ABSTRACT

Cibadak is one of the villages in the Astana Anyar sub-district, Bandung City with a population of 13,268 people. Cibadak is located close to famous tourist centers in the city of Bandung such as the Asia-Africa Museum, Bandung City Square, and the night culinary tour of Cibadak. Based on the drive test data conducted in the Cibadak area, the RSRP value was 50.83%, from the range of -100 dBm to -50 dBm, the RSRP value did not meet the KPI operator target of 70% ≥ -100 dBM. In addition, the SINR is 32.43% with a range of 8 dB to 50 dB, this value has not met the operator's KPI target of 70% ≥ 8 dB. The downlink throughput value is 13,47% ≥ 10 Mbps*, and the uplink throughput value is* 32,13% ≥ 10 Mbps*, the two throughput values indicate that the results of the throughput parameter have not met the XL operator's target of ≥ 10 Mbps. This causes the Cibadak area to have a fairly poor network quality for XL operators*

In this final project, a Carrier Aggregation planning simulation is carried out which compares the performance between two methods, namely Intra-Band with a frequency of 1800 MHz using Carrier Aggregation Deployment Scenario 1 (CADS 1) and Inter-Band Carrier Aggregation with a frequency of 2100 Mhz using two scenarios, namely Carrier Aggregation Deployment. Scenario 2 (CADS 2) and Carrier Aggregation Deployment Scenario 5 (CADS 5), these simulations were carried out using Forsk Atoll 3.3 Software by analyzing RSRP, SINR and Throughput parameters.

The simulation results based on the scenarios that have been determined in this final project show that the inter-band method with the CADS 2 scenario is appropriate to implement because it shows a significant percentage increase in the RSRP parameter of 13.93%, SINR of 97.13%, downlink throughput of 602%. , and the uplink throughput of 377.72% with the consideration that CADS 1 did not experience a significant increase in the throughput parameter, while CADS 5 did not experience a significant increase from CADS 2 as well as high maintenance costs and costs. So it is hoped that the results of the planning simulation in this final project can improve the quality of LTE services in the Cibadak area, Bandung.

Keywords: *Carrier Aggregation, Inter-Band, Intra-Band, Forsk Atoll 3.3*