

ABSTRACT

Stolembang-Grandlembang is an area located in West Bandung Regency. In terms of the field, this area is one of the potential markets in West Bandung Regency with the establishment of community housing, commercial centers, several educational facilities, lodging, and hospitals. From the results of the drive test obtained in the region has parameter value radio frequency a poor for operator X. Not only from the results of the drive test, when measuring the speedtest the speed download received by the user is quite low, only 2.80 Mbps. So this shows an imbalance between traffic user and cell capacity which affects the quality and throughput of the network received by the user, thus making this area need to be optimized on the side Capacity Planning.

In this final project, an LTE (Long Term Evolution) network planning is carried out using the Carrier Aggregation method to improve the LTE network in the area around Stolembang-Grandlembang. In the planning this time using 1800 MHz and 2100 MHz frequencies with the planning scenario used is Carrier Aggregation Deployment Scenario 2 (CADS 2) implemented as a scenario that can improve the quality and capacity of LTE networks in the Stolembang-Grandlembang area. This planning simulation will be carried out using Forsk Atoll 3.3.0 software and the parameters to be analyzed in this plan are throughput, RSRP, and SINR.

The results of the LTE Carrier Aggregation network planning simulation based on the scenarios that have been determined in this final project are the increase in the RSRP presentation by 20%, SINR by 52%, downlink throughput by 81%, and uplink throughput by 17%.

Keywords: *Carrier Aggregation, Throughput, Capacity Planning*