



ITS Canada News

Carl's Corner

As you read this, we will be making last-minute preparations for the 511 Summit to be held in Ottawa on September 8 and 9. As many of you know, 511 is a complex subject, with a requirement for total stakeholder involvement to ensure its success. In the United States, over 40 jurisdictions have already fully implemented 511; in Canada, Nova Scotia, Yukon and Quebec are operational. Other provinces such as Ontario, Alberta and British Columbia are right behind.



The Summit will pull together needed guidance from across Canadian jurisdictions and provide advice to the federal planners and implementers. Organizations ranging from telecommunications companies, to provincial governments, to engineering and consulting firms will all be present and providing their inputs. ITS Canada will of course also be there as we are co-sponsoring the event with Transport Canada, and have been providing advice and guidance on 511 implementation to the national Council of Deputy Ministers of Transportation for the past few years.

511 is at a cusp, and its evolution is now being cemented. If you are not attending and want to, please contact us immediately!



On the international front, this month sees ITS Canada in Stockholm at the ITS World Congress with a number of our members. Watch the website daily for photo and news uploads between September 20 and 25!

Also internationally, ITS Canada is considering an ITS mission to India in early December (1-6) in conjunction with an Indian national conference on ITS. We have speaking positions and a day devoted to Canada. As you may know from recent industry opportunities sent to members, this market is vast and growing rapidly. If you are interested, please let us know immediately. We are also planning a possible Pacific Rim opportunity in January or February.

Fall is upon us! As they say in the Kansai region of Japan when greeting each other, instead of "hello", "how's business?" !

Carl Kuhnke
Executive Director

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Getting the wheels rolling on rural ITS research

*By Trevor Hanson, MScE, P.Eng, PhD Candidate,
Civil Engineering, University of New Brunswick*

The University of New Brunswick (UNB) had an excellent opportunity recently to conduct intelligence gathering on worldwide innovations in rural ITS through transportation research funded by Transport Canada's ITS Policy Branch. Background investigation determined that the leaders in this field were the State of Alaska (which hosted the National Rural ITS Conference (NRITS) in 2008) in the North American context, and Finland in the European context.

Alaska provides a good example of where ITS for rural and low-density areas in Canada could be in the near future with a concerted effort. Alaska has invested substantially in its weather and traveller information system (including 511), and has innovative deployments, such as the Whittier Tunnel that uses ITS to allow vehicles and trains to use the tunnel at different times during the day. This is an excellent example of maximizing the use of infrastructure using technology involving two separate transportation modes. Given that many rural areas and smaller metropolitan areas have localized congestion during peak periods, ITS could be used to mitigate this. There are considerable challenges to overcome, however, as even well-proven technologies (such as contraflow lanes) have yet to achieve any kind of widespread adoption in these smaller jurisdictions. A test-bed could be an excellent way to demonstrate new technology and educate potential users.

Over time, the use of wireless technology will be very important to helping improve safety and efficiency for rural and low-density locations. During NRITS 2008, there was a special session devoted to IntelliDriveSM. Making the vehicle part of the data collection and sharing processes will be primarily through wireless communications. There are several challenges with IntelliDrive in rural areas (low traffic volumes may make vehicle-to-vehicle communication challenging), but there does not appear to be a test-bed for this technology focused on the rural context.

Looking to the future, Finland is an excellent example of an integrated rural, low-density and urban ITS environment that could be a model for Canada's rural and low-density areas. Several traffic management centres are located throughout Finland (some in areas as small as 50,000 people) and each one has a speciality, such as border crossing monitoring. These centres also coordinate emergency vehicle responses. In addition, there are many kilometres of weather-dependent variable speed limit signs that respond automatically to conditions, as well as being centrally controlled. There is also a sophisticated national road weather monitoring and information service combined with a winter road maintenance service. VTT, the technical research centre of Finland, is leading the charge on numerous ITS innovations, including rural rail grade crossing safety.

Perhaps the most innovative aspect of Finnish ITS is how they incorporate ideology into their decision-making process. While benefit-cost analysis is a common technique for determining the worthiness of a project, Finland has worked to capture the benefits of ITS that traditionally have been difficult to quantify (traveller information). Under their analysis, the technologies they have deployed provide an appropriate return on investment. Transportation agencies in Canada may struggle with how to quantify the benefits of initiatives such as providing up-to-date traveller information to the public, especially when other countermeasures (such as dividing a highway) have such well-documented and evident benefits. This is definitely an area for research.

In terms of next steps for us in Canada, there is considerable opportunity to develop a rural ITS research centre and test-bed that could put Canada on track to become world leaders. UNB has worked with provincial, federal and private sector partners on rural ITS initiatives in the past, and it is hoped that dedicated, long-term funding can become available to get a new research, test-bed and pre-deployment effort off the ground.

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ITS and Freight Security Research Program Update

*By Clark Lim and Tarek Sayed,
University of British Columbia*

Introduction and Research Goals

The Bureau of ITS & Freight Security Engineering (BITSAFS-Eng.) research group was initiated in the summer of 2007 to conduct ITS-related research in the area of goods movement. Specifically, the Bureau's research focus is on the application of goods movement research and intelligent transportation systems technologies to promote secure, safe, efficient, and competitive freight movement through the region, province, country, and across national borders.

The goals of the program are to:

- Investigate, research, develop, and showcase ITS-related applications that support local and national freight security, safety, and efficiency goals
- Establish a national ITS centre in the research of freight movement at UBC, and
- Train and develop students into high-quality personnel to support local and national economic and industry development goals.

Research Team Members

Lead by Professor Tarek Sayed, Director, and Clark Lim, Managing Director, the research staff consists of six full-time staff members:

- Derek Cheng (GIS Specialist)
- Karim Ismail (PhD Can.)
- Karim El-Basyouny (PhD Can.)
- Mohamed El Esawey (PhD Can.)
- Wook Kang (PhD Can.)
- Nicolas Saunier (Research Associate).

The group is already skilled in the areas of: transportation engineering, computer programming, simulation and modelling, economic evaluation methods, GIS, application of high-tech equipment, and survey design and conduct. This allowed the research program to "hit the ground running" with minimal learning of basic research and engineering concepts.

Short-term and volunteer staff also provided research support: Bidoura Khondaker (M.A.Sc. student), Hsu Hua Lu (B.A.Sc. student), Marcus Yu (high school student) and Stephen Su (high school student).

The mix and range of expertise and experience provided a good fit for the various research tasks required to be undertaken. Furthermore, "junior researchers" were introduced to the field of ITS and traffic engineering.

Research Partners and Supporters

The program is funded under a cost-shared contribution agreement between Transport Canada and the BC Ministry of Transportation and Infrastructure, including funding support from TransLink and in-kind support from a number of public and private sector partners. Transport Canada's funding comes from the Strategic Highway Infrastructure Program fund.

Additional partnership, participation and in-kind donations were provided by:

UBC Department of Civil Engineering; GIS Innovations; Safe Software; Canadian Differential GPS (CDGPS); Pitney Bowes-MapInfo; BC Trucking Association; NovAtel; City of Burnaby; Cobra Electric; Extreme CCTV; Vancouver Organizing Committee for the 2010 Olympic and Paralympic Winter Games (VANOC); IRD; IBEO; BC Ministry of Environment.

Research Agenda

Projects below represent six of the projects undertaken by the UBC Department of Engineering under the broader BITSAFS agreement:

Continued next page ...

ITS and Freight Security Research Program Update

Continued from previous page

- **“An Evaluation Methodology for the Testing of Freight Management Strategies at Border Crossings”**: This project consists of the development of an evaluation methodology and decision support system, creation of a micro-simulation tool, and the conduct of value-of-time studies of truck movement across the international Canada/U.S. border.
- **“Spatial Data Repository and Base Mapping System”**: With an understanding that a large quantity of quality data and information will be required to support the overall research program, a spatial data repository and base mapping system was created to provide a “clearinghouse” of essential project data needs.
- **“ITS Lab: Testing and Evaluation of ITS Technologies”**: An ITS laboratory for the testing and development of ITS applications was created. This laboratory provided both a place of investigation, design, and hands-on training and education. Testing and evaluation of high-precision augmented GPS and use of a laser scanner for the collection of traffic-related data were conducted. Furthermore, ITS education-supporting documents were created to provide prospective students with a foundation of ITS knowledge.
- **“Evaluation of AVI Applications at Inspection Stations”**: A micro-simulation of an inspection station was created to test the impact in the use of AVI technologies to allow the bypassing of selected freight carriers. This project also consisted of a comprehensive data collection field study, and an economic analysis that considered costs related to travel time and GHG.
- **“A Risk/Cost-based Algorithm for the Routing of Dangerous Goods”**: This project investigated the development of a risk and cost-based algorithm to provide optimal routing for the transport of dangerous goods within different times of the day. The cost and probability of incidents and plume footprint impacts from potential releases were key considerations.

- **“Truck Signal Priority (TkSP) using Video Sensors”**: A proof-of-concept application was developed that utilizes video sensors to automatically identify and track heavy trucks to provide detailed information to a dynamic truck signal priority (TkSP) algorithm. A micro-simulation was developed to test the concept and provide an environment for the assessment of overall time savings.

The research program is now nearing its completion, with draft versions of all project reports currently being reviewed by federal and provincial partners. The current status of the research projects, including final reports, will be updated on the program website: www.bitsafs.ca.

Given the rising significance of global trade, the prominence of the Pacific Gateway, and the proximity to the Canada-US border, marine ports, rail yards, and key trucking nodes, the University of British Columbia is well positioned to continue supporting the growing research field of ITS and goods movement.

For more information, please contact:

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*ITS Canada
Welcomes New Member Support*

SUSTAINING CORPORATE

Pelmorex Inc. (upgraded from Corporate)

Foreign Affairs and
International Trade Canada



ITS Canada News

IntelliDrive

By Bob Burrows,

Chair – ITS Canada's IntelliDrive Task Force

ITS Canada is moving forward in involvement in IntelliDriveSM. As members likely know, IntelliDrive is an overarching program of the U.S. DOT that is based on having accurate GPS, broadband wide area (cellular or WiMax) and broadband short-range communication (vehicle-to-vehicle, vehicle-to-infrastructure, and vehicle-to-device) in every vehicle while also embracing cyclists and pedestrians. Full background details are available on ITS Canada's website at: www.itscanada.ca/ConnectedVehicles

As Canada moves forward in embracing the U.S. DOT-initiated Intellidrive program and related technologies, ITS Canada has begun the process of forming a Task Force that will help determine how we can best serve our members in this leading-edge facet of the industry. We have received interest from a number of members and we remain keen in securing the interest of our provincial, municipal and transit organization members who will benefit from these new technologies. Your involvement and contributions can help drive the focus for this work in Canada. Should you be interested in joining the discussions, I encourage you to contact ITS Canada's Secretariat at itscanada@itscanada.ca.

It is expected that the first teleconference for the Task Force will be held in early September but I encourage anyone who wishes to assist me in forming an agenda for the first call to contact us.

We have already registered for ITSCanada's use of the IntelliDrive service mark and assisted two members in doing so as well. I recently attended a workshop on the military use of IntelliDrive where, among other things, I was pleased to learn of AASHTO's commitment to have IntelliDrive infrastructure operational by 2014.

IntelliDriveSM is a service mark of the U.S. Department of Transportation

ITS Benefits and Costs

REGISTRATION OPENS FOR IBEC ONE-DAY SEMINAR ON ROAD PRICING

International Benefits, Evaluation and Costs (IBEC) is an international organization with over 400 members from over 50 countries dedicated to information exchange on the methods and results of ITS evaluation. IBEC continues its tradition of sponsoring thought-provoking events on pressing topics of the day with a one-day workshop on road pricing, sponsored by IBEC being held on Sunday, September 20, 2009 in Stockholm, Sweden, in conjunction with the ITS World Congress. Presenters will include keynote speaker Jonas Sundberg of Sweco. Enjoy this opportunity to listen to outstanding road pricing experts, discuss evaluation challenges, partake in the interactive debates, and network with your peers.

To register online, visit:

www.ibec-its.co.uk

Membership in IBEC is free and open to any interested individual. To join, visit the IBEC website at or send an e-mail with full contact information to membership@ibec-its.org.

International Opportunities

An intermodal center in Illinois, U.S., is now moving forward after agreements were signed that allow for the immediate letting of over \$200 million in infrastructure investment, including road, bridge and utility construction as well as a \$400 million railroad terminal facility. CenterPoint Intermodal Center-Joliet, a 3,900-acre integrated intermodal center is a \$2 billion private investment that could generate as many as 15,000 new jobs. In conjunction with CenterPoint Intermodal Center in Elwood, the area is home to the largest inland port in North America, connecting the manufacturing, distribution and agricultural communities in the Midwest to the global marketplace.

News bITS

INFORM YOUR LOCAL COUNCIL ABOUT ITS

Member feedback recently brought to ITS Canada's attention that, when there is a need to present to a local or regional council about intelligent transportation systems, staff would benefit from information that would educate the "layman" regarding the ITS industry.

ITS Canada members can now request the use of the "ITS Primer", a PowerPoint presentation that has been developed to answer some basic questions:

- what is ITS ... definition, description
- benefits of ITS
- ITS architecture overview
- samples of a variety of intelligent transportation systems in action, e.g., RWIS, electronic toll, traveller information through GPS, etc.

Contact the Secretariat for more information.



THE IMPORTANCE OF YOUR PROFILE

There are a growing number of members using ITS Canada's online **Members Directory** to search for specific Canadian ITS capabilities. An excellent example is Foreign Affairs and International Trade Canada, which has just joined ITS Canada. Trade Commissioners from around the globe will now be using our website, and the data within it, to source Canadian capabilities for foreign procurement opportunities.

This feature is a valuable facet of your membership, and is supported through the information included in the online Members Directory. Please review your data, and particularly your corporate profile, and provide the Secretariat with any updates you feel appropriate via email. Profile word limits are 100 words for Corporate members, 200 words for Sustaining Corporate members.

REAL-TIME ROAD SPEED INFORMATION

The City of Toronto has announced that it has completed testing and is using real-time road speed information known as 'io-traffic' from Intellione as a data source in the Toronto Transportation Service's Traffic Management Centre (TMC). The Intellione system uses ordinary signals from mobile networks to calculate road speeds in real time, then reports traffic as a congestion map overlay on the City's internal Transnomis system. Road speeds are now measured and reported on virtually every freeway, collector and street in the Greater Toronto Area.

ITS RESEARCH AND DEVELOPMENT IN CANADA

Using data collected in November 2008, a new report is now available through ITS Canada's website entitled, "*ITS Research and Development in Canada*". This document contains:

- A subset of ITS projects from an *Inventory of Transportation-Related Research Institutes and Programs at Canadian Universities* (the full report is also available from ITS Canada)
- A summary of research projects planned or in progress for 2008-2009 (self-reported by Canadian universities).

Members can access the report online at:

www.itscanada.ca/english/researchanddevelopment.htm

TRANSPORT ADVICE PORTAL (TAP)

A joint venture between the U.K.'s Department for Transport (DfT) and the Institution of Highways and Transportation (IHT) and free to use, TAP is an online technical library devised to help users find up-to-date documents for planning, designing and operating road networks in the U.K. Although geared towards U.K. users, there are sections devoted to ITS (currently 41 items) and to Traffic Management (268 items) that include advice, good practice, reports on research projects, software, etc. The website also indicates users can contact them with specific technical queries: www.tap.iht.org

The portal acts as a one-stop-shop depository of everything from web links to core documents produced by a range of organizations. It can assist users to find specific documents they already know about but will also direct them to helpful information they may not previously have been aware of.

Members in the News



AECOM

Congratulations to **AECOM**: winners of the category “Contribution to Sustainable Transport” in the U.K.’s National Transport Awards!



Alpha Technologies Ltd. has announced the introduction of five new products to expand and update their line of ruggedized, outdoor uninterruptible power supply (UPS) and backup power solutions. Included in this market introduction are three new battery backup system enclosures and two new transfer switches for use in Traffic and Intelligent Transportation System (ITS) applications. Visit www.alpha.com/traffic for more information.



Delcan Corporation has received the Certificate of Completion of Defects and Liability for the Lion Rock Tunnel Traffic Control and Surveillance System (TCSS) from the Electrical & Mechanical Services Department (EMSD) of Hong Kong. This signifies that the Government of Hong Kong is satisfied with and certifies that the project is completed without any defects. Begun in 2005, the Lion Rock TCSS was implemented to update the 1978 manual operator system to a fully computerized single TCSS. The Lion Rock Tunnel is a twin-bored tunnel in Hong Kong. The existing TCSS was installed when the tunnel opened its first tube in 1967, and was later extended to cover the second tube when it opened in 1978. One of the vital functions of the TCSS occurs during evening maintenance periods when one tunnel is closed and the remaining tunnel transitions from one-way to two-way traffic. This contra-flow feature of the Traffic Control and Surveillance System (TCSS) is one of the critical system requirements of the contract implemented by Delcan.



INTERNATIONAL ROAD DYNAMICS INC.

International Road Dynamics Inc. (IRD) has been awarded a contract for Virtual Weigh Stations by the Pennsylvania Department of Transportation valued at approximately US\$2.1 million (CA\$2.3 million). The contract is for the supply and installation of 17 systems to be delivered and installed over the next 16 months, and are in addition to the eight previously installed IRD Virtual Weigh Stations in the state. The contract also includes a three-year maintenance and service contract for all 25 installed stations. The Virtual Weight Stations will be deployed statewide and used by the Pennsylvania State Police Motor Carrier Enforcement Division to screen for overweight trucks. Using a web based browser, multiple users can connect simultaneously through their laptops via a local wireless network. All the systems will include IRD’s iSINC (Intelligent Sensor Interface Network Controller), operational software and IRD/PAT 1.75m Bending Plate sensors. The sensors are configured in a double-threshold configuration and will weigh each vehicle wheel twice, providing higher accuracy weight results.



MARK IV IVHS and Kapsch TrafficCom submitted a joint proposal in response to the North Carolina Turnpike Authority’s request for proposal with respect to the procurement of an electronic toll collection system using tag and reader technologies. MARK IV, supplier of the biggest ETC system in the U.S. – the E-Z Pass network operated by the Inter Agency Group (IAG) – and Kapsch TrafficCom established a JV in order to bid together for the Triangle Expressway Electronic Toll Collection RFP. The joint proposal merges the proven 915MHz technology with the latest advancement in 5.9GHz DSRC technology to meet today’s requirements and the future needs of NCTA and its tolling customers.



Upcoming Events ... Visit ITS Canada's website for more events

77th IBTTA Annual Meeting & Exhibition

September 13 to 16, 2009 – Chicago, IL

www.ibtta.org/Events

VIII Congreso Internacional ITS

September 14 to 18, 2009 – Buenos Aires, Argentina

www.congresodevialidad.org.ar

16th World Congress on ITS

September 21 to 25, 2009 – Stockholm, Sweden

www.itsworldcongress.com

TAC Annual Conference & Exhibition

October 18 to 21, 2009 – Vancouver, British Columbia

Transportation in a Climate of Change

www.tac-atc.ca

9th International Conference on Telecommunications for ITS

October 20 to 22, 2009 – Lille, France

<http://itst2009.inrets.fr>

2nd World Roads Conference

October 26 to 28, 2009 – Suntec, Singapore

www.wrcsingapore.sg

CUTA Fall Conference and Trans-Expo

November 7 to 11, 2009 – Montreal, QC

www.cutaaactu.org

2009 Toll Road Summit of the Americas

November 15 to 17, 2009 – São Paulo, Brazil

www.ibtta.org/Events

TranspoQuip 2009

November 17 to 19, 2009 – São Paulo, Brazil

www.transpoquip.com

Australian Intelligent Transportation Systems Summit 2009

November 19 and 20, 2009 – Melbourne, Australia

www.its-australia.com.au/main

ITS for Mobility and Safety Management

December 3 to 5, 2009 – India

viney.gupta@international.gc.ca

Gulf Traffic

December 6 to 8, 2009 – Dubai, UAE

www.gulftraffic.com

Annual Polis Conference

December 10 and 11, 2009 – Brussels, Belgium

www.polis-online.org

Viet Transport

December 9 to 11, 2009 – Hanoi, Vietnam

www.viet-transport.com

Road User Charging Conference

January 13, 2010 – London, England

www.its-uk.org.uk/events

SIRWEC: Standing International Road Weather Commission Conference

February 8 to 11, 2010 – Quebec City, Quebec

www.sirwec.org/en/index.php?page=next_conference

16th International Road Federation (IRF) World Road Meeting

May 25 to 28, 2010 – Lisbon Portugal

www.irf2010.com

FISITA World Automotive Congress

May 30 to June 4, 2010 – Budapest, Hungary

www.fisita2010.com



Save the date! ITS Canada's 2010 Annual Conference will be held on June 13 to 16, 2010, in Ottawa, the nation's capital. It's sure to be an exciting year leading up to the Conference, with the expected widespread infrastructure spending. Be sure to be a part of this exciting event to hear first-hand about the latest in ITS deployments as well as research and development initiatives. Mark your calendar and stay tuned for more details to come!