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ABSTRACT

The need of wireless service currently required to meed 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 treat 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 ±12.3dB to approach efficiency equals one and needs ±15.1dB for the

target 10⁻⁶

Keywords: WiMAX 802.16e, AMC

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