

PERANCANGAN JARINGAN LONG TERM EVOLUTION (LTE) STUDY KASUS DI KOTA BANDUNG

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Abstrak

Kata Kunci :

Abstract

Long Term Evolution (LTE) Technology is a technology that bridge to fourth generation (4G) or it call pre-4G (3,9G) which is a development of previous technologies, namely UMTS (3G) and HSPA (4G). Long Term Evolution (LTE) is a technology under 3GPP standard. Reason of the Long Term Evolution (LTE) is a requirement of human needs in communication with high speed data access. Base on 3GPP standard LTE can provide 100 Mbps in downlink with OFDMA multiple access and 50 Mbps in uplink with SC-FDMA multiple access. LTE also can support scalable bandwidth from 1,25 up to 20 MHz.

In final project will discuss about LTE network planning case study in Bandung city. Final project will be focused in access network, one of part that responsibility to connect UE (User Equipment) and eNodeB. The stages that used in this plan is area planning estimation, bandwidth and frequency estimation that use, number of user estimation, the capacity that given by LTE system, calculation link budget, calculation of radius of the site in according to eNodeB capability, and the placement of an e Node B on existing networks and simulated signal quality at each coverage. After that make transmission link between nodes. Thus obtained a cellular network of Long Term Evolution (LTE) is reliable with optimum capacity and be able to providing various types of services.

Getted maximum capacity in LTE at 20 MHz bandwidth, there is 100,2 Mbps. And to implementation LTE network in Bandung city needs 51 eNodeB with each cell radius 1,13 km. and link transmission between nodes use mesh topology in node that possible occur handover. And capacity transmission link is 1 STM.

Keywords : LTE, capacity planning, coverage planning, link budget

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