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Mobility Management via Software Defined Networks (SDN) in Vehicular Ad Hoc Networks (VANETs)

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Abstract : A Vehicular Ad hoc Network (VANET) provides various services to end-users traveling on the road at high speeds. However, this high-speed mobility of mobile nodes can cause frequent service disruptions. Various mobility management protocols exist for managing node mobility, but due to their centralized nature, they tend to suffer in the VANET environment. In this research, we proposed a distributed mobility management protocol using software-defined networks (SDN) for VANETs. Instead of relying on a centralized mobility anchor, the mobility functionality is distributed at multiple infrastructural nodes. The protocol is based on the classical Proxy Mobile IP version 6 (PMIPv6). It is evident from simulation results that this work has improved the network performance with respect to nodes throughput, delay, and packet loss.

Keywords : SDN, VANET, mobility management, optimization
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