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An Information Centric Network for Distributed Registery with Content Unique Identifier (DID) and Verifiable Credentials

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Abstract: Decentralised Identifiers (DIDs), a new self-manageable method of authentication that is currently being standardised by the World Wide Web Consortium (W3C), are new standards for Content Unique Identifiers. Verifiable credentials (VCs), another ongoing standardisation (by the same W3C working group) that permits private and secure proofs of attribute ownership, are closely related to DIDs. Both of these methods rely on a central immutable decentralised registry (such as a blockchain or peer-to-peer network) where crucial meta-data is stored. Using the newly developing paradigm of Information Centric Networking (ICN), we design, construct, and evaluate a secure DID/VC registry service. The "search by name" feature of ICN, together with a secure protocol, are combined with the decentralised nature and our goal is to achieve technique for keeping in sync copies of an object at several locations. Our design has little network cost and provides quick lookup speeds because to ICN's built-in multicast and caching functionality.

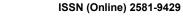
Keywords: DID registry, publish subscribe, privacy, and identity management

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