

ABSTRACT

Interchange near railway is easily found. At the peak hours such as morning and evening, it makes queues around rail crossings. This thing is compounded by the traffic lights at the intersection which can't controlled by dynamic scheme following the situation at railroad crossings. It can be dangerous for road users, as queues of vehicles can get stuck in the middle of railway. To overcome this problem, this research built a dynamic traffic light prototype uses Arduino microcontroller. Traffic light prototype is equipped with an ultrasonic sensor that placed in the railway gate, so it can detect the presence of trains that will pass through the railway. Sensor will automatically detect the presence of trains if the railway gate is closed, and take control of the traffic lights near railway, so it can be changed if the train will pass through the railway. This prototype can be used for the intersection near the railway if average time of vehicle to the intersection is lower than 1.2 second. But, an update for the algorithm of this system is needed, so the vehicle on other intersection arms will get faster service time.

Keywords: Queue, prototype, dynamic traffic lights, Arduino