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(57) Abstract :
The present invention provides a multi-agent system designed to enhance the management and control of devices within Internet of Things (IoT) environments. The system comprises device agents, control agents, communication agents, and security agents, each fulfilling distinct roles to improve network efficiency, scalability, and security. Device agents are responsible for monitoring and reporting the status of IoT devices. Control agents manage device configurations, optimize network performance, and execute control strategies based on data from device agents. Communication agents handle reliable and timely data exchange between agents using a standardized protocol. Security agents ensure network protection through authentication, authorization, and encryption. The multi-agent system enables decentralized management, enhancing real-time responsiveness and fault tolerance while addressing the limitations of traditional centralized approaches. This invention offers a robust framework for managing complex and dynamic IoT networks, improving overall operational efficiency and security. Accompanied Drawing [FIGS. 1-2]

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