ABSTRACT

Blood donation management systems fall short in providing traceability, immutability, audit, privacy and security features. They are vulnerable to the single point of failure problem due to centralization. Blockchain-based technology in the blood supply chain can assist in reducing the aforementioned risks. This system is designed to automate the blood donation management in decentralized way. The proposed solution stores non-critical and large data off-chain using the decentralized storage of the Inter Planetary File System (IPFS). It present the system architecture, sequence diagrams, entity-relationship diagram and algorithms to briefly explain the working principles of blood donation management solution. It evaluates the performance of the solution in terms of efficiency and effectiveness through performing security analysis. This System proposed a private blockchain-based solution to automate blood donation management in a manner that is decentralized, transparent, traceable, auditable, private, secure and trustworthy.