

ABSTRACT

Taman kopo indah area is one of dense housing area. Population density in an area will be directly proportional with the high of data access activity in the region, which if it is not balanced with an increase of network capacity by the operator, will cause Low Throughput Cell, and it happens in Taman Kopo Indah I. Based on the initial drive test average of throughput value is 719,11 kbps, where it below of minimum standard for Operator 3, which is 800 kbps.

To overcome this problem, network optimization is done by microcell planning using cell splitting method in Taman Kopo Indah I area, on the FDD 1800 MHz and 10 MHz bandwidth. The addition of microcell with cell splitting aims to increase site capacity and improve the quality of LTE services that were not maximally closed and served by existing sites by splitting macrocell into microcell. Simulation using two scenarios, there are microcell without cell splitting scenario and microcell with cell splitting scenario, in Atoll 3.3 software by paying attention to RSRP, SINR, and throughput parameters.

The results of optimization that have been obtained based on the simulation in this final project is an increase in average RSRP 24,2%, SINR 16,34%, and throughput 63,25%.

Keywords: *Microcell, cell splitting, LTE, RSRP, SINR, throughput.*