

## ABSTRACT

The rapid technological developments resulting in the need for strict regulation of frequencies, thus enabling the implementation of the adjacent frequencies. This causes interference between system, which will impact on the quality of telecommunication services. Therefore the need for a more thorough network design to reduce interference between system that will result in disruption of network quality. In Indonesia, especially in border areas have problems of interference due to the application of CDMA 2000 1x with a downlink frequency of 870.495 to 889,515 MHz uplink frequency overlap with the Extended GSM 880-915 Mhz in neighboring countries.

At this final duty conducted the analysis of interference effect that occurs in CDMA 2000 system caused by the Extended GSM. Some research scenario have done such as effect of distance Base Station CDMA and E-GSM, effect of distance Mobile Station CDMA with E-GSM, and position of base station in border.

Based on result of analysis, the high effect of interference is a distance of Mobile Station CDMA and Extended GSM with the distance both Mobile Station  $\pm 200$  meter due to the value  $E_b/I_o$  less than 7dB. Effect interference of coverage CDMA is the value  $E_b/I_o$  still stable more than 7 dB if the distance of Mobile Station CDMA less than 1 kilometer from Base Station and the value  $E_b/I_o$  less than 7dB if the distance more than 1 kilometer.

**Key words:** inter-system interference, CDMA 2000, Extended GSM