The reliability of halal product transportation using GPS tracking system

ABSTRACT

The rapid growth of Halal product market creates high demand for the logistic system to ensure the reliability of product during the transportation process. However, due to contamination, pilferage and chance of breakage in the supply chain, the reliability of the current status of halal product has been questioned that leads to the initiative of developing a new tracking system to monitor the movement of the product. Aiming at monitoring and reducing the possibility of cross contamination that might occur during the transportation process, the Halaltracer tracking system was developed using the combinations of Global Positioning System (GPS) and geofence algorithm. The Halaltracer tracking system is significantly contributing in terms of automatic detection on the spatial activity taken during the halal product's shipment process. Apart from providing spatial information about the delivery session and the route taken, the system also can detect the possibility of cross contamination by monitoring in real time the stopping of vehicles using a ray casting algorithm applied to the geofence technique used in the system. A functional prototype device with a web based interface for reporting function was completely built and tested in different kind of situation. The testing showed that the proposed model was capable of presenting a report of tracking which compliant the requirement of managing Halal product. In conclusion, these Halaltracer system will improve the traceability of Halal product during transportation by focusing on the Halal part thus, adding the credibility of consumer confidence in consuming the Halal products.