

ABSTRACT

Based on Operator X's Operation Support System (OSS) data, Cijerah has high resource block utilization (PRB 100%) which is linear with the high volume of traffic in the area. This has an impact on the poor Throughput value received by the user. The data from the drive test shows a Throughput value of 10 Mbps of 82% on the Downlink side and a Throughput value of 10 Mbps of 80% on the Uplink side. In addition, supported by speed test data, the Throughput value is 7.57 Mbps on the Downlink side and 1.66 Mbps on the Uplink side. This value is included in the low Throughput category and does not meet Operator X standards, namely Throughput 15 Mbps. Based on data from operator X in the Cijerah area, Carrier Aggregation has not yet been implemented, so planning for that area is needed.

In this final project, a Carrier Aggregation planning simulation is carried out by comparing the Intra-Band method at a frequency of 1800 MHz with Carrier Aggregation Deployment Scenario 1 (CADS 1) and the Inter-Band method at a frequency of 1800 MHz and 2100 MHz with Carrier Aggregation Deployment Scenario 2 (CADS 2) using Forsk Atoll 3.3 software.

Based on the results of the comparison of the two methods, CADS 1 has a greater percentage increase than CADS 2 in the two test parameters, namely RSRP and SINR, and for CADS 2 has a greater percentage increase than CADS 1 in the Throughput parameter. The difference in the percentage increase between the two methods shows that for the RSRP parameter, CADS 1 is 7.65% greater than CADS 2, for the SINR parameter, CADS 1 is 3.24% greater than CADS 2, for the Downlink Throughput parameter, CADS 2 is 24.23% of CADS 1, for the Uplink Throughput parameter, it was found that CADS 2 is 32.62% greater than CADS 1. The simulation results of these four parameters have met the KPI standard of operator X, and based on the problem of Low Throughput LTE network in the Cijerah Bandung area, the inter-band carrier aggregation (CADS 2) can be used as a solution to this problem and is better implemented.

Keywords : *Carrier Aggregation, Inter-Band method, Intra-Band method, CADS 1, CADS 2, Forsk Atoll 3.3.*