

ABSTRACT

LTE-Advanced (LTE-A) introduced by 3GPP is able to bring new experiences to its users. However, LTE-A is not without problems. Inter-Cell Interference (ICI) is a condition where users who are on the cell edge get a decrease in network performance. It caused by the position of the user who is increasingly away from eNodeB that is serving them, as well as interference from neighboring eNodeB at the edge of the cell. Ultimately, this condition causes a decrease the quality of the network for users at the cell edge.

To overcome this problem 3GPP introduced Enhanced Inter-Cell Coordination (eICIC) on Release 10 and followed by Coordinated Multipoint (CoMP) on Release 11. In this final project a comparative analysis of the performance of eICIC and CoMP LTE-A in Bandung is conducted. The simulation is carried out at a work frequency of 1800 MHz using a bandwidth of 20 MHz. To find out the performance of interference management in the system, three scenarios in the simulation are made. In the first scenario, the simulation is carried out by site existing, the second scenario applies the eICIC scheme, and the third scenario applies CoMP scheme. The parameters tested in this final project are RSRP, SINR, and throughput.

The simulation results using the eICIC scheme show an increase in the average SINR value of 0.6 dB. As for the RSRP parameters and throughput, a decrease in the average value are 0.01 dBm and 13.24 Mbps, respectively. Meanwhile, testing of the CoMP scheme showed an increase in the average values for the RSRP, SINR, and throughput parameters, each by 0.8 dBm, 0.11 dB, and 1.10 Mbps.

Keywords: LTE-Advanced, ICI, eICIC, CoMP