

ABSTRACT

3GPP (Third Generation Partnership Project) define Long Term Evolution (LTE) as fourth generation cellular technology which design to provide high speed data service to customer. LTE is expected to overcome the demand of high traffic in urban or major city area by enabling downlink maximum speed at 100 MHz and uplink maximum speed at 50 MHz, nonetheless provide high quality mobile broadband and lower capex (capital expenditure) to operator.

This final paper describe planning and analysis of AXIS existing 2G/3G to LTE network in Bandung based on actual traffic analisis. The detail will be focused on access network which responsible for connection between User Equipment (UE) dengan evolved nodeB (eNodeB) LTE and also focused on transmission link upgrade (upgrading backhaul transmission). The process start by calculating AXIS existing traffic network, defining site that will be upgraded to LTE, calculating link budget, coverage dimensioning, and calculating transmission capacity.

Based on Axis existing traffic data analisis, we found 62 site need to be upgraded to LTE network. Simulation result shows that LTE coverage signal level can fullfill polygon nearby and fulfill the Axis standardization about $\geq -75,0\text{dBm}$ for urban clutter and $\geq -78,0\text{dBm}$ for suburban clutter. We are using mesh topology for LTE link transmission at nearby node B which enable handover ability with STM1 transmission link capacity.

Keyword : LTE, traffic data analisis, coverage dimensioning