ABSTRACT

The development of the telecommunications industry in Indonesia has grown many cellular operators. To improve service quality, all of these cellular operators add to the amount of infrastructure such as eNodeB and others. The massive development of eNodeB is not without problems. Operators who install eNodeB closely can cause interference between eNodeB and other eNodeB. But in order to maintain network quality and coverage of an operator. The construction of the eNodeB must continue without having to ignore interference, because interference is one of the factors that affect the quality of the network to be bad. Even though the design of the eNodeB development has been carried out as well as possible, the problems (such as interference) that exist are unavoidable and the possibility can still occur.

At the end of this project, identification, analysis and optimization of interference on the eNodeB which is adjacent to the wasteway of the city of Bandung was identified. To strengthen the analysis, an analysis was carried out in two other supporting regions, namely Unisba and Karapitan. In the three regions, interference was identified, indicated by the SINR *parameter <6 dB. Furthermore, an interference source analysis is carried out to determine the types of interference that occur in the three regions. After this analysis, it is known that the type of interference on the adjacent eNodeB is co-channel.*

The performance of 4G LTE network conditions in the disaster area after the simulation after, has a percentage value for the SINR value of <6 dB = 20%, 6 to 8 = 12.1%, and> 8 = 41.8% which has decreased below the standard of 26.89%. In the Unisba region after optimization, the percentage value for SINR is <6 dB = 24.75%, 6 to 8 = 15.84%, and> 8 = 59.4% which has decreased below the standard of 24.75% . In the Karapitan region after after simulations, it has a percentage value for SINR values of <6 dB = 23.77%, 6 to 8 = 11.88%, and> 8 = 64.33% which has decreased below the standard of 17.06 %

Keywords: Interference, SINR**, Co-Channel, LTE, eNodeB Adjacent.**