A 3-Parameter Routing Cost Function for Improving Opportunistic Routing Performance in VANETs

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Abstract Dynamic topology and unstable wireless links make efficient data delivery in vehicular ad-hoc networks (VANETs) a challenging issue. To tackle this issue, several routing strategies for finding a route with high reliability and low latency in VANETs have been proposed. One of them is Opportunistic routing (OR) paradigm which can improve the reliability of routing in vehicular ad-hoc networks (VANETs) by broadcasting transmission features and employing additional backup links from other neighboring nodes. In this paradigm a node sends the packet to a number of its neighbors called forwarding set. The way transmission priority is assigned to the nodes in the forwarding set can highly affect the performance of opportunistic routing. In this paper a new measure composed of three parameters is proposed for selecting the best forwarding node. Simulations on highway environment indicate that the proposed method improves the routing performance in all grounds of QoS compared to the other published methods in the literature.

Keywords VANET · Opportunistic routing · Link state · Link stability · Packet advancement

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