

## **ABSTRACT**

*Internet of Things (IoT) has become a separate field of research since the development of internet technology and other media communication. The more developing human needs for technology, the more research will be present. Internet of Things is a network infrastructure that can combine communication between physical and visual objects, the network of physical object is embedded with electronics, software, sensors, and network connectivity that makes it possible to collect and exchange data so that can simplify human work.*

*In this Final Project an ambulance arrival warning system will be made for vehicles that are around the ambulance. This early warning system will produce output in the form of a warning message from the LCD and use LED, also the Quality of Service parameters for sending messages in idle or mobile state, so it can be compared between the two conditions. In the vehicle will be installed Wemos D1 R1, Gps Neo Ublox 6m, and using Google Firebase for data storage in the form of GPS coordinates, so that vehicle around the ambulance can detect the presence of ambulance around and immediately give the priority to the ambulance.*

*This early warning system has an accuracy in detecting location with an average shift location of the actual coordinates about 2,00146 meters. The early warning system also shows when the device is idle it gets an average delay of 0,16389 s, the average jitter is 0,17473 ms, the average throughput is 1502,53 kbps. Meanwhile, when the device is in mobile state, the average delay is 0,1685 s, the average jitter is 0,1846 ms, and the average throughput is 1511,975 kbps. With this relatively good QoS calculation, it is hoped that the ambulance will get more priority, with the accuracy of the information from this system.*

**Key Word:** *Internet of Things, Coordinate point GPS, Wemos D1 R1, LCD I2C, LED, Google Firebase.*