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STUDY ON PROVIDING TRAFFIC SAFETY INFORMATION SYSTEM USING MOBILE DEVICE

PARK, JAE HONG, YANG IN CHUL, YUN, DUK GEUN & KI, SUNG HWAN

Highway & Transportation Research Division, Korea Institute of Civil and Construction Technology, Korea

ABSTRACT

As 90 percent of traffic accidents are caused by human factors, so it would be helpful to prevent traffic accidents if we provide warning signs to drivers pre-determining the movement of their vehicles. The sensor which measures the movement of a vehicle is able to use a mobile device owned by drivers, utilizing lots of measured data from the device, it is possible to establish appropriate warning providing system for an individual driver.

Therefore, this study aimed to provide a measure of giving suitable and customized warning information to individual drivers using mobile devices which are widely available around the world. While driving at 100km/h, The average acceleration during driving at all speeds was -0.052m/s^2 while the maximum acceleration -0.763m/s^2 was revealed while driving at 100km/h. Then, using the centroid derived in cluster analysis, a method of providing warning information was proposed. In addition, zigzag driving in one to three lanes was conducted to measure changes in angular velocities and a maximum 0.500 rad/s angular velocity was obtained.

KEYWORDS: Safe, Vehicle, GPS, Accelerometer, Gyroscope