

## ABSTRACT

*many of four-wheeled vehicles in Indonesia is a new issue that must be considered in the present time as evidenced by the latest data in 2017 reaching 138,556,669 motorized vehicles such as private cars, buses, freight cars or trucks as well as motorcycle vehicles, even this increase in vehicles quite high each year at 12 percent per year. Therefore this reasearch makes the smart parking information system for car using the Raspberry Pi 3 model B microcontroller that is connected to the telegram messenger application to be able to provide information about parking area to users of Android or IOS.*

*The system design that has been carried out includes the process of connecting between the ultrasonic sensor HC-SR04, sensor Light Dependent Resistor (LDR), Resistor, Light Emitting Diode (LED) with raspberry pi 3 model B microcontroller, then raspberry pi 3 model B will use the mosquitto MQTT protocol brokers to communicate with Virtual Private Servers (VPS) to provide information on the availability of parking area that can be accessed via telegram applications in realtime.*

*In the results of the design of the smart parking prototype system, all sensors can be connected and can provide information via telegram with accurate accuracy of parking area information. In this research do 5 experiments. The average delay results produce a value for one parking area access of 254.1760707 ms and for two accesses the parking area is 192.5232936 ms. The average throughput for one parking area access is 11000,5513 bps and for two accesses the parking area is 14968,21152 bps. The average yield of jitter for one parking area access is 0.329803033 ms and for two accesses the parking area is 0.163838391 ms. The average packet loss for one and two parking areas access is 0%. From the results of all tests of Quality of Service(QoS) parameters which include delay, throughput, jitter, and packet loss compared with the TIPHON standard that the results meet the standards. therefore the proposed design of the prototype system can be implemented.*

**Keywords : IoT, Raspberry pi 3 model B, Smart Parking,Telegram**