

ABSTRACT

Hermin Arrang, *A Queue Management System for Improving the WIMAX's Quality of Service (QoS)* (supervised by **Zulfajri B. Hasanuddin** and **Rhiza S. Sadjad**).

The main goal of this research is to perform a queue management system in the WIMAX telecommunication network to improve its Quality of Service (QoS). The case of the WIMAX network in the region of Makassar, South Sulawesi, INDONESIA is considered. The OPNET MODELLER 14.0 software package has been used to perform the experiments.

Three methods of queuing management are performed based on the traffic control, i.e. the Droptail, RED and WRED queuing system. Five parameters measured from the simulation are the jitter, end to end delay, response time, throughput and the link utility, and then the results are compared to the network performance without any traffic control.

The WRED method has been proven to make the network performs better than its performance with the other two methods, with the jitter of 0.0015716 seconds, the end to end delay of 0.1239096 seconds, the response time of 5.633608 seconds, the throughput of 662 KBps and 48.4 % of the utility link. The performance of the network with the RED method is only better than its performance without any traffic control, and better than its performance with the Droptail method only in its jitter parameter.