

## ***Abstract***

*Best effort in IP network has a weakness in less capability of QoS. IP network with best effort characteristic has no mechanism to differentiate the type of service in network. Delay, packet loss, jitter will occur with high value and also throughput of the network will be decreasing as it the effect for no mechanism to guarantee the QoS for real-time service in network. The need of mechanism to ensure the QoS is a must to increase network performance especially for real-time service.*

*In this final project the technology which have QoS mechanism such as Resource Reservation Protocol (RSVP), Multi-Protocol Label Switching (MPLS) network and implementation of IP-Multimedia Subsystem (IMS) as the sub-system for the network will be analyzed as their role to be a part in simulation of QoS based network architecture. There will be some scenarios of their combination as they will be tested to find out the best scenario with high performance of QoS.*

*As the result the combination of RSVP and MPLS to create Traffic Engineering (TE) and the implementation of IMS in the network is giving a solution to overcome QoS problem in IP network with best-effort character as the service of the network is VOD in Wired Network Ipv4 protocol.*

*Keywords : best-effort, QoS, RSVP, MPLS, MPLS-TE, IMS, VOD*