ABSTRACT

Based on the data obtained from the results of the drive test in the area around the Siliwangi Stadium, Lombok Tongkeng, the radio frequency (RF) parameter value is quite bad for operator X, not only from the results of the drive test obtained, but on the measurement of the Speed test speed on the download side. which is received by the user is quite bad. And also around Siliwangi Stadium, Lombok Tongkeng in terms of its field is one of the potential market areas in Bandung City with the establishment of community housing, parks, military main regiments, educational facilities, lodging, and stadiums. So that it is necessary to do optimization on the Capacity Planning side of the area, seen from the data which shows an imbalance between cell capacity and user traffic which can affect the quality of the network received by users.

In this final project, a comparison simulation of Inter-Band Non-Contiguous Carrier Aggregation around the "Siliwangi Stadium, Lombok Tongkeng" will be carried out by comparing the planning scenarios of Carrier Aggregation Deployment Scenario 2 (CADS 2) and Carrier Aggregation Deployment Scenario 5 (CADS 5) with using the 1.8 GHz and 2.1 GHz frequencies. In the comparison simulation of LTE-Advanced networks with the Inter-Band Non-Contiguous Carrier Aggregation method will be analyzed including: RSRP, Throuthput, and SINR.

The results of the planning simulation based on the scenarios that have been determined in this final project, namely an increase in the presentation of the average RSRP value of 0.99%, SINR of 15.71%, downlink throughput of 44.56%, and uplink throughput of 39.22%.

Keywords: *Carrier Aggregation, inter-band non-contiguous, Capacity Planning, Throughput.*