

ABSTRACT

Based on the results of the survey and drive test using one of the cellular operators on Jalan Karawitan, it was found that the value of the LTE network radio parameters was poor, reinforced with RSRP values < -90 dBm, SINR < 5 dB, and throughput < 1 Mbps. Besides, the conditions around the road are included in the potential market so that a good capacity for LTE is needed in this region to be able to provide data services to everyone on Jalan Karawitan. Based on the identification of OSS data, there is an imbalance between user traffic and cell capacity which influences the quality and throughput of the received network.

In this final project a microcell planning was carried out on Jalan Karawitan, Bandung City on LTE 1800 MHz FDD with 10 MHz bandwidth using cell splitting method in increasing LTE network capacity in the region. This planning simulation was carried out using two scenarios, namely comparing the two conditions with and without the application of cell splitting in Atoll 3.3 software by taking into account the RSRP, SINR, and throughput radio parameter values.

The results of the planning simulation based on the scenario determined in this final project, namely an increase in the average RSRP value of 13,32%, SINR of 52,75%, and throughput of 236%.

Keywords: *Cell splitting, LTE, microcell, RSRP, SINR, throughput.*