ABSTRACT

In big cities like Bandung, for example, the city is very congested with traffic. This design aims to develop Smart Traffic Light using the Internet of Things. The target of this design is focused on facilitating fire fighting vehicles when getting emergency calls through smart traffic light using the internet of things.

In this design using several tools to assist in this design such as: Firebase services used in the smart traffic light are authentication and realtime database. ESP8266 is connected to Firebase via internet communication. Android application uses authentication and realtime database services. The smart traffic light application updates locations using the GPS feature and then stores travel location update data to Firebase using an internet connection. When the application is run the traffic light that is in line with the predetermined route will turn green before the fire engine reaches the traffic light point.

The smart traffic light test results from the traffic lights successfully change in realtime with a setting distance of 150 meters. On the test, the results of the distance value from 10 trials per path with the average changing value of lane 1 (133.39 meters), lane 2 (127.47 meters), lane 3 (136.34 meters), line 4 (126.45 meters), line 5 (127.38 meters). And with an average deviation value of 19,794 meters

Keywords: *Smart Traffic Light, Internet of Things, ESP8266, Firebase, Android.*