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(57) Abstract :
A secure edge-based coordination protocol is disclosed for autonomous IoT devices (101) using an edge server (102), coordination module (103), and security module (104). The system enables encrypted communication, trust scoring (105), and consensus-based task management without reliance on centralized servers. Edge-based real-time updates, modular design, and adaptive role allocation enhance device autonomy and resilience. The invention supports low-latency communication and robust security for scalable deployment in dynamic IoT environments.

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