ABSTRACT

The deployment of LTE networks in Indonesia using existing networks faces problems in maintaining network performance due to increased data peaks and less than optimal coverage quality. Operators need to design effective scenarios to overcome the problem of decreasing the value of RSRP, SINR, and Throughput parameters, as well as PCI service orientation, to meet KPI Parameters. This study uses scenarios of physical adjustments, such as the height and tilt of the antenna, as well as the basic parameters by changing the connection power cable connected to the antenna. Increasing the quality of the LTE network is carried out through performance analysis and optimizing the coverage of operators in Indonesia using the LTE 2300 MHz frequency. The drive test was carried out in the Bukit Calincing Valley area, Bogor, taking into account the RSRP, SINR, Throughput and PCI parameters. Prior to optimization, the KPI values for LTE performance in Lembah Bukit Calincing, Bogor were as follows: RSRP 86.28%, SINR 84.99% and Throughput 77%. In addition, there are problems with the service orientation of PCI and cross-converter between sector 2 and sector 3. After optimization, there is an increase in network performance as follows: the RSRP value increases to 96.61%, the SINR value increases to 94.97%. However, there is no increase in Throughput. In addition, PCI serving has been normal in all sectors taking into account the coverage area of each. Feeder cable replacement is done in sector 2 with PCI292 and sector 3 with PCI293. Thus, improving the quality of the LTE network in Indonesia can be achieved through physical adjustments and basic parameters. With higher RSRP and SINR values and optimal PCI serving, it is hoped that users in the Lembah Bukit Calincing area, Bogor can enjoy a better LTE network experience.

***Keywords**: LTE, Optimization, SINR, RSRP, Throughput, PCI, Crossfeeder.*