TSRN White Paper

A Decentralized Privacy Token on Ethereum

TSRN DAO

Preface

As of November 2026, digital assets have expanded beyond the confines of the crypto-native sector into a global alternative financial layer with a total market capitalization approaching USD 2.65 trillion. The principal figures are as follows:



・Total market capitalization and BTC dominance: The global crypto market is worth approximately USD 2.65 trillion, following an overall decline since the start of the year and a recent volatile recovery. Bitcoin trades at USD 78,369.21 and accounts for 59.3% of market capitalization. US spot Bitcoin ETFs have approximately USD 102.8 billion in assets under management, representing about 5.9% of Bitcoin's circulating supply, and remain the market's principal institutional anchor.

・Stablecoins as a cash pool: Stablecoin market capitalization totals approximately USD 299 billion, with average daily on-chain transfers across all categories of roughly USD 420 billion. USDT retains the leading position, while USDC holds approximately 24.0% of market capitalization, maintaining a stable share in the compliant segment.

・The surge in RWA tokenization: The circulating value of on-chain real-world assets, excluding stablecoins, is approximately USD 39.8 billion. US Treasury tokens account for around 37%, while private credit, including tokenized receivables and corporate loans, totals roughly USD 5.7 billion. Gold-backed tokens such as PAXG and XAUT have a combined market capitalization exceeding USD 4.6 billion. Tokenized government bonds, other bonds, and credit instruments now cover 15 countries and regions.

・Institutional custody and settlement: Regulated custodians, including Coinbase Custody, Fireblocks, and BitGo, hold over USD 510 billion in institutional cryptoassets. DTCC's tokenization service officially launched on October 28, with

an underlying pool of traditional securities eligible for tokenization worth approximately USD 30 trillion. It is currently in a limited production pilot; live settlement volumes for tokenized securities remain small and have not yet generated consistently substantial daily flows.

・NFTs and social ecosystems: Average monthly NFT trading volume remains between USD 400 million and USD 600 million, with floor prices for blue-chip collections recovering slightly over the past two weeks. Interest in social-finance protocols continues to cool: daily active on-chain users of comparable protocols have fallen to around 650,000, and their share of Ethereum gas consumption has dropped below 3%. Capital continues to flow toward RWA, L2, and institutional derivatives. In summary, digital assets have evolved from speculative coin trading into an integrated system combining global liquidity reserves, tokenized real-world assets, and institutional clearing.

As large numbers of users and substantial capital move to DEX platforms, CEX platforms must expand their scope and change their competitive strategies. Since 2020, OKex Chain, BSC, Heco, and others have emerged in succession. Replicating traditional CeFi tools on-chain will accelerate the development of DeFi, attract additional users, and further expand demand for cryptoasset investment and custody.

TSRN integrates multiple DeFi products and application models into a single ecosystem, aggregating a new suite of tools including Vaults, Pool, Swap, trade, liquidate, leverage, and collateralized lending. This creates a comprehensive DeFi yield ecosystem, provides greater financial liquidity, and offers users convenient, efficient investment solutions with high returns, supporting the healthy and stable development of DeFi.

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Chapter 1 Background to the Creation of TSRN

1.1 The Renewed Rise of the DeFi Market

DeFi, or decentralized finance, refers to financial activities running on underlying blockchain systems such as Ethereum. Using smart contracts, DeFi enables digital assets to recreate traditional financial structures on blockchain networks and generate synergies. Typical applications include quantitative trading, market making, lending, insurance, bonds, funds, auditing, derivatives, ETFs, exchanges, and clearing and settlement using digital assets.



By August 2026, DeFi had left behind its unregulated era of high-interest yield farming and entered a more advanced phase defined by compliance, real-world integration, and AI. Five dimensions illustrate these changes:

· RWA become the dominant segment: Tokenized US Treasuries, private credit, and high-quality commercial real estate have become the anchor of blue-chip DeFi. Approximately 30%–40% of the total value locked (TVL) in leading protocols has shifted into interest-bearing RWA. On-chain US Treasury yields have become a new pricing benchmark for global financial markets, while traditional pension funds and major insurers are entering at scale through compliant channels.

· AI agents dominate interaction: Users no longer operate manually but entrust their funds to AI DeFi managers. These agents automatically execute flash-loan arbitrage, options strategies, or cross-chain rebalancing in response to market fluctuations. AI bots generate more than 60% of on-chain trading volume, while direct human interaction with the blockchain has declined sharply.

· Regulatory boundaries and compliance layers become established: The EU's MiCA framework and US stablecoin legislation have been fully implemented, and all five largest stablecoin issuers hold banking licenses. DeFi frontends generally integrate on-chain KYC/AML oracles. Compliant privacy pools, such as those using layered zero-knowledge proofs, have become a necessary gateway for institutional capital, bringing fully anonymous participation to an end.

· Chain abstraction and intent-based settlement become widespread: Users no longer need to know whether the underlying network is Ethereum, Solana, or Layer 2. They simply sign an intent, such as buying within five minutes at the lowest slippage, and solver networks handle cross-chain routing in the background. Security incidents involving cross-chain bridges have declined by 90% compared with 2024.

· Returns shift from inflationary subsidies to actual economic output: Models relying solely on token issuance incentives have largely disappeared. Returns now primarily come from RWA interest distributions, MEV (maximal extractable value) order-flow payments, and network-security subsidies from restaking. Annualized yields have generally returned to a more rational range of 4%–15%.

1.2 Mainstream DeFi Applications



1) Lending

Lending platforms earn the spread between borrowing and lending rates. During a project's initial phase, project tokens are distributed to both depositors and borrowers as a marketing expense to encourage habitual use. DeFi platform tokens generally combine a share in platform profits with decentralized governance rights.

- Rates for both sides are dynamically adjusted in real time by oracles, or decentralized price feeds, using market information. Rate adjustments

balance supply and demand. Interest returns are distributed in the platform's digital assets.

• If digital-asset price fluctuations or unpaid interest cause the loan-to-value ratio to exceed 60%, the lending party must add collateral or repay part of the lent digital assets to bring the ratio below 60%. Otherwise, the collateral corresponding to the portion above 60% will be liquidated by a liquidation smart contract. A 5% liquidation penalty applies.

For each completed loan, part of the platform fee pays depositor interest and part is retained as a platform surplus reserve. This reserve is used partly for risk compensation in extreme market conditions or after hacker attacks, partly for team incentives, and partly to repurchase and burn platform tokens. Burning reduces token supply and establishes a basis for price appreciation. According to Debank, by May 2021 the size of DeFi lending protocols had reached a record high of USD 15.16 billion, exceeding USD 15 billion.

2) DEX Decentralized Exchanges

A DEX, or decentralized exchange, contrasts with a CEX, or centralized exchange. A DEX operates automatically on a public blockchain using smart contracts. Users can exchange digital assets on the DEX.

• As a neutral platform, the DEX does not itself supply the digital assets required for market making; it provides only the smart-contract algorithms used for market making.

• Users deposit equal values of two digital assets as a liquidity-provider (LP) trading pair, supplying the assets required for market making. In return, users acting as liquidity providers receive platform tokens as rewards. LP tokens also serve as claims allowing the deposited assets to be redeemed, and can be used as collateral on lending platforms.

• The platform issues tokens to incentivize market makers → order-book depth improves → slippage decreases → trading efficiency rises → more users trade on the platform → platform fee revenue increases → some trading fees are used to repurchase platform tokens → token supply contracts → prices rise → market-making rewards appreciate → the cycle repeats.

3) Aggregators

Aggregators analyze the capacity of each DEX and use intelligent algorithms to split large orders into smaller orders across multiple platforms, seeking the best exchange rates and reducing execution costs and slippage. Whether yield farming, staking, lending, or DEX automated market making (AMM), the basic approach is to deposit tokens into pools and earn returns. Higher returns can therefore attract more tokens. Lending, DEXs, derivatives protocols, aggregators, and individual tokens' staking mechanisms all compete for token deposits. Although these protocols appear to operate in different segments, they compete to some extent.

Underlying protocols generate returns, while aggregators optimize those returns, ultimately reaching an equilibrium. From a user's perspective, aggregators better serve their interests by offering greater flexibility and better returns.

4) Asset Mapping

Asset mapping uses oracles to represent off-chain assets on-chain, tracking the prices of stocks, futures, exchange-traded funds, and other traditional financial assets in digital-asset markets. For example, m synthetic assets can be issued by overcollateralizing the USD stablecoin UST. The minimum collateralization ratio is 150%; as with lending smart contracts, liquidation bots liquidate positions when this ratio falls below 150%. UST is issued by burning the digital asset Luna and maintains a USD 1 peg through arbitrage. Asset mapping allows ordinary users to bypass KYC, AML, currency conversion, and account-opening procedures. Without requiring whole-share ownership or being constrained by market closures or price-limit circuit breakers, users can exchange digital assets at any time, in either direction, for mapped representations of US equities and traditional financial derivatives.

5) Automated Yield Vaults

Smart contracts continuously select the highest-yielding investment options across DEXs, lending platforms, and other yield-generating platforms, automatically reinvesting funds to maximize returns. Rates for the same asset vary across DEXs and lending platforms according to supply and demand. Ordinary users cannot easily monitor changing rates for every asset on every platform and switch frequently. Automated yield vaults provide a fully automated asset-management solution.

1.3 Lessons from the GameStop Episode

GameStop, or GME, was founded in 1984 and is headquartered in Texas, United States. It has more than 5,000 stores in 10 countries. Its brands include EB Games, Australia's largest video-game retailer, and ThinkGeek, a retailer of novelty merchandise and gaming accessories. Its prospects had long been viewed unfavorably, chiefly because physical video-game retailers face the same challenges as department stores: digitalization has reduced foot traffic. The COVID-19 pandemic proved even more damaging. These factors led capital markets to view GameStop as a junk stock. Its share price briefly fell below USD 3 in March of the previous year and remained mostly below USD 10 throughout 2020.

Reddit is an online community comparable to a US version of Hupu. Its WallStreetBets forum, or WSB, is a gathering place for US retail investors, and GME became its most popular meme stock. WSB represents an extreme form of speculative retail investing. Its members are mainly millennials with ordinary jobs, who routinely go all-in on trending stocks and call options, then share gains, bankruptcies, and memes on Reddit. Some become rich overnight, but most initially make a little before quickly losing it all. Over the preceding two months, they had

gradually developed an almost cult-like culture, urging everyone to invest their entire savings in GME. Many essentially converted each paycheck directly into shares.



On January 19, the short-selling firm Citron published a bearish view on GME. On January 21, its founder Andrew Left stated that GameStop was overvalued and expected its share price to fall back to USD 20. WSB retail investors immediately pushed back and poured money into the stock, driving prices upward through extensive buying that often lacked a clear rationale. Even GameStop's adoption of Microsoft cloud services became a reason for a 44% one-day surge. Meanwhile, additional short sellers entered GME positions, and GME's Short Interest and Short Ratio remained above 100% for an extended period.

GME was so heavily shorted that shares were repeatedly unavailable to borrow: every share available for short selling had already been sold. Nevertheless, retail investors used every penny of their savings to buy GME and sustain the upward trend. Many short sellers could no longer hold their positions and had to buy shares back at a loss to cover them. This further lifted the price, forcing additional shorts to capitulate and producing an explosive rise within one month. GME climbed above USD 300. Citron eventually announced again that employees' families had received threats to their safety and that, for security reasons, it would no longer comment on GME. Citron was not the only firm affected: the prominent hedge fund Melvin Capital suffered even greater losses, recently losing 30% and having to seek outside assistance.

The Discord server used by WallStreetBets, the retail-investor stronghold, was temporarily banned for hateful content rather than financial fraud. Within a little over ten minutes, however, the community was back online. Retail investors celebrated, became more vocal, and continued calling for the short squeeze.

As the short squeeze intensified, Tesla founder Elon Musk, newly the world's richest person, added fuel to the fire by tweeting “Gamestonk” and linking to the

wallstreetbets forum. Wall Street effectively pulled the plug: US brokers led by Robinhood directly restricted buying and selling in GME, AMC, Nokia, and other stocks. Retail investors could no longer buy, and some users' holdings were even forcibly sold.

The GameStop episode offers many lessons. Innovators such as TSRN are using advances in blockchain technology and digital-currency models to protect users' and investors' assets and personal safety through anonymity, privacy, and security.

Under the current financial and technological systems, retail investors' rights can be undermined by data-driven price discrimination in shopping and brokers' extensive access to investment and trading data. Brokers such as Robinhood can use big data to provide institutional investors with valuable stock market information, while internet companies collect users' personal information, target them with personalized content, and profit from their data. Regardless of whether these practices are intentional, they can have a negative impact on ordinary users' rights and interests. Blockchain technology offers a potential solution by providing greater security, anonymity, and protection for users.

For example, a decentralized exchange built on privacy-focused blockchain smart contracts would allow retail investors to place buy and sell orders freely, without unnecessary restrictions. All orders and transactions could be verified through a block explorer, while sensitive personal information, such as how much a user has bought, sold, or currently holds, would remain private and inaccessible to others. Making this information public could allow malicious actors to identify market trends and trade against individual investors. Protecting such data could help reduce the likelihood of situations like GME and create a fairer trading environment for both long and short investors. More importantly, because the system is decentralized, users would not have to worry about a central authority suddenly shutting it down.

Looking back, in the Web 1.0 era, most people mainly consumed information, while only a small group had control over its production. With the development of Web 2.0, users became the main creators of online content, but large technology companies gained control over much of this information and turned it into a source of profit. Web 3.0 aims to change this situation. Through privacy-focused blockchain technology, users can regain control over their own information and decide how their data is used. This shift could bring significant changes not only to the internet but also to the way people live.

1.4 The Creation of TSRN

Nine engineers from the United States, China, Russia, South Korea, and Vietnam, all passionate about building decentralized communities and guided by chivalric values, created TSRN, abbreviated TSRN. Paying tribute to the GameStop episode and to WallStreetBets, the Reddit community championing retail investors, they aim to build a digital-asset ecosystem with privacy and pegged payments. Their hope is that every retail investor holding TSRN can share a united, chivalric spirit, enabling more investors to navigate the internet of value freely, safely, and on equal terms.

1) TSRN's Guiding Vision

Beyond time and space, with strong privacy: everyone is their own hero!

2) Core Value Characteristics

Transmit data privately, enable settlement and pegged payments, lower the barrier to participation in consensus and process transactions in parallel, and use blockchain to establish a comprehensive system of economic incentives for the community.



3) Ecosystem Vision

The project will provide liquidity for market making and use TSRN to build a new generation of automated DeFi yield aggregators. By pledging TSRN, users can earn collateral interest and use their collateral receipts to borrow mainstream tokens such as ETH, USDC, and UNI.

Chapter 2 Overview of the TSRN Project

2.1 Introduction to TSRN

Tresorion, abbreviated TSRN, is a decentralized privacy token on Ethereum. Based on privacy-focused blockchain technology, it is a disruptive community-building token used for transfers, running distributed applications, and incentivizing community participants. It emphasizes absolute privacy and data security and is an institutional-grade privacy public-chain token compliant with the EU's GDPR (General Data Protection Regulation) and MiCA framework.

TSRN is also a one-stop aggregator for cross-chain trading and interoperability among multiple assets, as well as a comprehensive blockchain development

platform. It will establish a decentralized international community and attract high-quality public-chain projects, financial institutions, digital-asset regulators, leading technology professionals, and real-economy businesses seeking blockchain integration. These participants will help sustain the normal development and operation of the TSRN community and its products.



Building on the DeFi distributed-finance model, TSRN's underlying infrastructure seamlessly connects various digital assets for market making and trading through the latest integration of cross-chain and sidechain technologies. It promotes coordinated development of DEXs and CEXs, overcomes the shortcomings of traditional centralized and decentralized systems, and seeks genuine fairness, impartiality, and transparency through aggregated trading.

To develop the ecosystem, TSRN will establish aggregated liquidity pools through AMM market-making protocols, yield farming, and collateralized lending, providing a value base for contract trading, leverage, and automated market making. Decentralized data contracts will also generate synthetic assets based on composite crypto indices and allow external access to key data and other API functions. This lowers barriers to DeFi and allows users to pursue higher returns without exposure to volatile assets or the need for active fund management.

As the ecosystem prospers and the community network develops, TSRN will integrate multiple DeFi products and application models into one ecosystem. It will aggregate a new suite of tools including Vaults, Pool, Swap, trade, liquidate, leverage, and collateralized lending, creating a comprehensive DeFi yield ecosystem with greater liquidity and convenient, efficient investment solutions with high returns, supporting healthy and stable DeFi development.

2.2 Building a Decentralized Financial Services Ecosystem

To achieve the ultimate freedom and privacy of digital assets, build a genuine decentralized financial services ecosystem, and extend the adoption of blockchain technology and digital-asset applications, TSRN has researched existing technologies and considered blockchain's decentralized characteristics and application scenarios as follows:

1) Multi-Asset Interoperability

TSRN can connect existing major digital-token networks, such as Bitcoin and Ethereum, and enable asset exchanges without altering the original chains' mechanisms. Newly emerging digital-token networks can also join TSRN at very low cost.

2) Transaction Privacy Protection

On TSRN, transaction participants can choose privacy-protected transactions. The system can protect the privacy of digital-asset transfers and trades and preserve the anonymity of digital-asset holders.

3) Extensibility Across Use Cases

TSRN can serve as a distributed exchange platform for multiple digital tokens, offer deposit and lending services for different tokens, facilitate digital-asset trading using tokens as a medium, and issue and trade new digital financial assets.

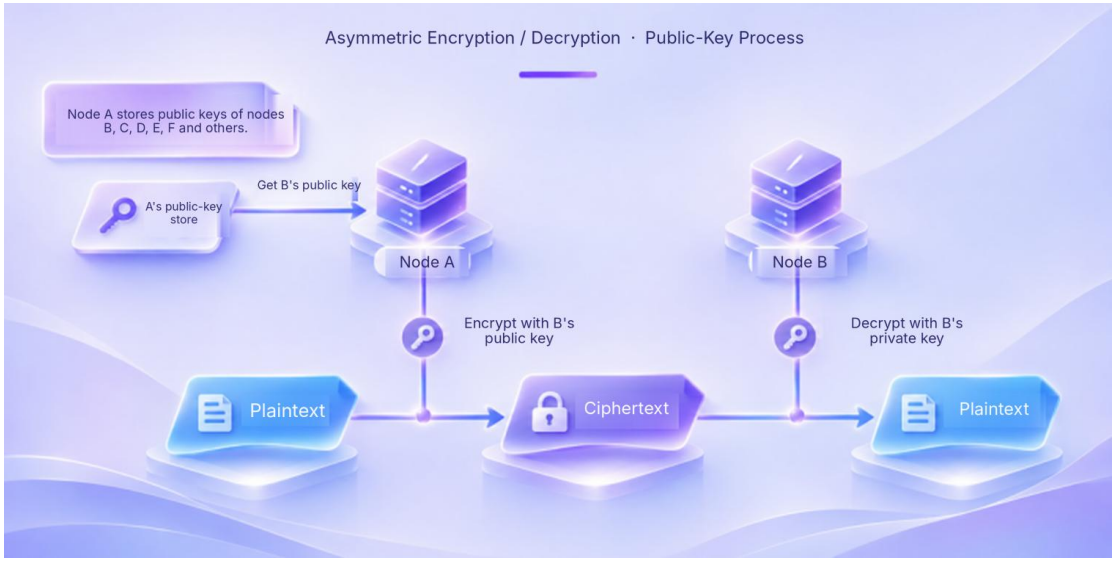
2.3 How the System Implements Privacy

Anonymity and encryption are two major features of blockchain. Anonymity means that an individual conceals their identity within a depersonalized group. Beyond the anonymity and encryption of assets, most blockchain-based applications also exhibit these two characteristics and have significant potential for privacy protection.

The TSRN system is essentially a series of blocks. This distributed public ledger has several components, particularly the storage of relevant information, the characteristics distinguishing blocks, and details about transaction participants. For the blockchain to function, transactions must occur, be verified, and be stored in blocks. Each block is then assigned a hash, a unique code identifying transactions. Once a block is added to the blockchain, anyone can view it. Through the TSRN blockchain network, we can query data about every transaction without identifying the transacting parties, thereby achieving encryption and anonymity for blockchain-related information.

Every connected computer on the TSRN network receives a copy of the blockchain, which updates automatically in real time when new blocks are added. Because each computer has a copy, thousands or even millions of identical copies may exist.

This makes manipulation virtually impossible without a single point of failure. TSRN information consists of usernames and digital signatures, and the system's chronological ordering ensures security.



As shown above, node A sends data to node B using public-key encryption. Node A obtains node B's public key from its own public key, uses it to encrypt the plaintext, and sends the resulting ciphertext to node B. Node B decrypts it with its own private key.



Encryption and Decryption Using Public and Private Keys: As illustrated above, Node A encrypts a message using Node B's public key and sends the resulting ciphertext to Node B. Node B then decrypts the ciphertext using its own private key.

TSRN aims to develop a fully anonymous and untraceable encryption protocol, together with a token-based payment ecosystem that maintains a stable peg. It also plans to establish a general-purpose cross-regional network and its supporting infrastructure, focusing on functionality, performance, a wide range of applications, ease of use, and overall user experience. The goal is to create the first

blockchain-based network infrastructure capable of supporting various anonymous applications while allowing unrestricted access across different regions. By providing a comprehensive underlying infrastructure, TSRN seeks to overcome existing barriers and make cross-regional operations more accessible.

Through an original fully distributed anonymous P2P communication protocol, a proprietary composite-transaction grouping consensus mechanism, and a transaction mechanism, TSRN will support transaction anonymity and Turing-complete smart contracts. It will also support third-party asset issuance, cross-chain communication, multi-chain integration, anonymous social networking, and distributed information storage.

TSRN's cross-regional network will implement comprehensive anonymization and overcome key technical challenges in value-transfer networks. Its ecosystem will closely connect blockchain, anonymous asset privacy, free trading, and unrestricted network connectivity in a new way, creating an unprecedented digital-world application ecosystem. Interwoven ecosystem chains and communities will form a matrix structure that together constitutes a complete, open, circular ecosystem.

Drawing on deep industry understanding and accumulated experience, and remaining committed to decentralization and individual liberty, TSRN will lead a new era of private networks offering asset security and full freedom.

2.4 Functional Design and System Participants

The basic functions of the TSRN private transaction protocol will implement the following design:

- Build a decentralized trading, clearing, and settlement network using an application-plus-protocol model;
- Strengthen application-layer barriers and reduce the risk of forks;
- Connect and integrate the markets and market depth of centralized and decentralized exchanges;
- Overcome current scalability bottlenecks of decentralized exchanges;
- Provide cross-chain interoperability compatible with native tokens from multiple underlying public blockchains;
- Include built-in dark-pool trading features supporting the splitting and separate execution of large orders.

Participants in TSRN's automated market-making system will include:

- Trading users: Users can choose between regular trading and flash trading modes.
- Broker-dealer: This role must be held by a compliant entity and primarily provides trade brokerage services to investors in exchange for commissions. Broker-dealers also act as compliant clearing and settlement providers. For a

fee, they can offer users automated verification of transaction compliance, substantially lowering barriers and costs and improving trading efficiency.



• Market Maker: This role supplies market depth and liquidity for specified token trading pairs. It is generally expected to be provided by token project teams or merchants.

• Relayer: The decentralized relayer network primarily updates and locks orders in a timely manner. Only orders listed in the Relayer Network order book can be executed, and orders can be canceled only after they are removed from the book. Relayer nodes are divided into regular and super nodes. Relayers provide order-book services and host and maintain off-chain orders. Makers and relayers negotiate fees and orders without relying on trust; relayers then submit the orders to the order book. Takers fill selected orders and broadcast them to the public blockchain, where smart contracts complete final clearing.

• Liquidity Backer: This role primarily supplies liquidity funding to the trading network, such as margin financing and token lending, mainly through TSRN, reducing funding costs for broker-dealers and makers.

• Information Feeder: Through paid subscriptions, this role supplies basic on-chain and off-chain trading-data analysis and other intelligence, providing information and tools to support users' trading decisions.

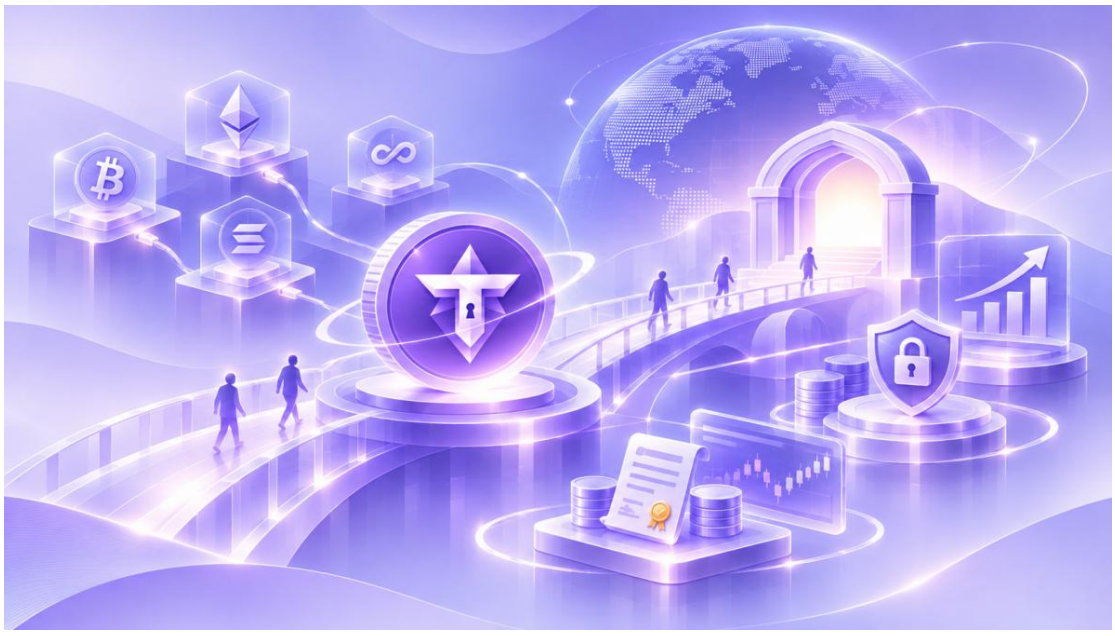
In TSRN's automated market-making model, regular trading pairs connect to the market depth of mainstream exchanges, providing sufficient liquidity for mainstream digital currencies. The flash-trading channel primarily lowers barriers for users seeking to purchase highly liquid digital currencies quickly. Trading based on the TSRN private transaction protocol primarily serves illiquid currencies in the long-tail market. Although the protocol can provide a market for illiquid tokens, it

cannot create liquidity from nothing; it will generally rely on liquidity supplied by reserve tokens, such as reserve pools provided by merchants.

2.5 TSRN's Future Development Philosophy

On the path toward freedom, we recognized the shortcomings of centralization, created blockchain, and established highly autonomous decentralized communities. Yet differences in beliefs have prevented us from reaching further. People in different communities may speak the same language while holding different principles and values. TSRN believes that communication does not require complete agreement on values. The protocol it follows is a bridge spanning all chains, welcoming everyone committed to decentralization and leading them toward ultimate freedom.

TSRN continually reflects this philosophy in its actual operations. Diversifying the ways in which digital assets can appreciate offers their holders a fast route toward financial freedom. Volatility may create opportunities, but for most people it creates greater risks. TSRN enables digital assets to circulate through contracts in more scenarios, thereby addressing the concentration of risk.



TSRN will also focus on information security to provide stronger safeguards for asset freedom. It believes genuine asset freedom comes from information privacy and security: assets must move according to their owners' wishes and always remain secure. Blockchain should not merely be different; it should make assets freer and the experience more human-centered. TSRN will make private decentralized financial services available to everyone, so modern finance becomes a key to financial freedom for ordinary people rather than merely a tool for the wealthy to accumulate more wealth.

Chapter 3 TSRN Technical Architecture

To enable high-value circulation of the TSRN token and build a private trading ecosystem, we will develop TSRN's underlying support system using Ethereum technology. An independently developed public blockchain will form its core and support the healthy operation of the entire ecosystem.

3.1 Decentralized System Governance

TSRN's governance structure is supported by a fully transparent decentralized autonomous system. This structure allows every token holder to understand the complete technical architecture and flow of value within the public-chain infrastructure, fully reflecting blockchain's value as a source of public trust.

All TSRN decisions are based on votes by token holders, and all technical updates are announced by the community. This fully decentralized governance system avoids the shortcomings of centralized management in traditional institutions and offers an effective solution, without dependence on trust, to managerial overreach, record manipulation, and unilateral decisions about an organization's direction.

To ensure fair valuation and smooth circulation of TSRN and prevent control by large holders or opaque manipulation, TSRN relies on the technical features described above to implement decentralized autonomous governance at its foundation. It also recruits financial auditing, analysis, and investment professionals from major global financial institutions to a financial oversight council, which provides professional supervision and guidance. The digital-asset trading platform on the TSRN blockchain is also highly forward-looking and has introduced multiple innovative financial services.



1) Responsiveness

The team's core architects and R&D personnel come from middleware and low-level communications teams at internationally renowned technology companies, averaging more than ten years of R&D experience. Years of practical work with highly concurrent services have given them a deep understanding of distributed-system applications. The team also includes many experts in system tuning and diagnostics. Its architecture can rapidly scale services as user numbers and system size change, providing a highly responsive experience across regions. CDN, caching, and in-memory matching technologies further improve overall performance and optimize the user experience.

2) Throughput

Overall throughput depends both on the weakest service and on the overall design model. Database services and other components are tuned to make full use of high-performance public-cloud services. With many years of practical experience, the core development team uses a reactive architecture to maximize throughput and scalability. Repeated optimization of the matching engine has also given the trading platform strong matching performance.

3.2 Consensus Mechanism

Consensus is the process by which system nodes reach agreement. Consistency in distributed systems is reflected in three aspects:

- Termination of steps and selection: all processes must agree on the same outcome;
- Select a value; the algorithm will not execute indefinitely;
- The consensus mechanism is the soul of blockchain.

The design of a consensus mechanism determines whether an effective incentive system can encourage more nodes to participate and increase decentralization. In most public blockchains, node count is negatively correlated with transmission speed. Balancing node count against system performance is another consideration. Common consensus mechanisms for public blockchains include POW, POS, DPOS, BFT, and mechanisms combining different approaches.

TSRN matrix technology is based on an innovative POS + DPBFT hybrid consensus mechanism, a new approach to securing cryptocurrency networks.

POS, or proof of stake, allocates rights according to the number of system tokens held and the duration of ownership, allowing participants to compete for the right to record transactions. Compared with POW's competition based solely on computing power, POS introduces additional institutional rules, substantially improving efficiency and suitability for commercial use. POS proportionally reduces mining difficulty according to each node's token holdings and holding period, accelerating the discovery of a nonce. This shortens the time needed to reach consensus to

some extent and avoids the high energy consumption of mining. However, POS is not perfect: mining is still required, the fundamental pain points of business applications remain unresolved, and other attacks may theoretically still have an impact, such as the Ethereum DAO attack that led to Ethereum's hard fork and the emergence of ETC, demonstrating the failure of the hard fork.



DPBFT stands for Decentralized Practical Byzantine Fault Tolerance. It addresses the inefficiency of the original Byzantine fault-tolerance algorithm, making Byzantine fault tolerance feasible in practical systems.

DPBFT is a deterministic form of consensus, unlike probabilistic mechanisms such as POW. Nodes across the network synchronously obtain the same persistent data, addressing data security at the data layer and double spending at the consensus layer. Some nodes act as validators, while all others act as observers.

All system nodes communicate with one another and reach efficient data consensus through majority rule among validators. TSRN uses the POS + DPBFT hybrid mechanism at the consensus layer to support healthy ecosystem development and prevent hard forks, thereby securing the main chain. Observer nodes can dynamically join or leave the validator set through stake-based POS elections. Nodes may enter or exit the network at any time, preserving decentralization and future extensibility.

3.3 P2P Network

The TSRN blockchain network is a distributed network of full nodes. Every node has equal, peer-level authority. Nodes connect directly to one another and can also independently validate block data and transactions.

This peer-to-peer (P2P) network layer is the most important foundation above the blockchain data layer. It implements the underlying mechanisms for node

communication, interconnection, and mutual verification of data correctness and validity, supporting efficient and stable operation of the TSRN blockchain.

3.4 Composite Keys

The term “public key” above actually refers to a composite key. A composite key is a tree whose leaves are conventional cryptographic public keys accompanied by algorithm identifiers. Each internal node specifies the weights of its children and the weighted threshold that must be met. A signature set is validated by traversing the tree from the bottom up, summing the weights of keys with valid signatures, and comparing the result against the threshold. Weights and thresholds allow many configurations to be encoded, including Boolean expressions using AND and OR.

Composite keys have many uses. For example, an asset may be controlled by a composite key containing one key belonging to a user and another belonging to an independent risk-analysis system. If a transaction appears suspicious, such as transferring too much value within a short period, the risk-analysis system refuses to sign it. Another example encodes an organizational collaboration structure: a CFO may sign a large transaction alone, while subordinates must sign jointly. Composite keys are also useful for notary services.

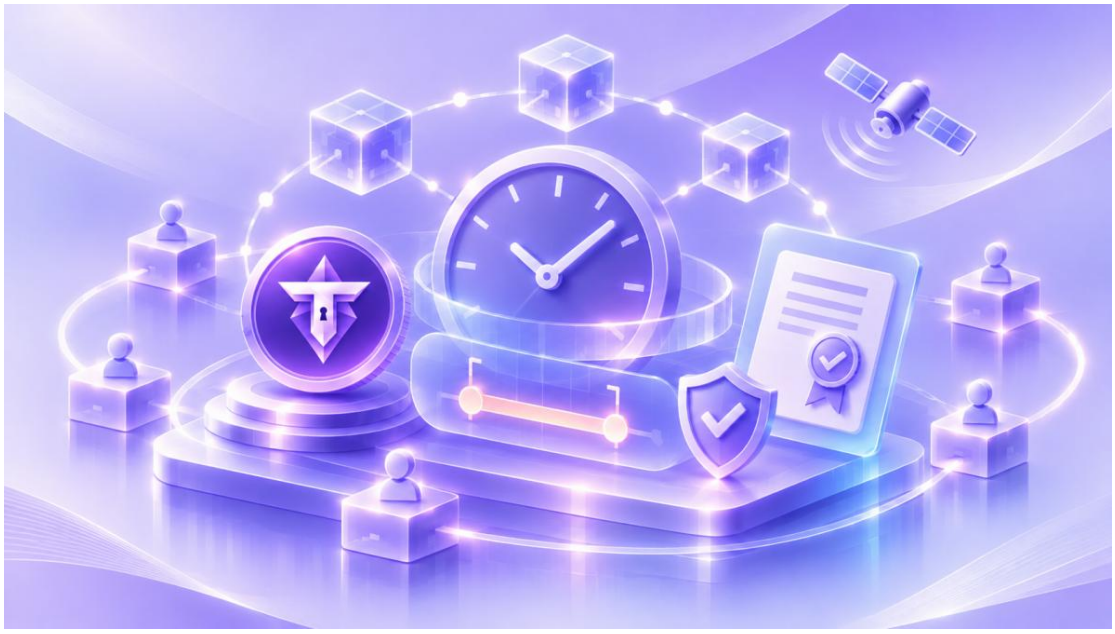
Each participant in a distributed notary service is represented by a leaf. A suitable threshold allows the group's signature to remain valid even when some participants are offline or refuse to sign. Although the literature describes threshold-signature schemes that can precisely generate composite keys and signatures, we choose an explicit representation with lower space efficiency so that keys using different algorithms can be combined. This avoids requiring every participant to upgrade simultaneously when old algorithms are phased out and new ones adopted.

3.5 Timestamps

A transaction timestamp specifies a time window within which the transaction can be considered to have occurred. A window is used because distributed systems do not have a single exact point in time, only many unsynchronized clocks. This reflects both physical limitations and the nature of shared transactions. In particular, when several parties must authorize a transaction, assembling a joint transaction may take hours or days.

The purpose of transaction timestamps is to tell contract code where a transaction falls on the timeline so that smart-contract logic can enforce time-related requirements. The same timestamp may be used for regulatory reporting or ordering events in a user interface, but such uses are not required. A locally observed timestamp may sometimes be preferable, even if it does not precisely match what other participants observed. If multiple parties need to agree on a precise point, they may use the midpoint of the window. This remains useful even though it does not exactly correspond to an event such as a keystroke or verbal agreement.

Time windows may be open-ended, indicating that a transaction occurred before or after a specified time without specifying by how much. Timestamps are checked by the notary service. Because notary participants also lack precisely synchronized clocks, whether a transaction submitted at a window boundary is considered valid at that instant is unpredictable. For other observers, however, the notary's signature is definitive.



A transaction bearing the notary's signature is assumed to have occurred within the specified time window. TSRN uses the Java time scale in UTC, with leap seconds incorporated into the last 1,000 seconds of a day so that each day contains exactly 86,400 seconds. Particular care is required to handle changes in the GPS leap-second counter correctly and maintain synchronization with Java time. When setting transaction windows, network propagation delays between users and notary services and within the notary service must be considered.

3.6 Attachments and Contract Bytecode

Transactions may have multiple attachments identified by file hashes. New attachments not previously encountered are stored and transmitted separately from transaction data and can be obtained only through standard resolution flows. Attachments are a series of ZIP files and cannot be referenced individually by contract code. Files from the ZIP archives are combined into one logical file system, and duplicate files are resolved only on their first occurrence. This is deliberately the same mechanism used by the Java classpath.

Smart contracts in TSRN are defined using JVM bytecode specified in The Java Virtual Machine Specification, SE 8 Edition. A contract is simply a class implementing the Contract interface, which exposes a single function named verify. The function receives a transaction and throws an exception if that transaction is considered invalid; otherwise it returns without a result. The set of verify functions executed is the union of the contracts specified by each state.

By incorporating the Java specification, TSRN allows developers to write code in multiple languages, use mature toolchains, and reuse code written in Java and other JVM-compatible languages. Java standards provide a comprehensive type system for ordinary business data: time and calendar handling through an implementation of JSR310; decimal computation through portable floating-point arithmetic or the provided bignum libraries; and so on. These libraries reflect years of careful development by the commercial Java community, making this resource a valuable foundation.

Contract bytecode may also define its own states as arbitrary object graphs. Because JVM classes are not a convenient form for interoperability with non-JVM platforms, permitted types are restricted and a standardized binary encoding scheme is provided.

States can label their properties using a small standardized set of annotations. These help control serialization into JSON and XML using JSR367 and JSR222 respectively, express static validation constraints using JSR349, and control insertion into relational databases using JSR338.

Attachments may also contain data files supplied to contract code. These may share a ZIP archive with bytecode or reside in another archive that must be supplied with the transaction being verified. Examples include currency definitions, time-zone data, and public-holiday calendars; any public information may be referenced in this way. Attachments are designed for data repeatedly used by many ledger participants. Contract code accesses them through the same APIs used for classpath files. The platform strictly limits attachment data types and sizes to prevent inappropriate files, such as videos and presentations, from being placed on the global ledger.

The transaction creator chooses the attached files. States therefore typically restrict which data they will accept. Attachments supply data but do not validate it. Where someone could profit by supplying malicious data, a constraint mechanism must prevent that behavior.

This is rooted in contract constraints encoded within the state itself: a state must specify not only a class implementing Contract but also constraints on the ZIP/JAR files supplied to it. These constraints can in turn ensure that the contract checks data reliability, either by directly checking data hashes or by requiring a signature from a trusted third party.

3.7 Hard Forks, Specifications, and Dispute Resolution

Distributed-ledger systems often differ in their underlying political philosophies and technical choices. Ethereum originally promised unstoppable applications governed by “code is law.” After a major smart contract was compromised, the absence of a non-code description of the program's intended behavior led to disagreement over whether the event could even be called a hack. The disagreement ultimately split the community.

Because TSRN contracts are simple ZIP files, they can easily include PDFs or other documents describing their actual intent. This mechanism is optional, and such documents are not required to be legally binding. Nevertheless, in financial applications, when disagreements arise, the legal agreement included in the files is more important than the software implementation.



It is technically possible to write a non-upgradeable contract. If it manages an asset existing only on the ledger, such as cryptocurrency, this can approximate “code is law.” We leave debate about the wisdom of this concept to political theorists and Reddit. TSRN's platform log has no direct equivalent of a blockchain hard fork. The only way to abandon a problematic or fraudulent transaction chain is therefore to agree out of band to discard an entire transaction subgraph.

Because there is no global visibility, agreement need not include every network participant, only those who may have received and processed the relevant transactions. Another consequence of limited global visibility is that no single point records exactly who has seen each transaction. Identifying the entities that must agree to discard a subgraph therefore requires correlating node activity logs.

TSRN nodes log sufficient information to make this correlation possible. The platform defines a flow available to anyone to assist this process. A tool can generate an investigation request and send it to a seed node. The flow notifies the administrator, requests a decision, and supplies enough information to persuade participation, such as a signed court order. If the administrator accepts through the node browser, subsequent hops in the transaction chain are returned. The tool thereby crawls the network semi-automatically to find all participants affected by a proposed rollback. The platform does not judge which rollbacks are legitimate; beyond locating the parties whose consent is required, it offers only minimal support for executing a rollback.

Once the affected participants are identified, at least two strategies can modify the ledger. One extends the transaction chain with transactions that simply correct the

database to match the intended real-world situation. Smart contracts must permit arbitrary changes outside normal business logic once a sufficient signature threshold is met. This simple approach is most useful when states involve few participants and none has an incentive to leave harmful information on the ledger.

For asset states resulting from theft or fraud, some participants will resist such repairs because they may profit in the real world during the interval between the ledger error and its correction. A more complex approach is then needed: all participants except the uncooperative parties agree to mark the relevant states as either no longer spendable or already spent. This is essentially a restricted form of database rollback.

3.8 Technical Features

To better support the rapid expansion of DeFi applications, we have made many trade-offs in TSRN's design. Architecturally, we have remained particularly committed to two aspects:

1) Scalability

From the bottom up, from conceptual design to implementation, scalability has always been our primary concern. As noted above, scalability is a difficult challenge for today's infrastructure. Yet it is also an essential capability for future infrastructure, so we must confront it and seek solutions.

2) Financial-Sector Requirements

Financial services differ from ordinary internet services in their industry-specific characteristics and rules. Supporting these requirements at the architectural level facilitates DeFi deployment. TSRN's DeFi applications have four characteristics:

- Highly scalable decentralized infrastructure;
- A distributed financial identity system;
- A decentralized credit system;
- Flexible development of distributed financial use cases.

Chapter 4 TSRN Token Economics

4.1 Issuance and Allocation of TSRN Tokens

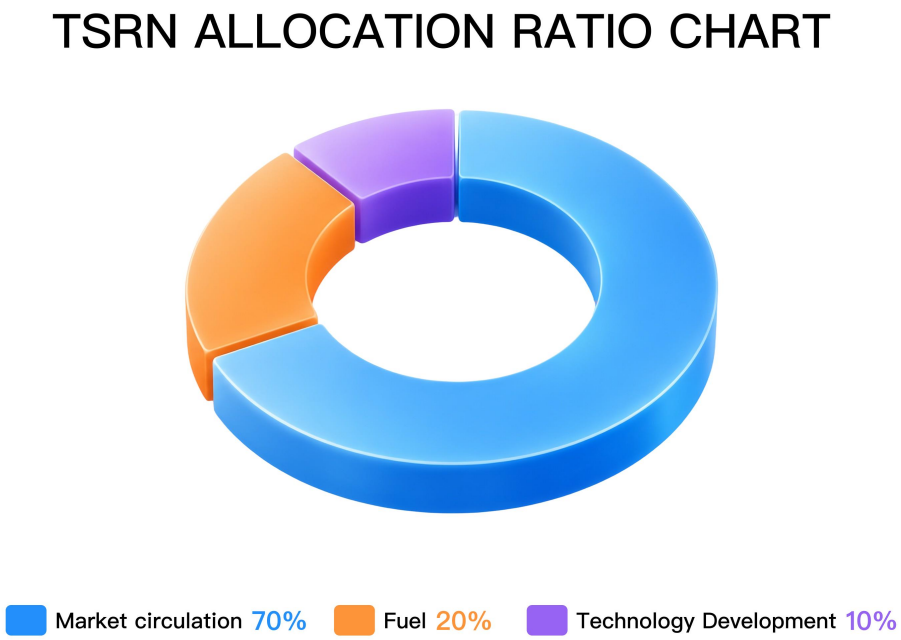
Building on the application prospects of DeFi + NFT + DAO and the underlying advantages of privacy protocols and data-computing networks, the TSRN Ecosystem Development Foundation has issued the high-value TSRN token.

Token name: TSRN

Total supply: 100 million tokens

Full name: Tresorion

Token issuance model:



• 70% is allocated to market circulation to achieve fully decentralized circulation and return authority to the market: 40% for market subscriptions and 30% for market incentive programs.

• 20% serves as fuel and is proportionally sent to a burn address for permanent destruction after each transaction. This is intended to stabilize returns: the more frequent the transactions, the higher the value, allowing tokens to appreciate steadily over time.

• The remaining 10% is allocated to the technical team for development.

Chapter 5 TSRN Value-Circulation Use Cases

5.1 Liquidity Mining Applications

In DeFi, liquidity mining means earning returns by depositing or lending specified token assets as required by a DeFi product with a mining mechanism, thereby supplying liquidity to its funding pool. Under the TSRN liquidity mining protocol, these returns take the form of TSRN tokens, representing future governance rights in the DAO community.

Cryptocurrency and blockchain markets currently attract many investors, speculators, and traders, and trading has generated thousands of blockchain assets. Unfortunately, financial-market sophistication has not kept pace, and

ordinary users struggle to execute valuable trades that benefit both parties. Blockchain assets have two principal shortcomings: limited borrowing mechanisms can cause mispricing, and substantial storage costs and risks create negative returns without a natural interest rate to offset those costs. These factors cause token-price volatility and discourage holding digital currencies.

Centralized exchanges let customers trade through built-in lending markets. These trust-based systems cover only a few leading assets and do not allow positions to move on-chain. Peer-to-peer protocols directly facilitate secured and unsecured loans between market participants. In every protocol we evaluated, lenders had to publish, manage, and, for secured loans, monitor offers and activate loans. Execution was generally slow and asynchronous because funds take time to move. We therefore developed the TSRN liquidity mining protocol, an Ethereum-based protocol establishing pools whose interest rates are calculated algorithmically from changes in asset supply and demand. Suppliers and borrowers interact directly with the protocol to earn or pay variable rates.

An important step in designing liquidity mining is defining its precise objectives. Our general objectives are:

- Incentivize long-term, sticky liquidity;
- Attract substantial short-term capital to create momentum and increase product awareness;
- Distribute tokens without an ICO and decentralize protocol governance.

Many protocols attach governance rights to their tokens to achieve decentralized governance. Yet decentralization is difficult to guarantee if governance-token ownership is highly concentrated. Distributing governance tokens to users is a major challenge for protocol teams. Our TSRN liquidity mining design can be a powerful tool for addressing this challenge compared with alternatives such as targeted airdrops.



1) Supplying Assets

On peer-to-peer platforms, one user's assets are lent to another user. Unlike exchange-based peer-to-peer platforms, the protocol aggregates each user's supply, offering more liquidity and maintaining the balance of the funding system. Borrowers and lenders can receive rewards, or interest, by circulating digital currencies while complying with the relevant agreements. Exchanges can also adjust the protocol incrementally or reward users by “liquidating” balances, potentially unlocking new business models for the Ethereum ecosystem.

2) Borrowing Assets

The TSRN liquidity mining protocol allows users to pledge one token as collateral and borrow easily from the protocol for use anywhere in the Ethereum ecosystem. Each money market has a variable rate set by market forces, determining the borrowing cost of each asset. Assets held by the protocol have a collateral factor between 0 and 1, determined by the underlying asset's liquidity and value. The collateral amount multiplied by its collateral factor equals the user's borrowing capacity.

3) Interest Rate Model

Rather than negotiating with suppliers and borrowers over terms and rates, the protocol uses a model that balances interest rates through supply and demand. Economic theory holds that interest, the price of money, should rise with demand: rates should be low when demand is low and high when demand is high. The utilization rate U for each market a combines supply and demand into a single variable:

$$Ua=\frac{Borrows_a}{Cash_a+Borrows_a}$$

The demand curve is encoded through governance and expressed as a function of utilization. For example, the borrowing rate may take the following form:

Borrowing Interest Batea=2.5%+Ua*20%

The interest rate earned by suppliers is implicit and equals the borrowing rate multiplied by utilization.

4) Liquidity Incentive Structure

The TSRN liquidity mining protocol does not provide liquidity directly. Instead, it relies on an interest rate model to encourage users to supply liquidity. When demand for a particular asset becomes unusually high, the amount of liquidity available for withdrawal or borrowing decreases. As a result, interest rates increase, encouraging users to provide more liquidity while making borrowing less attractive.

Based on this mechanism, TSRN's DeFi liquidity mining module will support liquidity mining for a range of assets, including BTC, USDT, ETH, and UNI.

5.2 Automated Market Making (AMM)

From Bancor to Uniswap, AMM technology has established a new foundation for immediate liquidity in any digital asset. AMMs not only enable price discovery in previously illiquid markets but do so in a highly secure, globally accessible, and unmanaged manner. AMMs have grown significantly. Innovations improving capital efficiency and reducing losses from volatility provide the infrastructure needed to attract larger liquidity providers from traditional markets.



TSRN believes that the fundamental AMM curve designs are already well established, and that future innovation will focus on developing new strategies based on these existing models. With this in mind, TSRN introduces concentrated and customizable liquidity to AMMs.

To overcome some of the limitations of traditional AMMs, TSRN will introduce the concept of virtual reserves, as illustrated in the following example.

In a traditional AMM, Alice deposits 500,000 DAI and 333.33 ETH into a liquidity pool, with a total value of USD 1 million. Her liquidity is spread across the entire price range of (0,∞). However, ETH prices tend to stay within a relatively limited range for extended periods. As a result, much of the capital provided by Alice may not be used efficiently.

With concentrated liquidity, LPs can choose a specific price range and provide liquidity only within that range. For example, Bob expects the price of ETH to remain between (1,000, 2,250) over the coming period. If his prediction is correct, he wants to earn returns comparable to those of Alice, despite investing much less capital. To do so, Bob only needs to provide 91,751 DAI and 61.17 ETH, with a total value of USD 183,500. This is significantly less than Alice's initial investment. The diagram below illustrates how this works.

$$x_c y_c = (x_b + 61.17)(y_a + 91751) = x_b y_b$$

$$y_b = 2250 x_b$$

Then

$$D = x_b y_b = 166678636.343 \asymp 166665000 = 500000 \times 333.33$$

Thus, Bob's virtual curve, or D value, is almost the same as Alice's.

The calculation above is a proof by contradiction. In practice, Bob provides the algorithm with his requirements: the expected price range, the current price point, and the desired size of virtual reserves, or virtual-curve D value. Once the virtual-curve expression is determined, the coordinates of points a, b, and c can be calculated easily, yielding x_{real}=61.17 and y_{real}=91751.

It also follows that if the price moves outside the range, one of Bob's two assets will disappear from his position entirely.

$$i_c = \left\lfloor \log_{\sqrt{1.0001}} \sqrt{P} \right\rfloor$$

The global state contains feeGrowthGlobal0(f_{g},0) and feeGrowthGlobal1(f_{g},1)—f_{g}—to track total fee income globally. For example, when a trade takes place within a tick, the system calculates the fees generated by that trade:

$$f_a(i) = \begin{cases} f_g - f_o(i) & i_c \geq i \\ f_o(i) & i_c < i \end{cases}$$

$$f_b(i) = \begin{cases} f_o(i) & i_c \geq i \\ f_g - f_o(i) & i_c < i \end{cases}$$

The variable f_{a} tracks fees in all intervals above tick i, while f_{b} tracks fees in all intervals below tick i. In the overall formula, subtracting fees accumulated below the lower bound i_{l} and above the upper bound i_{u} from total global fees f_{g} gives cumulative fees within (i_{l},i_{u}). The term f_{o} can be understood as a computational unit accumulating fees up to tick i. Its initialization follows the convention below:

The calculation of f_{a} has two cases:

- If the current tick equals or exceeds i, subtracting fees accumulated up to tick i, f_{o}(i), from global fees f_{g} gives the fees for all intervals above tick i;
- If the current tick has not yet reached i, f_{o} is initialized to 0. No fees have yet accrued in intervals above tick i, so the result is 0.

Similarly, for f_{b}:

- If the current tick reaches or exceeds i, f_{o}(i) represents fees accumulated up to i, that is, fees for all intervals below tick i;
- If the current tick has not yet reached i, fees for all intervals below tick i equal the current global variable f_{g}, or total fees to date.

In simple terms, to calculate cumulative fees within a range:

- If the current tick lies inside the range, i_{l}\leq i_{c} < i_{u}, subtract fees accumulated across all intervals below i_{l} from global fees f_{g};
- If the current tick is outside the range and below its lower bound i_{l}, no trades have yet taken place within (i_{l},i_{u}), so no fees have accrued and the cumulative amount is 0;
- If the current tick is outside the range and above its upper bound i_{u}, subtract the accumulated amounts at both ends: subtract fees below i_{l} from global f_{g}, then subtract fees accumulated between i_{u} and the current tick.

TSRN's fee calculation moves from the microscopic to the macroscopic. It divides the space into discrete intervals, and at each time step transactions and fees arise only within one discrete interval. Each individual tick records cumulative fees between the lowest tick and itself. The formulas above repeatedly use these values to calculate aggregate results.

TSRN changes the traditional AMM assumptions about LP behavior and no longer calculates each LP's fees from global liquidity and share alone. It considers the virtual liquidity present in each tick and the fees it generates to calculate fees per unit of virtual liquidity. It then examines each LP's position range. An LP supplies virtual liquidity within a chosen interval spanning one or multiple consecutive ticks. For a single tick, the system records each LP's contribution of virtual liquidity at that time, determines its proportion, and uses that proportion to allocate all accumulated fees within the tick.

In practice, LP behavior is complex, with different entry and exit times and different choices of ranges and ticks. TSRN's advantage is precisely that global calculations abstract away individual LP behavior and focus on ticks and positions.

After defining the global state variables described above, the system carefully records each swap's activity within ticks, tracking only the size of virtual liquidity in each tick. This forms the basis of swap formulas and the distribution of post-swap fees among all LPs participating in that tick. Complex LP behavior involves discontinuity across space and nonuniformity over time. To handle timing differences, TSRN also introduces position-level global variables recording fees for each address when it enters or exits a range or tick through setPosition, including uncollected fee and feeGrowthInside. This ensures later LPs do not share fees already accumulated by earlier LPs.

5.3 Collateralized Lending System

TSRN's lending model uses an automated liquidity protocol based on the constant-product formula. Each trading pair stores pooled reserves of two assets, provides liquidity for both, and maintains the property that the product of the reserves cannot decrease.

The basic price-oracle formula is:

$$p_{t_1,t_2} = \frac{\sum_{i=t_1}^{t_2} p_i}{t_2 - t_1} = \frac{\sum_{i=1}^{t_2} p_i - \sum_{i=1}^{t_1} p_i}{t_2 - t_1} = \frac{a_{t_2} - a_{t_1}}{t_2 - t_1}$$

We establish collateral-based funding pools and introduce insurance-pool management to reduce collateralization requirements. Smart contracts and oracles capture collateral market prices. If a pledged token's value moves beyond a set range, a smart contract automatically triggers an alert instructing the user to add collateral.



If the user cannot add collateral, the smart contract automatically liquidates the position and sells the pledged assets to safeguard the lender's returns. For a lender's exposure that could not be liquidated, the insurance pool compensates 70%, capped at the pool's total available amount. In insurance-pool management, rates rise with demand and fall when demand is low. The TSRN collateralized lending protocol enables continued financing by classifying pledged assets by risk. After supplying initial liquidity, market makers lock LP tokens as collateral in the TSRN protocol, allowing them to obtain continuing liquidity on the buy side. When users supply liquidity across a wide range, the liquidity assets' value fluctuates less when measured in the base currency.

If suppliers pledge LP tokens in TSRN, the collateral's resilience in extreme market conditions improves significantly, making the booster-pool system more robust.

Appropriate warnings are issued when project tokens rise sharply, and buffers absorb risk when prices fall sharply. Ultimately, TSRN aims to allow high-quality assets to appreciate over the long term while poor-quality assets gradually decline and are removed.

More precise risk pricing requires risk tiers, creating a tiered fixed-income fund. In addition to the initiating party (IP), two principal roles participate: key participants (GP) and fixed-income participants (LP). Both supply continuing funding. GPs directly invest in the project and convert their entire principal into project tokens. LP funds provide leverage to GPs, helping projects achieve greater value growth.

TSRN allows IPs to pledge high-quality assets, adding protection for GPs and encouraging substantial GP inflows. Every GP inflow contributes to the Vault, which holds LP risk reserves and profits. As the Vault grows, LPs become increasingly willing to invest.

As follows:

$$LPw \propto Vault \propto IPcol * GPturnover * IPltv$$

$$GPturnover \propto GPw$$

Where:

- IPcol is the IP's collateral
- IPltv is the IP's current loan-to-value ratio
- GPturnover is the GP's turnover rate
- GPw is the GP's willingness to invest
- LPw is the LP's willingness to invest
- Vault is the reserve

Effective signaling therefore allows an IP's pledge of lower-volatility assets to increase LP funding capacity. As a critical link in the market-feedback loop, LP funding produces a positive multiplier effect.

If a project is a poor-quality asset, GPs have converted their base currency into project tokens, making the leveraged assets much more volatile than the IP's collateral. GPs may therefore be liquidated first when the project's asset price falls. Remaining GPs prefer to receive the collateral after the IP is liquidated and consequently reduce turnover. This directly reduces incremental Vault funding and sharply lowers LP willingness to invest, gradually eliminating poor-quality projects.

$$LPw \propto IPcol * GPturnover$$

$$GPturnover \downarrow \Rightarrow LPw \downarrow$$

This transmission mechanism helps TSRN operate sustainably and remove poor-quality assets. It also conveys substantial useful market information as external input for TSRN's risk pricing, providing decision-making feedback to investors and liquidity providers.

5.4 TSRN Pegged Payments

With the support of TSRN's payment and clearing system, the TSRN token will facilitate pegged payments and provide people around the world with an accessible, free, private, and secure payment solution.



TSRN's payment and clearing system aims to become a new vehicle for transferring and storing value in the digital economy while supporting the growth of global trade. It will also help establish a digital-economy alliance built around borderless data circulation, shared access to value, and collaborative industrial innovation.

By combining blockchain, big data, the Internet of Things (IoT), and artificial intelligence, TSRN aims to bring industrial data and assets from around the world onto the blockchain in a secure manner. Through the integration of industrial data and large-scale data connectivity, the system will create new opportunities for value generation.

This global value community will bring participants together, allowing them to create greater value through cooperation and build an open, shared, and collaborative digital-economy ecosystem in which value can circulate continuously.

TSRN's pegged payment system offers several key advantages:

- Greater efficiency in cross-border payments: Traditional wire transfers ultimately pass through banks, with interbank payments completed by a central transaction party. Intermediated transactions require two complex processes. First, all participating banks must reconcile transaction information and synchronize it with an intermediary settlement provider. Second, the central party executes final payment only after offsetting debits and credits across accounts. With TSRN, all network nodes jointly maintain and verify information, ensuring consistency. Blockchain payments therefore

avoid complex synchronization and reconciliation, significantly improving cross-border efficiency.

• Conserving banking resources: A consortium blockchain can connect banks in a cross-border payment system. Currency-conversion payments can then be executed directly in real time without intermediary correspondent banks. On a blockchain payment platform, each bank needs only one reserve account. Capital previously held with intermediaries is freed, leaving more resources available for the bank's own business.

• Lower payment risk: Blockchain connects all payment and settlement nodes and institutions so they can jointly maintain payment information and verify consistency. With TSRN, all parties maintain transaction records and validate information together, substantially reducing payment risk.

• Faster transactions: Traditional cross-border payments involve extensive manual reconciliation and end-of-day batch processing. A transaction generally takes at least 24 hours. TSRN payments provide uninterrupted 24/7 service and reduce manual processing, substantially shortening clearing and settlement times.

• Lower transaction costs: Traditional payments incur processing, receiving, financial-operations, and reconciliation costs. TSRN reduces the role of intermediaries, improves liquidity, and enables real-time confirmation and monitoring, lowering direct and indirect costs throughout the process. Financial institutions can improve cost structures and profitability; end users can reduce fees, making previously uneconomical small cross-border payments viable and extending financial inclusion.

Chapter 6 Global Team and DAO Community

6.1 Global Team

TSRN's core development team consists of nine engineers from the United States, China, Russia, South Korea, and Vietnam who are passionate about building decentralized communities.

Rick Fishbune — A graduate of the University of Minnesota Twin Cities and former IBM technical director, responsible for power-architecture design, management, and technical strategy. He is a recognized expert in reliable power design for global servers. He currently leads a team developing blockchain-based server clusters and ecosystems.

Авдотьюшка — A graduate of Moscow Polytechnic University with a doctorate in computer science, and a former employee of IBM's Computer Research Center. The paper “New Directions in Cryptography” introduced this researcher to digital cryptography. Using asymmetric encryption and elliptic-curve algorithms, the

researcher examined the feasibility of distributed ledgers, participated in designing more than ten digital currencies, and discovered several security vulnerabilities, becoming a trusted and well-known member of the digital-currency community.

Tan Fei — Holds a doctorate from Saarland University in Germany, specializing in digitalization and financial clearing, with expertise in natural language processing. Participated in several blockchain projects involving social networking, the Internet of Things and digitalization, and blockchain finance, and conducted technical research at Microsoft's Digital Technology Laboratory.



Kim Hwan-seong — Technical development manager and software engineer with a bachelor's degree from Seoul National University. Has more than three years of experience in major software and game development in New Zealand, joined Ethereum two years ago, and currently develops blockchain source code.

Matthew Walther — An internationally known blockchain application expert and leading figure in commercial blockchain deployment. A former member of the US Business Council, he holds a doctorate in sociology from Columbia University and is a researcher at its financial research center. He is an authority on applications of intelligent financial technology.

Maaghul Clinton — Advises cryptography companies, crypto startups, venture-capital funds, and international policymakers on blockchain solutions. A director of the Private Investment Fund Institute (PIFI), he previously worked with Cravath, Swain & Moore LLP in New York and Goldman Sachs in London. He currently advises on financial operations, drawing on 30 years of financial-sector experience to help the platform understand users' actual needs.

Minkevich — Technical adviser and internationally recognized expert in computer-technology application development. Has worked at Apple, SGI, Microsoft, Google, and other companies, with more than 15 years of global IT development and operations experience.

Nguyen Thi Long — A Vietnamese blockchain expert with extensive experience developing large-scale systems and previous roles at leading international companies such as Qualcomm. A visiting professor of data engineering at Columbia University and a well-known blockchain scholar.

Bradley — Researches parallel big-data computing and the optimization of distributed algorithms, with extensive experience in blockchain, cryptography, and data mining. Bradley will provide advanced algorithmic support for the project's core blockchain mathematical models, core AI algorithms, and parallel big-data computing.

6.2 Building the DAO Community

To advance decentralization, TSRN will build its community around a DAO, or Decentralized Autonomous Organization, also known as a self-coordinating organization. In digital-asset value circulation, the continuing commercialization of DAO projects also creates additional value for users.

DAO governance rights are usually represented by a set of fungible or non-fungible governance tokens. Participants acquire tokens through purchase or contribution and become governors of the organization. Tokens allow them to participate in decisions and operations and enjoy corresponding rights. DAOs generally have no separate decision-making or management hierarchy, relying instead on democratic community voting. Changes to governance rules and major decisions usually require votes by governance-token holders. Stakeholders modify smart-contract rules through cooperation and competition, achieving democratic self-governance.

The DAO aims to bring together outstanding developers and accelerate the creation of products applying different digital assets. Currently, different versions of cross-chain digital assets on Ethereum operate independently, and projects provide varying levels of cross-chain support. A unified platform is needed to integrate them, unlock more value from digital assets on Ethereum and other public chains, and attract additional projects into the ecosystem through cross-chain integration. TSRN DAO will play an important role in this process.

TSRN believes DAOs combine decentralization, independence, self-governance, and token-based incentives, treating each system element as an asset and integrating financial, human, and other forms of capital. This improves organizational effectiveness and value circulation and offers a useful approach to existing management problems. TSRN will therefore devote itself to building a more valuable community, operating through a community-based model and attracting a large user base.

In line with DAO development goals, TSRN's community building follows a highly decentralized approach combining on-chain and off-chain methods. Guided by blockchain's decentralization principle, community strength, and users' interests, TSRN will gradually transition to a fully self-governing, community-based digital-asset financing ecosystem.

In the first phase, TSRN will use globally distributed collaboration to bring together parties with clear strengths and shared principles, building a world-class blockchain + DeFi value platform. In the second phase, TSRN will implement its philosophy of increasing user value, achieving shared benefits, joint ownership, and joint governance with the community and users.

TSRN's global community follows a highly decentralized approach combining on-chain and off-chain methods. Once programmed successfully, TSRN can operate according to its original rules, while continually maintaining and upgrading itself in response to actual conditions. This self-improvement mechanism not only eliminates trust problems but also enables unprecedented collective coordination, forming TSRN's technical foundation.

- Smart contracts technically implement TSRN's rules;
- Token economics provides a practical incentive basis for distributing TSRN's benefits;
- Blockchain connects individuals and organizations worldwide, allowing TSRN to expand beyond geographic limits.

TSRN tokens serve as proof of value circulation and as an incentive mechanism, while smart contracts define collaboration and benefit allocation among members. Members are not rigidly divided into investors, developers, partners, operators, or consumers: anyone holding TSRN tokens becomes part of the community. By continually optimizing contract structures, members can seek the most direct paths, maintain efficient collaboration, and pursue better development directions.

Chapter 7 Disclaimer

This document is provided solely to communicate information and for reference. It does not constitute investment advice, an inducement, or an offer to buy or sell shares or securities in TSRN or its related companies. Any such offer must be made through a confidential memorandum and comply with applicable securities and other laws.

Nothing in this document may be construed as compelling participation in a public token offering. No act connected with this white paper, including requesting a copy or sharing it with others, shall be regarded as participation in a public token offering.

Participation in a public token offering signifies that the participant meets the age requirement, has full civil legal capacity, and has entered into a genuine and valid contract with TSRN. All participants enter into contracts voluntarily and obtain a clear and necessary understanding of TSRN before signing.

The TSRN team will continue making reasonable efforts to ensure that the information in this white paper is truthful and accurate. During development, the platform may be updated, including its mechanisms, tokens and token mechanisms, and token allocation. Parts of this document may be revised in later white papers as the project progresses. The team will publish updates through website

announcements or new white papers. Participants must obtain the latest version promptly and adjust their decisions accordingly. TSRN expressly disclaims liability for losses resulting from (a) reliance on this document, (b) inaccuracies in it, or any actions taken as a result of it.



The team will make every effort to achieve the stated goals, but force majeure means it cannot make an unconditional commitment to completion. TSRN tokens are an important tool for platform functionality, not an investment product. Holding TSRN tokens does not grant ownership, control, or decision-making rights over the platform. As cryptographic tokens used in the project, TSRN tokens are not any type of currency in the following categories: (a) securities; (b) equity in a legal entity; or (c) shares, bonds, notes, warrants, certificates, or other instruments granting rights.

Whether TSRN tokens appreciate depends on market forces and demand after applications are deployed. They may have no value. The team makes no commitment regarding appreciation and accepts no responsibility for consequences arising from changes in value. To the fullest extent permitted by applicable law, the team is not liable for damage or risks arising from participation in a public token offering, including direct or indirect personal harm, loss of business profits, loss of business information, or any other economic loss.

The TSRN team complies with regulatory requirements and industry self-regulatory declarations conducive to healthy industry development. Participation signifies full acceptance of and compliance with such checks. All information disclosed by participants for these checks must be complete and accurate. The TSRN team has clearly communicated potential risks. By participating in a public token offering, participants confirm that they understand and accept all detailed terms and provisions, accept the platform's potential risks, and bear the consequences themselves.