Litong: A Scalable Blockchain for Peer-to-Peer Finance and Governance

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Abstract

Litong is a purely peer-to-peer blockchain designed to enable secure transactions without intermediaries. It combines high-speed transactions, decentralised governance, and a dual-token ecosystem to support scarcity, utility, NFTs, and meme coins. Using a hybrid Proof-of-History (PoH) and Proof-of-Stake (PoS) consensus, Litong achieves deterministic block ordering, fast finality, and performance-based validator rewards. The system separates functions into two tokens: Part A preserves scarcity and governance value, while Part B fuels utility operations, minting, and gas payments. Validators are rewarded according to performance, creating a meritocratic and sustainable ecosystem. NFTs and meme coins are strictly utility assets and do not influence network security or validator rewards. All operations are executed through a secure command-line interface, ensuring deterministic execution across devices.

1. Introduction

Blockchain networks often face congestion, high fees, and uneven validator incentives, limiting scalability and adoption. Litong addresses these challenges by employing a hybrid PoH and PoS consensus model combined with dual-token economics and developer-friendly tooling. Part A is a fixed-supply token, totalling 588 million units, serving as the backbone for staking, governance, and validator rewards. Part B is a dynamically minted utility token produced at a rate of 20 tokens per block and is used for transaction fees, NFT and meme coin creation, and gas payments. Each Part B transaction undergoes a 20% burn to control inflation, with the remaining 80% supporting validator rewards, liquidity pools, and ecosystem development.

Validators are selected based on both stake and performance, with early validators receiving fixed rewards and top performers earning dynamically calculated incentives. Validator rewards are determined using the formula:

$$Rv=Rbase+RdynamicR_v = R_{\text{base}} + R_{\text{dynamic}}Rv=Rbase+Rdynamic$$

Where RbaseR_{\text{base}}Rbase is the fixed reward of 0.1 Part A per block for early validators, and RdynamicR_{\text{dynamic}}Rdynamic is proportional to the validator's stake and performance compared to all active validators:

$$R_{\text{dynamic}} = \frac{S_v}{\sum_{i=1}^{N} S_i} \cdot \frac{P_v}{\sum_{i=1}^{N} P_i} \cdot R_{\text{pool}}$$

Here, SvS_vSv represents the validator's stake (Part A or converted Part B), PvP_vPv is the performance score based on validation speed, accuracy, and uptime, NNN is the total number of eligible validators, and RpoolR_{\text{pool}}Rpool is the portion of Part A allocated to dynamic rewards from Part B distributions. Validators who underperform experience an annual reward decay of 0.5–1% or may face slashing penalties. NFTs and meme coins enhance utility without impacting network security, and all operations are conducted through the CLI.

2. Blockchain Architecture

Litong's blockchain is organised into a base layer and an execution layer. The base layer handles block validation, ledger maintenance, and transaction ordering. Each block contains a timestamp, previous block hash, Merkle root, validator identification, block reward information, and a full list of transactions. Chronological ordering and immutability are ensured using double SHA-256 hashing, implementing Proof-of-History (PoH).

The PoH sequence hashes are generated as:

$$H_n = \text{SHA-256}(H_{n-1} \parallel T_n \parallel TX_n)$$

Where H0H_0H0 is the initial seed hash, TnT_nTn is the timestamp, and TXnTX_nTXn is the transaction data. Each hash proves the elapsed time since the previous one, allowing deterministic transaction ordering. Blocks are generated every five seconds, and validators must stake 32 Part A or 64 Part B to participate. Part B staking gradually generates Part A until 32 are accumulated, at which point auto-staking locks these tokens for validation.

The execution layer supports smart contracts, NFTs and meme coin minting, staking, and token swaps. Heavy computational operations are separated from consensus to maintain throughput. Security measures, including CAPTCHA verification and rate-limiting, prevent automated abuse.

3. Consensus Mechanism

Litong uses a hybrid Proof-of-History and Proof-of-Stake consensus. PoH ensures verifiable chronological ordering, while PoS selects validators based on stake and performance. Part B staking generates Part A rewards until 32 Part A are accumulated,

after which auto-staking locks tokens for validation. Performance-based rewards are calculated according to validator stake, performance, and contribution.

Validator performance PvP_vPv is scored as:

$$Pv=wb \cdot Sb+wa \cdot Sa+wu \cdot SuP_v = w_b \cdot S_b + w_a \cdot S_a + w_u \cdot S_uPv=wb \cdot Sb+wa \cdot Sa+wu \cdot Su$$

where SbS_bSb is block validation speed, SaS_aSa is accuracy, SuS_uSu is uptime, and weights wb,wa,wuw_b, w_a, w_uwb,wa,wu sum to 1. Early validators receive 0.1 Part A per block, while the top 100 validators earn additional dynamic rewards. Underperforming validators face decay or slashing. Validators cannot vote on their own rewards, maintaining fairness.

4. Token Economics

Litong's dual-token model balances scarcity and utility. Part A is fixed at 588 million tokens, used for staking, governance, and validator rewards. Part B is minted at 20 per block and fuels transactions, NFT/meme coin creation, and gas. Each Part B transaction burns 20%, and the remaining 80% is distributed as follows: 30% to validator rewards, 30% to liquidity pools, and 20% to ecosystem development. Users can swap Part A for Part B at a ratio of 1:10.

Gas fees are dynamic, adjusting between 0% and 5% according to network usage:

$$Gf=Gmin+(Gmax−Gmin) \cdot UtUmaxG_f = G_{\text{min}} + (G_{\text{max}} - G_{\text{min}}) \cdot \frac{U_t}{U_{\text{max}}}Gf=Gmin+(Gmax−Gmin) \cdot UmaxUt$$

This ensures fair economic incentives and network stability.

Token Flow Illustration (plaintext):

Part A (Fixed Supply 588M, Staking/Governance/Rewards)

Part B (Dynamic Mint 20/block, Utility: Tx, NFTs, Meme Coins, Gas)

└► Ecosystem Development 80%

5. Wallets and CLI

All wallet creation and blockchain interactions occur through the CLI. Users can mint NFTs, meme coins, stake tokens, claim rewards, and perform swaps. The CLI ensures deterministic execution, displays Part A and Part B balances, and allows network selection between mainnet and devnet. Devnet tokens can be requested periodically; mainnet operations require Part B for gas.

6. NFTs and Meme Coins

NFTs require a name, description, and 3x3 image. Minting costs 0.1 Part B, with 20% burned and 80% allocated to liquidity and rewards. Meme coins require a name, description, image, and optional attributes, costing 0.2 Part B plus 0.1 per attribute. NFTs and meme coins are utility-only and cannot participate in staking or rewards. Gas fees are dynamically adjusted.

Illustration:

Mint NFTs / Meme Coins → Pay Part B → 20% Burned → 80% to Liquidity & Rewards

NFTs & Meme Coins → Utility Only

7. Staking and Rewards

Validators stake 32 Part A or 64 Part B to participate. Part B stakers earn Part A until reaching 32, then auto-stake. Rewards depend on performance: early validators earn 0.1 Part A/block, top performers earn dynamic rewards, and underperformers face decay or slashing. Rewards can be claimed or deferred.

Illustration:

Stake Part A / Part B → Validator Eligibility

Part B Stakers → Earn Part A until 32 → Auto-Staking

Validator Performance → Rewards Distribution

Reward Claim → Claim / Defer (Portfolio Storage)

8. Security and Anti-Bot Measures

Litong secures its network using CAPTCHA verification, rate-limiting, and device fingerprinting during wallet creation and critical operations. Validators are penalised for inactivity. Double SHA-256 hashing ensures chronological integrity. The CLI confirms critical operations, protecting against accidental or malicious misuse.

9. Block Generation

Blocks are generated every five seconds, with headers including timestamps, previous hashes, Merkle roots, validator IDs, and reward data. Transactions, NFTs, and meme coins are stored in Merkle trees for verifiable inclusion. Rewards are distributed per block: Part A to validators, Part B to utility operations, including a 20% burn.

Illustration:

Transactions / NFTs / Meme Coins → Merkle Tree → Block Header → Validator Verification → Rewards Distribution

10. Gas and Dynamic Fees

Gas fees are paid in Part B, dynamically adjusting from 0% to 5% based on network demand. Distribution: 20% burned, 30% to validator rewards, 50% to liquidity and ecosystem development. NFT and meme coin operations follow the same structure.

Illustration:

Transaction / NFT / Meme Coin → Pay Part B Gas → 20% Burn / 30% Validator / 50% Liquidity & Ecosystem

11. Conclusion

Litong is a scalable, secure, and incentive-aligned blockchain for peer-to-peer finance, governance, NFTs, and meme coins. Its hybrid PoH + PoS consensus allows fast,

verifiable blocks and performance-based validator rewards. Dual-token economics separate scarcity from utility, preserving Part A value while enabling Part B operations for transactions and asset creation. NFTs and meme coins enhance utility without compromising security. Dynamic gas fees, performance-based rewards, auto-staking, and anti-bot measures ensure sustainability, fair validator participation, and balanced economic growth.