ABSTRACT

LTE (Long Term Evolution) is a fourth generation (4G) technology developed by 3GPP. The growing number of customers increasing every year requires better network performance. Data information that needed for all users which can be accessed anywhere, especially for users who are on the edge of a base station becomes very important. High intercell interference become one of the problems in LTE network, thus urgently need an effective way to remove it, especially the interference on the cell edge and the degradation of capacity in cells.

OFFR (Optimal Fractional Frequency Reuse) is one of the interference management method. The OFFR scheme aims to regulate the allocation of frequencies to minimize the possible use of the same frequency so that the user will be able to maximize the coverage area in the city as well as to increase the capacity of each cell. Case study was conducted in Cimahi city area. Planning is based on coverage by first doing link budget calculations. Simulation planning is done by using Atoll software.

Based on the simulation results for non-OFFR method planning with the number of users as much as 6,229, the average RSRP is -70.75 dBm, CINR equal to 15.68 dB and connected user of 85.5%. For OFFR method with the number of users as much as 17,455, RSRP average reaches -46.54 dBm, CINR equal to 38,23 dB and user connected equal to 81.9%. By applying OFFR method, interference on the cell edge can be reduced, cell capacity and coverage cell are increased.

Keywords: LTE, OFFR, intercell interference, Atoll, LTE signal strength.