NotaryVault: Secure Document Authentication on Blockchain

Prof. A.K. Dhakade, Muntajeebuddin N. Farooqui, Kunal R. Tong, Ishwar A. Raut, Sakshi V. Gangamwar
Department of Computer Science & Engineering
Jawaharlal Darda Institute of Engineering & Technology, Yavatmal, India

Abstract: *The Notarial Office(NO), working on providing various essential certificates, still relies on manual handling and requires paper materials from other government departments. That brings lots of inconvenience. The Notarial Office rejects non-local paper materials for their lower credibility in the local place and then cannot provide cross-border services. It also easily causes sensitive information leakage as copies of paper materials have been stored. In this case, a blockchain-based system is suitable to address challenges in this scenario because of its advantages (e.g, decentralized, immutability, transparency, auditability). We implemented this system on top of the Hyperledger Fabric. Moreover, we replace manual operations with smart contracts, set extra ledgers to off-load different types of transactions and provide encryption for private information when needed. In the end, we get the expected result. That is, the modification outperformed the unmodified network in experiments.*

Keywords: Blockchain, smart contract, e-government, cross-border services, electroniccertificate, the Notarial Office

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