ABSTRACT

CDMA technology is the third generation technology which is a multiple access technique based on spread spectrum communication techniques, at the same frequency and time channel use codes that uniquely identify each user. Power control in CDMA system is an absolute necessity to avoid interference between users, as a result of the power variations will cause cross correlation. In cellular systems, power up the base station (BS) will vary due to differences in location of each user, giving rise to serious problems in CDMA systems because users closer to the BS will interfere with other users better. Without a good power control CDMA system will not produce optimum capacity.

The movement of the user in a different channel conditions affect the power level received by each user, therefore, required an evidentiary power control algorithm is suitable to be applied in different channel conditions. An ideal CDMA system, each user should have the same power level so that the expected target QoS in CDMA systems can be achieved. Power control algorithm is used to reduce the interference that occurs so that the user is expected to increase capacity in each cell.

In this final task to analyze the performance comparison with the power control algorithm MSPC, M-ASPC and ASPC to determine their performance in overcoming the effects of interference, a deep fade and the step size. Simulation results show that the better performance is MSPC than the other algorithms when the user speeds slow. While M-ASPC algorithm to overcome interference in Medium and high speed with the number of active users is growing. Effect on the step size power control algorithm shows the step size the greater the error that occurred greater. Conventional algorithm is better in overcoming problems of feedback delay. While the effect of fading rate showed the best performance and MSPC approaches AWGN value.

Keyword: *Power Control*, MSPC, ASPC, M-ASPC, *deep fade*, *step size*