ABSTRACT

As an effect of the globalization era, telecommunication technology, especially in wireless communication system is forced to prepare high data rate with reliable QoS (Low BER with very small Eb/No). The problem in mobile communication is multipath fading, which *affected* the rising of error data receive on receiver side.

MC-CDMA system is a combine technique between multiple access techniques with OFDM (Orthogonal Frequency Division Multiplexing). The using of MC-CDMA will make frequency selective fading change into flat fading, so the process for overcoming the fading effect is easier. Beside the ability to overcome multipath fading, it also makes the use of bandwidth more efficient. The channel coding technique is needed to overcome random error which resulted by multipath fading. This final project analyzes the compare of Regular coding technique's performance and Irregular LDPC on MC-CDMA system by modified scheme. The analyzes is about the compare number of bit '1' effect, the effect of variant size of block code, code rate value, number of decoding iteration and the effect of user's speed.

The simulation result showed that LDPC Coded MC-CDMA system with Irregular coding technique gives coding gain 6,7 dB, while Regular coding technique 6,3 dB. In every compare variation, Irregular LDPC has better performance than Regular LDPC. Simulation results also shows that LDPC Coded MC-CDMA performance to Irregular coding technique with mobile user condition on 120 km/hour speed, BER target can be got on Eb/No 9,6 dB, while Regular LDPC can not get the target.