ABSTRACT

Almost every house has a motorcycle vehicle, making it possible for the crime of motorcycle theft to occur. This research is devoted to supervision and security that is very minimal, causing motorbikes to be easily stolen at the level of personal use around the house. Therefore, it is necessary to improve an adequate security system with the latest technological developments. The application of the Internet of things in research is a tracking system using a Global Positioning System (GPS) integrated with an Arduino microcontroller with NodeMCU ESP8266 on an object in the form of a motorcycle. The purpose of this research is to improve the performance of the tracking and security system so that the system works more optimally by testing GPS NEO6MV2 users with GPS Smartphones using three different services, namely Telkomsel, Indosat, and XL. The method used in this research is Research and Development (R&D). The results obtained by using three different services in the tracking process and looking for a high level of accuracy are indosat with an average difference in distance from five test sites is 0.008 meters, using telkomsel produces an average difference in distance from five test sites is 0.008 meters, then xl with an average difference in distance from five test sites is 0.212 meters. The result of this research is that the GPS Tracker circuit works well and can be controlled with a smartphone through the Blynk application and the location point data can be updated automatically. Blynk can also turn on and off the battery current flow through the switch button accessed through the smartphone. The SW420 vibration sensor and FPM10A fingerprint work as expected. An active buzzer alarm will sound if the SW420 vibration sensor detects a vibration in the motorcycle contact. While the FPM10A fingerprint connected to the relay can turn on and off the battery current flow, then the buzzer active alarm will sound for six seconds if you enter a fingerprint ID that has not been registered.

Keyword: GPS Tracker, Microcontroller, Security, Motorcycle