

## ABSTRACT

The development of technology has brought some change in network technology, especially wireless. Mobile Ad-hoc Network (MANET) is an example. Mobile Ad-hoc Network (MANET) is a technology in wireless LAN which not need an infrastructure on the network, so that it is easy to build and configure. MANETs are extremely flexible and each node is free to move independently, in any random direction when communication still exists.

MANET using wireless media for information delivery which is sensitive to the range of each node, velocity and the number of nodes communicating so it needs a routing protocol that can provide a reliable communication. In this final project will be analyzed the performance of Destination Sequenced Distance Vector (DSDV), Ad-hoc On-demand Distance Vector (AODV) and Dynamic Source Routing (DSR) on Manhattan Grid mobility model on using Network Simulator version 2 (NS2). The performance that analyzed are packet delivery ratio, average delay, packet loss and throughput with a change of node number scenario and increased of node velocity.

Simulation result shows that occurs a decreasing performance for all routing protocol when the number of nodes and node velocity increase. The optimal configuration of MANET using Manhattan grid mobility model are when the number of nodes is 20 and node velocity is 1 m/s using DSR routing protocol with performance result are packet delivery ratio 99.783 % , average delay 32.588 ms, packet loss 0.217 %, throughput 288.548 Kbps and *Routing Overhead* 0.197 %.

**Keyword :** MANET, DSDV, AODV, DSR, Manhattan Grid, NS2