ABSTRACT

Long Term Evolution (LTE) is the latest techonology cellullar communication system designed to provide a better spectral efficiency, increased radio capacity, lower operational costs for operators, as well as high quality mobile broadband services for user. In LTE used Frequency Division Duplex (FDD) and Tiem Divisi on Duplex (TDD)

In this research is done by using software Atoll simulation and analysis of coverage and LTE voice service quality. Parameters used in the analysis of coverage of voice service parameters is Signal level, SINR (Signal to Interference and No ise Ratio), BER (Bit Error Rate) and Throughput. In addition, an analysis of the capacity calculation.

In this research, simulation analysis was conducted on three scenarios is at LTE 1800 MHz, LTE 2100 MHz and LTE 2600 MHz, bandwidth 10 MHz, FDD and tDD modes duplexing for each frequency. Previously, the calculation of the radius, and the number of cells at each frequency so we get the number of eNodeB.

Final results of this simulation analysis is the bandwidth of 10 MHz with QAM mapper generating capacity of 25,2 Mbps, to increase coverage and voice service quality, LTE 1800 MHz FDD can be effectively used because covered 8 % overl coverage area to receive power level -70 up to -65 dBm with a average power level received of the -74,54 dBm and has a throughput od 20 Mbps, 18-19 dB SINR and BER from 0,05 to 0,1 which satisfy the LTE standard in general has a throughput of 2-3x larger than HSUPA (5,7 Mbps)

Keywords: LTE, FDD, TDD, capacity, coverage and voice service.