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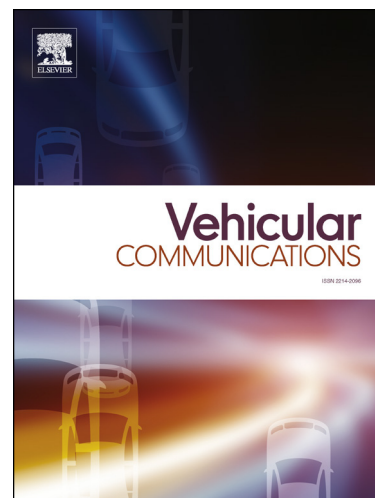
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A Survey on Authentication Schemes in VANETs for Secured Communication

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Abstract

A vehicular Ad Hoc Network (VANET) is a class of mobile ad hoc network (MANET) which supports, vehicle to vehicle (V2V) and vehicle to infrastructure (V2I) communications. The significant features of VANET includes, self-organization, distributed networking, and highly dynamic topology. The VANET features and its applications to road safety have attracted a lot of interest in industry and academia more so into the research on improvement of transportation systems for saving millions of lives. The transmission of messages in open-access environment like VANET leads to the most critical and challenging security issues. Authentication, data confidentiality, data integrity, data availability, and non-repudiation are crucial components of security in VANET. This paper focuses on the authentication schemes in VANET as it plays a important role in secured communication. The authentication schemes are basically classified into three categories: cryptography techniques, digital signatures, and message verification techniques. The main objective of this paper is to provide a taxonomy of authentication schemes, and discuss their mechanisms, advantages, disadvantages, performance and scope of research. Furthermore, the paper concludes with presentation of open security issues in VANET authentication.

Keywords: Vehicular Ad Hoc Networks (VANETs), Dedicated Short Range

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