

ABSTRACT

Recently time the Increasing of datarates and better performance is to be one fundamental aspect in implementation of technology telecommunication. The increasing of datarates which is higher made technology telecommunication is rapidly advanced. One of the existing technology is Long Term Evolution- Advanced (LTE-Advanced). LTE-Advanced is a technology that released by 3GPP that focus on higher capacity and better performance. It has datarates 3 Gbps in downlink and 1.5 in uplink. One of fiture from LTE-advanced is Carrier Aggregation (CA) that is about technique to aggregate two component carrier with maximum bandwidth 100 MHz in same band or opposite it. The implementation of this fiture to optimization the different frequency band problem and capacity utility. In this thesis use three scenario CADS1, CADS2, CADS3. These scenario use 2300 MHz as primary cell with bandwidth 15 MHz and second is 850 MHz as seconday cell using 5 MHz bandwidth. The design parameter of this planning is Radio Receive Power Signal (RSRP), Carrier Interference to Noise Ratio (CINR), Throughput and User Rejection value. The result of this planning first is about RSRP value that show in without CA scenario is -65.5 dBm, CADS 1 : -65.5 dBm, CADS2 : -54.42 dBm, CADS3 : -54.42 dBm. For CINR value , withhout CA scenario resulting 8.34 dB, CADS 1 : 8.07 dB, CADS 2 : 8.46 dB and CADS 3 : 8.25 dB. Last, one the value of throughput, without CA has 27.035 Mbps, CADS 1 : 53.194 Mbps, CADS 2 : 42.274 Mbps, and CADS 3 : 42.274 Mbps. The best value of user rejection is on CADS 1 that have value 11.5 %.

Keywords: LTE, LTE-Advanced, Carrier Aggregation, Link Budget, Coverage Planning, Capacity Planning.