

## Abstract

By looking at the rapid growth of the cellular technology these days, cellular technology based on WCDMA (Wideband Code Division Multiple Access) is a development from GSM, GPRS, and EDGE network and consider as multiple access technology through high speed digital communication. Soft handoff enable cells, original cell and new cell to serve mobile station by alternating during the handoff transition and work in the same frequency.

Some of the parameters are often used in the final task to find out the reason of failure soft handover comprise : Energy Bit to Noise Ratio (Eb/No), Receive Signal Level (RSL), and Link budget. These are some factors that causes handover failure like RF condition and bad network reception because of MS lower potency receiver, bad Eb/No (below threshold) and the dimension of blocking probabilities value which is beyond blocking standard that already been stated.

Based on the analysis can be concluded with number of user 30 MS and distance of user that spreading is not exceed from the spoke cell ( $R$ ) = 1.87 Km, for system with power control, more and more longer the distance of the user, more and more bigger the value path loss where the range of value path loss that it gets is between 180 dB-145 dB. More and more lower the value level of the user receiver within measurable range -105 dBm until -108 dBm and also the Eb/No value that measure beyond threshold (5 dB). Whereas for system that aren't using power control, the bigger the distance of the user causing the bigger the value path loss with range between 108 dB-149 dB. More and lower the value level of user receiver with measurable user range -75 dBm until -116 dBm with Eb/No measurable value beyond the threshold value (5 dB). The number of user (40 MS and 50 MS) member affects the interference dimension within a cell and the value Eb/No for each user become smaller causing the drop call (disconnected conversation during the phone call).

Key word: Soft handover, WCDMA