

## ABSTRACT

VoIP is one of technology that famous among countries in the world. Moreover, this technology is on behalf to change the old POTS (PSTN) technology. Satellite as one of transmission media with all of lackness and benefits bring a lot of positive thing beyond the VoIP traffic flow. Eventhough the satellite constellation nowadays is use as backbone transmission media from the fiber optic that come first as a choice to connect between countries.

In this thesis explain about comparations between shortest path routing technology and load balancing routing algorithm. From both of routing technologies has been analyzed on Quality of Service such as delay, packet loss, jitter, throughput, and utilization ratio. The analysis has been taken from the simulation running in network simulator software. Satellite node, bandwidth link, data rate, and ISL are modeled in this software.

The result from both routing algorithm are analyzed. Load balancing routing algorithm give a significant impairment due to real time (VoIP) traffic flow. The delay, jitter and packet loss are all gone to be better result in this algorithm. Then, the load balancing algorithm answered all the constraint by real time traffic to flow to satellite constellation.

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