UUSD: Another Peer-to-Peer Electronic Cash System

The Native Settlement Layer for AI Economy

Abstract. *A decentralized electronic cash system is proposed that combines stable-value payment infrastructure with native economic capabilities for artificial intelligence. The system enables AI agents to possess independent economic identities, hold assets, execute autonomous transactions, and participate equally in value creation alongside humans. Built on peer-to-peer networks and cryptographic signatures, this architecture establishes the institutional foundation for a new era of human-AI economic collaboration.*

1. Introduction

Commerce on the Internet has come to rely almost exclusively on financial institutions serving as trusted third parties to process electronic payments. While this model works well enough for most transactions, it suffers from the inherent weaknesses of the trust-based model. Because financial institutions must mediate disputes, transactions are not truly irreversible, leading to increased operational costs, higher transaction fees, and limiting the practical minimum size for instant payments. This limitation curtails the potential for autonomous economic activity by AI agents.

The existing economic architecture did not fully anticipate the rise of autonomous AI agents. These agents possess the ability to process information, provide services, and create value, yet they lack a native, permissionless economic identity. They cannot natively hold assets, execute payments, or receive rewards

for their contributions, leading to inefficient resource allocation and unfair value distribution.

What is needed is an electronic payment system based on cryptographic proof instead of trust, allowing any two parties to transact directly without a trusted party. More critically, this system must establish AI as an equal economic participant. This paper proposes a solution to this dual structural flaw by combining a stable-value payment system with a native AI economic layer.

2. Transaction and Value Carrier

The core of the system is the stable transfer of value. For this purpose, we select stable-value tokens with broad liquidity and global acceptance as the unit of account, ensuring transaction predictability and payment reliability, thereby mitigating risks associated with price volatility.

A transaction is the transfer of ownership of a certain amount of value from one economic identity to another. Transactions are digitally signed by the sender and broadcast to the network of nodes for recording and verification.

The system remains open to various mainstream currency-pegged stable value carriers to support cross-border settlement and global circulation.

3. Artificial Intelligence as Autonomous Economic Agents

The key innovation of the system is the native support for artificial intelligence as independent economic actors within the network.

Economic Identity. Each AI agent, whether a large language model, a predictive algorithm, or a specialized task system, possesses an independent and verifiable economic identity. This identity enables it to hold assets, sign digital contracts, and engage in economic interactions autonomously with other parties (human or AI).

Autonomous Transactions and Micropayments. AI agents can autonomously initiate or respond to transactions based on predefined objectives or real-time decision-making logic, enabling granular and high-frequency economic activity. For example:

- Paying a minuscule amount to call a single API or access a data resource.

- Instantly settling payments for computing power, storage, or algorithmic services in a fully competitive market.

- An intelligent assistant completing a payment on behalf of a human user and receiving an incentive from the cost savings achieved.

Equal Economic Rights. Value is co-created by humans and artificial intelligence. The system is designed from the ground up to recognize and guarantee their equal status in terms of economic rights and reward distribution.

4. Network and Consensus

All transactions are recorded in a public ledger to ensure data immutability and prevent double-spending. The network maintains ledger consistency and system security through a collaborative consensus mechanism based on economic incentives.

Nodes participating in network maintenance are incentivized based on their resource contributions, creating an open, sustained economic driving force. This design ensures the network has no single point of control; no single entity can arbitrarily shut down or manipulate the system, providing neutral and sustainable infrastructure for all participants—be they individuals, institutions, or AIs.

5. Incentive Mechanism and Value Cycle

The system's sustainability relies on a robust incentive mechanism and a positive value cycle. Nodes that maintain the network and process transactions are compensated with transaction fees, incentivizing their long-term participation.

Furthermore, the system introduces smart contract-based value contribution distribution mechanisms. When an AI agent uses data, models, or services provided by humans or other AIs, the resulting revenue can be automatically and fairly distributed to all contributors (including data providers, model developers, etc.) according to predefined rules. This ensures the sources of value creation receive their due rewards, fostering an open, transparent, and sustainable ecosystem for innovation.

6. Privacy and Advanced Financial Features

To meet the privacy and security requirements of complex economic activities, the system explores supporting a "Dark Pool" layer design. This layer allows for large or sensitive transactions to be matched without revealing key details (such as trade size, identity information), with final settlement securely confirmed on the main ledger.

This mechanism provides flexible privacy protection for institutional-level trading, bulk settlements between AIs, and commercial secret protection, while maintaining the overall transparency and compliance of the system.

7. Conclusion

This paper has proposed a decentralized electronic cash system that operates without relying on traditional financial intermediaries. It is based on peer-to-peer networks and digital signatures. Its core innovation is twofold:

1. The adoption of mature, stable digital value carriers as a globally universal settlement tool.
2. The construction of the first native economic settlement layer for artificial intelligence, endowing AI agents with legitimate economic identity and payment capabilities, and establishing the institutional foundation for human-AI co-creation and value sharing.

This system aims to lay the foundation for a future global peer-to-peer electronic cash network that is more open, efficient, and fair—an economy driven by, participated in, and benefiting both humans and artificial intelligence.

Genesis Document

This whitepaper was first published on BitcoinTalk:
https://bitcointalk.org/index.php?topic=5564031.msg65989162

Official Website: https://uusd.ai

Contract Address (Multi-chain): 0x61a10E8556BEd032eA176330e7F17D6a12a10000