

Short-term Congestion Prediction for in-vehicle Navigation System

Mr. Jun Hu from CTS, Imperial College London

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Abstract

As Dynamic Route Guidance (DRG) systems are a rapid growing market, more sophisticated systems are continuously being developed. Current vehicle navigation systems receive real-time congestion information from a traffic information centre (TIC) to the vehicle via the Traffic Message Channel (TMC), to the extent that congestion is detected. The system doesn't incorporate the anticipated traffic situation in the route recommendations. So there is no guarantee that the recommended route will turn out to be congestion-free or least congested. Additionally, due to the latency of the information generated and by the time received by drivers, it will be too late for him/her to response, since he/she will most likely be already held in congestion. A driver would prefer to be given route guidance information corresponding to the likely traffic when he/she will be on the road in question, rather than on the situation that existed prior to him/her starting his/her journey. This is a motivation for us to develop a system that could incorporate the congestion prediction in the system. A new source of data, called TPEG (Transportation Protocol Expert Group) was used in this research. TPEG is a new standard format for delivering real-time traffic information to drivers over digital radio channels and considered to be a replacement to the current RDS-TMC standard in the future. In this seminar, the overview of this research will be described along with the results we obtained so far.

Biography

Jun Hu is a research student at the Centre for Transport Studies at Imperial College London. He has a MSc in Transport with Sustainable Development from Imperial College London and a BEng in Civil Engineering from The University of Nottingham. Currently as his PhD project he is working on congestion incidence prediction for in-vehicle route guidance system. His research interests are: Intelligent Transport System, traffic prediction, spatial data analysis, and traffic micro-simulation modelling.