ABSTRACT

The growing of vehicle ownership is getting increase, without support facilities offset by good traffic will cause traffic problems, especially for crossroad. Based on information from the transportation department of Bandung, the timing of traffic light's color shift today was based on the estimated number of vehicles is carried out every year.

In this Final Project will be made traffic-light controller which the part of smart traffic system. This system divided into two block, controller block and sensor block. In this Final Project will only be made blocks of traffic light controller only, whereas block of sensor will be done by Milda Pangestiani. Generally, the duty of traffic-light control block is control the traffic-light at crossroad based on the data of number of vehicle delivered by sensor in real-time. The data communication between controller block and sensor block using point-to-point wireless communication via XBee Pro S1 module. The determination of traffic light color shifting performed using methods that has been established by Directorate General Bina Marga in "Manual Kapasitas Jalan Indonesian (MKJI)".

The final result of the making of smart traffic light controller is control the traffic lght at the crossroad based on the condition of crossroad in real-time. Maximum distance of the sensor to the sensor is 40 meters with no obstacle. In the crowded traffic condition(30 vehicles queues) got the green time on the road that have crowd phase is 16.40 second and on quite phase is 3.3 seconds.

Keyword: Traffic Light, Smart Traffic, Real-Time, Wireless Communication