# ABSTRACT

Based on structure, wireless network can be classified into two main categories, with and without infrastructure (ad hoc). Wireless network with infrastructure has simple configuration, consist of a base station which have certain coverage area and providing service for users inside the coverage area, while ad hoc wireless network don't have an infrastructure like base station. Mobile ad hoc network (MANET) is a wireless network that consists of nodes with routing table that has no set to certain topology.

The nodes from this network also function as router that responsible for searching and maintaining route to every node inside the network. MANET that will interconnect with fixed host has to pass a gateway first. In MANET, every nodes will always moving, and users movement will affect the performance of the MANET. In this final project, OSLR (Optimized Link State Routing) protocol is used in an implemented MANET network. This protocol is optimized from classic link state algorithm to fulfill the requirement for the mobile ad hoc network. The core of OSLR is Multipoint Relay (MPR). Then throughput and packet loss will be analyzed.

From measurement results obtained the values of throughput in scenario 1 to file 10 MB 30 MB and 50 meters are 758.154 to 3770.317 kbps, for files and 10 MB 30 MB and 75 are 1108.552 to 4797.911 kbps kbps. In scenario 2 to 10 MB worth of files 3738.422 kbps and to 30 MB worth of files 5532.81 kbps. In scenario 3 can not be measured because it failed to copy. The values of Packet loss on each scenario worth well enough, which is below 5%. From experiment in this final project, the value of throughput in scenario 1 (static) for the number of nodes that a lot, it will get a higher value, because the distance between nodes closer, so that will increase the signal strength will also increase the throughput value.

**Keyword: ad hoc, MANET, throughput, OLSR, MPR**