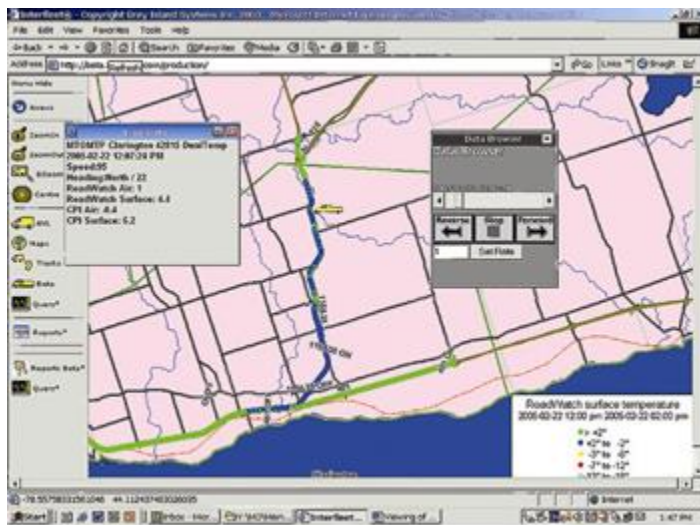


RoadTalk

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Developing Software For Automated Display of Pavement Temperatures How Cold Is That Pavement?



Web-based mapping program displaying weather and ground condition data obtained by the AVL system.

MTO is working on minimising its use of road salt while continuing to keep roads safe for winter driving. In recent years, MTO has implemented innovative techniques such as combining rock salt with pre-wetting liquids to ensure the salt adheres to the pavement, and adjusting application rates more precisely to differing temperature and snow conditions.

These winter maintenance methods are most effective when road managers receive accurate and timely information about pavement temperatures, since that data enables them to select the appropriate salt application rate for that given area. Obtaining information regarding pavement temperature unique to each region is beneficial since weather and temperature conditions vary with time of day and location along a route.

MTO is developing software to improve maintenance operations that will automatically display pavement temperatures on a web-based mapping program. The system can be used to make decisions on whether to adjust salt application rates, and if so, by how much.

The AVL system, mounted on patrollers' trucks, retrieves pavement temperature readings that were measured by infrared thermometers. The pavement temperature information is relayed to a central computer every few seconds by a GPS-based cellular communication link. The temperature data is then recreated on a map that is accessible by the road manager. Pavement temperature ranges are plotted in different colours along the route, making it easy to observe where salting rates could be adjusted, or alternate de-icing materials selected, based on the temperature range observed.

In the graphic, the weather and ground conditions (pavement temperature) of the highways were obtained by the AVL system on the patroller's vehicle, and displayed on the web-based mapping program. The green section in the display indicates roadway temperatures above +2°C, which is a condition where salt is not needed. The highway sections in blue indicate temperatures in the +2°C to -2°C range where, depending on the other road and weather conditions, an application of road salt could be considered.

The automated display of pavement temperature will provide the necessary information regarding road and weather conditions. This innovative AVL technology will greatly aid MTO in improving their winter maintenance systems and decrease the amount of road salt applications on highways, resulting in both cost and environmental savings.

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