

ABSTRACT

This Final Project focusing on planning the outdoor LTE network in Cipularang (Cikampek-Purwakarta-Padalarang) Toll-highway. LTE network planning is done by calculating coverage and capacity.

The coverage calculation used to obtain the radius of the radio transmit power antenna or BTS (Base Transceiver Station). Capacity calculation used to determine the amount of capacity provided by the antenna or base stations, as well as knowing that throughput will be obtained by the user in the Toll-highway. This research also conducted the traffic planning which required as supporting data in outdoor LTE network planning. Then do the planning is based on neighbor relations and physical cell identity (PCI)

LTE network planning also accompanied by a simulation using software ATOLL. With the PCI especially in potential areas, namely along Cipularang Toll-highway by comparing before and after PCI allocation, it can reduce interference levels indicated increased probability of an area with a small BLER value from 760 km² to 761 km², then because interference is reduced, the average value of $C/(I + N)$ rose by 11,09 dB 10,96 dB previously, so the average user throughput increase of 18.842,96 kbps become 19.026,46 kbps.

Key Words : LTE, ATOLL, coverage, capacity, neighbour relation, physical cell identity, BLER, $C/(I+N)$, throughput.