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(57) Abstract :

A system (100) and a method (200) for blockchain-based physical evidence traceability for edge computing services is provided. By leveraging distributed and decentralized blockchain technology, the system (100) ensures transparency and immutability of evidence records, enhancing trust and accountability. One or more smart contracts (110) automate and enforce predefined rules for evidence custody, transfer, and authentication, streamlining the process and eliminating human errors. One or more edge computing nodes (112) strategically deployed enable real-time data collection, processing, and transmission, reducing latency and improving overall system (100) performance. One or more sensors (114) integration monitors the physical condition and location of evidence during custody and transfer, ensuring integrity. A mobile application (116) provides authorized personnel with secure access to real-time evidence information. With data encryption component (118) and privacy control component (120), the system (100) ensures confidentiality and restricts access based on user roles and permissions.

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