IoT and Web Based Motor Vehicle Security System with GPS Tracking Features and Automatic Power Cut Off

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ABSTRACT

In general, motorbikes only have security such as conventional safety locks or just an alarm system. This is different from vehicles such as modern cars which already have a GPS (Global Positioning System) device. There are many ways to improve motorized security systems, one of which is installing GPS devices in vehicles that do not yet have similar security. So Internet of Things (IoT) technology and GPS devices such as the Ublox Neo are used to help monitor the vehicle's whereabouts in real time. IoT technology allows smart sensors to be connected to the internet network. Tracking systems that use IoT can utilize data from sensors to provide information to users about the whereabouts of their vehicle. The use of this technology aims to increase efficiency and security in vehicles so that the rate of vehicle theft can be reduced. The results of the test show several conditions when the device cannot work properly. However, 80% of the test results show the device's success in tracking vehicles. The average response time for receiving satellite data is around 1-5 seconds. Users can also turn off the vehicle so that it is easier for users to chase perpetrators, thereby minimizing the occurrence of vehicle theft. The response time of the device in turning off the vehicle is around 5-10 seconds due to alternating sending and receiving data with the GPS module. The hope is that perpetrators of vehicle theft crimes will find it more difficult to steal motorbikes equipped with IoT-based security systems.

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