



v2xsystems.ca

**Reference**8810-7391
8810-7437**Patent status**

US Provisional Patent filed

Stage of developmentProof-of-concept ready
In-lab prototype testing done
On-road demonstrations of safety applications support complete**Contact**Scott Inwood
Director of Commercialization
Waterloo Commercialization Office
519-888-4567, ext. 33728
sinwood@uwaterloo.ca
uwaterloo.ca/research**V2X Vehicular Communications System****Background**

Road accidents represent a serious social problem and a leading cause of people death and disability in many countries. More than 93 people have been killed each day on average on the U.S. roads in 2010, plus an amount of \$871 Billion of economic and societal impact on U.S. citizens due to vehicle crashes. Hence, we develop novel wireless solutions to enhance road safety by reliably and timely exchanging safety messages among vehicles. Each safety message carries vehicle status information, such as speed, acceleration, brake status, etc., which allows for the implementation of many advanced road safety applications.

Description of the invention

The global smart transportation market was valued at US\$ 43.47 Billion in 2013, and is expected to witness a rapid growth during the period from 2013-2018, to reach US\$ 100.92 Billion by 2018. Specifically, for vehicular networking, the market growth is driven mainly by the high number of traffic accidents and its severe socioeconomic impacts, which have increased the need for a safer transportation system; and the government initiatives around the world toward mandating vehicular networking technologies

Our wireless technology was recently awarded the second prize in the highly competitive Innovation Challenge organized by Valeo, among 969 participating teams from 55 countries. Our research on vehicular networking is supported by GM and has been granted several Best Paper Awards from highly recognized international conferences.

Advantages

Quality-of-service support for high priority road safety applications:

- Reliable broadcast of safety messages
- Suitable delivery delay of the broadcast safety messages by vehicles and road-side units
- Comparison with the IEEE 802.11p standard via computer simulations in city, highway, and emergency scenarios

Potential applications

A variety of road safety applications:

- Vehicle Internet of Things
- Lane change warning
- Emergency brake alert
- Traffic signal violation warning