ABSTRACT

In the news on television, cases of theft of motorized vehicles are often shown from the home page (especially motorbikes), in just a few tens of seconds the motorbikes are managed to be carried away by thieves without being tracked. With so many cases like this, to find out where the stolen vehicle is, a tracking system that can be used interactively and based on google maps is needed to make it easier to navigate the tracking of the vehicle's location.

In this final project, a vehicle tracking system is made which is built by three main components, namely an Arduino microcontroller, a GPS module, and a GSM module mounted on a motorcycle. There are three main features of the system, namely firstly sending notifications on mobile phones in real-time (real-time) if the vehicle changes position more than a certain distance from its initial position (parking point on the home page), secondly tracking location (coordinates) with two command modes, namely : on demand (delivery of positions only at any time if needed) and periodic, (sending of positions automatically every certain period of time), and the third is the control feature to turn off the vehicle engine.

From the results of functional testing the system works in accordance with all the planned features with performance: error rate of 26.6%. Accuracy after the displacement distance of 30 meters there is a deviation of 0-20 meters, the average delay (round trip) for position requests is 08.79 seconds, the delay (one way delay) of relay activation commands is on average: 03.60 seconds, and battery life backup an average of 3 hours 58 minutes.

Keywords: *IoT*, Instant Messaging, Google Maps, *GPS*.