

## **ABSTRACT**

*The implementation of 4G-LTE network in Indonesia by leveraging the existing network of 2G and 3G. That how the operator company are trying to utilize the existing network to optimize LTE service. The recent case on LTE is about interface. Even though have been optimized in RF by using physical tuning method, it still have bad experienced either low throughput in user side. For it necessary to optimize the network, one of them by applying A-SFN technology before using physical tuning method.*

*By using A-SFN, it make possible the whole sector in e-nodeB are able to transmit the same signal at the same time on the same frequency channel to the user equipment (UE) in the same cluster. This technology is able to solve the prolem of low throughput and low SINR that cause of inter-cell interference. This research was applied in Batununggal. To analyze the quality and performance of the network is carried out by monitoring and comparing the results of the field test drives on some specific parameters. The parameters analyzed include RSRP, SINR, throughput. Drive test performed before and after the optimization was applied.*

*After optimization of the network by using A-SFN features and from the RF side with physical tuning obtained improved results on the area of the research. The mean throughput improvements occurred from existing conditions is worth an average of 5.7 Mbps increased to 6.1 Mbps. This increase includes quite well, but not in very good level because the minimum threshold of throughput is 12 Mbps. For the distribution of SINR parameter, the mean value of SINR on the network that originally increase from 7.87 dBm to 9,779 dBm. With the increased value of 1,969 dBm was able to eliminate the 4 point bad spot on the area of research. As for the spread of the average network coverage RSRP parameters increased from originally worth 88.8-dB with a 2 point bad spot into-93.08 dBm and the number of points of the bad spot reduced to 1 point.*

*Keyword: LTE, SFN, drive test, SINR, RSRP, throughput, optimization*