ABSTRACT

In this paper calculated the density of traffic and categories of types of vehicles passing on a road in the video previously taken offline. The video will be extracted into frames which are then detected movement of the object by using background subtraction method, calculating a centroid, the centroid tracking, and thresholding selection. System testing is done to three (3) test video is a video in the morning, afternoon, and evening. Video taken by using a webcam placed above the roads that will be examined.

The results of this paper is a system that is able to calculate the density of traffic along the category types of vehicles passing on a road section. After testing of the system has been created, it can be concluded that the election of the light intensity, the size of the structuring element erosion, bwareaopen threshold value, the size of the structuring element dilation, and extensive labeling threshold affects the accuracy of the system. The system works optimally in the afternoon, the size of the structuring element erosion of 2x1 pixels, bwareaopen threshold value of 200, the size of the structuring element dilation 16x8 pixels, and a threshold value of 5000 pixels wide labeling system with an average accuracy 94,307%, with accuracy of vehicle counting 99,091%, and accuracy of vehicle classification 89,524%.

Key Word : *background subtraction, centroid,* number of vehicles, traffic density, *thresholding technique.*