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SECURE REAL-TIME TRAFFIC DATA AGGREGATION WITH BATCH VERIFICATION FOR VEHICULAR CLOUD IN VANETS

ABSTRACT

The vehicular cloud provides many significant advantages to Vehicular ad-hoc Networks (VANETs), such as unlimited storage space, powerful computing capability and timely traffic services. Traffic data aggregation in the vehicular cloud, which can aggregate traffic data from vehicles for further processing and sharing, is very important. Incorrect traffic data feedback may affect traffic safety; therefore, the security of traffic data aggregation should be ensured. In this project, by using the property of data recovery in the message recovery signature (MRS), we propose a secure real time traffic data aggregation scheme for vehicular cloud in VANETs. In the proposed scheme, the validity of vehicles' signatures is verified, and then the original traffic data is recovered from signatures. Moreover, the proposed scheme supports batch verification for multiple vehicles' signatures. Due to advantages of the MRS, security features such as data confidentiality, privacy preservation and reply attack resistance are preserved. In addition, the comparison and simulation results indicate that the proposed scheme is superior in comparison to previous schemes with respect to the communication and computational cost.