ABSTRACT

Currently the need for information and communication continues to grow rapidly from time to time. In the world of the telecommunications industry, the network optimization process carried out by RF engineers currently still takes time in the decision-making process to improve network performance due to the lack of tools to analyze a network. With these problems, a machine learning system was designed that can predict LTE cellular network KPIs based on KPIs that have a strong relationship.

This research is intended to create a web-based system to predict KPI throughput and utilization. With input predictions from KPIs based on a high relation to the KPIs that will be predicted. The algorithm method used to predict KPI in this system is Random Forest.

The output of this system is the predicted value of KPI Throughput and Utilization. The system created produces an error value between the predicted value and the actual value of 0.066 for the Throughput model and 0.841 for the Utilization model and an R-Squared value of 0.984 for the Throughput model and 0.986 for the Utilization model.

Kata Kunci: *Machine Learning, Random Forest, Throughput, Utilization.*