ABSTRACT

Technology 4G Long Term Evolution (LTE) technology in the current era is very beneficial for the wider community because LTE technology is a technological development that existed previously aimed at improving service to the community, which in the current era really needs a technological development in the internet or exchange of information quickly and efficiently. LTE technology has a high data transfer speed in cellular network services, but there are several case issues that are obtained, one of which is the bad spot found in cellular network services, which is poor signal quality, the signal suddenly disappears or there is no signal at all. and also the coverage area is very minimal or small. There are several factors that cause bad spots to occur, including changes in azimuth angles and network emission patterns on sector antennas. To overcome this case issue, a network optimization effort or signal quality improvement is needed for the CKR111 site, which covers the Pasirgembong Cikarang City area. The research method used in improving signal quality is using the physical tuning optimization method by adjusting the azimuth and mechanical tilt angles on the sector one antenna at the CKR111 site Pasirgembong, Cikarang. The expected results when carrying out Atoll simulation network optimization using the physical tuning method are expected to be able to increase the radio measurement parameters, namely Reference Signal Received Power (RSRP) and Signal To Interference Noise Ratio (SINR), for Atoll simulation results it is expected to be able to achieve ≥ - 100 dBm in accordance standard KPI operator RSRP values Telkomsel is 90%, and the ≥ 0 dB in accordance KPI standard SINR value for Telkomsel operators is 80% ≥.

Keywords: Azimuth, Bad spot, Mechanical Tilt, Physical Tuning, RSRP, SINR