

Traffic Light Assist Prototype Integrated Area Traffic Control System

by Dr. Ir. Zainal Arifin, M.T., Dr. Drs. Sukoco, M.Pd., Dr. Sutiman, M.T., I Wayan Adiyasa, M.Eng., Naufal Annas Fauzi, M.Eng.

ABSTRACT

The large number of motorized vehicles operating on the highway often causes congestion on certain road sections. Vehicle congestion on the highway can be caused by several things, such as: roads that are too narrow, there is road narrowing, there are road repairs, accidents, and crossroads that are not optimally regulated. ATCS is a system that regulates traffic control that aligns red light times in a city by considering the number of vehicles on the roads at intersections. However, driver behavior is still a problem that is quite difficult to solve. Some of the negative behavior of drivers that can cause traffic jams and accidents include: motorists using the phone while waiting for the green light to turn on, causing the vehicle behind them to increase their waiting time, lack of skill of the driver when starting the vehicle when the green light is on so that it also causes the driver behind to waiting longer, drivers do not stop when the red light is on so accidents often occur, drivers do not concentrate when going through an intersection with APILL lights so sudden braking often occurs which can endanger themselves and other motorists. The development of Traffic Light Driver Assist which is integrated with ATCS is carried out to give a signal to the driver that he is going to pass a crossroads. The signal given is in the form of an APILL light sign which will be passed later at a crossroads. This device is also integrated with GPS (Global Positioning System) to determine the position of the vehicle. If within a few tens of meters the vehicle will pass the crossroads, the signal sending device will send a signal to the device owned by the driver, so the driver will know how fast the vehicle must be driven so that the vehicle will pass through the crossroads when the APILL light is green.

The "Traffic Light Assist Prototype" research will produce a communication device between the device and the Area Traffic Control System and the device and the driver so that the driver gets information about the APILL light earlier before crossing a road intersection. In addition, the device will also recommend the optimal speed that must be achieved by the driver so that the driver can pass the intersection when the APILL light is green. The next output is international publications and intellectual property rights. This research is a type of applied research. This study applies the results of basic research on Area Traffic Control System (ATCS) and Global Positioning System (GPS).

Kata Kunci: *automatic motorcycle, internet of things, throttle by wire*