

ABSTRACT

Density voice and data traffic from the operator Telkomsel is happening in the Swarga Bara PT Kalimantan Prima Coal, Sangatta, East Kalimantan and poor signal parameters that exist in the area, then it is hereby Telkomsel will build a Node B to overcome it.

Good planning is required in a cellular network construction. This is caused by the construction will cost quite a bit. Plans include capacity planning, coverage and terrestrial radio link. In planning used software 2.8.0 Atoll, Pathloss 4.0, MCom 4.2, Global Mapper, Map Info, MapSource, Nroute, and TEMS Investigation 8.0.4.

In this final task development plan has been done in the Node B Swarga Bara Telkomsel PT Kalimantan Prima Coal, Sangatta, East Kalimantan. Predictions resulting from capacity planning to customers in 2017 was 8053 customers, Offered traffic for uplink is 172.92 kbps/km², cell area of 13.43 km²/cell, cell radius of 2.27 km and the number of cells by 2 cells. Coverage obtained from the planning maximum allowable pathloss to 141.9 dB for voice services, real time data service of 133.8 dB, and data services for non-real time 139.9 dB, but it also obtained the radius of the cell based on the calculation of the COST 231-Hata equation respectively each for voice, real time data, and data non-real time by 5.06 km, 4.11 km and 3.2 km, while that to reach the state line of sight, microwave antenna is placed at a height of 30 m either at the near end and far end.

Keyword: Node B, coverage, capacity, link radio terrestrial