

Integrating Blockchain and Internet of Things Platforms: An Empirical Study on Immunization Cold Chain

Authors : Fawzia Abujalala, Asma Elmangoush, Majdi Ashibani

Abstract : The adoption of Blockchain technology introduces the possibility to decentralize cold chain systems. This adaptation enhances them to be more efficient, accessible, verifiable, and data security. Additionally, the Internet of Things (IoT) concept is considered as an added-value to various application domains. Cargo tracking and cold chain are a few to name. However, the security of the IoT transactions and integrated devices remains one of the key challenges to the IoT application's success. Consequently, Blockchain technology and its consensus protocols have been used to solve many information security problems. In this paper, the researchers discussed the advantages of integrating Blockchain technology into IoT platform to improve security and provide an overview of existing literature on integrating Blockchain and IoT platforms. Then, presented the immunization cold chain solution as a use-case that could apply to any critical goods based on integrating hyperledger fabric platform and IoT platform.

Keywords : blockchain, hyperledger fabric, internet of things, security, traceability

Conference Title : ICBTIA 2021 : International Conference on Blockchain Technologies for Industrial Applications

Conference Location : Istanbul, Türkiye

Conference Dates : November 08-09, 2021