

ABSTRACT

Wimax IEEE 802.16e is non-line of sight (NLOS) Broadband Wireless Access (BWA) which WiMAX forum product that can increase with IEEE 802.16 standard. This technology can be used for mobile wireless access implementation for data services with wide bandwidth about 20 MHz, with coverage area about 50 km, and high bitrate 75 Mbps. The movement of user will cause sound service quality on Wimax IEEE 802.16e network are Doppler spread which creates miss-match frequency between transmitter and the moving mobile station.

The research about effect of user movement to sound service quality on Wimax IEEE 802.16e network. It is done toward Wimax IEEE 802.16e transmission system simulation passed through non line of sight multipath fading channel with rayleigh distribution and AWGN. This research used user velocity movement parameters from 0 km/hour, <15 km/hour, 16-50 km/hour, to 51-120 km/hour.

The research output are the amount of fading is increasing both of the user movement. Modulation system can effect of Eb/No needed. When BER about 10^{-3} for BPSK modulation, the velocity of user movement up to 50 km/hour, good signal received by system and Eb/No under 12 dB. While for QPSK modulation, the velocity of user movement maximal under 50 km/hour. And then for 8PSK modulation under 30 km/hour. So, BPSK modulation is appropriate to be used in Wimax IEEE 802.16e system. The amount of subcarrier and rate encoder, can effect to increased of Eb/No too.

Keyword : Wimax, BER, FER, Eb/No, Modulation, SNR