SOLALUX

WHITE PAPER

PARALLEL VELOCITY

Redefining Blockchain Performance

2025
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Website:
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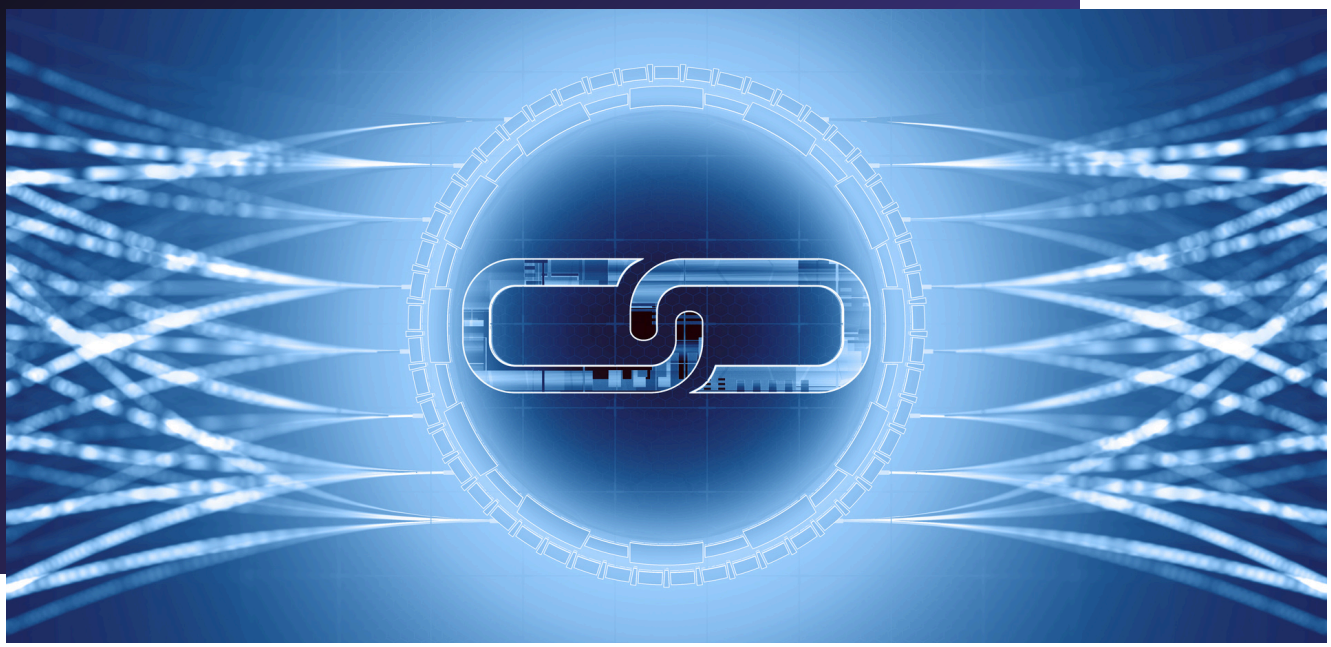

Preface

Blockchain technology once promised us a grand vision: an open, transparent, and user-driven digital future.

However, this promise is crumbling as we attempt to build high-frequency consumer applications like gaming, social networking, and finance onto it. Network congestion, high and unpredictable fees, and slow transaction speeds act as invisible barriers, stifling not only user experience but also dampening developer enthusiasm.

Therefore, we built SolaLux—not for incremental improvements, but to establish a new paradigm. SolaLux is not just another ordinary Layer 1 blockchain. It is a high-performance foundation specifically designed for the era of large-scale applications.

We return to first principles, fundamentally eliminating performance bottlenecks through a disruptive parallel computing architecture, reshaping user economic expectations through a fixed, low-fee model, and building a thriving and symbiotic ecosystem through deep developer incentives.

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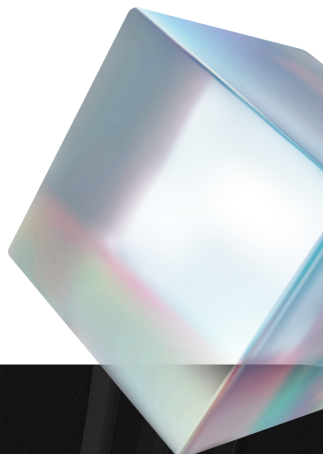


01. Execution Summary

1.1 Vision and Mission

Our Vision

It will become the cornerstone operating system for next-generation consumer-grade decentralized applications, providing hundreds of millions of users with a smooth, invisible, and reliable Web3 experience, hiding the complexity of technology beneath an exceptional user experience.

Our vision for the future is one where users will no longer need to be aware of the existence of "blockchain." When engaging in financial activities, users will enjoy instant feedback, near-zero costs, and absolute asset autonomy, as naturally as using today's internet services, but underpinned by a more open, fair, and trustworthy underlying protocol. SolaLux aims to be the platform of choice for building this future—a truly decentralized network adopted by the mass market.

Our mission

By building a blockchain protocol that combines extreme performance, predictable costs, and strong incentives, we aim to eliminate key barriers to mainstream user adoption of Web3. To this end, we focus on resolving three core challenges:

1. **Resolving the conflict between performance and scale:**
   Provide your application with linearly scalable resources so that the user experience is never compromised by the limitations of the underlying infrastructure.

2. **Ending the conflict between cost and experience:**
   Providing a stable and low-cost transaction environment enables high-frequency, low-value interactions, thereby unlocking unprecedented application scenarios.

3. **Bridging the gap between development and success:**
   Create a healthy economic ecosystem that deeply links the success of developers with the success of the network, allowing them to share in the added value.

01. Execution Summary

1.2 Core Innovation Points

Dynamic State Sharding Parallel Engine

We've gone beyond the traditional concept of "multithreading," achieving fine-grained parallelism at the transaction level. By dynamically analyzing the state access required by a transaction (such as wallet addresses and smart contract data), the system automatically routes it to a dedicated shard for processing, completely avoiding the performance killer of "global state contention."

The result is a system that scales linearly with demand, providing a solid foundation for large-scale concurrent applications.

Congestion-resistant, fixed low-gas-fee model

The essence of innovation:

We have reshaped the network's economic model, transforming Ethereum's "auction-based" and Solana's "market volatility" gas fees into a predictable "service fee" model.

Advantages:

For users

Costs are predictable, eliminating concerns about incurring exorbitant fees due to sudden surges in online popularity.

For developers

Developer-friendly product logic with more frequent interactions, without worrying about user churn due to uncontrollable costs.

Self-driven deflationary development and incentive flywheel

This is the link between technology and community. Our economic model has two powerful engines built in:

Value capture engine	The more active the network, the scarcer the SLX token becomes, directly translating the success of the ecosystem into value for all participants.
Ecosystem growth engine	Through the developer incentive pool, we directly reward applications that bring real users and transactions to the network.

02. Market Opportunities

Blockchain technology is standing on the threshold of moving from fringe innovation to mainstream adoption. However, the current infrastructure is insufficient to support this historic leap. SolaLux has precisely targeted this structural market gap, aiming to provide the necessary underlying support for the upcoming Web3 application tsunami.

2.1 Industry Background

The limitations of current blockchain infrastructure are creating a multi-billion dollar untapped market.

The core contradiction lies in the fact that burgeoning application ideas are being constrained by outdated underlying architecture.

Performance stifles application innovation:

The sequential execution model of most blockchains is their fundamental bottleneck. When a game attempting to attract millions of daily active users launches, the resulting concurrent requests immediately overwhelm the network, leading to disastrous experiences such as transaction delays and asset loss. This is not a problem specific to a single application, but a common obstacle faced by the entire industry, limiting the imagination across all sectors, from DeFi to social networking.

Unpredictable costs hinder commercialization:

For businesses or developers looking to build their business models on the blockchain, floating gas fees act like unpredictable "taxes," making product pricing, revenue forecasting, and user experience standardization impossible. This is especially true in microtransaction scenarios (such as in-game items and content rewards), where transaction costs often exceed the value of the goods themselves, fundamentally stifling the development of such business models.

Imbalance in the developer economy model:

In many ecosystems, developers contribute the vast majority of the network's value (users, transaction volume) but struggle to share in the long-term benefits of the network's growth. This lack of incentive mechanisms makes it difficult for the ecosystem to form a healthy and sustainable growth flywheel.

02. Market Opportunities

2.2 Target Market

SolaLux's strategic focus is on three of the most promising and performance-critical verticals, whose maturity signifies the true arrival of Web3:

GameFi and Blockchain Games

According to leading analysts, the blockchain gaming market is projected to surpass $50 billion by 2025. A true "killer app" game must offer a smooth experience comparable to Web2 games, meaning the underlying blockchain must support:

- High-frequency in-game actions
- Large-scale real-time interaction among players on the same screen.

SolaLux's consistently low fees and high TPS are perfectly tailored for such scenarios.

Decentralized social networking and creator economy

Data monopolies and unfair profit distribution on Web2 social platforms have sparked widespread discontent. Next-generation SocialFi applications will need to handle massive amounts of content uploads, likes, comments, and donations. Every interaction should be instantaneous and near-zero cost. SolaLux has the potential to be the birthplace of these disruptive applications.

High-Frequency DeFi and Real-World Assets

With the development of derivatives, algorithmic stablecoins, and RWAs, DeFi protocols need sub-second clearing capabilities and extremely low transaction friction to compete with traditional financial markets.

02. Market Opportunities

2.3 Competitive Advantages and Market Positioning

In the crowded Layer 1 blockchain market, SolaLux is not seeking to become another "universal public chain," but rather has adopted a focused strategy, clearly positioning itself as a "special zone for high-performance consumer-grade DApps."

Through a series of combined strategies, we have established differentiated advantages in key dimensions that are difficult to imitate.

Feature Dimension	Ethereum (and mainstream L2)	Solana	**SolaLux**
Scalability trajectory	Rollups	Monolithic	Partitioned
Transaction cost model	Auction-driven, highly unstable	Marketization, relative volatility	Secure, highly stable
Developer core principle	A significant user base and considerable financial resources; brand impact	Rapid velocity; established ecological framework	Optimal performance + manageable costs + sustainable advantages
User experience	Secure yet costly and sluggish	Rapid yet intermittently unreliable	Exceptionally seamless performance, transparent pricing, and reliable quality.

03. Core Technology Framework

SolaLux's technical architecture is a comprehensively innovative system, with in-depth innovations in the consensus layer, execution layer, data layer, and cost layer. This system not only focuses on peak performance but also emphasizes stability, predictability, and sustainability in real-world application scenarios.

3.1 Parallel Execution Engine: Nyriad

Transaction Analyzer

- Using static code analysis and runtime probing techniques, quickly identify state access patterns before transactions are executed.
- Build a transaction dependency graph to automatically detect potential conflicting transactions.
- Implement intelligent pre-caching to reduce state access latency.

Shard Manager

- Dynamically monitor the load on each shard to achieve intelligent load balancing.
- Support cross-shard atomic transactions to ensure consistency of complex business logic.
- Provide dynamic shard splitting and merging capabilities to adapt to ever-changing workloads.

Parallel Scheduler

- Based on an improved Directed Acyclic Graph (DAG) scheduling algorithm:
- Priority scheduling is implemented to ensure low-latency processing of critical transactions.
- Parallelization of batch transactions is supported to improve throughput efficiency.

Key technical characteristics

Adaptive Parallelism: The system automatically adjusts the granularity of parallel processing based on the current load, reducing overhead under low load and maximizing parallelism under high load.

03. Core Technology Framework

3.2 Consensus Mechanism: Hybrid Spacetime Proof

Our consensus mechanism is a two-layer structure, with each layer optimized for specific needs:

Innovation at the PoS layer

- Introduce a reputation-weighted staking mechanism, comprehensively considering the historical performance of nodes.
- Implement dynamic committee elections to prevent excessive concentration of power.
- Employ randomized group verification to enhance the system's resistance to attacks.

Deep optimization of the PoT layer

- The time-series node network employs BFT consensus to ensure the reliability of the time source.
- It achieves nanosecond-level time accuracy, supporting high-frequency trading.
- It supports dynamic adjustment of the time window to adapt to different network conditions.

Fault tolerance and recovery

Supports Byzantine fault tolerance, enabling normal operation even with 1/3 malicious nodes.

Provides a fast view switching mechanism for rapid recovery in the event of master node failure.

03. Core Technology Framework

3.3 State Management and Storage: Aether Store

We designed a multi-level state storage system:

Hot data layer

- Based on a high-performance in-memory database
- Automatically identify and cache frequently accessed states
- Implement intelligent prefetching strategies

Warm data layer

- Utilizes SSD cluster storage
- Supports fast status retrieval
- Provides compressed storage options

Cold data layer

- Distributed archive storage
- Supports on-demand state reconstruction
- Provides historical state snapshot service

State synchronization mechanism

- Achieve incremental state synchronization, reducing network traffic.
- Support fast checkpoint recovery.
- Provide state verification tools.

03. Core Technology Framework

3.4 Network Layer Optimization

We redesigned the network layer communication protocol:

Message propagation protocol

- A variant of the Gossip Protocol
- Implement priority message routing
- Supports large file chunked transmission

Topology Management

- Dynamic network topology discovery
- Intelligent routing selection
- Load balancing scheduling

3.5 Fixed Costs and Economic Predictability Model

Our billing system comprises the following key components:

Basic cost calculation:

Basic cost = Basic cost unit × Operational complexity coefficient

Resource pricing system:

Computing resources

Charged based on actual CPU cycles used.

Storage resources

Pricing based on space and time occupancy of state.

Bandwidth resources

Billing is based on data transfer volume.

04. Token Economic Model

4.1 Core Value Proposition of the Token

Triple value anchoring:

Practical value

As the "fuel" for the network to run, all transactions and the execution of smart contracts require SLX.

Governance value

Holding an SLX signifies having a say in the direction of network development.

Capital value

Through deflationary mechanisms and staking rewards, value is added for long-term holders.

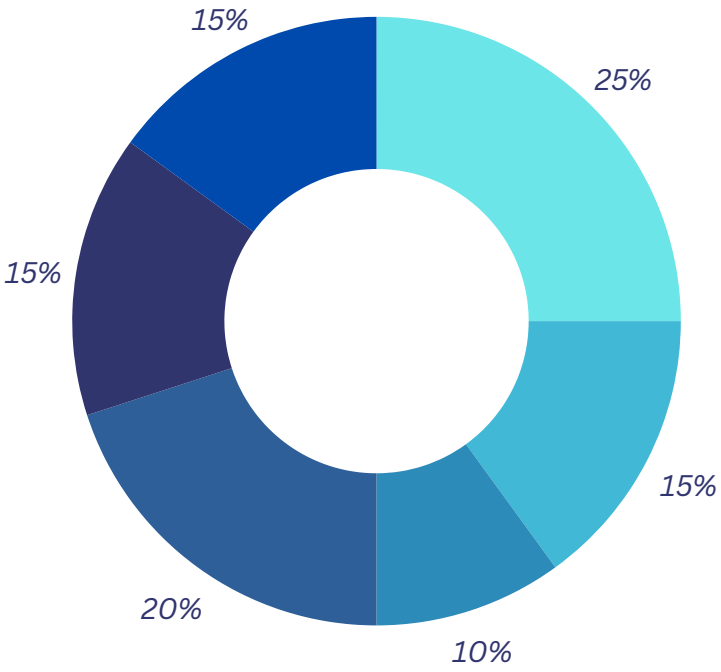
4.2 Token Utility Matrix

Application Contexts	Comprehensive Elucidation	Economic implications
Internet transaction charges	Operations including payment transactions, execution of smart contracts, and data storage.	Fundamental needs and network effects directly offer value enhancement.
Network staking	Validators must stake SLX to guarantee network security.	Minimize distribution supply and enhance network stability.
Governance Voting	Voting on proposals concerning enhancements to agreements and the allocation of funds.	Foster community cohesion and attain decentralized governance.
Developer Incentives	Earn SLX rewards from the incentive pool contingent upon DApp performance.	Foster innovation and expedite ecological advancement.
Payment method	Preferred pricing and settlement currency for decentralized applications within the ecosystem.	Broadening application contexts and strengthening the ecological barrier

04. Token Economic Model

4.3 Token Allocation and Release Plan

Total supply: 1.2 billion SLX



Project	Proportion	Quantity	Release guidelines
Ecosystem Advancement Fund	25%	300 million	TGE releases 10%, followed by a linear distribution over 36 months.
Community Sales	15%	180 million	TGE releases 25%, followed by a linear distribution over six months.
Airdrop	10%	120 million	Complete release within one month following the TGE.
Research and Development team	20%	240 million	A 12-month lock-up period, succeeded by a linear release over 24 months.
Private Equity	15%	180 million	TGE releases 20%, followed by a linear distribution over 12 months.
DAO	15%	180 million	TGE releases 5%, followed by a linear distribution over 48 months.

04. Token Economic Model

4.4 Value Capture Mechanism

Dual-engine driven model:

Engine 1: Deflationary Combustion Mechanism

Destruction formula: Transaction fee per transaction × 50% (destruction ratio)

- The destruction process is open and transparent, and anyone can verify it on a browser.
- Destruction records are permanently stored to ensure transparency.
- Deflationary pressures are positively correlated with online activity.

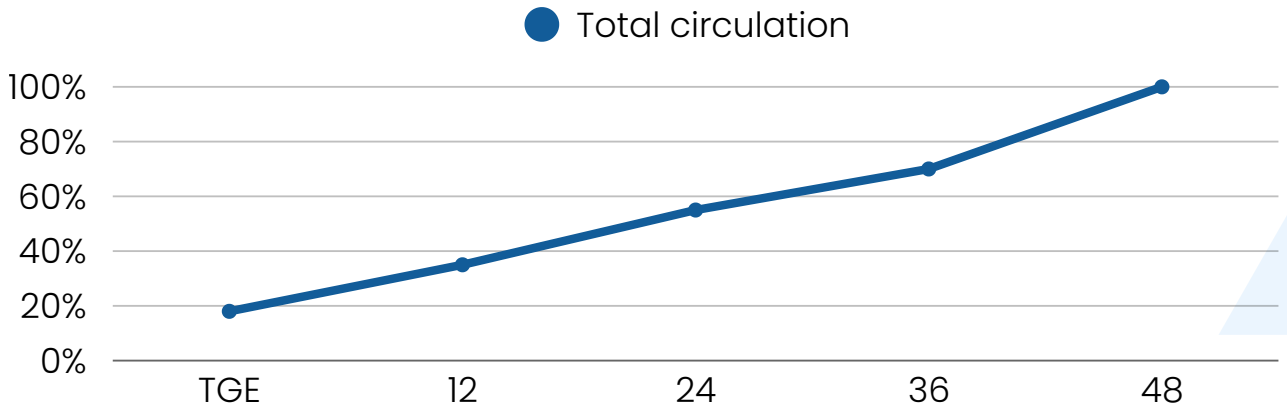
Engine 2: Staking Reward System

- **Basic annualized yield:** 7%-12%
- **Yield adjustment mechanism:** Dynamically adjusted based on the collateral ratio and the network inflation rate.

4.5 Token Release Curve

Key milestones:

- TGE (Time of Circulation): Circulating supply approximately 18% of total supply
- Month 12: Circulating supply reaches approximately 35%
- Month 24: Circulating supply reaches approximately 55%
- Month 36: Circulating supply reaches approximately 70%
- Month 48: Complete release, entering steady state



5. Ecosystems and Governance

SolaLux is committed to building a vibrant, self-sustaining, and continuously evolving decentralized ecosystem. Our governance model aims to balance efficiency and democracy, incentivizing innovation while maintaining stability.

5.1 Governance Structure

To ensure the effectiveness and fairness of governance, we have designed a three-tiered governance structure with mutual checks and balances:

Legislative Branch - SLX Community Council

- Composed of all SLX holders, with each token representing one vote.
- Responsible for approving major protocol changes, fiscal budgets, and ecosystem development plans.
- Major proposals require ≥66.7% approval to pass
- Established specialized standing committees (Technical Committee, Economic Committee, and Appropriations Committee).

Executive Branch - Council

- The council is composed of nine members elected by the community, serving two-year terms.
- It is responsible for implementing resolutions passed by the council, managing day-to-day administration, and responding to crises.

Oversight Branch - Oversight Committee

- Operating independently of the council, it is responsible for auditing the use of funds and the effectiveness of agreement implementation.
- It possesses the power to investigate misconduct and the power to temporarily freeze assets.

5. Ecosystems and Governance

5.2 Developer Incentive Program

This is a long-term incentive program that rewards valuable contributions through objective data metrics.

Rating weight matrix

Evaluation Criteria	Weight	Measurement metrics
User growth quality	35%	Daily active users, user retention rate, cost of acquiring new users
Network value contribution	30%	Trading volume, fee contribution, total value locked growth
Technological advancement	20%	Code quality, protocol advancement, security performance
Community impact	15%	Brand recognition, social media engagement, external partnerships

Bonus distribution mechanism

Diamond Award (Top 5%)

Earn up to 100,000 SLX rewards per month

Platinum Award (Top 5%-20%)

Monthly 20,000-50,000 SLX rewards

Gold Award (Top 20%-50%)

Monthly 5,000-20,000 SLX rewards

5. Ecosystems and Governance

5.3 User Experience Optimization Fund

Special funding amount:

No less than 5% of the ecological fund will be allocated annually as a special fund.

Fund usage direction:

Gas fee subsidy (40%)	Educational outreach (30%)	Interface optimization subsidy (30%)
Provide new users with a full subsidy on their first transaction.	Creating multilingual tutorials and hosting offline meetups	Funding DApps to improve user interface and experience

5.4 Fiscal Governance and Management

Diversification of income sources

- Transaction fee sharing (main source)
- Cross-chain bridge revenue sharing
- Ecosystem service fees

Budget approval process

- 45 days before the season: Departments submit draft budgets
- 30 days before the season: Budget Committee reviews and publishes the budget.
- 15 days before the season: Community council vote

5. Ecosystems and Governance

5.5 Community Governance Tools

Front-end governance portal:

- Proposal Creation Wizard
- Visualized voting dashboard
- Real-time results tracking system

5.6 Dispute Settlement and Escalation Mechanism

- Community mediation: reaching a settlement with the assistance of a neutral third party.
- Technical Arbitration: Disputes involving issues related to the agreement shall be submitted to the Technical Committee for arbitration.
- Public Referendum: Major disputes will ultimately be decided by a vote of all token holders.

5.7 Governance Incentive Mechanism

Voting reward system:

- Participate in governance staking: Lock up SLX and participate in voting to earn additional rewards.
- Voting accuracy reward: Participants whose voting results align with the actual development trend receive a bonus.
- Active Participation Medal: Awarded a special identity badge and enjoys priority rights for cumulative participation in governance.

06. Development Roadmap

Phase 1: Technology Validation Period (2024)

Key technology delivery:

- Parallel computing engine Nyriad V1.0 launched
- Hybrid consensus mechanism HPoST running stably on testnet
- Basic developer toolkit development completed

Verifiable results:

- Testnet TPS reached 10,000+
- Successfully deployed 300 test DApps
- Completed three rounds of independent security audits

Phase 2: Ecological Construction Period (2025)

Key tasks:

- Mainnet V1.0 officially launched
- Cross-chain bridging system established
- Official wallet and block explorer launched

Ecological indicators:

- Daily transaction volume exceeds 2 million
- Number of active DApps reaches 500
- Total value locked (TVL) reaches $1 billion

06. Development Roadmap

Phase 3: Expansion Phase (2026)

Ecosystem expansion:

- The focus is on introducing 50 high-quality GameFi and SocialFi projects.
- Developing the DeFi derivatives market, with a TVL target exceeding $5 billion.
- Launching a multilingual developer support program.

User experience optimization:

- Launch a mobile super app integrating wallet, trading, and social functions
- Achieve one-click cross-chain asset transfer
- Establish a rapid response mechanism for user feedback

Phase 4: Global Expansion (starting in 2027)

Strategic priorities:

- Achieve fully decentralized governance (DAO)
- Establish a global developer community
- Launch enterprise-grade solutions

Deepening Governance:

- Establish a mature proposal review mechanism
- Improve the financial management system
- Foster a healthy community culture

07. Risk and Compliance

7.1 Technical and Security Risks

The main risk in implementing the core technologies lies in the complexity of the parallel computing architecture. Critical condition errors or deadlocks may occur during the implementation of dynamic state sharding and the parallel execution engine.

To address this risk, we will employ formal verification methods to mathematically prove all core algorithms and establish a multi-level testing system. We will also implement an emergency pause mechanism to temporarily halt network operation in the event of a serious error, ensuring the safety of user assets.

In terms of cybersecurity, new blockchains are vulnerable to various security threats, including 51% attacks and Sybil attacks.

To address this, we employ a threshold signature scheme to enhance consensus security, establish a real-time threat detection system, and implement a vulnerability bounty program to encourage security researchers to discover and report vulnerabilities.

7.2 Market and Operational Risks

The extreme volatility of the cryptocurrency market could severely impact the pace of ecosystem development. We will establish a market stabilization fund of 5% of the target market capitalization and implement a flexible gas fee adjustment strategy to mitigate market shocks.

Team operational risks are equally significant. The loss of core members could severely impact project progress. Therefore, we have implemented an equity incentive plan and a talent development system to ensure team stability.

7.3 Risk Response and Continuous Improvement

We have established a comprehensive risk warning mechanism, which includes setting multiple quantitative monitoring indicators, such as keeping network computing power concentration below 30% and token holding concentration below 20%.

07. Risk and Compliance

7.4 Compliance Framework

SolaLux has established a multi-layered compliance architecture to ensure compliant operation across all jurisdictions. We have established a non-profit foundation in Singapore as the governance body and a DAO legal entity in the Cayman Islands to provide legal protection for decentralized governance.

Our compliance framework primarily comprises the following aspects:

- Establishing a dedicated compliance committee, composed of internal experts and external legal counsel.
- Developing a detailed compliance manual covering multiple areas including securities law, tax law, and corporate law.
- Establishing a regular compliance training system to ensure all team members understand and comply with relevant regulations.

7.5 Global Operations Compliance System

Compliance filing in multiple jurisdictions:

We have completed the necessary registration procedures in cryptocurrency-friendly countries and regions such as Switzerland, Singapore, and the UAE.

KYC/AML Comprehensive System:

- Verify the identity of all investors participating in the token sale.
- Establish a transaction monitoring system to detect suspicious transaction patterns.
- Process cross-border transactions in accordance with FATF travel rules.

7.6 Data Privacy and Information Security

GDPR and other privacy regulations compliance:

- Implement data classification management
- Establish a personal information protection mechanism
- Set up a data breach emergency plan