**TITLE OF THE PROJECT:**

PRODUCT TRACKING AND TRACING WITH DECENTRALISED BLOCKCHAIN

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**ABSTRACT**

Supply chain management enhanced by the Internet of Things (IoT) solutions integrate special tags (e.g., RFID, NFC, and QR-codes) with products to create Smart Tags, in addition to storing supplemental information about a product, which is also used to track products during their lifecycle. However, a product consumer has to implicitly trust the Smart Tag creator and other stakeholders within the supply chain that they are providing authentic data within a product's tag. The DL-Tags solution steps into this environment to offer a decentralized, privacy-preserving, and variable management of Smart Tags during a product's lifecycle. The solution is based on distributed ledger technology (DLT) and uses the Ethereum blockchain to mediate interactions between the stakeholders during a product's exchange process. By reaching a consensus on the product's description and state logged on the blockchain, all involved stakeholders and product consumers can verify the product's authenticity without revealing their identity. The paper describes the DL-Tags solution and includes a cost analysis of all implemented transactions on the Ethereum blockchain. The proposed solution provides evidence of the product's origin and its journey across the supply chain while preventing tag duplication and manipulation. It is among the rest documented practical solutions using DLT and IoT for supply chain management, which is designed to be distributed ledger agnostic.