

FINAL YEAR PROJECT REPORT

**DESIGN AND SIMULATION OF AN EFFICIENT
UNICAST ROUTING PROTOCOL IN MOBILE ADHOC
NETWORKS (MANETS)**

By

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ABSTRACT

A mobile ad hoc network differs from wired networks in several respects. Routing protocols are challenged by high mobility, low bandwidth, limited computing capability and limited energy which are the key characteristics of mobile nodes. The protocols for these networks must be designed to keep up with the drastically and unpredictably changing network topology, with minimized message exchanges and utilization of scarce network resources in an efficient manner.

Ad-hoc on demand Distance Vector Routing Protocol (AODV) is intended for use by mobile nodes in an ad hoc network. The dynamism of a route makes it less stable and hence less suitable for a network. The focus has been on enhancing the performance of Ad Hoc on Demand Distance Vector (AODV) routing protocol by choosing Route Fragility Coefficient (RFC) as its metric. This metric causes AODV to find a stable route. The stable route is characterized as the one which has less dynamism and in which nodes stay close to each other. Simulation results are provided to demonstrate improvement in throughput and reduction in routing protocol overhead with increased mobility. The performance metrics are measured by varying the maximum speed of the nodes and size of the network.

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