ABSTRACT

In effort to balance traffic load in a network,traffic engineering is needed in network commonly, where the Djikstra algorithm always used in traffic mapping. However the use of Djikstra algorithm cause some source of network over load. To balance the traffic load, it's need a new routing algorithm that give alternative route to the network when Djikstra algorithm path is over loade.

In this final task, VoIP service simulation and analyze over the use of Djikstra algorithm in OSPF and Adaptive algorithm at MPLS have done. QoS parameters that analyzed are packet loss, throughput, jitter and delay without simulating MPLS signalling process.

The result of the simulation show that the use of Adaptive algorithm in routing process improve the performance for delay, packet loss and throughput,but for jitter it is better to use Djikstra algorithm. For the condition where Adaptive algorithm has rerouting path with big propagation delay, there is performance decreasement for delay parameter.

Keyword : Multi Protocol Label Switching (MPLS), Voice over Internet Protocol (VoIP), Quality of Service (QoS), Adaptive algorithm, Djikstra