ABSTRACT

An increasing number of vehicles over the years led to an increase in density at each fork in the road . It is ultimately an obstacle to traffic control at the intersection of jam -prone road. During this time, the system settings in every traffic light crossroads commonly used is Fixed Time Traffic Light Controller which works within the time set in advance . However, this method still can not cope with the traffic congestion and other problems that occur at intersections . So the need for a system that is able to regulate traffic flow adaptively.

The final project will developed a traffic light control system is adaptive to detect the number of vehicles in each road segment at the junction of four roads using digital image processing. Data input is taken from each road segment by using a camera . Then the data is processed in the computer through the process of pre - processing . Detection of the number of vehicles with digital image processing is done by the method of background subtraction . Software used is MATLAB .

Obtained from the simulation and testing of the average number of vehicle detection system accuracy is 73,78 %. At the afternoon conditions, the system accuracy is better than the morning and daylight conditions with the value of system accuracy is 86 % . This system is still not quite good because the accuracy is low in the certain time so it still can not be implemented but the traffic light control system designed is able to work optimally when compared to conventional traffic light for road conditions are not too crowd.

Keywords : *Traffic light, image processing, background subtraction.*