Road Side Unit Assisted Stochastic multi-hop Broadcast Scheme for Instant Emergency Message Propagation

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***Abstract*— VANET (Vehicular ad hoc Network) is a special kind of ad hoc wireless network where every single node is a vehicle moving in a relatively high velocity, which leads to exclusive challenges like rapid changing topologies, safety and privacy concerns. In this specific network, broadcasts tend to be carrying important messages such as car accident notification, disaster alert or extreme traffic condition. Thus the propagation of broadcasted emergency messages could be critical to save human lives and property. Many researchers have proposed routing or broadcast protocols to solve this problem in VANET. With consideration of the other common issues. The objective of this paper is to propose a broadcast scheme in VANET that is not likely to cause broadcast storm problem with a reasonable delay and high delivery rate. Since VANET is an attack-prone network and any kind of malicious behavior in VANET might cause serious loss or even death in reality, we should also refrain from using beacons to exchange privacy-sensitive information in V2V (Vehicle to Vehicle). In this paper, a multi-hop broadcast scheme that makes use of RSU and V2I (Vehicle to Infrastructure) communication is proposed. The simulation result shows that the proposed scheme outperforms static stochastic broadcast scheme in terms of delivery rate. Comparing to flooding, we offer a better delay and less network usage.**

***Keyword*— VANET, Broadcast, Percolation, Stochastic, Wireless**

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