

ABSTRACT

WiMAX IEEE 802.16 is one of the candidates of future technology to accommodate BWA services. The IEEE 802.16e, mobile WiMAX, is one the standard set, that can be used in NLOS condition with higher user mobility up to 120 kmph. In NLOS conditions, the quality and capacity of a wireless system is very influenced. The IEEE 802.16e standard system has to have the best performance to overcome the impact of various channel transmission.

WiMAX technology use a variety of ways to overcome the various problems caused by multipath fading conditions, one of them is the technique of error correction channel coding techniques. The addition of Forward Error Correction (FEC) is expected to reduce the quantity of bit error rate (BER) as an impact of a large data transfer fast. One of Forward Error Control type is Turbo Code.. The advantages of turbo code is a minimum power usage at each modulation so possible to send of the very low power level signal.

Based on the overall simulation results, we can conclude that using Turbo code with variation of code rate, which varies the speed of the user as well as varying interleaver block size results in improved BER performance varied as well. To get a quality BER as a big 10^{-5} , on code rate 1/3 needed SNR 6.7 dB with a coding gain as a big 8.2 dB. At the speed of user 0 km / h to obtain a BER of 10^{-4} qualities required Eb / No 6.5 dB with a coding gain as a big 2.8 dB and the use of the Blok interleaver (16x16) shows excellent performance in terms of improving the BER. When system using a Blok Interleaver 16x16, the target BER 10^{-4} can be reached at Eb/No 5.4 dB with coding gain as a big 1.1 dB.

Keywords : mobile WiMAX, Turbo Code, *Block Interleaver*, BER