ABSTRACT

The IEEE 802.16e or recognized as Mobile WiMAX is an improvement of previous WiMAX standard to support user mobility. Mobile WiMAX conforms the capability of portable and mobile application which optimize the previous standard performance to resolve dynamics of mobile wireless channel. To resolve dynamic mobile wireless channel, an accurate channel model is required, so that the Mobile WiMAX's network could be well planned, specifically for analyzing influence of problems because of multipath on performance of Mobile WiMAX. That problem is multipath fading such as doppler shift.

In this Final Project, the writer learns about propagation channel models for Mobile WiMAX system using one of empiric propagation models, COST 231 Walfisch-Ikegami. This model is believed to be accurate to describe mobile wireless in urban area because it calculates of parameters such as building height, distance between transmitter and receiver, and width of street in that area.

The simulation results show best performance for Mobile WiMAX system is reached when has LOS distance one kilometer and the velocity 0 km/h. On that condition the pathloss is 110.56 dB and to reach BER 10^{-3} needs SNR 8.86 dB. To get performance of mobile WiMAX system is the better from it needs to be done by equalization, error control, and power control.

Keyword: Mobile WiMAX, Walfisch Ikegami, Pathloss, Doppler Shift, Bit Error Rate