ABSTRACT

The development of cellular technology has been in the third generation of technology (3G). There are three standard of 3G by International Telecommunication Union (ITU), such as WCDMA, CDMA and TD-SCDMA. From that three standard, technology that is used in Indonesia by now is CDMA 2000 1x. 3G's technology use digital full packet switch system, while CDMA 2000 1x(2.5G) still using digital circuit packet switch system. In order to apply the 3G technology in Indonesia, it's need to used third generation of CDMA first class i.e CDMA 2000 1xEV-DO (1x Evolution-Data Optimized).

This final project analyze link budget of CDMA 2000 1x and link budget of CDMA 2000 1xEV-DO which is separated in to two part that is reverse link (link from mobile station to base station) and forward link (link from base station to mobile station). Forward link analyze the value of Eb/No that can be reach by mobile station that is on a certain site whereas reverse link analyze the power that is received in base station. The purpose of this analysis is to know the link's quality and to get the equalization between gain and loss in order to get C/N that desired.

For the same data rate 9,6 kbps, MAPL CDMA 2000 1X EV-DO is smaller 2,7 dB than CDMA 2000 1X for reverse link. According to link-balancing calculation, it is getting the pilot channel's power percentage for CDMA 2000 1X EV-DO is 14,79%, bigger than the percentage of pilot channel's power for CDMA 2000 1x that is 10,64%. Based on the result of link budget calculation, BER CDMA 2000 1X that is getting: 1,13 x 10^{-4} for forward link and 0,77 x 10^{-4} for reverse link, meanwhile BER CDMA 2000 1X EV-DO: 3,14 x 10^{-4} for forward link and 2,17 x10^{-4} for reverse link.