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An optimal lightweight cryptography with metaheuristic algorithm for privacy preserving data transmission mechanism and mechanical design in vehicular ad hoc network

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Abstract

Recently, vehicular ad hoc network (VANET) plays a vital part in intelligent transportation system (ITS) that intends to accomplish seamless Internet connectivity amongst the vehicles on the roadway. The VANET can be widely employed to enhance driving safety. But the wireless nature of the network results in challenging issues of security as well as privacy. In this aspect, this study designs an optimal Lightweight Cryptography with Dragonfly Firefly (LWC-DFFF) optimization algorithm to achieve privacy preserving communication in VANET. In addition, the proposed model involves the design of DFFF algorithm to determine the reliable nodes in the network for secured data transmission. Moreover, the LWC technique gets executed to securely transmit the data from source to destination via reliable nodes. The design of reliable node detection using DFFF algorithm helps to considerably improve the privacy preserving communication in VANET. A