

ABSTRACT

The cellular market has experienced an enormous subscriber growth in the recent years. So the operators need to support high capacity and performance especially for the problem of coverage in their networks by minimum costs. Some of the operators have the option of using two frequency band in one cell, there are GSM 900 and GSM 1800 or GSM 800 and GSM 1900 in order to fulfil the capacity demand. This sistem called as multiband cell

This final assignment will present performance simulation GSM multiband cell in PT.Excelcomindo by generate traffic which have poisson distribution. Simulation technique which have done only from multiband cell performance based on KPI (Key Performance Indicator) in PT Excelcomindo, there are TCH traffic, TCH call congestion ≤ 0.02 , dan UL/OL subcel change succeses rate $\geq 90\%$. Analyse this final assignment from result of simulation multiband cell and from measurement result KPI in PT.Excelcomindo so can known the performance of multiband cell in GSM.

The performance of GSM multiband cell in PT.Excelcomindo showing that multiband cell have a good performance for take care traffic in GSM network. From result of simulation multiband cell and from measurement result in PT.Excelcomindo, known that traffic channel after applying multiband cell got increasing capacity channel traffic(TCH) 21.93 erlang which first 8.2 erlang. By arrival user 15% - 25% from sum of totally use, multiband cell have congestion rate which mean blocking probability $\leq 2\%$. And also have succses rate UL/OL subcell change succses 90%-100%.