Syamailcoin: Gödel's Untouched Money

Alshen Feshiru
alshenfeshiru@zohomail.com

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Abstract

Syamailcoin prevents natural falsehood—corruption from system limits. When bits flip, valid state becomes indistinguishable from corrupted state. Provide self-verification: state accumulation with exponomial growth and harmonic decay, 288-bit , factorial consensus, and balanced bit. System tolerates 14.47% Byzantine faults across four time-decreasing stages.

1 The Problem

Payment systems face hardware bias, Byzantine failures, and Gödelian incompleteness. Syamailcoin addresses these through deterministic mathematics. Natural falsehood: when state T becomes identical to corrupted $T \oplus A$ through radiation, thermal fluctuations, or defects. Syamailcoin embeds verification within transitions.

2 Memory Decay Accumulation

2.1 Growth and Weighting Function

Growth $\gamma^{i/R}$: 5% per 10 iterations. Decay φ prioritizes recent states. $\gamma > 1.1$ diverges; $\gamma < 1.0$ stagnates. $\varphi > 0.95$ overweights history; $\varphi < 0.8$ loses memory.

2.2 State

$A(n) = \sum_{i=0}^{n} F(i)^{288}$. Exponent 288 matches hash output (32-bit × 9 states). Derivative $\frac{\partial A}{\partial i} = 288 F(i)^{287} \frac{\partial F}{\partial i}$ determines emission.

3 SAI-288

SAI-288 9-state, 64 rounds per 72-byte block. State: 9 × 32 bits. Input: 576 bits. Output: 288 bits. IV: 0x243F6A88, 0x85A308D3, 0x13198A2E, 0x03707344, 0 xA4093822, 0x299F31D0, 0x082EFA98, 0xEC4E6C89, 0x452821E6 Round $t \in [0,63]$ on $M_0,, M_{17}$:

4 Blockrecursive

Blockrecursive Block: index, hash, previous reference, transactions, timestamp, $F(i)$, proof, accumulation, commitment, signature, storage check, version. Valid when: hash matches, signature verifies, proof $\geq$0.1447, storage balanced, transactions valid.

5 Prevention

Prevention PoE(25, 5, 20, 3) = |53,130-1,140|=51,990. Threshold 0.1447 provides 14.47% Byzantine tolerance, exceeding $\frac{1}{3}$.

5.1 Inevitabilty Stage

Inevitabilty Stage

Distribution	Seconds
4,104,313 → 3,743,507	868.2
3,743,507 → 1,186,437	720.0
1,186,437 → 200,448	117.6
200,448 → 0	36.91

Duration: $\Delta t_k = \frac{R}{\gamma} \ln(\frac{A(k+1)}{A(k)})$.

6 Unbalanced Bit

Unbalanced Bit NAND flash degrades from unbalanced data—excess ones or zeros degrade silicon oxide via charge trapping. Integrity: $hash(balanced(B)) \oplus hash(B)$. Verify: confirm balance, recompute hash, validate XOR.

7 Economic

Economic Genesis: $\frac{9,469,999.9999999428}{40.2306}$=235,294 (40.2306 = harmonic mean). Rewards: $R(i) = \max(0.000223166823529411 8, \frac{F(i)^8}{A(i)} \cdot remaining)$. Maximum: $\sum_{i=0}^{\infty} R(i) \leq 9,469,999.9999999428$. Verify: 4,104,313+3,743,507+1,186,437+200,448+235,294=9,469,999.

8 Persistent

Persistent 85.53% capacity. Under LWE. Two-strike. Accumulation. Unbeaten-Bit: 2^{144} under Grover. Before failure. Collision, LWE, discrete logarithm.

9 Summary

Summary Five components: mathematical integrity via $F(i)=\gamma^{i/R}\boldsymbol{\tau}\sum_{j=0}^{i}S_j\varphi^j$, 288-bit hash and Unbeaten-Bit, physical mitigation via balanced storage, fair consensus via factorial proof with 14.47% Byzantine tolerance, recursive verification via time-independent validation. Supply: genesis 235,294, maximum 9,469,999. 9999999428. Non-zero minimum ensures sustainability.

References

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