

## **ABSTRACT**

*Telkomsel as one of the largest operators in Indonesia are always trying to improve the quality of its network. This time Telkomsel plans to expand coverage and increase capacity at the Pelabuhan Pondong, Padang Pengrapat village, Tanah Grogot district, East Kalimantan. When viewed from the data traffic Telkomsel, the area has high traffic density, therefore Telkomsel plans to add a new base stations in the area.*

*Build a base stations require a large fee, therefore it needs to plan very carefully. Step that needs to be done such as in an actual field survey to determine the coordinates of the location of the construction of new base stations, pre SITAC (site acquisition), pre-CME (civil mechanical engineering), terrestrial radio link planning, coverage planning, capacity planning and analysis as well as simulation results of the planning. This new base stations built in the Pelabuhan Pondong, Padang Pengrapat village, Tanah Grogot district, East Kalimantan.*

*The result is, this new base stations improve signal quality in that area and also overcome the traffic density in the sector B site Jl.Minyak\_2 (site Pelabuhan Pondong). To achieve LOS conditions, the microwave antenna is placed at a height of 60 m side near end and far end side 50 m. MAPL for the uplink of 155.51 dB whereas for the downlink of 155.51 dB. Cell Range by coverage planning results obtained 2.11 Km. TRX needs of each sector is a sector (30 °) by 5 TRX, sector B (110 °) by 5 TRX and sector C (230 °) for 4 TRX. Coordinates the establishment of BTS is S1.84224 E116.23313.*

*Keyword: : Site Investigation Survey, BTS 2G, GSM*