

ABSTRACT

The traffic light intersection are one of important parts of the street that causes high vehicle density if not managed properly. Vehicle density is a main problem must to be faced, especially in traffic light intersection. This problem can be solved with provide efficient traffic light system in intersection for continuous movement through intersection. Smart Traffic Light have understanding that the time duration of traffic light always changing depends of number of vehicle in intersection. This system use Webster method for optimization traffic light cycle time and minimize average vehicle delay time based on mathematics equation.

In this research is design traffic light miniature with three way intersection. Which has collected data is process use Webster method, then performed an analysis of data processing result. From the results of data processing then used as input microcontroller for control the system sensor and control time duration traffic light in intersection based on vehicle density.

Based on testing the data using Webster method, existing traffic light system can still be optimized and generated outputs average vehicle delay time, which average vehicle delay time is formed decreases by 40.52 %for phase one and 15.97 %for phase 2 from existing conditions.

Keywords: Smart Traffic Light, Webster Method, Average Vehicle Delay Time, Infrared Sensor.