

ABSTRACT

Mobile ad hoc Network (MANET) is a wireless network that consists of mobile nodes without fixed infrastructure (gateway, router). In this network, nodes used as a router its self that be responsible for searching and handling routes to every destination node. The mobility characteristic in every node makes topology in this network always changes, and then a power full routing protocol is needed.

MANET network can be build rapidly to support emergency situations like natural disaster, search and rescue the victims, also for military application. Multimedia application such as video streaming is very useful to support those emergency situations. This video application needs large of bandwidth to transmit in the whole network, but MANET network has a limited bandwidth, limited transmission distance and also limited battery power in every nodes. So routing method that can solve those problems is needed.

In this final assignment, MANET network will be simulated to analyze MAODV (Multicast Ad hoc On Demand Distance Vector) and DSR (Dynamic Source Routing) routing protocol performance. Delay, jitter, throughput, packet loss and PSNR are metrics that chosen to measure those two protocols performance. We will use parameters such as the nodes speed, background traffic addition, and the number of nodes. The generator traffic will use VBR (variable bit rate) traffic that can be a video application with MPEG-4 encoding.

In this simulation, MAODV is better in delay when the speed of the node changes, crowded traffic or the node increase in this MANET network. DSR is good in throughput and PSNR when the mobility is high. MAODV is very stable for the network that has dynamic condition, but DSR will decrease the performance when the numbers of nodes increase.

Key Word : Routing Protocol, Wireless, Ad-Hoc Network, DSR, MAODV