

ABSTRACT

The 5G network is available for the first time in Central Lombok, West Nusa Tenggara, precisely at the Mandalika International Street Circuit which is currently hosting the 2021 World SuperBike and following MotoGP 2022. Therefore, the Mandalika International Street Circuit needs to have a good service quality measurement or Quality Of Service (QoS). One of the main things in determining network quality is measuring the Quality Of Service (QoS) to find out the value of the network parameters. The Mandalika International Street Circuit as the host of the 2021 World SuperBike and 2022 MotoGP has an increasing number of visitors. This encourages the development of technology to support improving the quality of 5G for service providers in tourism.

The study conducted an analysis of the quality of the 5G network at several points on the Mandalika International Street Circuit. Measurement of the *Quality of Service (QoS)* of the internet network to determine the comparison of packet loss, throughput, delay, jitter parameter values on each TELKOMSEL network operators which are used as references in determining the quality of the network.

From the results of the comparison of Telkomsel's 5G network service quality at the Mandalika Lombok Circuit, during Peak Season there was a decrease in average download throughput of 53.45% and streaming throughput decreased by 32.14% compared to Low Season, while upload throughput increased to 37.63% due to different service usage patterns. The packet loss value remained stable at 0% indicating reliable transmission, while the average delay tended to increase in download and upload to 31.78% and 28.73%, while jitter also increased in download to 34.95%, but decreased slightly in streaming. This shows that high traffic loads affect network speed and stability, but overall the quality of Telkomsel's 5G network service remains in the very good category according to TIPHON standards and supports tourist activities at the Mandalika Lombok Circuit despite heavy traffic.

Keyword: 5G,MANDALIKA,QoS, Telkomsel, Network