

ABSTRACT

The need of wireless service currently required to meet the needs of large capacity transmission with high bit rate. One of technology that can fulfill them is WiMAX 802.16e that can serve moving users.

With the condition of moving users (can be moved around), then the channel that occupied by each user will always change every time. With such condition, then the user can not be treated equally. Users who are close to the base station will receive better treatment and users who are located further away from the base station can be treated worse.

On this thesis, we discuss a method to treat the condition, which is using the Adaptive Modulation and Coding (AMC) on 802.16e WiMAX technology. This technology is used to maintain the quality of service so that performance is maintained. Modulation used is QPSK, 16QAM, and 64QAM. WiMAX 802.16e performance will be measured based on the BER (Bit Error Rate) is used without the AMC, using AMC type I and type II.

The simulation results show that the performance of Adaptive Modulation and Coding Type II is better than type I or without AMC. AMC type II needs ± 9.3 dB to approach efficiency equals one and needs ± 14.7 dB for the target 10^{-6} , smaller than AMC type I that needs ± 12.3 dB to approach efficiency equals one and needs ± 15.1 dB for the target 10^{-6} .

Keywords : *WiMAX 802.16e, AMC*