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A Review of Security Strategies used in Vehicular Adhoc Networks

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ABSTRACT

This is a review of various aspects of security strategies used for Vehicular Adhoc Networks. In this paper we will be exploring the different threats to system security seen in a Vehicular Adhoc Network Subsystem and their corresponding solutions. Vehicular adhoc networks comprises methods by which Vehicles can communicate with each other either in an independent or adhoc manner or through a designated third-party intermediate node referred to as “Road Side Unit”. Given the domain, the connection between the devices is wireless. The security challenges in Vehicular Adhoc Networks are similar to those associated with Wireless Technologies and Distributed Computing. In this document we shall be looking into cases regarding Certificate based authentication and usage of basic PKI Infrastructure, Sybil attacks, Invalid Certificate Revocation Methods, Black Hole attacks, Gray Hole Attacks, Worm Hole Attacks, Jelly Fish Attack and Spoofing. We shall also be looking into Adhoc Routing Protocols like Adhoc On Demand Distance Vector Routing protocol (AODV) and methods to prevent Black Hole and related attacks.

Keywords : VANET, Network Security, Vehicular Edge computing, Intelligent Transport Systems (ITS), Public Key Infrastructure, Sybil attack. Black Hole Attack, Worm Hole Attack, Jelly Fish Attack, Gray Hole Attack, AODV