

ABSTRACT

Radio frequency KPI is a reference for engineers in determining the performance of radio frequency access network. Parameters which are measured in LTE radio frequency are RSRP, RSRQ and throughput. The parameter values that do not meet the standards specified kpi resulting user can not access the desired service.

Implementation of LTE in Indonesia use existing network that already exists, which in its development it has some problems, especially in maintaining network performance caused by lack of capacity causes by increasing user and the coverage quality that was not optimal. Operator needs to perform an efficient mechanism to solves problems such as low RSRP (Radio Signal Rceive Power), low RSRQ (Radio Signal Reference Quality) and Low Throughput

Optimization of LTE network uses scenarios of physical tuning (antenna height adjustment and tilting the antenna), expand bandwidth and SFR (Soft Frequency Reuse) implementation in Bandung Area. Optimization is done by analyzing the problems of access layer radio (Radio frekuensi layer) and reviewing the parameters RSRP, RSRQ and throughput

Reference parameters of network performance increased after optimization. The *mean* throughput increased from 7.24 Mbps to 19.18 Mbps, where the KPI target is above 12 Mbps. *Mean* RSRP decline from -96.18 dBm to -93.94 dBm, but if the see the percentage of the value that is above the threshold -105 dBm, it increased from 81.58% to 96, 67%. *Mean* RSRQ increase from -14.6 dBm to -12.93 dBm, with a percentage of the value that is above the threshold -15 dBm increased from 61.3% to 96.48%. Connected user increase from 313 user to 914 user. RF KPI was achieved, so the suggestion for optimization was success in solving problems such as low RSRP (Radio Signal Rceive Power), low RSRQ (Radio Signal Reference Quality) and Low Throughput.

Keyword: LTE, Optimization, physica tuning,, expand bandwidth SFR