

## **An Enhanced Connectivity Aware Routing Protocol for Vehicular Ad Hoc Networks**

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**Abstract :** This paper proposed an Enhanced Connectivity Aware Routing (ECAR) protocol for Vehicular Ad hoc Network (VANET). The protocol uses a control broadcast to reduce the number of overhead packets needed in a route discovery process. It is also equipped with an alternative backup route that is used whenever a primary path to destination failed, which highly reduces the frequent launching and re-launching of the route discovery process that waste useful bandwidth and unnecessarily prolonging the average packet delay. NS2 simulation results show that the performance of ECAR protocol outperformed the original connectivity aware routing (CAR) protocol by reducing the average packet delay by 28%, control overheads by 27% and increased the packet delivery ratio by 22%.

**Keywords :** alternative path, primary path, protocol, routing, VANET, vehicular ad hoc networks

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