

## **ABSTRACT**

*Currently, the traffic level continues to increase in the Wonogiri Regency area, so that this increase in traffic affects the signal quality in the area, especially the LTE network. In this case, the Telkomsel provider made a breakthrough with the Red Site Solution objective, namely the addition of the 1800 MHz LTE band, which previously only had the L900 MHz WNG114 Tempursari band. From the results of the addition of the L1800 MHz band that has been carried out in the area, it turns out that there are still problems, one of which is between the L900 and L1800 MHz bands on the resource utility side, which is still unbalanced. This results in less traffic than it should be capable of. This indicates the need for optimization to improve the quality of the existing LTE network at the WNG114 Tempursari site, using physical methods and parameters tuning. The results obtained after optimization, from the utility resource sector 1 has become a balance. This is because the resulting gap value of 17.97% is in accordance with what Telkomsel operator wants, which is 20%. The payload before optimization results on May 8 to 14, 2021 get an average value of 132.69 GB, so it is still 108.59 GB less than the target set by the Telkomsel operator, which is > 241.28 GB, and the payload after optimization results from 17 to 23 May 2021 get a payload of 363.84 GB. This can be said to experience an increase of 122.56 GB from the target desired by the Telkomsel operator, which is 241.28 GB. From the results of the comparison between the payload before and after an increase of 174.19% or 231.15 GB.*

**Keywords:** *LTE, Optimization, resource utility, payload*