White Paper

Version 2.0

Disclaimer

None of the contents of this document shall be considered an offer to sell or an invitation to purchase any coin, nor shall any offer, solicitation, or sale of SYMM tokens by SymVerse take place in any jurisdiction where such offer, solicitation, or sale would be illegal. Therefore, no part or copy of this white paper should be taken or transmitted to any country where distribution or advertising related to the coin sale described in this white paper is prohibited or restricted. This white paper may include certain statements, financial information, or forecasts. All of these are merely forward-looking statements or information and cannot be used as a basis for any conclusion or as a promise. Therefore, this white paper does not constitute any advice for sales nor form part of any opinion or solicitation provided by SymVerse to assist with investment decisions or the purchase of SYMM.

SYMM is a utility coin and may have no performance or specific value outside of the SymWorld ecosystem. This white paper only describes information related to the platform's technical content, operation, and current vision. There are inherent risks and uncertainties associated with all participating members or partners, their businesses and operations, the initial coin sale of SYMM, and the SymVerse project. While we strive to achieve our intended vision, please be aware that numerous unforeseen potential factors may affect the outcome. We do not warrant or guarantee any statements in the white paper, as they are based on our beliefs, expectations, and assumptions, which cannot be assured due to the possibility of various unexpected events.

SYMM is a platform that requires ongoing development and improvement. Many implementations may be continually refined during the development process. In cases where implementations differ from the white paper, the specific implementations take precedence. Blockchain, cryptocurrency, and other technological aspects of our market are in their early stages and will face many challenges, competition, and a changing environment. Before relying on this document, please consult with appropriate advisors and others.

SymVerse SYMM

The term "SymVerse" is a neologism formed by combining the prefix "Sym," meaning "together," and the suffix "Verse," meaning "interact," conveying the idea of "all participants helping each other and living in symbiosis."

SymVerse is a blockchain mainnet platform, and the network of connected SymVerse mainnets is called the "Fractal Network." The ecosystem that expands based on the Fractal Network is referred to as "SymWorld."

Declaration

Nature uses only the longest threads to weave her patterns,
so, each small piece of her fabric reveals the organization of the entire tapestry.
- Richard Feynman -

Since the introduction of the Bitcoin white paper in 2008 and the launch of Ethereum in 2015, blockchain systems have infused the spirit of the internet—openness, sharing, and collaboration—with new elements of "decentralization" and "direct participation." Under the banner of Web 3.0, data decentralization and self-sovereignty have already become the ethos of a new era.

In a future where artificial intelligence and IoT permeate as new economic agents, blockchain's core functionality will center on defining the address system that regulates relationships between economic agents and linking innumerable assets and data through blockchain data ownership.

SymVerse predicts that a decentralized identifier (DID), capable of expressing the diverse economic activities and interconnectedness of various economic agents and objects within future social infrastructures, will be essential. In response, it introduced a new blockchain mainnet that operates with its own independent decentralized ID system. The SymVerse mainnet is currently the only blockchain operating based on decentralized ID.

The **Web3 economy** is fundamentally driven by **transaction cost economics**. Early blockchain mainnets were unable to accommodate the various services demanded by existing platform economies or provide fast transaction processing speeds. As a result, there have been attempts to interconnect existing mainnets and their dependent networks. However, in the future, various mainnets will offer their own fee structures, and these fee structures will influence both user scale and transaction volume, ultimately becoming the foundation of each mainnet's competitiveness.

On mainnets with high transaction fees, applications requiring lower fees cannot coexist. Therefore, **specialized or niche mainnets**, where applications with similar characteristics can

coexist, will emerge. A new vision for interconnected blockchain networks is required to link these diverse mainnets. **SymVerse 2.0** provides this new blockchain network environment, where countless mainnets can connect on equal terms through a **mainnet identifier** embedded within its proprietary decentralized ID system. Unlike Ethereum, Solana, and other existing mainnets, SymVerse envisions a blockchain network where multiple mainnets coexist, referring to this collection of mainnets as a **Fractal Network**.

SymVerse's decentralized ID consists of individual IDs and the accounts contained within them. By providing a standardized framework for these decentralized IDs, users can distinguish between their numerous accounts. Within the Fractal Network, the use of decentralized IDs enables the identification of specific purposes, facilitating seamless interoperability between different mainnets. Additionally, by utilizing the accounts within personal decentralized IDs, SymVerse envisions the potential for **quantum-resistant address systems** in preparation for the era of quantum computing.

SymVerse 1.0 introduced the prototype decentralized ID called **SymID** and a multi-blockchain DNA known as the **Citizen Chain**, establishing a mainnet and service infrastructure designed for future blockchain networks.

SymVerse 2.0 enhances practicality and scalability to meet the demands of the Web3 economy through unique DNA capable of supporting diverse account features, decentralized IDs tailored for specific industries, and user-friendly programming capabilities. It further evolves the Fractal Network, where various mainnets coexist, and strengthens the mining reward mechanism for existing **Proof of Network (PoN)** participants by transitioning to **Proof of Stake (PoS)**, ultimately enabling participating nodes to receive rewards through staking.

Additionally, SymVerse provides a foundation that enables the nodes of the mainnet to integrate with platforms such as AI and IoT, broadening the application scope of blockchain and adding expansion functions to create an economic order where the real world and the metaverse are integrated. Through this, the ecosystem allows Web3 applications to participate voluntarily and grow independently within the SymVerse mainnet and Fractal Network.

I. Challenges of Blockchain Mainnets

The blockchain ecosystem, represented by Bitcoin and Ethereum, presents a new paradigm for transforming data into value with data uniqueness and transaction transparency for the future internet aimed at a hyper-connected society. However, despite its admirable spirit, exceptional ideas, and technology, blockchain has not yet been practically utilized for everyday transactions. We believe that this is due to certain inherent flaws.

Disparity with Web 2.0 Performance

The existing blockchain ecosystem requires significant time for block generation due to its decentralized consensus process, resulting in slow block creation and transaction confirmation speeds. To overcome these weaknesses, most blockchain mainnets have evolved to incorporate centralized network functions among nodes that can provide trust within the consensus process. For blockchain mainnets to offer advantages and strengths that surpass Web 2.0, they must provide complex functionalities that connect simpler transaction protocols, decision-making protocols, data sovereignty for privacy protection, and decentralized governance.

Passive Response to KYC/AML

For Web 2.0 to expand into Web 3.0, blockchain mainnets need to provide features that allow them to be conveniently used like private networks. Both domestic and international virtual asset exchanges are applying various travel rules and whitelist systems, increasing user inconvenience. The blockchain alternative to address this issue is the DID (Decentralized Identifier). DID is a core solution for self-sovereign data management and privacy. However, major Web 2.0 platforms like Google and Meta dominate privacy-related services with single sign-on solutions that secure personal information. Blockchain mainnets can expand Web 3.0 services by leveraging DID to provide solutions for KYC (Know Your Customer) and AML (Anti-Money Laundering).

Lack of Diversity in Transaction Costs

Traditional web platforms offer various pricing and fee structures. Blockchain mainnets, on the other hand, impose transaction costs known as Gas based on system usage. This can lead to higher transaction costs for more complex Web 3.0 applications due to their intricate transaction structures and computations. To overcome this, specialized blockchain mainnets that can accommodate diverse transaction cost structures are necessary.

Bottlenecks in Web 3.0 Adoption

Blockchain applications predominantly rely on standardized smart contracts. Developing applications using these smart contracts is more difficult than Web 2.0 development, causing bottlenecks that delay the spread of Web 3.0. Solutions and usage methods must be provided that allow more small business owners and internet application companies to easily adopt blockchain and popularize Web 3.0 services.

Value Bias and Inadequate Reward Structures

As decentralized networks expand, the problem of value monopolization by a small number of participants with substantial computing power or significant stakes is becoming entrenched. This value bias and the moral hazard among value providers can slow down the influx of various types of services and participants into mainnets or blockchain ecosystems. Additionally, it strays from the core values of "reward based on contribution" and "reasonable symbiosis" for users who contribute to the actual building of the blockchain ecosystem. Such issues raise fundamental questions about the sustainability of blockchain and highlight the importance of value-sharing between ecosystem providers and consumers.

Absence of Automatic Governance Systems

Monetization and arbitrary control by a small group have been widely criticized. This is often due to issues related to the initial distribution of coin issuance, the selection of contributors participating in the consensus process, and the concentration of rewards. To resolve this, blockchain users should be empowered to create their governance by applying features such as voting, staking, rewards, and penalties.

II. SymVerse Features

SymVerse introduces a new approach and innovative design philosophy to create a better world through blockchain.

Socio-Economic Convergence Based on Game Theory

The design of the SymVerse blockchain platform is based on various techniques and conclusions well-known in game theory, focusing on the perspective of individual participants pursuing their interests. The mechanism is designed to guide participants toward voluntary symbiosis, even while they seek personal gains. Game theory has been applied in the following ways across governance, consensus process participation incentives, and the production, distribution, and consumption stages of the blockchain:

- **Block Generation Consensus Structure**: Incorporation of veto power from strategic voting theory.
- **Motivation and Reward Distribution**: Incentive-compatible reward distribution based on mechanism design.
- **Voluntary Node Participation**: Introduction of a voluntary participation mechanism through staking policies.

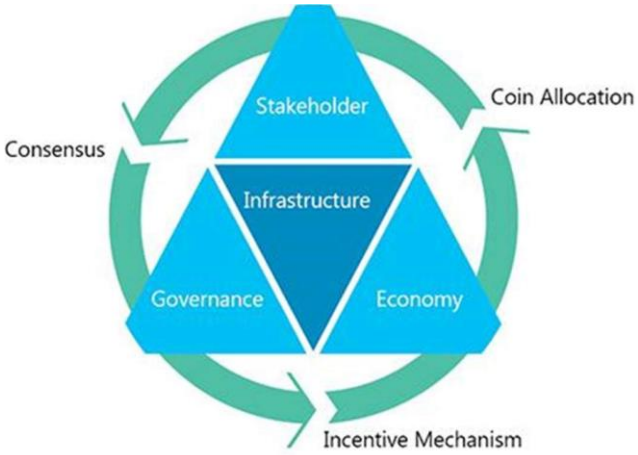
Innovative Blockchain Technology Through Integrative Approaches

Existing blockchain platforms are a fusion of various academic disciplines. SymVerse expands on this tradition by applying achievements from fields such as monetary and financial theory, social choice theory, game theory, systems engineering, computing theory, and network theory to the functional design of its blockchain platform.

Adoption of a Sustainable Dynamic System

Blockchain platforms are divided into stakeholders (S), economy (E), governance (G), and technical infrastructure (I). For sustainable platform operation, the individual processes must satisfy intra-process stability and pursue inter-process stability. In other words, individuals

and groups as stakeholders must coexist, the production, consumption, and distribution of coins must be incentive-aligned, all consensus processes must be automatically handled fairly, and the technical infrastructure must be designed as a dynamic system that considers real transaction times and network quality.



Building a Symbiotic Ecosystem Centered on Coin Holders

Traditional platforms have operated with a focus on providers that operate blockchain nodes. Blockchain consumers hold or use coins provided by these node-operating suppliers and contribute to the blockchain ecosystem but do not receive rewards for their participation. SymVerse offers an incentive structure where blockchain consumers can earn rewards by staking mainnet coins on providers' nodes, fostering a sustainable ecosystem. This approach enables producers, distributors, and consumers to voluntarily participate and coexist in a virtuous cycle of rewards.

Forward-Looking Open Design

Blockchain is evolving into Web3, the future internet based on user self-sovereignty and value operation. However, major blockchains have weaknesses in areas such as transaction processing speed, user convenience, account scalability, and fairness in coin distribution. Producers and distributors also face challenges related to speed, scalability, storage capacity, and governance. SymVerse has researched the direction of future blockchains and designed a forward-looking and open platform that incorporates the following perspectives:

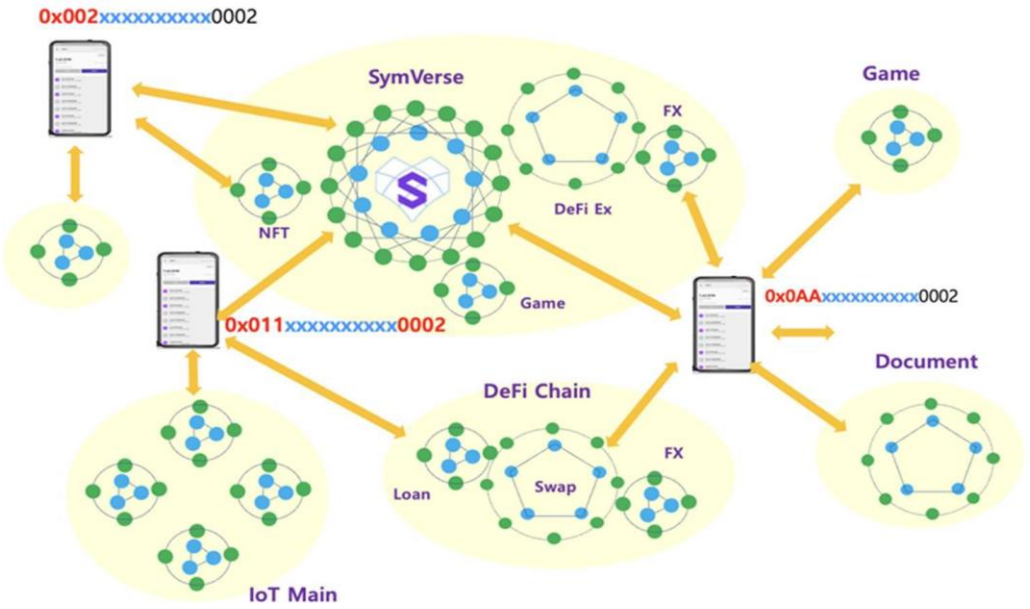
- **Fractal Network**: Interconnected mainnets that accommodate differences in transaction costs.
- **Flexible Decentralized ID System**: Adoption of a system capable of accommodating various regulations and user needs.
- **SymID Applications**: Use of SymID across diverse areas such as the metaverse and IoT.
- **Virtual Mainnet Construction**: Through Citizen Alliance (CA) nodes.
- **Multi-Blockchain Implementation**: To save platform costs, enhance transaction processing speed, and support multi-functional capabilities.
- **DApp Token Interoperability**: Consideration for future cross-token functionality between DApp tokens.
- **Unlimited Sharding Capability**: Providing enhanced processing speed and scalability through an infinitely scalable sharding function.

III. SymVerse Innovations

1. Evolution of Blockchain: **Fractal Network**
2. Evolving Functional Network: **SymNet (PoS)**
3. Tamper-Proof High-Speed Consensus Algorithm: **SymSensus**
4. Multi-Blockchain for Speed and Enhanced Functionality: **SymChain**
5. Smart Contract Template: **SCT (Smart Contract Template)**
6. Flexible DID with Multi-Account and Name Service Capability: **SymID**
7. Blockchain Hub in Your Hands: **Sallt**
8. PoS Reward Mechanism: **NodePower**

1. Evolution of Blockchain: Fractal Network

The Fractal Network is an interconnected set of different mainnets working together as a blockchain collective. Blockchain platforms can be used across various sectors. Extremely fast services like auctions, voting, matching, and securities trading can be provided as complex services through independent mainnets or a network of interconnected mainnets. The Fractal Network is the core technology that meets these service requirements, representing a new vision for the blockchain of the future.



Components of the Blockchain Mainnet

All participants in SymVerse are assigned a **SymID**, which extends to all independent elements within virtual spaces like the metaverse and IoT components.
Users participating in the blockchain network are consumers of blockchain services, while service nodes, such as **Work Nodes** (nodes performing tasks) and **Warrant Nodes** (nodes generating blocks), serve as providers of blockchain services. The key components of the blockchain mainnet are as follows:

- **SymID**

SymID is the identification standard for all elements and transaction entities within the SymVerse mainnet. It consists of 10 bytes and includes a credential document for the account. SymID allows users to identify which blockchain mainnet is being used and intuitively understand the purpose of the account through the account identifier. By reviewing the document associated with a SymID, users can check attributes such as authentication strength, credibility, and the status of the ID, simplifying the representation of smart contracts and facilitating blockchain transactions. This representation method of SymID serves as a prototype of the newly prominent blockchain standard, **DID (Decentralized Identifier)**.

- **Work Node**

Work Nodes are classified as Full Nodes or Light Nodes depending on the size of the blockchain. These nodes manage load balancing for transaction processing by blockchain consumers and verify the integrity of transactions before propagating them to the Warrant Nodes.

- **Warrant Node**

Warrant Nodes lead the consensus process and generate blocks. Full nodes among the Work Nodes can become Warrant Nodes after passing a fair, automated benchmarking test. Out of 25 Warrant Nodes, 9 are selected and operated by the foundation, possessing voting rights only, while 16 decentralized nodes have both voting and block-generation rights. New Warrant Nodes are chosen from verified Work Nodes as candidate nodes. Each day, four Warrant Nodes are randomly selected from the candidate pool to serve a four-day term. This randomized grouping ensures that block proposers cannot manipulate block content, a process called SymSensus.

• **Citizens Alliance Node (CA Node)**

Also known as an ID Node, the CA Node is a DApp that generates SymIDs and forms an independent network with unique identification numbers, with the Master CA Node as the central point. The SymVerse Foundation manages the creation of general CA node numbers. Using a 14-bit network identifier for SYMIDs, up to 2^14 (16,384) independent CAs can be established within the Fractal Network, or a virtual mainnet can be operated using CA Nodes within the SymVerse mainnet.

CA Nodes issue SymIDs that can be simultaneously recorded on the Citizen Chains of their mainnet and other mainnets in the Fractal Network, including the SymVerse mainnet. Additionally, IDs can be registered with approval from other mainnets. CA Nodes operate using a client/server model, allowing major DApps to run their own CA Nodes and create/manage SymIDs according to their KYC and AML policies.

• **SymScan**

SymScan is a node that records and allows users to view all data on the blockchain. It offers query services for SYMM coins and tokens, smart contract details, token creation, transaction history, the selection process for Warrant Nodes, and contribution-based reward records for all accounts.

• **Sallt**

Sallt is a self-sovereign decentralized wallet that allows users to manage all assets independently without a central administrator. It acts as a connection point for communication between different mainnets in the Fractal Network and links to external mainnets. Sallt supports various mainnets, including Bitcoin, Ethereum, and TRON, and is compatible with Android, iOS, Windows, Mac OS, and Chrome browsers.

• **SymPose**

SymPose is a Web IDE (Integrated Development Environment) for deploying and managing smart contracts. SymPose integrates with the Sallt wallet, allowing users to deploy and execute smart contracts.

By use of SymPose, users can deploy SCT20/21/22 (Token Contract Template) and SCT30 (NFT Contract Template). Additionally, developers can use SymSolidity to deploy custom-developed smart contracts directly to the SVM (SymVerse Virtual Machine).

2. Evolving Functional Network: SymNet (PoS)

SymNet incorporates the following functions of a distributed P2P mainnet network:

- Sustained Node Activation: Maintained through Proof of Stake (PoS).
- Slashing: Penalties imposed to prevent malicious or malfunctioning nodes.
- Enhanced Transaction Speed and Scalability: Achieved through continuous functional segmentation of blockchain nodes.
- Network Functions: Including consensus processes, load balancing, and transaction aggregation for block generation.
- Integration of Future-Oriented Service Nodes: Such as file storage, messaging, and AI computing.

SymNet's operation involves wallet users, as consumers, processing transactions through work nodes and activating the network. Work nodes stake a certain number of coins to participate in the consensus process. Nodes are selected for the veto group (Group A) in the consensus process, while work nodes participate in the block proposer group (Group B) as warrant nodes. After the consensus process for block generation is completed, coins are distributed to all nodes that participated in SymSensus.

Transaction Processing

Wallets with accounts always process transactions through connected work nodes. The work node list is continuously updated, and all wallet node communications are handled by connecting to three work nodes. If a specific work node connection fails, another work node is chosen.

Work nodes process transactions received from wallets and forward them to two warrant nodes in different groups. The warrant nodes then disseminate each transaction record to all other warrant nodes. Once transaction records are shared, they are recorded on the block because of the consensus process, and the new block is propagated throughout the blockchain.

Network Activation Through PoS Consensus Participation

All potential Warrant Nodes applying for consensus participation must have a SYMM deposit account. Each Warrant Node holds mining-proof tokens, NodePower, equivalent in size to their SYMM deposit. SYMM is distributed among participating Warrant Nodes based on their proportion of NodePower each time a block is generated.

Group A, the veto group, holds a set amount of SYMM as a deposit and, after pre-screening and selection by the foundation, participates in voting and block generation for a designated period as one of the nine Warrant Nodes in the consensus process. Group B candidates wishing to join the block proposer group must deposit a specified amount of SYMM, determined by the foundation, and can be probabilistically selected to participate as Warrant Nodes.

Work Nodes registered as candidates in Group B must hold NodePower tokens in their account matched to the locked SYMM amount, enabling them to mine according to their allocated percentage. The distinction in rewards between Warrant Nodes actively participating in consensus and Work Nodes waiting for participation incentivizes proactive involvement.

Records of participation for Warrant Nodes are documented in the Warrant Block, while rewards are recorded in the Main Block. Block propagation across all nodes follows a traditional P2P network broadcasting model. Work Nodes can collaborate to provide services such as file sharing, media streaming, and messaging, and can charge service fees using proprietary tokens or SYMM.

3. Tamper-Proof High-Speed Consensus Algorithm: SymSensus

Features of SymSensus

SymSensus is the world's fastest Byzantine Fault Tolerance (BFT) algorithm, guaranteeing block finalization within 1.4 seconds and incorporating a voting system with veto power. It is the consensus method used by Warrant Nodes for block generation. Newly created coins are allocated based on the staking balance of participating and candidate nodes, with allocation dependent on each node's role and contribution. The design of SymSensus is rooted in Social Choice Theory, applying the Gibbard-Satterthwaite Theorem to reflect mechanism design principles.

SymSensus consists of 25 Warrant Nodes, divided into two groups:

- **Group A**: Composed of 9 nodes selected by the foundation, which hold voting rights only. These nodes collectively exercise veto power to prevent collusion among Warrant Nodes. Consensus is reached when more than two-thirds of all Warrant Nodes approve, effectively preventing manipulation.
- **Group B**: Comprising 16 Warrant Nodes chosen from candidate work nodes based on NodePower, with each node assigned specific roles in the consensus process. This group includes one Primary Node, three Front Bench Nodes, eight Middle Bench Nodes, and four Back Bench Nodes. The Primary Node rotates every 2 seconds, with a Front Bench Node usually promoted to the Primary position. Front Bench Nodes are randomly selected from Middle Bench Nodes, while Back Bench Nodes are promoted to Middle Bench after a set period.

The number of blocks generated by the Primary Node is not fixed, ensuring sufficient transaction processing. Block size varies based on block type. The Primary Node collects transaction records, creates a block, and requests validation. If two-thirds of the Warrant Nodes approve the block through the signature-based BFT method, the block is finalized and propagated to other nodes. The Primary Node logs consensus participants in the Warrant Block and distributes coins accordingly.

Prevention of Malicious Node Manipulation

SymSensus inherently prevents malicious nodes from tampering with blocks due to the following reasons:

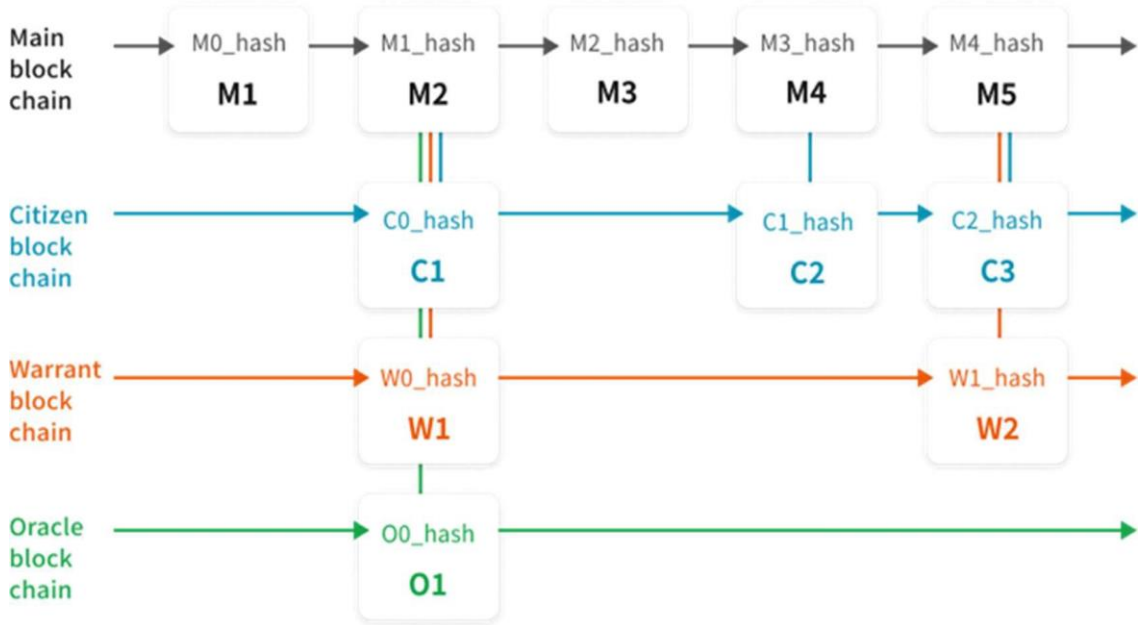
- Group A, with collective veto power, ensures that Group B Warrant Nodes cannot collude for personal gain.
- All transactions transmitted by wallets must pay network fees, which mitigates Sybil attacks by malicious wallets, as Work Nodes can block them at the outset. Such attacks would incur substantial costs even if attempted.
- Transactions are initially verified by Work Nodes, and if a Work Node acts maliciously or malfunctions, Warrant Nodes step in for further validation. Malicious nodes are blacklisted in the consensus block's **Blacklist**; while malfunctioning nodes are placed on the **Gray List**, barring them from participating in SymSensus.

- A **slashing policy** imposes penalties to prevent participation by malicious or malfunctioning nodes, ensuring all nodes involved in the consensus process maintain proper transaction handling and network quality.

4. Multi-Blockchain for Speed and Enhanced Functionality: SymChain

SymChain refers to a multi-blockchain structure where data is distributed across four separate blockchains, providing the flexibility and efficiency needed to support various blockchain applications.

- **Main Chain:** Records transaction data and reward history. It ensures block finality during block generation, with an average block generation time of 1.39 seconds.
- **Citizen Chain:** Stores SymID information and is created alongside the initial credential document when a SymID is generated.
- **Warrant Chain:** Records information about Warrant Nodes participating in the consensus process and updates whenever there are changes.
- **Oracle Chain:** Logs data related to changes in mainnet parameters, exchange rate information for interoperability with other mainnets, and governance voting records for external systems.



5. Smart Contract Template: SCT (Smart Contract Template)

The Smart Contract Template (SCT) allows for most standardized transactions, which traditionally required smart contracts, to be processed simply within the mainnet without the need for standalone contracts. This provides convenient blockchain usage opportunities for individuals and internet applications that have previously found blockchain difficult to access.
Key Features of SCT:

- General Token Functions (SCT20/21/22)
- NFT Token Functions (SCT30)
- SymID Name Service (SCT31)
- Coupon Service (SCT40)
- Integration of SCT and Smart Contracts: Use of SCT alongside smart contracts through SymPose
- Support for Multiple Electronic Signatures
- Support for Document Original Proof

6. Flexible DID with Multi-Account and Name Service Capability: SymID

SymID is designed with a forward-thinking approach for the future development of SymVerse, enhancing user convenience and proactively responding to the evolving requirements of different nations and economic communities. Each user can possess one SymID with multiple accounts.

Features of SymID

SymID is a 10-byte alphanumeric combination that guarantees identity verification and duplication prevention. It includes:

- ID Type (2 bits)
- Network Identifier (14 bits)
- Citizen ID (6 bytes)
- Account Identifier (2 bytes)

The 6-byte Citizen ID can theoretically generate up to 281 trillion unique IDs for use within the Fractal Network, while the account identifier allows each SymID to hold up to 2^16 account

documents (credentials). The Network Identifier is managed by the Master CA and can be used as an independent mainnet identifier within the Fractal Network or to set up a virtual mainnet within the SymVerse mainnet.

Each SymID is stored on the Citizen Chain along with a credential document containing various information. All blockchain accounts operate using SymID, unlike traditional blockchains that store accounts based on public keys. This structure enhances blockchain speed and saves storage capacity.

Field			Size	Description
SymID	Ver		2b	0: version 1
	Citizen ID	CA ID	14b	0x001 : Master CA 0x002 ~ 0x3FFF : CA
		Random	6B	0x00...01 : CA Random Number : 일반 사용자 (중복체크 필요)
	SeqNum		2B	1: General Credential 2 이상 : Basic Credential

Creation and Management of SymID

The process of creating a CA account is straightforward. Users generate a public and private key using the Sallt wallet and then apply for an account on the CA server, after which the SymID and additional information are recorded on the Citizen block. Multiple accounts can also be created through the Sallt wallet's integration with the CA server, though applying for multiple accounts incurs additional costs.

As a prototype of DID, SymID records supplementary information such as public key hash, country, account status, credibility, role, and organization. The public key hash is used to verify the user's signature, while the country attribute distinguishes transactions between countries. Credibility provides further trust information. The role attribute differentiates the characteristics, industrial functions, or tax obligations associated with a SymID.

Account status is categorized as active, revoked, locked, or marked. Users can directly manage active and revoked statuses when creating multiple accounts, while locked and marked statuses are managed automatically by the SymVerse platform.

Name Service Matching with SymID

The name service allows users to set names corresponding to their SymID for use on the SymVerse blockchain. Key features include:

- Domain Name Registration and Management: Users can register and manage their desired names. Registered names are linked to the SymID, enabling more intuitive interactions on the blockchain.
- NFT-Based Ownership Management: Names are issued as NFTs, which users can own, transfer, or trade. This functionality turns names into assets on the blockchain.
- Transaction and Service Integration: Registered names can replace SymIDs in various blockchain services, enhancing user experience and accessibility.
- Security and Privacy Protection: The name service utilizes blockchain's inherent security features to ensure a high level of data privacy. All registrations and transactions are transparently recorded, protecting user information.

For instance, using the SCT31 protocol, users can create a name like "alice" to be used in place of their SymID for all transactions. Specific groups and their associated names can be created and matched with particular SymIDs for expanded use. For example, users can register names like alice, finance.galaxy, and alice.finance.galaxy, and use these names as trading accounts as needed.

Another application includes creating and trading NFTs that hold information about documents, images, or photos with associated names.

7. Blockchain Hub in Your Hands: Sallt

Sallt acts as an independent application that connects all mainnets based on SymVerse and serves as a hub linking essential services. The main features of Sallt include:

- Self-Sovereignty: Achieves complete decentralization, allowing individuals to manage all wallet-related information independently. This realizes the decentralization and data self-sovereignty that blockchain aims for.
- Mainnet Versatility: Supports the registration and operation of coins and tokens from various mainnets, including Bitcoin, Ethereum, Polygon, TRON, and Binance Smart Chain. It also allows users to back up multiple mainnet KeyStores into a single file and restore

accounts later using the stored KeyStore, password, and mnemonic code.

- OS Compatibility: Provides applications with identical functionality for Android, iOS, Mac OS, and Windows. A plugin for the Chrome browser is also planned, enabling users to conveniently use the same wallet across multiple devices.
- SSO (Single Sign-On): Offers an API called Wallet Provider, which allows for the easy adoption of blockchain-based SSO to access multiple systems via Sallt.

8. PoS (Proof of Stake) Reward Mechanism

All nodes in SymNet can mine SYMM using mining power known as NodePower (SNP). Since SYMM is mined proportionally to the amount of NodePower held by each node, all NodePower holders are motivated to voluntarily participate in PoS mining and ensure that their decisions are optimal.

NodePower is created at a 1:1 ratio with SYMM as collateral and can be held and circulated by Warrant Nodes. Each unit of NodePower allows the holder to mine SYMM in proportion to its share, calculated as (1 / total amount of NodePower).

Conditions for Mining Participation

Warrant Nodes: Group A Warrant Nodes must have a set amount of SYMM as a deposit, while Group B Warrant Nodes must hold a certain amount of NodePower.

Work Nodes: All Work Nodes must hold an amount of NodePower equivalent to that required for Group B Warrant Nodes to participate in mining.

	A Group Warrant Node	B Group Warrant Node	Candidate Warrant Node
SYMM Collateral	6,000,000	X	X
Minimum NodePower	X	6,000,000	6,000,000

NodePower Attributes

- **Perpetuity**: The size of NodePower demonstrates a perpetual ability to mine SYMM. SYMM generated with each block is distributed to the registered mining accounts.

- **Upper Bound**: The supply of NodePower is limited and can only be issued within the size of the SYMM held by the foundation.

IV. SymVerse Economics

Issuance and Distribution of SYMM and SYM (ERC-20)

In SymVerse 1.0, a total of 900 million SYMM tokens were initially issued after the completion of the mainnet. Of the 1 billion SYM (ERC-20) tokens mentioned in White Paper V1.0, the circulating supply will be fully swapped for SYMM according to the token swap schedule provided by the foundation. Once the swap of the circulating SYM (ERC-20) tokens from the originally issued 1 billion is complete, SYM (ERC-20) will no longer be in circulation and will be permanently retired.

In SymVerse 2.0, each of the 25 mainnet nodes has 6 million SYMM staked. Out of the initially issued 900 million SYMM, 150 million SYMM are staked, and the remaining 750 million SYMM will be removed from circulation through burning or other means. As a result, on the SymVerse mainnet, only SYMM staked through PoS and SYMM mined through mining will remain in circulation.

The overall management of market supply, token burning, recovery, and token swaps related to SYMM distribution will be carried out by the foundation.

Token swap of SYMM and SYM (ERC-20)

Starting in 2025, SYM (ERC-20) will be swapped for SYMM mined by the foundation. SymVerse 2.0 will begin with 150 million SYMM as the initial mining base. While 1 billion SYM (ERC-20) tokens were issued, excluding 100 million allocated for mining, the total circulating supply amounts to 900 million tokens. Therefore, theoretically, 150 million SYMM would need to be swapped for 900 million SYM (ERC-20), establishing an swap ratio of 1 SYMM to 6 SYM (ERC-20).

The SYMM required for exchanging SYM (ERC-20) will be secured through the SNP held by the foundation, and the swap will proceed through mining over a designated period. Token swap will be conducted every two months over a total period of 18 months, distributing 1.18 times the total swap quantity of SYMM in nine installments.

Token swap method involves first swapping SYM (ERC-20) for a new swap proof token (SCT21), and then finally receiving SYMM during the designated swapping period. The gas fees required when sending SYM (ERC-20) to the foundation will be borne by the SYM (ERC-20) holders.
Once swapped, SYMM cannot be converted back into SYM (ERC-20).

Details and announcements regarding the swap will be provided at:
👉 https://swap.symverse.org

SYMM Supply Function During Block Generation

The SYMM supply function is calculated based on a step function that gradually decreases over time as blocks are generated each year.
Using the minimum block generation time of 1.39 seconds, the maximum number of blocks generated annually is less than 22,687,770. Over a period of 20 years, the maximum amount of SYMM that can be mined is 367,920,000 SYMM.
The maximum expected annual supply of SYMM is recalculated every year, starting on May 1.

Year	Total mining amount per block	SYMM Annual mining amount	Daily mining volume	Daily mining per SNP	Annual mining volume per SNP
2024	4.00	84,096,000	230,400	0.001536	0.56
2025	4.00	84,096,000	230,400	0.001536	0.56
2026	2.00	42,048,000	115,200	0.000768	0.28
2027	2.00	42,048,000	115,200	0.000768	0.28
2028	1.00	15,768,000	43,200	0.000288	0.11
2029	1.00	15,768,000	43,200	0.000288	0.11
2030	0.75	10,512,000	28,800	0.000192	0.07
2031	0.75	10,512,000	28,800	0.000192	0.07
2032	0.50	8,409,600	23,040	0.000154	0.06
2033	0.50	8,409,600	23,040	0.000154	0.06
2034	0.40	6,307,200	17,280	0.000115	0.04
2035	0.40	6,307,200	17,280	0.000115	0.04
2036	0.30	4,204,800	11,520	0.000077	0.03
2037	0.30	4,204,800	11,520	0.000077	0.03
2038	0.20	4,204,800	11,520	0.000077	0.03
2039	0.20	4,204,800	11,520	0.000077	0.03
2040	0.20	4,204,800	11,520	0.000077	0.03
2041	0.20	4,204,800	11,520	0.000077	0.03
2042	0.20	4,204,800	11,520	0.000077	0.03
2043	0.20	4,204,800	11,520	0.000077	0.03
Total		**367,920,000**		**-**	**2,45**

Use of Funds

The SYMM held by the foundation are allocated to support the balanced growth, sustainability, and ecosystem expansion of SymVerse as follows:

- Technology Development and Operational Management: 30%
- Foundation Operations: 15%
- Business Development: 10%
- Marketing: 15%
- SymWorld Ecosystem Building: 30%

V. Organization

1. Governance Structure

The SymVerse Foundation is composed of the Board of Directors, the Asset Management Committee, the Technical Committee, and the SymWorld Committee. These bodies make decisions related to governance, technical development direction, and collaborative strategies within SymWorld.

2. Roles and Responsibilities

The responsibilities and roles of all institutions and committees participating in SymVerse are outlined as follows:

- **Board of Directors**: Oversees the strategic direction and overall governance of the foundation.
- **Asset Management Committee**: Manages the financial assets and resources of the foundation to ensure effective use and sustainability.
- **Technical Committee**: Guides the technical roadmap and development initiatives for continuous innovation and advancement.
- **SymWorld Committee**: Focuses on strategies for fostering collaboration and mutual growth within the SymWorld ecosystem.

SymVerse Foundation Operations

- The foundation appoints an appropriate number of members to the Board of Directors, Asset Management Committee, and Technology Development Committee every two years.

Board of Directors

- **Operational Staff**: The board comprises up to 5 members. The foundation can appoint up to 2 members, while the remaining members are elected through participant voting. Candidates nominated by the foundation are selected based on recommendations from at least 2 existing board members and are approved by a majority vote within the board.

- **Voting Process**: SYMM holders can nominate candidates, and the final selection is determined by summing the square root of the SYMM holdings of participating voters as weighted votes.

Asset Management Committee

- **Responsibilities**: Manages the assets held by the SymVerse Foundation as directed by the Board of Directors. Allocates funds within the given budget for technological development and ecosystem building, sharing these actions with the board and related committees.
- **Operational Staff**: Composed of up to 5 members. The foundation can appoint up to 2 members, with the remaining members elected through participant voting.
- **Voting Process**: SYMM holders nominate candidates, and votes are weighted by the square root of the voters' SYMM holdings.

Technical Committee

- **Responsibilities**: Establishes SymVerse's technology strategy and manages implementation plans for SIP (SymVerse Improvement Proposals). Technical suggestions are submitted via the SIP site. Proposals related to blockchain technology are reviewed by the Technical Committee with input from various off-chain stakeholders.
- **Operational Staff**: Composed of up to 5 members. The foundation can appoint up to 2 members, while the remaining members are elected by participant voting.
- **Voting Process**: SYMM holders can nominate candidates, and votes are weighed by the square root of the voters' SYMM holdings.

SymWorld Committee

- **Resource Allocation**: Collaborates with the Asset Management Committee to allocate investment resources needed for policies that promote application discovery and activation.
- **Operational Staff**: Comprises up to 10 members who create operational rules and make decisions with a two-thirds majority consensus.
- **Operational Principles**: Support applications can be submitted online. The selection process involves community voting, with the candidate ranking determined by the sum of the square root of SYMM holdings of participating voters. Final decisions are made through a majority vote by the review and investment committee according to operational guidelines.

VI. RoadMap

1. SymVerse Milestones

2018

- Founded SymVerse Inc.

2019

- Established SymVerse branch in Dubai.
- Launched the decentralized wallet, SymWallet.
- Acquired the world's first patent for multiple blockchains.
- Secured a patent for node-proof-based consensus process and blockchain creation method.
- Listed on the global exchange DigiFinex.
- Released Mainnet V1.0.

2020

- Passed the certification test by the Ministry of Science and ICT (TTA).
- Achieved GS Certification Level 1, a first in the blockchain wallet sector.
- Developed a blockchain-based voting protocol.
- Secured a patent for a digital ID system (DID) using a distributed ledger.

2021

- Developed the BBP (Blockchain Broker Platform).
- Launched the SymScan site.
- Integrated SymVerse mainnet with two domestic exchanges.
- Announced the standard for CAII (DID authentication server).
- Launched the decentralized blockchain wallet, SalIt.

2022

- Developed the SVM (SymVerse Virtual Machine).
- Launched the SymPose smart contract development environment.
- Developed blockchain integration modules.

- Launched the Fractal/Virtual Mainnet Solution.

2023

- Launched the content community platform, Communy.
- Enhanced SymNet and updated Sallt and SymPose versions.

2. RoadMap

2024

- Improved core network TPS (Transactions Per Second) performance.
- Upgraded the PoS (Proof of Stake) mechanism.
- Launched a mass transfer system.
- Upgraded the Wallet Provider.
- Released SymVerse 2.0 featuring Proof of Stake and soft mining.
- Enhanced SymPose functionalities.

Post-2025

- Launch of SymID Name Service (SCT31) and related DApp services
- Scan 2.0 portalization with SymID login function
- Sallt 2.0 upgrade with portal and fintech services
- BaaS portalization for various token and NFT providers
- Launch of SymWorld ecosystem support portal
- Expansion of SymPose technology community
- Exit including 750 million SYMM burn
- Exit of SYM (ERC-20)