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(57) Abstract :

The present invention relates to a trust-based device pairing system for re-authentication in personal mobile hotspots. A mobile hotspot device incorporates a Trust Establishment Module that engages in a secure pairing process with a client device via cryptographic exchanges, generating authentication metadata including a unique device identifier and a cryptographic token. A Trusted Device Registry securely stores this metadata in encrypted form, independent of transient Wi-Fi credentials, while a Secure Re-Authentication Module verifies trust upon reconnection by querying the registry. A Hotspot Coordination Layer subsequently grants network access when trust is confirmed. The invention employs asymmetric encryption and periodic challenge-response protocols to ensure a persistent, secure trust relationship in the technical field of mobile communications and hotspot security.

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