

## ABSTRACT

A mobile radio channel may be modeled as a linear filter with a time varying impulse response, where the time variation is due to mobile station's movement. Relative motion between mobile station and BTS will produce a random frequency modulation that related to the differences of Doppler shift on every path of received signals. This Doppler shift will lead to the Doppler spread bringing out signal distortion, so it decrease the transmission system performance.

Based on that background, this final project perform some research concerning the effect of mobile station mobility to the voice service performance of CDMA 2000 1x system. The research is conducted through the simulation of the CDMA 2000 1x transmission system that overcome a canal having the character of multipath fading with Rayleigh distribution and Additive White Gaussian Noise (AWGN). The CDMA2000 1x transmission system model is only applied on physical layer between mobile station with Base Transceiver Station (BTS) in the perform of channel coding, interleaving, walsh code, and QPSK modulation.

The result shows that as the mobile station speed increasing, the data performance will decreasing in this case is bit error rate (BER) and Throughput to user speed. The mobile station speed increasing, BER performance will increasing and the throughput will decreasing. Throughput is measuring from how much the data will be received without error from all the data when send prosesing is influenced of mobile station mobility. Throughput is reserved from data rate 153,6 kbps at user speed are 3 km/jam much better between data rate more low and with more speed that is 446 bps at EB/No 14 dB.