

## **ABSTRACT**

Mobile Ad Hoc Networks in terms of network topology is a collection some of the dynamic wireless network nodes. Each node has a wireless interface to communicate with other nodes. Mobile Ad Hoc Network has a network node infrastructure that is not permanent. This network consists of several nodes that are mobile with one or more interfaces on each node. Each node on Mobile Ad Hoc network must be able to maintain the performance of data packet traffic in the network due to the nature of node mobility by network reconfiguration.

In this final simulated three kinds of routing protocols, namely Zone Routing Protocol (ZRP), Ad hoc on Demand Distance Vector Routing (AODV) and Destination sequenced Distance Vector (DSDV). This protocol will be simulated in network simulator (NS-2) and with several scenarios to analyze its performance. As the addition of nodes, and increased mobility. A protocol is devoted to mobile networks is very need to be analyzed so that its performance can be evaluated and developed. Evaluate the performance of each routing protocol in terms of parameters: the average end to end delay, packet delivery ratio, average throughput, routing overhead, normalized routing load, and convergence time.

Analysis of all the simulation scenarios that have been done to prove that the ZRP has a much better performance than other routing protocols. First seen from always having an average end to end delay smaller almost doubled. Second, the percentage of ZRP packet delivery ratio is always above 98%. Third, the ZRP has the average value is always higher throughput almost doubled. Fourth, the percentage of ZRP routing overhead is 10% smaller than the routing protocol. Fifth, the percentage of normalized routing load ZRP smaller 10% of the total package. And the last, ZRP has convergence time value most smallest.

**Keywords: Mobile Ad Hoc Networks, Zone Routing Protocol (ZRP), Ad hoc on Demand Distance Vector Routing (AODV), Destination sequenced Distance Vector (DSDV)**