CAR ACCIDENT INFORMATION SENDING TOOL THROUGH ARDUINO-BASED SMS

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ABSTRACT

Motor vehicle accidents occur a lot in Indonesia and it is caused by several factors such as poor road conditions and errors on the part of the driver. In the event of an accident, of course, you need fast help, but currently reporting of accidents is still hampered by the speed of information. To overcome the delay in assistance, a tool is made that functions automatically to send messages in the form of SMS containing location data in the form of coordinates when an accident occurs. This tool has a system that uses the MPU-6050, SIM900A Module, and the Neo 6M GPS module which is connected to the Arduino Uno R3 so that when the car has an accident, the value changes drastically at the MPU-6050 angle. So that if an accident occurs, the SIM900A module automatically sends an SMS message in the form of accident information containing notifications and coordinates to the authorities. Based on the tests that have been carried out, the average error on the MPU-6050 sensor is 4,5% and the overall average error is tilted towards the left, which is 5,0333%. Testing the accuracy of the Neo 6M GPS, the average difference between the distance between the Neo 6M GPS and the GPS from the smartphone is 14 meters, and the average time required by SIM900A to send SMS is 5,6 seconds. Testing of the whole system was carried out by testing the set of slope < 60° and ≥ 60°, the percentage of success was 100%. While the test when the condition rolled to the right and returned to its normal position showed a success percentage of 80% with the average speed of SMS sent when it was rolled 1 time 7,096 seconds, rolled 3 times 11,512 seconds, and when it rolled 5 times was 12,612 seconds. While the test results when the condition rolled to the left and returned to its normal position showed a success percentage of 66,666% with the average speed of SMS sent when it was rolled 1 time 8,115 seconds, rolled 3 times 7,583 seconds, and when it rolled 5 times, namely 10,648 seconds.

Keywords: *Accident, Angle, Coordinates, SMS.*