Abstract

Data traffic is important information for road statistic developer and road users. Data traffic was collected by two methods. First method is by manual counter, the surveyor count every car pass. Second method is by detector that planted in road before road built. But those two methods doesn’t effective, because it used human resource that makes data can not collected realtime and cost a lot because detector planted in the road.

This Final Project collected data traffic used an Arduino microcontroller that equipped with two motion sensors. Motion SENSOR will detect any movement from car then send it to microcontroller arduino. Arduino microcontroller will process that detection and send data to server periodically. Data transaction between Arduino microcontroller and server use GET method on server based on PHP Programming Language. Data will encrypt use private key before it send to server. The private key will change everytime data transaction occur. Those private key was sent by server after server receive valid data from Arduino microcontroller. Server will decrypt data that received before and save it to database MySQL.

The trial result based on categories that distinguished by low traffic, medium traffic and high traffic. The test result motion sensor is not capable to distinguishing vehicles between
motorcycles and cars. However, the accuracy obtained by the Arduino microcontroller as a whole by 90%, 82% and 91% for each category.

Keywords: data traffic, Arduino microcontroller, Android application, encryption decryption RC4 on Arduino.