ABSTRACT

Mobile Wimax (Worldwide Interoperability for Microwave Access) is a broadband wireless technology with IEEE 802.16e standard that design to solve wireline network and fullfill high broadband demand of mobility user. Mobile Wimax has more advantages than previous generation, which are interoperability, security, availability, capability (broadband access), wide area coverage, mobility and the most important thing that Wimax guarantee QoS (Quality of Service).

In this research held analysis and simulation in Wimax Network 802.16e. In this simulation has been research about users that can be served without having decreasement of QoS. Three parameters of QoS are, *throughput*, *delay* and *Packet loss*. Video and VoIP services are the service that have been simulated.

Output from this research and analysis show that user growth caused QoS change on Wimax Network 802.16e. Ideal amount of users are thirty users. It shows that in this capacity has 34 ms delay on video. Also 5.15514 ms for voip. For both of it, 12.6371 ms. Troughput value for thirty users are, 48.23 kbps in video, 8.9667 kbps in voip and 9.4208 kbps for both of these application. Packet loss for voip, video and for both services are 0 %.

Key words: user added, QoS, wimax