

## ***Abstract***

*The CDMA is communication system wick growing up. The CDMA system have weakness, one of that is Interference Limited. Crosstalk from different transmitter on the same frequency becoming one of problem on CDMA system . The other word, the reciever not only receiving the desire signal, but also receiving another signal. Another signal from unknown system interference desired signal that called Multiple Access Interference (MAI)*

*One of way to against MAI is use Multiuser Detection (MUD) technique. The signal that receive will be coming to advance stage of signal process. The signal will be process on MMSE Linear Detector that is the MUD technique on receiver*

*Performance system will see on two parameters.First, affection of Signal Noise Ratio (SNR) and second, the result of Bit Error Rate(BER). The purpose of simulation will be decreasing BER value*

*On CDMA system, number of user will affection the perfomances value. The simulation has BER target is  $10^{-3}$  . On fading channel, with 5 user BER target can achieve when SNR is 8 dB, then with 7 user BER target can achieve when SNR value is 10 dB whereas with 10 user,BER target can achieve when SNR value is 13dB.*

*MUD MMSE Linear Detector deriving SNR value to achieve the BER target  $10^{-3}$ .*

*The result display that MMSE Linear Detector system will achieve BER target when SNR value are 5-6 dB for 5 user on the system*

*MMSE Linear Detector improving SNR value 2 dB better then conventional system*