ABSTRACT

Tegalega is a potential market area in the city of Bandung. Characterized by the number of central fort buildings, the Koramil headquarters, the Tegalega park, and the Tegalega terminal, this area has a very high network activity. This results in a decrease in the quality of network data in the area. Based on network quality measurement by means of a drive test using the G-NetTrack Pro software. The RSRP value in the range of -100 dBm to -50 dBm is 48.12% where this value has not met the operator's KPI target for RSRP, which is at least 70% 100 dBm, while the SINR value with a range of 8 dB to 50 dB is 42, 96% where this value does not meet the operator's KPI standard for SINR, which is at least 70% 3dB, and for throughput it can be 62.15% 5 Mbps on the uplink side, while on the downlink side there is 59.73% 5 Mbps. This value is included in the category of low throughput and does not meet XL Operator standards where the Throughput is 70% 10 Mbps.

In this final project, inter-Band Non Contiguous Carrier Aggregation planning is carried out in the "Tegalega Bandung" area by comparing the scenarios of Carrier Aggregation Deployment Scenario 2 (CADS 2) and Carrier Aggregation Deployment Scenario 5 (CADS 5) planning using a frequency of 1800 MHz and 2100. MHz. This planning simulation was carried out using Atoll 3.3 software by taking into account the parameter values of RSRP, SINR, and Throughput.

The results of planning simulations based on the scenarios that have been determined in this final project show that the CADS 2 scenario is appropriate to be implemanted, because of the the increase in the percentage before and after carrier aggregation for RSRP parameters of 4,39%, SINR of 56,37%, downlink throughput of 554,18%, and uplink throughput of 283,50%. Considering that CADS 5 did not experience a significant increase from CADS 2 and the costs were quite high for CADS 5 and difficult maintenance.

Keywords: *Inter-Band Carrier Aggregation,*CADS, *Atoll, Throughput*.