

A Multilevel Authentication Protocol: MAP in VANET for Human Safety

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Abstract : Due to the real-time requirement of message in Vehicular Ad hoc NETWORKS (VANET), it is necessary to authenticate vehicles to achieve security, efficiency, and conditional privacy-preserving. Privacy is of utmost relevance in VANETs. For this reason, we have proposed a new protocol called 'Multilevel Authentication Protocol' (MAP) that considers different vehicle categories. The proposed protocol is based on our Multilevel Authentication protocol for Vehicular networks (MAVnet). But the MAP leads to human safety, where the priority is given to the ambulance vehicles. For evaluation, we used the Java language to develop a demo application and deployed it on the Network Security Simulation (Nessi2). Compared with existing authentication protocols, MAP markedly enhance the communication overhead and decreases the delay of exchanging messages while preserving conditional privacy.

Keywords : Vehicular Ad hoc NETWORKS (VANET), vehicle categories, safety, databases, privacy, authentication, throughput, delay

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