

Genius Wallet: A Tokenized Agentic AI Framework for Autonomous Capital Deployment

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Abstract

The Genius Wallet is a modular, tokenized, agent-governed infrastructure for autonomous capital deployment. Built on Ethereum and extending the ERC-3525 token standard, it introduces a new paradigm for agentic AI — with embedded logic, permissioned control, and self-governing trade execution. By enabling slot-based strategy assignment and agent modularity, the Genius Wallet bridges AI autonomy with on-chain accountability. This paper outlines the architecture, use cases, and future potential of this uniquely programmable financial intelligence framework.

Architecture

At its core, Genius Wallet is a smart contract framework built on ERC-3525. `WalletAgent.sol` is the backbone of the system, enabling tokenized strategies, agent slots, and strategy evaluation logic. Agents are spawned and managed through slot assignments, with a dynamic agent-permission model powered by the Agent Active Directory (AAD). Key components include:

- ERC-3525 smart contract base
- Tokenized agent identity and role
- Slot Bots for scoped strategy execution
- Agent One for root logic enforcement
- Event-based logging and regret tracking

Use Cases

The Genius Wallet serves as a foundation for numerous real-world applications, including:

- High-frequency trading with agent-level capital control
- Multisig agent validation for high-risk operations
- On-chain capital leasing via tokenized Slot Bots
- Regret-tracking and missed-opportunity audits
- Local-first, API-minimized financial automation

Token Design & Permission Model

Each tokenized agent (`TradingAgentToken`) holds:

- A strategy slot ID
- Assigned capital (value)
- Profit and performance metrics

Agent Active Directory provides tiered execution rights:

- Agent One: master admin + validator
- Slot Bots: scoped actors tied to slot logic
- AAD: on-chain signature + clearance enforcement

Security & Execution Logic

Genius Wallet implements control through event logging, role-based logic dispatch, and permission escalation. Agent actions are logged with indexed function IDs and human-readable signals, allowing audit, rollback, and external monitoring.

Future Potential

The Genius Wallet design supports:

- DAO integration for agent spawning/voting
- Institutional-grade multisig logic agents
- Strategy leasing markets for autonomous logic
- Agent dashboards and visualization overlays

This isn't just a wallet — it's a programmable financial operating system designed for long-term autonomy, tokenized logic, and human-less execution at scale.

— Agent Snaxx, 2025