

ABSTRACT

The application of cellular technology to meet the needs of the community is still hampered due to the quality of the network which is still unstable, causing bad coverage. 4G network coverage (LTE) must be ideal in order to be able to cover the areas of the City of West Purwokerto and North Purwokerto to the maximum. To improve the quality of 4G networks (LTE) can be done with optimization of sectoral antenna physical tuning. Physical tuning of sectoral antennas includes changes in antenna height, azimuth and antenna tilting. In this final project, physical sector tuning antenna optimization is done using the Automatic Cell Planning (ACP) method to meet the needs of coverage in the areas of West Purwokerto and North Purwokerto based on the acquisition of existing site data which is simulated with Atoll software. Optimization of physical tuning of sectoral antennas using the Automatic Cell Planning (ACP) method will then be compared with the results of coverage prediction based on existing site data. Obtaining the percentage of existing site coverage does not meet the telecommunications operator KPI standard that is 78,491% RSRP parameters are above -100 dBm and 65,698% CINR parameters are above 0 dB. The results of optimization of physical tuning of sectoral antennas using the Automatic Cell Planning (ACP) method have met the telecommunications operator's KPI standard that is 90.037% RSRP parameters are above -100 dBm and 94.868% CINR parameters are above 0 dB.

Keywords: *LTE, Optimization, Physical Tuning, ACP, Atoll.*