

(54) Title of the invention : Biometric and Bluetooth-Based Multi-Environment Access Control System, Multi Environment Dual-Factor Access Control System Using Fingerprint and Bluetooth Based Authentication with Mobile App Integration

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(57) Abstract :
A dual-factor access control system combining fingerprint scanning and Bluetooth-enabled smartphone proximity detection to grant access to secure physical enclosures. The system activates the fingerprint scanner only when a registered phone is detected nearby, ensuring stronger authentication. A mobile app supports fallback access via PIN or voice and logs user activity. A fingerprint scanner remains inactive until a pre-paired mobile device is detected nearby, preventing spoofing. The system includes a mobile app for fallback access, access logs, override control, and temporary user permissions. Designed for secure, offline capable use across. The system is designed for deployment across various contexts including hotel rooms, lockers, cabinets, machinery, delivery boxes, elevators, and vehicles fleets, offering enhanced tamper resistance, real-time alerts, and smart network integration

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