

*The Internet of Things (IoT) is a novel paradigm that connects billions of devices worldwide, enabling simultaneous interaction and connectivity between both the digital and physical realms. The utilization of multi-agent systems (MAS), in which many autonomous agents work together to achieve certain goals, is a significant part of IoT deployment. These agents could be physical devices such as sensors and actuators, or software programs that analyze and interpret data. In a multi-agent environment, agents must successfully interact and collaborate, often in real time, to execute complex tasks and adapt to changing circumstances. MAS's dynamic and dispersed nature makes it perfect for IoT applications requiring flexibility and scalability. However, combining IoT with MAS presents significant challenges, particularly in terms of secure communication. Traditional centralized communication systems are increasingly insufficient to address the complexity and scale of IoT networks. Centralized systems are vulnerable to single points of failure, with the compromise of a central node affecting the network's security and functionality. This research addresses the critical need for robust security mechanisms in multi-agent IoT environments. By integrating blockchain, the proposed solution offers a decentralized framework that ensures data integrity and authenticity through immutable ledgers and cryptographic techniques. Using standardized FIPA performatives the messages are saved in a blockchain using smart contract and then delivered to the recipient. This approach mitigates the risk of large number of cyber-attacks and enhances the fault tolerance of the complete IoT system. The complete approach is demonstrated using a case study.*