

ABSTRACT

Broadband Wireless Access (BWA) is information technology with high speed access and now become research project in many countries. One of BWA services is WiMAX IEEE 802.16 which mobility supported. This standard could use at NLOS (Non Line of Sight) condition and it is supported by mobility for user until 120 km/h.

At NLOS condition IEEE 802.16e (mobile WiMAX) is demanded to have good performance at condition of canal which always change because of multipath fading phenomenon. To handle problems that occur because this condition we can use subchannelization method.

In this final project, performance analysis for subchannelization method at mobile WiMAX OFDMA system's in downlink direction for single and multi user is done. It is based on parameters such as Signal to Noise Ratio (SNR) and measuring parameter which is fading characteristic's, otherwise algorithm planner for amount of active sub channel with adaptive process where it is compare two parameters, BER graphic's against SNR.

The result of simulation shows that the use of sub channel amount with low degree that sub channel 2 has the best performance in one equal FFT point for single user with performance increase for about ± 4.45 dB. Same thing occur in multi user condition's, otherwise adaptive process the use of sub channel amount show good performance's without performance degradation's although canal condition's change fast.

Key words: *subchannelization, Signal to Noise ratio, Bit Error Rate, Broadband Wireless Access*