

## **An expertise centre for the vehicle infrastructure cooperation applied to the mobile road weather information systems**

?. Morin

### ABSTRACT

Road transport allows our society's goods and persons to circulate. Preserving traffic fluidity is very important for the well being of the economy and social activities. The arrival of Intelligent Transport Systems (ITS) in several sectors gives tools to better manage information. This will impact designs of some vehicle or infrastructure components and our way of driving. Transport Canada asked the University of Sherbrooke to discover the latest state of the art technologies, to look into new opportunities of research, and to assess all research topics in the particular field of Vehicle Infrastructure Cooperation (VIC) within its application with mobile Road Weather Information Systems (RWIS). We know that several road organisations have begun projects to improve road maintenance. Their needs are related to every aspect of information treatment process:

sensors design;

items for data collection;

communication networks;

ways of building and exploring databases;

decision support systems conception;

management support systems conception;

way of sending information to the road users.

The University of Sherbrooke has started up an expertise centre studying exclusively on the applicability of VIC on mobile RWIS. Discoveries could accelerate in the short term improvements for road maintenance managers, and in the longer term for road users. Several departments of the University have been involved:

Electrical and computer engineering;

Computer sciences;

Applied geomatics;

Business management.

At this time, specific projects are in relation with the conception of an intelligent vehicle for road measurements, methods for data mining, the use of communication technology P25, camera images processing for surface state detection and optimal camera images compression. Links are made to include other researchers from other universities in Canada and the rest of the world. In

the process of finding research topics, the expertise centre's staff has always verified discoveries' potential applicability.