

ABSTRACT

Suitcase is a container that is often used to store items such as clothes and other necessity to traveling. In the case of traveling by plane, suitcase normally stored in the plane's trunk, where crimes such as theft often occur which cause the suitcase to disappear unknowingly. Therefore, we need a way to find out or to track the whereabouts of the suitcase.

In this Final Project, a microcontroller-based Smart Suitcase is made which is equipped with a Global Positioning System (GPS) module and a Global System for Mobile Communication module (GSM) to send coordinate data via Short Message Service (SMS) to the user's smartphone so that the location of the suitcase can be known in a google maps display. In addition, this suitcase is also equipped with an MC-38 Magnetic Sensor that can send an indicator in an open/closed condition. In the open position, the position of the suitcase will also be sent on google maps.

From the results of GPS accuracy testing which was carried out 15 times, all system features function with an error rate of 6.7%. Then from the test results, the average response time (round trip delay) between sending a location request until a response appears on the cellphone is 9 ms. And the average response time (delay) between the opening of the suitcase until the notification appears on the cellphone is 5 ms, and the position accuracy based on the tool compared to the comparison tool (smartphone) produces an average deviation of 18.05 m.

Keywords: *Smart Suitcase, GSM SIM 900, GPS, Magnetic Sensor MC-38*