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Invention Title	BLOCKCHAIN-BASED SECURE NETWORK COMMUNICATION SYSTEM
Publication Number	32/2024
Publication Date	09/08/2024
Publication Type	INA
Application Number	202441058777
Application Filing Date	02/08/2024
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	COMMUNICATION
Classification (IPC)	H04L0009320000, H04L0009080000, H04L0009060000, G06F0021640000, G06Q0020060000

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Abstract:

The invention relates to a Blockchain-Based Secure Network Communication System designed to enhance the security and integrity of data transmission in a distribu environment. The system utilizes blockchain technology to create an immutable, decentralized ledger that records all communication transactions between network employing advanced cryptographic protocols and a consensus mechanism, the system ensures that each transaction is encrypted, verified, and securely recorded. Th provides a tamper-proof record of all communications, enhances trust among network participants, and mitigates risks associated with centralized security models. T offers improved security, decentralization, transparency, and scalability for secure network communication. Accompanied Drawing [FIGS. 1-2]

Complete Specification

Description:[001] The present invention pertains to the field of network communication systems, specifically focusing on enhancing the security of data exchanges i distributed environments. As digital communication becomes increasingly integral to various industries, ensuring the confidentiality, integrity, and authenticity of da transmitted over networks has become a critical concern. Traditional security measures, while effective in certain scenarios, often face limitations when applied to decentralized systems where trust among participants is not guaranteed.

[002] This invention leverages blockchain technology, known for its decentralized, tamper-resistant nature, to address these security challenges. By integrating bloc into network communication systems, the invention aims to provide a robust solution for securing data exchanges between network nodes. The system is particula for environments where multiple parties need to communicate securely without relying on a centralized authority, such as in peer-to-peer networks, IoT ecosystem distributed computing environments.

[003] In essence, the field of the invention lies at the intersection of network security, blockchain technology, and distributed systems, offering a novel approach to communication in environments where traditional centralized security models may fall short.

BACKGROUND OF THE INVENTION

[004] In the rapidly evolving landscape of digital communication, the security of data exchanged over networks has become increasingly critical. As businesses and individuals rely more heavily on digital communication, the risks associated with data breaches, unauthorized access, and tampering have also escalated. Traditiona methods for securing network communications, such as encryption, secure protocols (like TLS/SSL), and firewalls, have provided a foundation for protecting data in However, these methods are often designed for centralized or semi-centralized networks, where trust can be established through a central authority or trusted thir

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