GNSS Introduction in the ROAD Sector

Advanced In-Car Telemetry for Commodity Vehicles

Session Topic: ICT AND THE ENVIRONMENT

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1 – Abstract

The road sector represents one of the largest mass markets for ICT technology applications both in terms of number of users and business volume with a continuous growth in the last years. Intelligent Transport Systems (ITS) are an important component of the global answer to the challenge raised by increased personal and freight mobility. The capabilities provided by ICT technologies open the possibility of reducing the negative impact of road transport while at the same time offer new services to a wide range of transport actors such as infrastructure providers, fleet operators, insurers, etc.

GMV and the University of Valladolid are developing a system which collects various measures (speed compliance, fuel economy, CO2 emission, route choice, incident detection) in order to study the driving behaviour. Thanks to this system, it will be possible to know the effect of certain behavioural interventions (e.g. variable speed limits, driver training) on various measures (speed compliance, fuel economy, CO2 emission, route choice, incident detection). Additionally, it will be feasible to study the effect of feedback on driving behaviour via on-board displays, text messaging, etc.

The technologies applied are:

- Controller Area Network (CAN)
- Global Positioning System (GPS)
- Accelerometers
- GPRS/GSM
- Web technology

GMV and UVA are currently developing a fully-functional demonstrator for a system of this kind involving the black-boxes in the vehicles and a data center where data is collected for further analysis. Over this architecture different services are also being developed in order to offer the information above mentioned to very different type of clients. The initial goal is to evaluate the most energy-efficient way to drive different car models to know, for example, if it is better to follow the shortest path or the fastest. Through data collecting and further data analysis from the car devices it will be possible to extract information that will provide the driver with the information he needs in order to maximize the energy efficiency of his car.

The difficulty of assessing CAN-BUS data for a wide range of car manufacturers means that initially the number of car models considered should be restricted, although the outcome of the study can be extended to a larger number of cars without problems. GMV and UVA are currently working in the system needed and the are expecting to start the data collection campaign at the beginning of 2008.

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Carlos Busnadiego-Gutiérrez is a Project Manager in the Spanish company GMV. He is specialized in GNSS and communications Systems with advanced skill in GIS and programming computers and mobile devices under different platforms. He got his M.Sc in Telecommunications Engineering for the University of Valladolid at 2002. He can be reached at cbusnadiego@gmv.com

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