

## **ABSTRACT**

*Bogor Botanical Gardens is a tourist spot by people who visited Bogor. Most of the visitors who come use smartphone that already connected to Long Term Evolution network (LTE). LTE is a development of previous technologies, the previous technology is UMTS also known as (3G) and HSDPA (3,5), and LTE is referred to as a candidate for the fourth generation (4G). Therefore, network optimization is needed in order to get a fast and stable network.*

*the analysis of this research is begin by doing a drive test around the Bogor Botanical Gardens area with several parameters, namely Reference Signal Received Power (RSRP), Signal Interference Noise Ratio (SINR), Throughput, dan Block Error Rate (BLER). If the results of the drive test do not meet the KPI criteria, improvement will be made in terms of coverage. Coverage improvement is carried out in 3 scenarios, namely physical tuning, power configuration, and the addition of Microcell Sites. In the physical tuning scenario, there are several ways, namely mechanical tilting, and azimuth tilting. Then there is the Power configuration scenario or setting the transmit power on a transmitter. and the scenario of adding a Microcell site, namely the design of a new site with a smaller cell size. Repairs will be carried out using the Atoll software.*

*Based on this research, it can be concluded that the Power Configuration method has the best improvement compared to the 2 others method, namely Physical Tuning and Microcell site addition. The final result obtained in the Power Configuration Scenario is increased the RSRP parameter value from -100,66 dBm to -88,73 dBm, SINR from 12,56 dB to 16,08 dB, Throughput from 45.521 kbps to 53.527 kbps, and BLER from 0,02 to 0,01.*

**Keywords** : *Long Term Evolution, RSRP, SINR, Throughput, Drive test, Physical Tuning, Power Configuration, Microcell site addition.*