ABSTRACT

The existing and emerging generations of wireless communication systems such as UMTS are designed to meet the ongoing demand for high-speed communications. But all these technologies still can not meet the demand that increases every time because the user experience are using applications that use a lot of bandwidth such as downloading data, video streaming, and smart home. These things makes the Third Generation Partnership Project (3GPP) to develop new technology after UMTS, which is LTE (Long Term Evolution). LTE system is capable of providing maximum data rate of 100 Mbps for downlink and 50 Mbps for uplink.

But LTE still has a problem, when the user is in cell edge. Users who are in the cell edge is difficult to get coverage because of its location that is far from eNodeB. This condition causes a decrease in SINR and throughput on the user in the cell edge. In this final project carried out LTE-Advanced planning in the area of Bandung, especially Kelurahan Sumur Bandung, Bandung Wetan, Batununggal, Lengkong, and Regol. Planning is done with frequency 1800 Mhz and with Coordinated Multipoint (CoMP) method. This method is expected to solve user issues in cell edge and increase throughput in cell edge. Parameters analyzed in this final project are SINR, User Connected and throughput.

From the site calculation on the test teritory it is found site amounted to 40. In scenario 1 the average SINR is 12,05 dB, User Connected 90,5%, User Throughput 40,66 Mbps. For scenario 2 obtained SINR of 25,05 dB, User Connected of 99,9%, and User Throughput 72.6 Mbps. For scenario 3, SINR obtained for 20.89 dB, User Connected of 99,9%%, and user throughput 129,072 Mbps

Keywords: LTE-*Advanced, Coverage Planning, Capacity Planning, CoMP*