the purchase or investment in tokens. Under no circumstances should it be interpreted as an offer to purchase or sell RIGGO tokens, and nothing in this document shall serve as a basis for contracts or investment decisions. We expressly deny any liability for direct or resultant damages or losses of any kind arising directly or indirectly from reliance on the information contained in this white paper, or from any errors, omissions, or inaccuracies in the information contained herein. In addition, no one shall have any obligation or right to conclude any contract or prepare legally binding documents related to the sale of RIGGO tokens based on this white paper, and no one may use this white paper for the purpose of collecting or receiving funds.

All investments involve risks, including price volatility, lack of liquidity and the possibility of a total loss of principal. Before making investment decisions, investors should use due diligence and potentially solicit the help of independent financial, legal and tax experts on the topics discussed in this white paper before exercising their own judgment on the relevant market. When deciding to invest in or purchase RIGGO tokens, we recommend to check the regulations and laws regarding virtual assets in your country of residence.

Investing in or purchasing RIGGO tokens does not guarantee the principal and return, and there is a risk of a loss of principal and return due to unforeseen risks as well as those specified above. All risks arising from this shall be borne entirely by the investor, and RIGGO, which provides the service, is not responsible for any investment losses.

## 11 Contact

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**Community://t.me/RIGOcomm**

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