



ITS Canada News

ITS Canada Awards 2007 Scholarship

ITS Canada Michel Van Aerde Memorial Scholarship for Graduate Study in ITS

By William Johnson, TRENDS

ITS Canada's Education and Training Committee is pleased to announce the recipient of ITS Canada's Michel Van Aerde Memorial Scholarship for 2007. The award of \$5,000 is made through a competitive process to a student registered full-time in a graduate studies program related to intelligent transportation systems at a Canadian university.

Mohamed Wahba of the University of Toronto is the successful winner of the award for 2007. The Review Committee made its selection based on his strong academic record, clearly stated goals, demonstrated understanding of ITS and strong letters of recommendation.

Mohamed is a graduate student for the Ph.D. degree in Transportation Engineering at the Department of Civil Engineering, University of Toronto. He demonstrated in his application an outstanding academic record, with degrees in Science (Cairo – B.Sc. in Operations Research), Management Sciences (Cambridge – M.Phil.) and Transportation Engineering (Toronto – M.Sc.) He has demonstrated innovative thinking in his research on transit system analysis, has gained research and field experience in ITS applications, and demonstrated in his written submission an understanding of the role of ITS in transportation.

The Review Committee was impressed with his letters of recommendation and with the indications of his teaching and mentoring skills. His Masters thesis topic at Toronto was "A New Framework for the Transit Assignment Problem: A Multi-Agent Learning-Based Approach", which formed the basis of several of his conference papers.

ITS Canada extends congratulations to Mohamed and wishes him every success in his graduate studies.

We thank all the candidates who competed for the 2007 award, and invite potential applicants to watch the website for future scholarship opportunities.

www.itscanada.ca/english/scholarships.htm

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Industry Opportunities in South Africa

The Johannesburg Roads Agency (JRA) is beginning the implementation of an extensive transport plan in preparation for the 2010 soccer World Cup. Intelligent transport systems form the foundation of the City's plan that will see a proposed R350 million spent on a number of key transport projects. For this financial year, about R54.6 million, funded by the City of Johannesburg, will go toward the initiation of some of these advanced traffic management systems projects. For the next financial year, R190 million, funded by the Department of Transport, has been allocated.

JRA operations manager for network mobility Peter Filbey explains that it is necessary to first optimize the efficiency of the existing basic transport infrastructure. This refers specifically to traffic signals (traffic lights) in the City that are often the cause of congestion owing to power outages or general equipment failure. Filbey says that, for the past six months, a pilot project has been running whereby traffic signals at key intersections have been equipped with uninterruptible power supplies. Two models have been tested, one providing battery power for 2 hours and the other for 12 hours.

About R8 million is also being spent on traffic signals for the conversion of conventional lights to light-emitting diodes (LEDs). Filbey explains that the LEDs, which will soon be implemented across the City, are brighter and use about 60 percent less energy than traditional lights. He adds that although the initial spend is higher, it will cut the energy bill for running the lights by up to 50 percent.

After dealing with basic infrastructure, the plan covers more advanced transport systems. In July, construction will start on a new traffic management centre (TMC), located in Martindale. The TMC will accommodate the central computers required to support the ITS elements and its operators. Filbey comments that it will function as a control room for all the ITS, and will also enable operators to view the real-time footage gathered by the closed-circuit television cameras along the road network.

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Members of the JRA, the Johannesburg Metropolitan Police Department, the emergency services and disaster management personnel will be stationed at the centre. Filbey notes that the most important focus of the plans leading up to 2010 is the provision of efficient, safe and reliable public transport systems in Johannesburg.

A number of ITS projects will be implemented in the development of public transport. Advanced public transport management systems (APTMS) will be implemented between March 2008 and August 2009. In conjunction with this project, the advanced traveller information systems (ATIS) project will run from February next year to the end of January 2010. The APTMS is aimed at enhancing the efficiency of public transport fleets and creating a positive user experience through the provision of information and an effective fare collection system. The ATIS involves providing information to travellers through the Internet, variable-message signs and different forms of media. Through these projects, travellers will have access to an intermodal journey planner. On a dedicated website, an individual will be able to put in a destination and receive information regarding the bus and Gautrain schedules and which modes to use. The user will then be able to plan a trip and have an accurate indication of how long the journey will take.

The bus rapid transit system will also benefit from ITS. A real-time passenger information system will give passengers access to the bus schedule with arrival and departure times. Cameras will be installed on buses and at the bus stops to facilitate the provision of the real-time information.

The efficiency of the bus system will be further augmented by the implementation of an intersection priority control system. The system will be linked to the traffic signals, enabling operators to coordinate signals to allow buses the right of way and ensure that the signals are green at the intersections along their routes. A headway system will also be put in place to internally manage the buses. It will identify the distance between buses and the number of passengers on board, and will determine which vehicle needs priority.

Tremendous Potential for ATMS in Western Europe

Advanced traffic management systems (ATMS) are receiving considerable attention across Western Europe, particularly given surging traffic congestion and pollution levels. While the UK, France and Germany together account for around 63 percent of total market share at present, future revenues will come primarily from Scandinavia, Greece, Portugal, Italy and Spain. This is because these markets are growing rapidly, as they focus ever more intensely on improving traffic management activities.

New analysis from Frost & Sullivan, *Strategic Analysis of Advanced Traffic Management Systems in Western Europe*, reveals that revenues in this market totalled US\$884.79 million in 2006, and are likely to reach \$1,216.32 million in 2015 due to significant advances in processing technologies for video detection and rising congestion in urban and interurban areas.

"Rising congestion levels on road networks are creating plenty of scope for advanced traffic management systems in Western Europe," notes Frost & Sullivan research analyst Sraavani Dodletti. "Traffic volumes have been on the rise despite the implementation of congestion charging schemes, forcing government authorities to implement traffic management systems as a means of reducing journey times and cutting costs."

In addition, increased investment by the Trans European network (TEN) in the traffic sector is leading to growth and development in the ATMS market. The total investment made by TEN ranges from US\$1 billion to \$2 billion, and six European projects have been selected to drive forward this growth and development. These projects span 14 member states in Europe, and involve major national and regional traffic authorities and operators.

As regards market trends, there is an increasing shift from loop detectors to overhead detection systems. Overhead detectors have proven themselves to be effective alternatives to inductive loop detectors, since traffic flow patterns measured with these non-intrusive sensors meet the accuracy requirements of a large number of trunk-road applications. Aside from this, the video detection market is an emerging market, which is steadily gaining pace, and is witnessing significant advances in technology related to improving the processing power and flexibility of applications.

However, despite all these positive aspects, budgetary constraints remain a major impediment to the further uptake of advanced traffic management systems. Given their limited budgets, local authorities are less likely to experiment with new measures that have not yet been tried and tested in the field.

"Given the enormous scope for revenue generation in the traffic sector, it is essential that the government and public authorities recognize the importance of increasing budgetary allocations for the traffic industry," says Sraavani. "This will in turn encourage more companies to create new technologies through research and development."

Government and public authorities can increase their budget allocation through revenues from congestion charging and toll collection schemes. This will increase budgets for the traffic management industry. Increased budgets are also available through strategic partnerships with private companies.

Strategic Analysis of Advanced Traffic Management Systems in Western Europe is part of the Automotive and Transportation Growth Partnership Service program.

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ITS Canada News

ITS Canada Supports Use of 5858-5925 MHz Band for ITS DSRC

The next breakthroughs in ITS will be based on wireless telecommunications between vehicles, and between vehicles and the roadside. A key component of this will be the use of Dedicated Short-Range Communications (DSRC) to make transportation infrastructure “intelligent”. This approach is expected to result in the highest level of road safety, efficiency and travel convenience benefits that should be achievable with such systems.

Making infrastructure intelligent is currently a priority undertaking in the United States, where the Vehicle Infrastructure Integration (VII) initiative is working to deploy advanced vehicle-vehicle and vehicle-infrastructure communications that could keep vehicles from leaving the road and enhance their safe movement through intersections. U.S. automobile manufacturers are investing heavily in VII in cooperation with the U.S. federal government.

There are a wide range of safety applications suitable for DSRC, including adaptive cruise control, intersection collision avoidance, lane departure alerts, incident detection and notification, approaching emergency vehicle warning, braking information sent to surrounding vehicles, lane changing assistance, road works warning, adaptive lighting, etc.

There is also the possibility of “train-to-vehicle” and “grade crossing-to-vehicle” communications for grade crossing collision avoidance applications, particularly for road-rail crossings not equipped with automatic crossing warning systems. “Crossing-to-vehicle” communication may also offer a solution for an alternate route if it is suspected that the crossing may be occupied by a train for a long period of time. Given that trains are unable to stop in a short distance, trains and crossings should be classified as “public safety”.

At a recent meeting of the World Road Association (PIARC), both VII and a parallel European initiative called the Cooperative Vehicle-Highway Systems (CVHS) were discussed. The general sentiment at the meeting was not ‘if’ intelligent infrastructure was coming, but ‘when’.

Transport Canada has been an active participant in the process of assigning the 5858-5925 MHz band to ITS applications.

ITS Canada has submitted a letter of support to Industry Canada regarding the proposed spectrum utilization policy, technical and licensing requirements to introduce dedicated short-range communications-based intelligent transportation systems applications in the band 5850-5925 MHz. The proposal can be found on Industry Canada's website at:
<http://strategis.ic.gc.ca/epic/site/smt-gst.nsf/en/sf08744e.html>.

ITS applications using DSRC offer a number of benefits that fall within key transportation objectives. Since a continuing priority is the safety of the transportation network, the use of DSRC for ITS applications is strongly supported because of the safety applications this would enable. While it is not Industry Canada's intent to provide an exhaustive list of all ITS applications using DSRC, ITS Canada supports an emphasis on safety as a primary driver of the designation of the band for ITS applications.

Transportation goals also often include improving the efficiency of the transportation network, helping to reduce congestion, and mitigating the negative effects of transportation on the environment. ITS that use DSRC can also contribute to these priorities.

ITS Canada supports the use of the 5850-5925 MHz band for these applications and other commercial uses such as electronic tolling and traveller information.

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ITS Canada News

ITS DSRC

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Finally, it is very important that the Canadian spectrum utilization policy for ITS be harmonized with the U.S. This implies identical standards for the equipment and its operating software. The continental mobility of travellers requires that DSRC-accessed ITS services available to Canadian motorists should also be available in the U.S. and vice versa, implying that all On-board Units (OBUs) should be able to communicate with all Roadside Units (RSUs) in both countries. Again, this is a safety consideration so that travellers do not lose the safety benefits of their DSRC-based equipment. In addition, automobiles sold in Canada are designed for the U.S. market, so intelligent infrastructure initiatives in Canada will inevitably need to closely parallel the U.S. initiative. Anything that may jeopardize the complete cross-border compatibility of the system should be avoided.

ITS Canada supports the use of the American Society for Testing and Materials (ASTM)-DSRC standards, to ensure that Canadian equipment will be interoperable with U.S. equipment. ASTM has already been adopted in Canada for other applications. Furthermore, ITS applications operated by government entities in Canada can benefit from lower procurement and operating costs when standardized equipment can be sourced from and supported by a variety of competing suppliers.

Should you have any questions, please contact Colin Rayman, ITS Canada's General Manager, at colin.rayman@itscanada.ca.

*ITS Canada Welcomes
New Member*

SUSTAINING CORPORATE
Johny Tiedown

News bITS

New U.S. Publications Available

ITS/Operations Resource Guide 2007 (U.S. Department of Transportation)

Contains a compilation of over 400 documents, videos, Websites, training courses, software tools, and points-of-contact related to ITS and transportation operations. Visit:

<http://www.resourceguide.its.dot.gov>.

Weather Applications and Products Enabled Through Vehicle Infrastructure Integration (VII) - Feasibility and Concept Development Study (U.S. Federal Highways Administration)

This document examines current and future vehicle data elements that have the potential to be used directly or indirectly to sense weather and road conditions. VII involves the two-way wireless transmission of data from vehicle-to-vehicle and vehicle-to-infrastructure utilizing Dedicated Short Range Communications (DSRC).

VII will enable the development of weather-related products and applications designed to improve safety and increase mobility and efficiency along the nation's roadways. The potential contribution of VII-derived atmospheric and road condition information in the analysis and prediction of weather-related hazards is also explored. To make effective use of mobile data for weather-related applications, it is necessary to invest in research to understand issues associated with current and anticipated data elements; therefore, VII-related research and development topics are surveyed, as well as the feasibility of utilizing VII-enabled data to mitigate the impact of road weather-related hazards. Visit:

www.ops.fhwa.dot.gov/publications/viirpt/index.htm.

Members in the News

APPLANIX[®] A TRIMBLE COMPANY

Responding to client demand for even greater orientation accuracy and superior performance in areas where Global Positioning System (GPS) coverage may be limited, **Applanix** has announced the launch the POS LV 610, a turn-key solution designed for the specific needs of mobile mapping service providers and engineering/survey professionals. The first Applanix POS LV 610 unit has already been purchased by Toyota Central R&D Labs Inc. for use in vehicle dynamics reference data gathering to better study vehicle motion and road positioning. Applanix POS LV units are used around the world for a variety of applications, including advanced vehicle design research and engineering, roadway geometry surveying and pavement inspection, mobile mapping operations for road and rail right-of-ways and robotic vehicle automation. For more information, visit www.applanix.com.



Daktronics has been awarded a project to engineer, manufacture and provide walk-in dynamic message signs (DMS) for use by the Ohio Department of Transportation (ODOT) on freeways near Columbus, as part of a US\$8 million ITS improvement. ODOT has purchased 12 full-matrix Vanguard[®] walk-in signs with the latest in light emitting diode (LED) technology, providing reliability and allowing easier access for service and maintenance inside the sign cabinet. The full-matrix capabilities of the sign allow the combination of graphics and text to effectively communicate important traffic information to motorists. The signs are controlled by the Daktronics VFC-3000 sign controller. ODOT will use the signs to display traveller information and AMBER Alerts.



Delcan's California Department of Transportation's (Caltrans) District 7 project to relocate the existing Traffic Management Center (TMC) to the new Los Angeles Regional Transportation Management Center (LARTMC) was awarded the "Best of ITS" award under the Partnership Deployment category. The award was presented at ITS America's Annual Meeting & Exposition in Palm Springs, California, in June 2007. Delcan developed and implemented the plans to transfer operational systems from the existing TMC in Los Angeles to the new LARTMC, as well as upgraded the existing Advanced Transportation Management System (ATMS) software to a new web-based ATMS system. The Delcan team provided operational and system requirements to the architectural design firm so that the building design properly reflected the spacing, electrical, HVAC, cabling and communications needs of the TMC's operations. Delcan's plan minimized and, in most cases, eliminated system downtime. For more information, visit www.delcan.com.



Telvent has been awarded two contracts for the deployment of the electronic National ID (NID) system in Spain. Valued at more than 30 million euros, under the project all Spanish citizens will have a high-security document that includes both the physical and digital identity of the holder. Using the card, Spaniards will be able to securely access a wide range of services, including transactions with government agencies, financial institutions and Internet purchases. Telvent will supply personalization systems for the electronic NID, specifically the hardware and software required for laser recording of citizens' personal data on their NID cards. The electronic NID system is expected to be available throughout Spain by the end of 2007, and complements Telvent's recently completed project for electronic verification of identification documents at Spanish border check-points.



Upcoming Events

2007

Asia Traffic

July 9 to 12, 2007 – Singapore
www.asia-traffic.com

ITE 2007 Annual Meeting and Exhibition

August 5 to 8, 2007 – Pittsburg, PA
www.ite.org

23rd World Road Congress (PIARC)

September 17 to 21, 2007 – Paris, France
www.paris2007-route.fr

VII Congreso Espanol ITS

September 18 to 20, 2007 – Valencia, Spain
www.itsspain.com

6th Chilean ITS Congress

September 26 to 28, 2007 – Santiago, Chile
www.itschile.cl

Trafic 2007 (IFEMA)

October 2 to 5, 2007 – Madrid, Spain
www.trafic.ifema.es/ferias/trafic/default_i.html

75th IBTTA Annual Meeting and Exposition

October 6 to 10, 2007 – Vienna, Austria
www.ibtta.org

National Rural ITS Conference

October 7 to 10, 2007 – Traverse City, MI
www.nritsconference.org

14th World Congress on ITS

October 9 to 13, 2007 – Beijing, China
www.itsworldcongress.cn

Intertraffic North America

October 10 to 12, 2007 – Fort Lauderdale, Florida
www.intertraffic.com

TAC Annual Conference and Exhibition

October 14 to 17, 2007 – Saskatoon, SK
www.tac-atc.ca

CUTA Fall Conference and Trans-Expo 2007

November 10 to 14, 2007 – Québec, QC
www.cutaactu.ca

Gulf Traffic Exhibition and Conference

December 10 to 12, 2007 – Dubai, UAE
www.gulftraffic.com

2008

ITS CANADA ANNUAL CONFERENCE AND GENERAL MEETING 2008

Montreal ~ Quebec ~ Canada
www.itscanada.ca/montreal2008

15th World Congress on ITS/ITS America's 2008 Annual Meeting & Exposition

November 17 to 20, 2008 – New York, NY
www.itsa.org/worldcongress.html

CUTA Fall Conference and Trans-Expo 2007

Theme: The Way Forward

Call for Abstracts

Open to all current CUTA Members

Visit www.cutaactu.ca/en/node/1541 to submit your presentation abstract online