EFFICIENT ANONYMOUS AUTHENTICATION MECHANISM FOR VANET

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ABSTRACT
Vehicular Ad hoc Networks is a new generation of Mobile Ad Hoc Networks which is adapted to streets. VANET is defined as cooperation of vehicles and road side units (if any) over the Dedicated Short Range frequency (5.9 GHz). This new technology will revolutionize the driving experience by providing support for road safety, transport efficiency and passenger entertainments. VANET can be a target of many attacks due to mobility of the nodes and wireless communication of network. These attacks can directly affect vehicles passenger on life-or-death decisions, so security of this network is very important. On the other hand, One of the concerning issues in providing security is privacy which users prefer to keep their privacy and not to be traceable. Here, traceability is a legitimate process for some governmental authorities and networks operators. Hence, deployment of VANET security without violating users’ privacy has become to the point of interest and many projects are defined. We categorise the VANET area into three major cases. The first case is in present of RSU, the second one is where there is no RSU. While the last case is the boundary area for communicating between this two cases. In this thesis, we propose two efficient anonymous authentication mechanism including function of revocation based on group signature. The result of analysis of these security mechanism and simulation of them demonstrate that this mechanism improve VANET security. The simulations also show the performance metrics such as message delay, and packet lost, and average throughput are improved.

KEYWORD
VANET, authentication, privacy, security, anonymity