ABSTRACT

Elevated levels of accidents, both on the road and on the highway, from year to year looks very significant. One thing that cause this high level of accident was the road markings violations committed by vehicles' driver. Road markings that have been made by the government serves to regulate traffic or to warn or guide road users in traffic on the road. This has been set in PP No. 43 of 1993 on Infrastructure and Road Traffic. In addition, in UU LLAJ No. 2 of 2009 Section 287, has been firmly told that there would be sanctions for vehicles' driver who violate road markings, a fine of Rp 500.000,00. Violation of road markings is often regarded as a minor offense, so the driver driving the vehicle at will, without notice and obey road markings that have been available. Though this road markings violation can trigger a fairly high accident rate.

With the development of technology, image processing can be a solution to this problem. Data in the form of a video taken with the camera to do the correlation of two images in the form of image difference which comparing current frame with previous frame and comparing the current frame and background, this system is expected to identify traffic roads based on the calculation of difference. Furthermore, changes in the value of the correlation is processed through the classification to determine whether there is the violation of road markings. If there is the violation of the road markings, then by looking at the threshold value will be detected size of the vehicle which is divided into two parts, the big cars and small cars. The implementation of this system is done with the help of the Matlab R2010a software.

The reliability of the system was tested by performing simulation experiments. The test results show that the system is able to detect road markings violation with 82.10% success percentage for the light conditions during the day and 95% in the afternoon. The threshold overrule value of 5 or 10 and image binary threshold level of 1.4 are the best value in detecting violations of highway markers with an average accuracy of 86% and detects the size of the car who commits an offense with an average accuracy of 92%.

Keywords : image processing, road marking detection, image correlation, image difference