ABSTRACT

Because the traffic demand of customers who use internet data is increase, then created a LTE technology developed by 3GPP. LTE (Long Term Evolution) using OFDMA (Orthogonal Frequency Division Multiple Access) technique to reduce Intersymbol Interference (ISI). But, the interference is still high enough, especially for users who are on the edge of the cell (cell edge), where inter-user collide with each other can weaken the signal of each other and affect the capacity of the cell. This problem is happen in the area who has high population density such as Bandung city.

To solve the problem, so make a design of network using SFR *(Soft Frequency Reuse) and* FFR *(Fractional Frequency Reuse) methode as an interference management methode that aims to set the allocation of user frequency, so it's not simultaneously used with other users, although the frequency between the two users are the same frequency. By dividing the Bandung city into 3 types of areas, namely urban dense, urban, and sub-urban, SFR and FFR methode using capacity and coverage planning on the LTE frequency which is 1800 MHz using Atoll 3.3 software with the calculation of link budget and the determination of the propagation model Cost-231 to estimate the number of sites is used in each classification of the area.*

Based on the result of simulation by using the calculation of capacity planning, the estimation result of throughput required for Bandung city area is 17.639,42 Mbps. In the FFR methode, the value of RSRP is -97.39 dBm, and for SINR is 24.49 dB. While in SFR, the result for RSRP is -94.36 dBm, and SINR is 26.64 dB. By applying the SFR methode, it is obtained a smaller value of interference with higher coverage area and cell capacity than the FFR methode.

***Keyword** : Coverage Planning, Capacity Planning, Soft Frequency Reuse, Fractional Frequency Reuse, Long Term Evolution, Atoll*