

## **ABSTRACT**

*When compared to the current 4G LTE technology, the next generation of wireless communication is required to be able to accommodate wider service capacities with a different varieties of QoS requirements. The need for low latency, large throughput, large user capacity per km<sup>2</sup>, high mobility capabilities require the presence of the latest technology that can support those needs. Developing technology that has been applied to 4G LTE, 5G will focus on developing the Internet of Things which will later be able to support the communication process of Device-to-Device or Machine-to-Machine.*

*The technology of implementing 5G which is currently being developed is for communication between vehicles and objects such as other vehicles, vehicles with infrastructure or vehicles with people passing by on the communication distance of the vehicle. However, some obstacles are still encountered in the process of implementing 5G technology, such as the existence of several parameters that have not met the requirements, due to limited infrastructure.*

*Based on these conditions, in this Final Project the parameters related to the process of communication between vehicles are carried out, namely throughput, reliability and delay. The analysis process uses constant speed, which is 20km/h for each scenario. From the three tested scenarios, it can be found that scenario 1 meets the planned 5G standard, namely throughput values close to 2 Gbps, reliability values approach 99% and delay below 1 ms.*

*Keywords: V2V, throughput, reliability, delay*