ABSTRACT

Technology telecommunication growth rapidly, in order to make the network efficient, Next Generation Network (NGN) introduce the technology called Voice Over Internet Protocol as alternative for telecommunication development.

On the other hand Broadband wireless access (BWA) is a promising emerging technology and became the new topic on research in world, one of them is WiMAX IEEE 802.16. This technology have to be able to give high speed data services, guarantied Qos, reliable onto the fading environment, and so on.

This research are analysis performance of VoIP on the WiMAX network using two internet protocol those ara IPv4 and IPv6, and also the characteristic of performance because of number of user, user movement, distance of user and BTS, number of router on core network and background traffic. The performance analyzed is throughput, delay, jitter, and packet loss.

From the experiment result can be seen that number of user below 20 IPv4 has better performance than IPv6. IPv4 has better performance for number of router for throughput and packet loss. User movement and distance of user has stable result for throughput and packet loss for IPv4 and IPv6.

Key Word : *Next Generation Network* (NGN), *Voice over Internet Protocol* (VoIP), *Quality of Service* (QoS),

Broadband Wireless Access (BWA), WiMAX IEEE 802.16d, IPv4, IPv6.