INTELLIGENT TRANSPORTATION SYSTEMS

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IEEE ITS COUNCIL NEWSLETTER

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Issue	Due date
January	December 1^{st}
April	March 1^{st}
July	June 1^{st}
October	September 1^{st}

THE IEEE INTELLIGENT TRANSPORTATION SYSTEMS COUNCIL

COMMITTEES

SOCIETIES REPRESENTATIVES

Council News

From the Editor

by Alberto Broggi

Dear colleagues,

only a few words to introduce this new issue of our newsletter; this issue includes two interesting feature articles and reports on our Council's activities. The main piece of news is that our Transactions (the IEEE Transactions on ITS) is now managed electronically so –we believe– this will reduce review times and increment the number of submissions.

We have a short report from our flagship conference regarding SARS probelms, plus our usual section on Call-For-Papers and list of next interesting events.

If you have announcements or comments you would like to share, please contact me at broggi@ce.unipr.it. We hope you enjoy your issues of the IEEE ITSC newsletter. Please send comments and suggestions to me as well.

Message from the IEEE ITS Council President

by Charles J. Herget

We are now in the fifth year as a council of IEEE. At this time, we are in the process of making a decision whether to remain a council or become an IEEE society. I would like to receive input from the readers of this Newsletter on this topic.

First, let me give some explanation on the organization of IEEE to put the matter into perspective. IEEE is the world's largest professional organization with over 300,000 members worldwide. In order to accommodate the diverse technical interests of such a large organization, IEEE is divided into societies. Currently there are forty-one societies. These societies range in size from a few thousand to some with several tens of thousands of members.

As new technologies emerge, IEEE has a procedure that permits an entity to be formed that can conduct most of the activities of a society without actually being a society. That entity is a council. A council is an organization formed by societies having an interest in an identifiable technology that is not totally within the scope of an existing society. The Council on ITS is a good example of this process. In the past, the technologies represented by IEEE were not a significant part of the transportation industry. However, as electronics and computers have become widely used in transportation, the technologies in IEEE have come to play a significant role and have become identified under the name Intelligent Transportation Systems.

The Council on ITS was approved by IEEE and began operation in 1999. Currently, it consists of seventeen member societies.

As a council, we conduct many of the activities of a society. We have an annual conference and an annual symposium. We publish a transactions and this newsletter. We have formed an ad hoc committee to consider the options for the future. The options we are considering are (1) becoming a society, (2) remaining a council, and (3) merging with an existing society.

As a society, one of the added activities we could pursue that I think would be of interest to many of the readers of this newsletter is to form chapters. Chapters of IEEE are regional entities that hold local meetings of members of a society. Because a council does not have members, it cannot form chapters. We have received several requests from around the world to form chapters on ITS; however, we have no mechanism for doing so at the present time.

With this background, I would like to solicit your input. Do you think we should become a society? If so, would you join the society? Would you like to participate in a local chapter of the ITS Society if it existed? Please send me your comments at c.herget@ieee.org.

I would like to thank those who responded to my request in the last issue for volunteers. I received responses from several people who volunteered to serve in various activities on the Council.

I welcome your input on suggestions for improving the services of the Council to our profession.

Calendar of Council Events

by Emily Sopensky

Next Meetings are scheduled as follows:

ITS Council Administrative Committee Meetings:

October 12, 2003 ..... Shanghai, China
during IEEE ITSC 2003

IEEE Intelligent Transportation Systems Conferences:

October 12–15, 2003 ..... Shanghai, China
October 3–5, 2004 ..... Washington, D.C., USA
2005 ..... Vienna, Austria
2006 ..... Toronto, Canada

IEEE Intelligent Vehicles Symposia:

June 8, 2003 (demos) ..... Marysville, Ohio, USA
June 9–13, 2003 ..... Columbus, Ohio, USA
June 14–17, 2004 ..... Parma, Italy
2005 ..... Las Vegas, NV, USA

The VISTA Project and Its Applications

by Fei-Yue Wang, Zhixue Wang, and Pitu B. Mirchandani

The VISTA Project and Its Applications

Reprint of the article appeared in
IEEE Intelligent Systems, November-December 2002, p.72–75

Fei-Yue Wang is a professor in the University of Arizona's Systems & Industrial Engineering Department and the director of the University's Program for Advanced Research for Complex Systems. He is also the director of the Intelligent Control and Systems Engineering Center at the Chinese Academy of Sciences' Institute of Automation. His major technical interests are intelligent and complex systems. He received his BS in chemical engineering from the Shandong Institute of Chemical Technology, his MS in mechanics from Zheijiang University, and his PhD in Computer Science and Systems Engineering from Rensselaer Polytechnic Institute. Contact him at feiyue@sie.arizona.edu.

Zhixue Wang is a research scientist at the Chinese Academy of Sciences' Intelligent Control and Systems Engineering Center. His major technical interests are intelligent control, intelligent vehicles, and embedded systems.

Pitu B. Mirchandani is the Salt River Project Professor of Technology at the University of Arizona and has joint appointments in the university's Systems & Industrial Engineering Department and Electrical & Computer Engineering Department. His technical interests include optimization, logistics and design of real-time decision and control systems, and distribution of services and goods. He received his BS and MS in engineering from the University of California, Los Angeles, and his SM in aeronautics and astronautics and his ScD in operations research from the Massachusetts Institute of Technology. Contact him at the Systems & Industrial Eng. Dept., Univ. of Arizona, Tucson, AZ 85721; pitu@sie.arizona.edu.

In Arizona, a window of opportunity exists for using planned infrastructure expenditures to construct "intelligent lanes" on Interstate Highway 10 between Phoenix and Tucson for deploying intelligent vehicles (IVs). The Arizona Department of Transportation (ADOT) has identified the need for a third lane on I-10 in each direction between the two cities by 2005 and a fourth lane by 2020. Research shows that deploying IVs is feasible and beneficial if the communication and electronics infrastructure can be incorporated with minimal additional cost into the construction of additional lanes.[1] In fact, a study by BRW has proposed a six-phase, three-track approach that addresses both the need to increase the Phoenix-Tucson corridor's capacity and the deployment of IVs if necessary.[2]

Although BRW discussed options for IV technologies for the PhoenixTucson corridor, it did not recommend any specific technology. The choice of technology involves these issues:

- The vehicle's "intelligence" must be affordable by a large segment of the population.
- Initially, conventional vehicles should be able to use the infrastructure.
- The additional agency cost for equipping the infrastructure must not be so high that it offsets the IV's benefits.

In 1998, the University of Arizona formed the Vehicles with Intelligent Systems for Transport Automation research team, which the ADOT charged with the mission of investigating new and existing technologies and concepts that address those issues. The Arizona state legislature and ADOT funded the VISTA Project initially. The VISTA team consisted of 16 faculty members, research associates, and assistants from the University of Arizona and Arizona

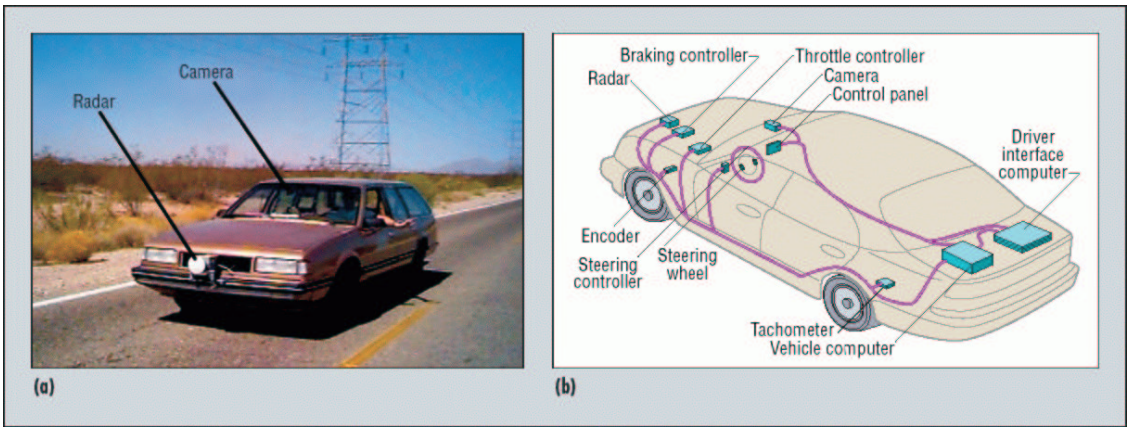

Figure 1: *(a) VISTA Vehicle I and its (b) hardware (based on the PATH vehicle4).*

State University.[3] Since 2000, the VISTA project has been continuing as a joint project with the Chinese Academy of Science's Intelligent Control and Systems Engineering Center (ICSEC), sponsored partly by the University of Arizona's ATLAS (Advanced Traffic and Logistics Algorithms and Systems) Center, China's National Natural Science Foundation, the Triangle Group, and the CASIC Corporation.

The vehicle and control system

To demonstrate the deployability of VISTA's IV and automated-highway-system concepts, the team built VISTA Vehicle I, a demonstration vehicle based on the PATH (Partners for Advanced Transit and Highways) Vehicle.[4] Figure 1 shows VISTA Vehicle I and its hardware. VISTA Vehicle II, built at ICSEC, is equipped with an additional Differential Global Positioning System, an inertial measurement unit, and a laser reader that determines the vehicle's position and velocity by reading a special bar code on the ground for calibration.

Based on the behavior-programming approach for robotic vehicles,[5] the VISTA vehicles' control system comprises a set of hierarchically organized agent programs. These agents perform such functions as long-range path planning, radar-based headway maintenance, radar-based road following, and close vehicle following. One agent classifies the driving conditions into different modes and then activates the agent corresponding to the current mode to control the vehicle.

Figure 2 presents the VISTA control system's hierarchical control structure.

Each agent consists of a set of fuzzy rules that organize basic control commands. The system obtains many of the fuzzy rules directly by mimicking human driving behaviors. Because fuzzy control rules use linguistic terms such as "if the distance between the two vehicles is a little large, then increase the speed a little bit," the team can easily convert human driving skills and experiences into agents. At first, the system used a nonadaptive fuzzy technology. Later, the team implemented the neurofuzzy method[3] to add learning capability to the agents to improve driving performance.

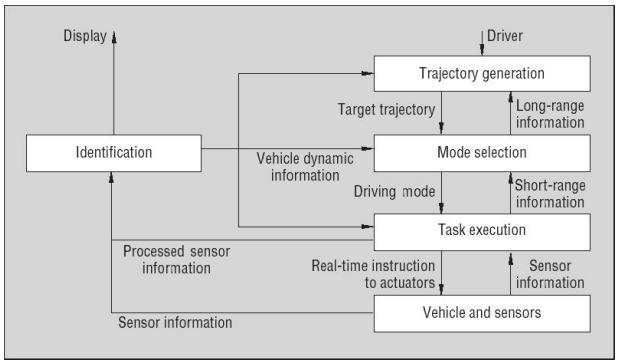

Figure 2: *The VISTA control system's hierarchical structure.*

Methods

To achieve the specified objectives, the team has developed and tested three methods.

The first is *calibration-based vehicle control* instead of guidance-based vehicle control. The team uses bar code-based *calibration stations* to determine the vehicle's position with high accuracy. These stations also offer a parameterized curve representing the center line of a lane to be followed for a long distance

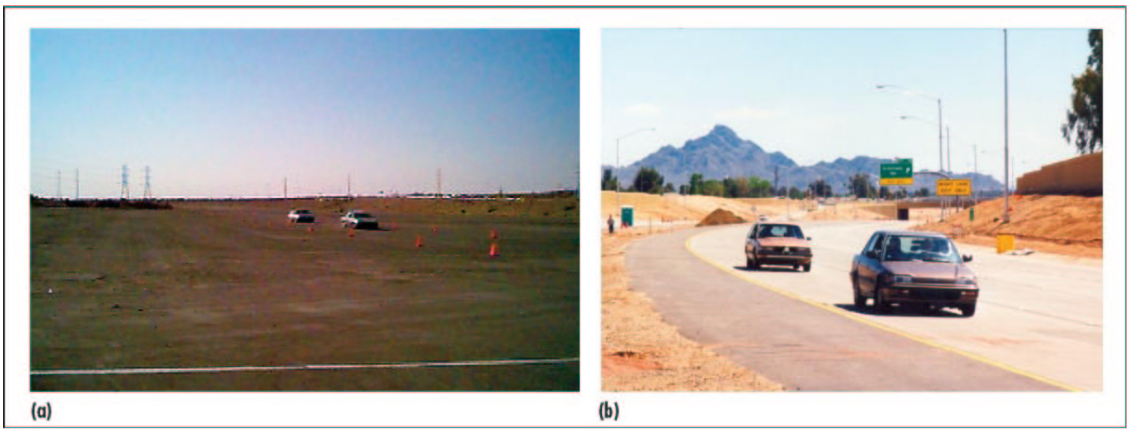

Figure 3: *(a) Field test and (b) demonstration of autonomous control of VISTA Vehicle I on Highway 51 in Phoenix, Arizona. (In both pictures, the front car is a human-driven test vehicle and the car behind is VISTA Vehicle I.)*

ahead. The distance between two stations is relatively large (about one mile in the test); between them, the vehicle uses only the in-vehicle sensory information for driving. The control system recalibrates the in-vehicle sensors when the vehicle passes a station. This method reduces the cost of constructing and maintaining road-site sensors and provides vehicles with long-range road information.

The second method is *trajectory planning and optimization* based on the long-range road information. This can help reduce energy consumption and air pollution while increasing traffic throughput for vehicles and traffic control.

The third is *distributed hierarchical agent-based control* instead of traditional functional decomposition into sensing, planning, and acting. As we mentioned before, the vehicle control system is decomposed into hierarchically organized special-purpose task-achieving modules-that is, agent programs.

On 21 March 1999, the VISTA team successfully demonstrated autonomous control of VISTA Vehicle I to its Technical Advisory Committee at an Arizona State University field test (see Figure 3a). On 27 and 28 April 1999, the VISTA team successfully demonstrated VISTA Vehicle I's longitudinal and lateral controls to the public and ADOT on Highway 51 in Phoenix (see Figure 3b).

Applications

The three methods have applications in many fields; here are three examples.

Automated vehicle proving grounds. Deployment of calibration-based vehicle control (or any automated driving techniques, for that matter) for automated driving on highways will take a long time. However, this method is practical, economical, and reliable for constructing automated vehicle-proving grounds to test mass-produced cars. Because proving grounds are controlled, known environments, barcode-based calibration stations can provide accurate information on vehicle position and velocity. They can also greatly simplify the computational and communications requirements for automated driving on vehicle test tracks.[6] China's National High-Technology Research and Development Program (also called the 863 Program) is using calibration-based vehicle control to construct a prototype of an automated vehicle- and tire-proving ground.

Recommending vehicle speeds and steering angles. Current technologies such as Global Positioning System, Global Information System, Global System for Mobile Communication, and digital maps support long-range road information. Because the VISTA approach exploits such information, vehicle trajectory planning and optimization become practical and useful. The current GPS-based vehicle navigation systems give drivers only the direction and distance. With optimal-trajectory planning, a vehicle navigation system can calculate online or offline the desired vehicle speed and steering wheel angle, at any time and point, for driving to a destination on a specified path. The system can also take into account optimality criteria such as minimum energy consumption, minimum time, and minimum jerk (the rate of change in acceleration). So, instead of just suggesting direction and distance, the system might also recommend the appropriate speeds (for example, telling the

driver to speed up or slow down a little bit) and steering angles (for example, telling the driver to turn the steering wheel left or right a little bit). Initial results for this application appear elsewhere.[7]

Individualized automatic vehicle control. Because human driving skills and experiences are easily converted into agents, VISTA's control system can train an autonomous IV to acquire a human driver's behavior using a neurofuzzy network. The basic idea is to install an initial automated control system using a fuzzy-logic agent and then modify its control rules to fit an individual driver's behavior.

To achieve this, the system records driving actions and the corresponding vehicle motions during the learning phase. Through the neurofuzzy network implementation of the initial control system, the system plays back the recorded information offline as the training data to refine the membership functions for linguistic-input signal patterns, output control actions, and conjunction operators in the fuzzy reasoning. After extensive training, automated driving adapts to the driver's behavior.

This method provides an effective mechanism to construct driving control systems with personality for IVs. Initial results for learning longitudinal driving behaviors appear elsewhere.[8]

The US Federal Highway Administration, ADOT, and CASIC are sponsoring the Arizona Digital Highway Project through the ATLAS Center. This project uses VISTA's methods to develop and test digital vehicle and highway technologies to enhance driving safety. The project's basic technical concept is that if, through state-of-the-art sensor and geolocation technology, a vehicle knows within centimeters where it is and knows to a similar precision where the roadway is, many highway accidents can be prevented by warning drivers of possible hazardous situations. Furthermore, if, through vehicle-to-vehicle communication, the vehicle knows where all other vehicles in its vicinity are, most highway fatalities can be eliminated. The project will be completed in 2005.

Acknowledgments

We express our appreciation to the VISTA team for their great effort in the project. We al thank the Arizona Dept. of Transportation, especially Tim Wolfe and Steve Owen, for their support and confidence in our endeavor. Finally, we appreciate the VISTA Technical Advisory Committee's input. The State of Arizona Dept. of Transportation, the US Dept. of Transportation, an Outstanding Oversea Scholar Award, and the Outstanding Young Scientist Research Fund partly supported this research.

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ITS, Eh! Meet Canada's Flagship ITS Centre and Testbed

by Baher Abdulhai

ITS, Eh! Meet Canada's Flagship ITS Centre and Testbed

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Ontario has always been a Canadian leader in recognizing the importance and potential of applying emerging technologies to address significant mobility, environmental, and economic challenges in transportation.

The first large-scale application of computerized signal control systems, Torontonians brag, was in Metropolitan Toronto during the early 1960s. More recently, changeable-message-sign driver information systems (such as COMPASS, www.mto.gov.on.ca/english/traveller/compass) for freeway control have been introduced in the Greater Toronto area. Also, an imaginative publicprivate sector initiative has introduced North America's first comprehensive electronic tolling system, the 407 Express Toll Route, on Highway 407. Although Toronto is a leader in ITS deployment, an equally large-scale research focus has been absent. The "intelligence" in ITS stems not only from high-tech gear but also from high-end intelligent systems-the computer programs that make the high-tech gear tick. To meet the need for such ITS research and development, the University of Toronto recently established the state-of-the-art Intelligent Transportation Systems Centre and Testbed (www.civ.utoronto.ca/its).

Defining ITS

At the University of Toronto, our definition of ITS is broad and inclusive. It involves applying information technology and other advanced methods and techniques to improve transportation system performance and to increase these systems' contribution to our economic and social well-being. We're interested in all transportation forms: private road-based (cars, trucks), public transit (buses, subways, and so on), and nonmotorized (walking and bicycles). The transportation system is highly multidimensional. Addressing transportation problems involves a complex interplay between technology; human perception; cognition and behavior; and social, economic, and political systems. So, transportation research is inherently multi- and interdisciplinary.

The heart of ITS undoubtedly lies in gathering and using system information in real time to improve real-time control of the system. In so doing, the intention is to reduce both delay due to congestion and other unwanted system "externalities" such as accidents and pollution. Developing such real-time information and control systems involves a wide variety of interconnected research problems that can be

The Challenge of Canadian Transportation

Transportation plays a fundamental role in societal fabrics and national economies worldwide. Canada is no exception. The efficient, safe, cost-effective movement of people and goods is so central to our daily lives that we tend to take the transportation system for granted until it fails. The main reason for such failure is that demand outpaces supply, for numerous good and bad reasons. Renewed worldwide interest recognizes the importance of transportation infrastructure investment and maintaining an efficient, cost-effective transportation system to support economic and social well-being. In addition, advances in information technology, vehicle technologies, and industrial production systems, as well as increased understanding of our technological systems' local and global environmental impacts, are creating opportunities for and challenges to transportation system planning, design, and operation that we must address. In the US, for example, the TEA-21 program is investing 217.9 billion dollars in transportation infrastructure renewal and expansion over the next several years. In Canada, the challenge is to find fiscal and other means by which we can upgrade our transportation systems to remain competitive in the North American and global marketplace and to maintain our quality of life. Congestion is typically the most visible transportation issue for both the general public and decision makers, especially in large urban areas such as Greater Toronto. It costs businesses billions of dollars annually in lost productivity, and it generates considerable frustration, inconvenience, and stress among travelers attempting to move about the urban area during the course of their daily activities. Congestion, however, is but one of many important issues regarding the transportation system. Safety is equally important; over 3,000 deaths occur annually on Canadian roads, along with huge economic and personal losses due to injury, property damage, and lost productivity. The environment and sustainability are also burning issues; the transportation sector produces 25 to 30 percent of Canadian greenhouse gas emissions. Other issues include the economic impact on and interaction with land use and urban forms, not to mention the impact on social and interpersonal interaction and on the quality of life.

- Technical (sensor, communication, and computing hardware; automated vehicle technology; and so on)
- Methodological (control systems theory, traffic flow theory, AI, very-large-scale database management and other software requirements, simulation methods, image processing, and so on)
- Behavioral (drivervehicle interactions, traffic controllercontrol display interactions, user decision making in response to information and other stimuli, and so on)

In addition, system design and transportation policy development must address longer-term issues that affect transportation system performance, including

- Long-term location choices of people and firms (such as where to live, where to locate a business, or where to work)
- Land development processes that influence the location choices
- Household auto ownership or transaction decision making
- The daily activities and travel behavior of households and individuals

These longer-term issues intersect with the real-time control problem in that decisions regarding location, activity, and travel manifest themselves as trips within the transportation system that must be managed in real time. (For more on the challenges of Canadian transportation, see the related sidebar.)

The Testbed

The Testbed provides an instrumented, multijurisdictional, multiagency transportation operations environment linked to university laboratories for real-world development, testing, and evaluation of ITS technologies and applications. It is also a meeting ground or melting pot for public, academic, and private practitioners and researchers to explore new approaches to transportation system management. It offers a site for private industry to demonstrate and evaluate its prototype technologies under live traffic conditions and an ongoing testing ground for Canadian ITS efforts. The Testbed will

- Accelerate ITS deployment through advanced R&D
- Demonstrate ITS deployment readiness before

systemwide investments
- Identify and help resolve potential institutional barriers to assure seamless operation of an integrated multijurisdictional, multiagency transportation system
- Showcase Canadian ITS and boost the Canadian share of the international ITS market

Such a multistakeholder environment will facilitate an integrated approach to the development and deployment of advanced technologies for operating and managing urban transportation based on real-time, computer-assisted traffic management and communication.

Components

The Testbed has two major components:

- The University of Toronto research center (the ITS Centre)
- The physical Toronto transportation network, including surface streets, freeways, and the transit network

The ITS Centre, the Testbed's heart, includes workstations tied directly to the instrumented Toronto transportation network via *traffic management centers,* a computer network for research and development, and a variety of software systems for transportation engineering and control. The Centre is establishing fast two-way communication via dedicated fiber-optic connections for collecting data from the transportation network and for possibly feeding back feasible control and management strategies to that network.

The Centre's R&D program focuses on the modeling and development of ITS modules that would enable real-time optimization, control, and management of dynamic, intermodal transportation networks. Because ITS application development relies on real-time knowledge of dynamic network conditions, real-time surveillance and control data are crucial. (For more on ITS and dynamic transportation, see the related sidebar.) However, although real data is extremely important, it is unlikely to cover all traffic scenarios necessary for comprehensive algorithmic development and validation. So, the Centre is developing an advanced, scalable traffic simulation model to provide a virtual replica of the Toronto transportation network.

ITS modules under development will communicate with real and virtual data sources and with each other through a *central communicator* module (see Figure 1). This module uses Fortran Traffic Systems' Fastracs, an advanced transportation management system. All modules and the central communicator will be "plug and play" to enable continuous development and the replacement of older modules with newer ones as they emerge. Upon completion of the first generation of these modules, the overall system will offer an integrated transport control and management solution. This system will be subject to continuous development to benefit from advances in knowledge and in computing, communication, and information technologies.

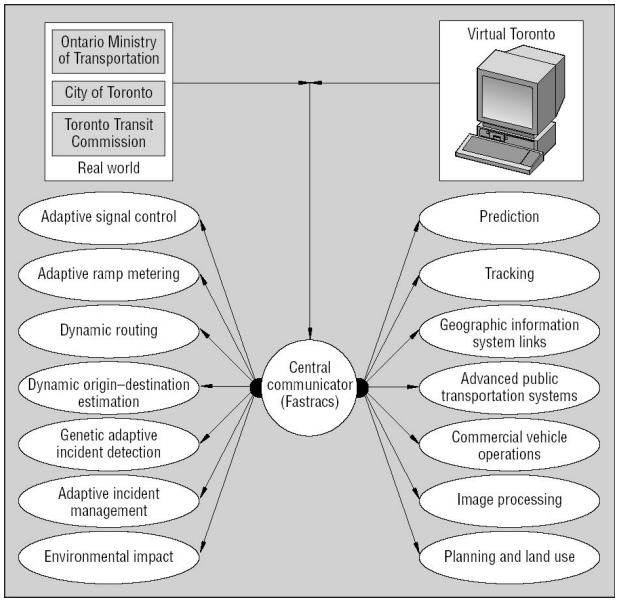


Figure 1: *Ongoing research.*

The founding partners

Transportation generally is a public commodity. Public agencies usually fund the research. Private organizations are usually consultants and contractors whose activities include infrastructure construction as well as system and software development for public transport agencies. Academics focus on pushing the envelope, expanding the frontiers of knowledge through intensive research.

Recently, however, the field has been moving toward employing sophisticated technology that calls for collaboration between the public, private, and academic sectors. The Testbed partners (see Table 1) cover these three sectors, offering monetary and in-kind contributions to the Testbed. In return, a dynamic Canadian ITS industry will undoubtedly en-

hance the level of service and increase the partners' share of the ITS market, nationally and internationally.

Researchers

Currently, an ITS research "cluster" involves 16 faculty members in five departments from two faculties (see Table 2). Eventually, we could expand the cluster, both within the currently committed departments and to other departments such as the Department of Geography and the Department of Economics, as well as to the Faculty of Architecture, Landscape, and Design (for example, urban design issues); the Faculty of Law (for example, legal issues in real-time control of transportation systems); and the Faculty of Management (for example, logistics issues).

Our vision is for the university community, public agencies, and the private sector to consolidate their expertise and innovative capacities to solve growing transportation problems nationally and internationally. As transportation problems grow increasingly complex and become global, and with the advent of ITSs that reach beyond the conventional civil-engineering approach to transportation, the time has come for Canadian universities to expand and create a truly multiagency, multijurisdictional R&D capacity. The ITS Centre and Testbed is the first step in this direction.

Table 1. Current Testbed partners.

Sector	Participant
Academic	Univ. of Toronto
Private	Toronto Hydro
	Toronto and Area Road Builders Assoc.
	Heavy Construction Assoc. of Toronto
	Fortran Traffic
	Delcan Corp.
	IBI Group
	iTrans Consulting
	ITS-Canada
	Canadian Urban Transit Assoc.
Public	Canada Foundation for Innovation
	Ontario Innovation Trust
	Transport Canada
	Ministry of Transportation of Ontario
	City of Toronto
	Toronto Transit Commission
	Ontario Research and Development Challenge Fund

Table 2. Testbed partners.

Faculty and department	Focuses
Faculty of Applied Science and Eng.	
Dept. of Civil Eng.	Real-time control of freeway operations
	ITS architecture
	Air quality impact
	ITS freight applications
	Traveler behavior and urban simulation modeling
	ITS public-transit applications
Edward S. Rogers Sr. Dept. of Electrical and Computing Eng.	Hybrid systems and control of automated vehicle systems
	Sensor technology for driver assistance and automated control
	Ambient intelligence systems
	Mobility and traffic analysis
	Multimedia processing
	Adaptive signal processing, control, and fault diagnosis for ITS
Dept. of Mechanical and Industrial Eng.	Information communication between people and networks
	Sensors and actuators for driver assistance and automated control
	Operations research applications in ITS and logistics
	Influencing driver responses through visual perception
Faculty of Arts and Science	
Dept. of Computer Science	Humancomputer interface design and mobile-interface design
	Computer vision, object recognition, object tracking, mobile robotics, and vision-based navigation
Dept. of Psychology	Visual attention, eye movements, and aging
	Eye tracking, and perception and cognition

Report on ITS Council Advisory Committee Meeting

by Emily Sopensky

IEEE Intelligent Transportation Systems Council

February 15, 2003 Administrative Committee Meeting

The February 15 2003 meeting of the ITS Council's AdComm was held in Dallas, Texas, USA.

Activities and issues addressed included:

- Conducting annual Council elections.
- Instigating a search for a new editor-in-chief for the Transactions
- Discussing Council status. (Options: -remain a council; -petition to become a society; -merge with an existing society. Form chapters
- Discussing means of increasing revenues (-Exhibits at conferences; -non-member subscriptions of Transactions; -advertising in newsletter).
- Discussing how to increase the number of volunteers; the role of technical activities VP.
- Discussing the creation of a magazine?

Elections (Dailey):

The 2004 ITS Council Officers elected are:

Charles Herget,	President
Paul Kostek,	VP Conferences
Emily Sopensky,	VP Publications
William Scherer,	VP Finance
Ichiro Masaki,	VP Technical Activities
Fei-Yue Wang,	Secretary

Daniel J. Dailey is Immediate Past President.

Conferences (Kostek):

Noting that the excom recommended that the ITSC be held two consecutive years in North America, then in Europe or Asia, Kostek intends on developing a strategy for where we want the conferences to be held. Masaki asked that the Council seriously consider technical issues and identifying general chairs from industry when setting up future conferences.

2003 ITSC Shanghai. Currently there are 30 papers from China, but Wang wants at least 100.

See page 18 for an update on this conference.

2004 ITSC Washington, D.C. Kostek expects significant participation from the U.S. Department of Transportation, especially since the location is two blocks away from DOT headquarters.

2004 IV Parma, Italy. Broggi informed that the one-day, by-invitation-only ATA EL conference is also being held in June in Italy. With high visibility for car manufacturers; exhibits, 150 attendance; electronics focus, Broggi suggested coordinating with the ATA-EL. The Council asked him to explore the possibility as a joint conference.

2005 IV Las Vegas. Wang reported that he is reluctant to have a demo at the IV2005 - Las Vegas, because it is so expensive there. If the symposium were moved to Arizona, we could use the GM proving grounds. Masaki noted that the demo is up to the program chair. Wang stated that the State of Ariz. snowplow path on I90 path, which is magnetic, is close to Las Vegas. The issue was left unresolved.

2005 ITSC Vienna. The Council approved having the ITSC 2005 in Vienna, Austria with Reinhard Pfiegel of Via donau, as general chair. (A summary of Pfiegel's presentation can be found on the ITSC website at www.ieee.org/itsc.) Via donau is a five-year initiative of ITS Austria to promote auto, road infrastructure, rail, air transport, water, logistics and general transport. Vienna is a city of 1.8 million. Pfiegel ensured that the ITSC conference would get proper support if it was held in Vienna. The motion passed.

Kostek stated that he was approached to hold ITSC in Russia for 2008.

Publications:

Prof. Chelsea White III, the editor-in-chief of the Transactions, is ready to pass the baton, so President Herget appointed him to chair the ad hoc committee to search for a new EiC. The members of the committee are Hideki Hashimoto, Yilin Zhao and Charles Herget (ex officio), but open to more members. The timeline for replacement of the editor-in-chief and staff is 2003, so a replacement should be identified as soon as possible, preferably as early as June, so for a seamless handover from the old to the new EiC can occur before the end of the year.

The AdCom meeting in Dallas, TX

Chip White reported that ITS ManuscriptCentral website is now in testing and should be available this spring to accept papers electronically and to manage the paper flow. The Transactions saw an increase in submissions during 2002, almost doubling the number of papers submitted in 2001. The two special issues published in 2002 were March 2002 (best papers of ITSC and IV 2000 with guest editors Professors Alberto Broggi, Petros Ioannou and Shoichi Washino.) and September 2002 (IV 2001 papers in the area of Intelligent Control and Sensing in IV with guest editors Prof. Katsushi Ikeuchi, Dr. Masataka Kagesawa, and Shunsuke Kamijo).

Upcoming special issues include a special issue on Adaptive Cruise Control Systems with Guest Editor, Prof. Petros Ioannou. Prof. Ruey Long Cheu, is Guest Editor of a special issue based on papers presented at the ITSC 2002 Conference.

New associate editors are in the process of being selected. They will appear on the inside cover of the next issue of the Transactions.

Broggi reported that the newsletter database is now circulated to 13,000 email names

Technical Activities:

In the new office of vice president of technical activities, Prof Masaki announced his goals are to increase the level of technical activities in the Council both quantitatively and qualitatively. He proposed setting up special sessions at IV to explore new fields, such as unmanned airborne vehicles. To attract more interest and involvement from industrial participation, he suggested identifying those from industry who agree to act as general chairs for future IV symposiums.

Masaki also hopes that future symposiums will be approved at least two years in advance.

Council status:

An ad hoc committee was formed to investigate the future direction of the Council - whether to become a society, merge with another society or to continue as a council. Herget announced that he had been approached by the presidents of Communications, Vehicular Technology, and Systems, Man & Cybernetics societies to merge the Council with each of their societies. Case, Smith and Sopensky volunteered to be on the committee.

Standards:

See the appropriate section in this newsletter.

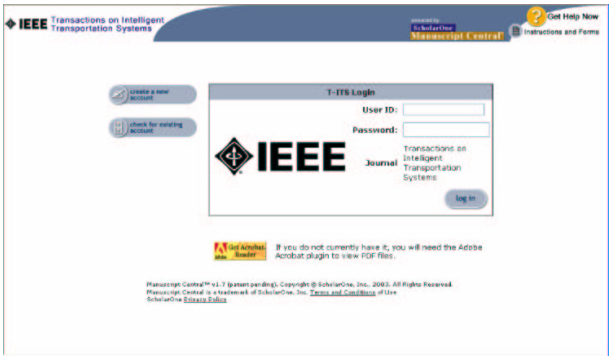
The next Adcom meeting is in Shanghai Oct 12 2003 preceding the ITSC 2003 conference. The Excom is scheduled to meet in Columbus, Ohio June 9 during the IV Symposium and in a teleconference scheduled for October 1.

Announcement: IEEE Trans on ITS goes electronic

by Hideki Hashimoto

IEEE ITSC Electronic Submission System

Our Electronic Submission and Review System has opened. You can submit your papers to our transactions by using the system (http://its-ieee.manuscriptcentral.com) and the review process will be conducted by electronically correspondences. We can shorten our publication schedule.



If you want to submit your paper, please access http://its-ieee.manuscriptcentral.com and then click the "create a new account". It is very easy and user-friendly.

Report on IEEE Trans. on Intelligent Transportation Systems

by Chelsea C. White

The configuration and testing of the Transactions on ITS Manuscript Central website has been completed. We have already received the first electronic submissions through the Manuscript Central website. Authors should be aware that the Transactions on ITS will now accept only electronic submissions. All electronic submissions should be made through the IEEE Manuscript Central.

Information regarding requirements for electronic submission of papers can be found on the Transactions website at http://www.ewh.ieee.org/tc/its/trans.html. Authors may submit papers through the Transactions on ITS Manuscript Central website by clicking on the link Submit papers to be found on the Transactions web page or by going to http://its-ieee.manuscriptcentral.com.

Technical problems experienced during loading papers may be solved by contacting the IEEE Support Staff at Support@ScholarOne.com. Other questions or problems regarding submissions should be directed to the journal administrator, Jerri White at jerrilyn@umich.edu.

Authors of accepted papers will now find information for authors of accepted papers on the Transactions website. This information was previously provided in the author kits sent with acceptance letters. Please note that final manuscripts still must be submitted in hard copy form.

The Council on ITS has authorized a new category of papers for the Transactions. The Transactions will now accept technical correspondence papers in addition to regular papers and reviews. Technical correspondence papers should be no more than 6 published pages in length. For additional information, see the Information for Authors on the website.

IEEE Trans. on Intelligent Transportation Systems - Index

by Jerri White

Vol.4, No.1, March 2003

- **Fuzzy Logic Based Virtual Rumble Strip for Road Departure Warning Systems**, by Tom Pilutti and A. G. Ulsoy

  Abstract: This paper provides a detailed investigation into two potential forms of onboard road departure warning systems. A method known as time–to–lane–crossing (TLC) is compared with rumble strips placed a fixed distance from the road edge, and is found to provide enhanced performance over such static rumble strips in terms of reduced false warnings and increased warning anticipation. A new approach, called the variable rumble strip (VRBS), is proposed which is an onboard electronic implementation of the static rumble strip where the warning threshold is allowed to vary according to the risk of the vehicle departing the road. Performance of the fuzzy logic based VRBS system is similar to that of the TLC–based approach, but requires less sensor information making it more feasible in a vehicle application. Performance is measured in terms of hits, misses, and false alarms based on a validation warning set comprised of either static rumble strip generated warnings or by a warning set generated by subjective interpretation of the road departure criticality. The algorithms are tested on two-hour driving simulator runs

by 12 drivers. The paper also includes an extension to the VRBS system involving the use of an estimate of driver lane–keeping performance to alter the VRBS threshold adjustment.

- **Automated Lane Change Controller Design**, by Cem Hatipoglu, Umit Ozguner, and K.A. Redmill

  Abstract: The primary focus of study in this paper is the background control theory for automated lane change maneuvers. We provide an analytic approach for the systematic development of controllers which will cause an autonomous vehicle to accomplish a smooth lane change suitable for use in an Automated Highway System. The design is motivated by the discontinuous availability of valid preview data from the sensing systems during lane-to-lane transitions. The task is accomplished by the generation of a virtual yaw reference and the utilization of a robust switching controller to generate steering commands that cause the vehicle to track that reference. In this way, the open loop lane change problem is converted into an equivalent virtual reference trajectory tracking problem. The approach considers optimality in elapsed time at an operating longitudinal velocity. Although the analysis is performed assuming that the road is straight, the generalization of the proposed algorithm to arbitrary road segments is rather straightforward. The outlined lane change algorithm has been implemented and tested on The Ohio State University (OSU) test vehicles. Some of the experimental results are presented at the end of the paper.

- **Performance Analysis of Caching and Prefetching Strategies for Palmtop- Based Navigational Tools**, by Vittoria de Nitto Persone and Vincenzo Grassi

  Abstract: Navigational tools that assist travelling people when they visit new areas are becoming increasingly common. Some of these tools are designed to be used with small portable devices (palmtops and also cellular phones), to give users more flexibility in their utilization (e.g. while walking in a town). The limited storage capacity of such devices makes unrealistic to think that all the useful information can be stored in such devices, apart from the most basic one, like road maps and location of some points of interests. Other more detailed information should be loaded on the fly when needed, e.g. by using a wireless connection to some remote information service. However, this could cause unacceptably high latency to get the information. Another important factor that must be taken into account is the energy consumption caused by the access to the remote information service through a wireless link. Hence, the design of an information service that integrates the capabilities of palmtop-based navigational tools must be carefully designed around the goals of reducing both the perceived latency and the consumed energy. To this purpose, we investigate the use of caching and prefetching techniques. We present analytical and numerical results obtained by defining a probabilistic model of the typical utilization scenario of the considered service, and corresponding cache management policies.

- **A Compact Integrated Visual Motion Sensor for ITS Applications**, by Keiichi Yamada and Mineki Soga

  Abstract: We have developed a prototype of a compact integrated visual sensor, which detects direction and velocity of motion on a focal plane in a wide brightness range in real time with a newly devised motion measurement method. The sensor is composed of a lens and a single-chip VLSI whose die size is 2 mm x 2 mm that was fabricated with a 1.5 microns standard CMOS process. The spatial resolution is 10 x 2. As a result of performance evaluation of the prototype sensor, it was confirmed that the sensor can detect motion direction and velocity up to an on-chip image velocity of 100 mm/s in a response time of 10 us under an illuminance range between 100 lux and 100,000 lux. Furthermore, we have demonstrated effectiveness of the visual sensor by applying the sensor to running vehicle detection on a road and blind corner monitoring at a road junction.

- **Distributed Architecture for Real-Time Coordination of Bus Holding in Transit Networks**, by Jiamin Zhao, Satish Bukkappatnam, and Maged Dessouky

  Abstract: A distributed control approach based on multi-agent negotiation is presented, wherein stops and buses act as agents that communicate in real-time to achieve dynamic coordination of bus dispatching at various stops. The negotiation between a Bus Agent and a Stop Agent is conducted based on marginal cost calculations. We present optimality conditions for the formulated problem, using which we derive a negotiation algorithm to coordinate bus holding at various stops. A comparison between the negotiation algorithm and other simple bus control strategies such as On-Schedule and Even-Headway strategies made through simulations verifies the robustness and efficiency of our Negotiation strategy to different transit environments, involving both stationary passenger arrivals as well as a variety of non-stationary passenger arrivals.

Report: IEEE Intelligent Transportation Systems Conf. 2003

by Fei-Yue Wang

IEEE ITSC'03 has received 476 papers so far and among them 264 are from China. Many IEEE Conferences in China this year and Asia has postponed their date to September, so we are not going to change our original date (Oct 12 to 15, 2003) for the time being. There are two cases of SARS detected in Shanghai at this point, but we are watching closely the SARS situation in China, we will make changes in terms of place and date if necessary.

Report: IEEE Intelligent Vehicles Symposium 2003

by Sadayuki Tsugawa

We had nearly 160 submissions, and accepted 138 papers. We received 120 camera ready. Now the proceedings may be under printing.

The registration and hotel booking have started.

On Sunday (June 8) morning the tutorial will be held. The speaker is Mr Bishop, who will talk about the current IV. On Sunday afternoon, the technical visit to TRC test track will be held.

On Monday (June 9) morning, after the opening ceremony, Professor Emeritus Dr Robert Fenton will provide the plenary talk on AHS.

On Wednesday (June 11) we will have the panel discussion on the inter-vehicle communications.

Preliminary CFP: IEEE Intelligent Vehicles Symposium 2004

by Alberto Broggi

IEEE ITSC **Call for Papers** **IV'04**

IEEE Intelligent Vehicles Symposium
Parma, Italy, June 14-17, 2004

The Intelligent Vehicles Symposium (IV'04) is an annual forum sponsored by the **IEEE Intelligent Transportation Systems (ITS) Council.** It gathers researchers from industry and universities to discuss research and applications for Intelligent Vehicles and Intelligent Infrastructures. Three days of the symposium will be allocated for technical presentations and one day will be dedicated to live vehicle demonstrations. The technical presentations are characterized by a single session format so that all attendees remain in a single room for multilateral communications in an informal atmosphere. Papers dealing with all aspects of vehicle-related intelligent systems and cooperation between vehicles and infrastructures are solicited for IV'04.

Program Topics Include the Following Technical Categories

- Driver Assistance Systems
- Automated Vehicles
- Active and Passive Safety
- Integrated Safety Systems
- Vehicle Environment Perception
- System Architecture
- Smart Infrastructure
- Impact on Traffic Flows
- AHS
- IVI
- Sensors
- Image, Radar, Lidar Signal Processing
- Information Fusion
- Vehicle Control
- Decision and Expert Systems
- Communications and Networks
- Human Factors
- Human Machine Interaction
- Others

Special Session Organization is encouraged. Organizers should contact Dr. Niehsen at Wolfgang.Niehsen@de.bosch.com

Paper Submission

Prospective authors are requested to send an extended summary through the conference website no later than **Dec. 1, 2003**. The summary must be a **pdf file** in **IEEE two column format**. A LaTeX style file and a Microsoft Word template are available at the website. The extended summary must be 4 pages including figures with sufficient detail for review for technical merits and appropriateness. A separate page should include (1) the title of the paper, (2) the name of the authors, (3) the name, mailing address, telephone and fax number, and email address of the corresponding author, (4) the technical categories.

Please refer to the following websites for the most up-to-date information:

IEEE IV'04 **http://www.ieeeiv.org**
IEEE ITS Council **http://www.ieee.org/itsc**

Important Dates	
Organized session proposal deadline	Nov. 1, 2003
Extended summary submission	Dec. 1, 2003
Notification of acceptance	Feb. 1, 2004
Camera-ready manuscript due for proceedings	Mar. 15, 2004

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Update on SCC 32, Standards Coordinating Committee on ITS

by Robert M. Barrett

APPROVED STANDARDS:

- ANSI/IEEE Std 1404-1998, IEEE Guide for Microwave Communications Systems Development: Design, Procurement, Construction, Maintenance and Operation
- ANSI/IEEE Std 1455-1999, IEEE Standard for Message Sets for Vehicle/Roadside Communications
- ANSI/IEEE Std 1489-1999, IEEE Standard for Data Dictionaries for Intelligent Transportation Systems
- ANSI/IEEE Std 1512-2000, IEEE Standard for Common Incident Management Message Sets for use by Emergency Management Centers

Status Change:

IEEE Std 1488-2000, IEEE Standard for Message Set Template for Intelligent Transportation Systems Was **Trial Use** Standard. No comments were received for the two-year trial period, promoted to full use on September 12, 2002.

Newly Approved Standard:

- IEEE Std 1512.3-2002, IEEE Standard for Hazardous Material Incident Management Message Sets for Use by Emergency Management Centers (September 12, 2002)

Balloted Standard:

- P1512.1 Standard for Traffic Incident Management Message Sets for Use by Emergency Management Centers

  Ballot November 2002, recirculated January 2003, to Standards Board for approval March 2003

OTHER APPROVED DOCUMENTS:

Survey and Analysis of Existing Standards and those Under Development Applicable to the Needs of Intelligent Transportation System (ITS) Short Range and Wireless Communications

Book 1: National Wireline Standards
Book 2: Regional Wireline Standards
Book 3: International Wireline Standards
Book 4: National Wireless Standards
Book 5: Regional Wireless Standards
Book 6: International Wireless Standards

WITHDRAWN PARs:

- P1435, Recommended Practice for the Application of Synchronous Optical Network (SONET) Technology to Intelligent Transportation Systems (ITS) (withdrawn October 2000)
- P1436, Standard for Ground Based Transportation Collision Avoidance Radar (withdrawn June 2002)
- P1449, Recommended Practice for Engineering Considerations Related to Lightning Protection: Device Placement, Grounding, Bonding and Physical System Geometry (withdrawn June 2002)
- P1543, Standard for Message Sets for Back Office Applications/Roadside (Resource Manager) Communications (withdrawn October 2002)

Recommended for withdrawal:

- P1512.a, Standard for Emergency Management Data Dictionary (recommended to be withdrawn at the March 2003 meeting of the Standards Board)

ACTIVE PARs:

- P1454, Recommended Practice for Selection and Installation of Fibber Optic Cable in Intelligent Transportation Systems (ITS) Urban Suburban and Rural Environments as Well as Transportation Operations Centers and Associated Campus
- P1489, Revision to IEEE Standard for Data Dictionaries for Intelligent Transportation Systems Current effort is to adopt ISO 14817, *Transportation information and control systems Requirements for an ITS/TICS central data registry and ITS/TICS data dictionaries* as an ANSI/IEEE standard to replace IEEE Stds 1488 and 1489.
- P1512.2, Standard for Public Safety Incident Management Message Sets for Use by Emergency Management Centers
- P1512.b, Amendment for Data Elements Found In Standard for Common Incident Management Message Sets For Use By Emergency Management Centers, IEEE 1512- 2000
- P1556, (DRAFT) Standard for the Security & Privacy of Vehicle/Roadside Communication including Smart Card Communication
- P1609.1, Standard for Dedicated Short Range Communications (DSRC) Resource Manager
- P1609.2, Standard for Dedicated Short Range Communications (DSRC) Application Layer
- P1609.3, Standard for IP [Internet protocol] Interface for Dedicated Short Range Communications (DSRC)
- P1609.4, Standard for Data Dictionary and Message Sets for Dedicated Short Range Communications (DSRC)
- P1634, Standard for Common Data Dictionary for Use in Intelligent Transportation Systems

Liaison Activity:

Mr. Paul Thorpe (OSS Novaka) is the liaison between SCC 32 and the Data Dictionary/Message Set Template Working Group and JTC1, SC 6 - Abstract Syntax Notation 1 (ISO/IEC 8824 and 8825 or ITU-T X690 and X691).

Non-Council ITS News

5th Short Course on Dynamic Traffic Flow Modelling and Control

by Markos Papageorgiou

Lecturer:	Prof. Markos Papageorgiou
Date:	9-13 June 2003
Location:	Chania (Crete), Greece
Fee:	1.200 EURO (for graduate students: 800 EURO) (20% reduction is granted in case of more than one participation from the same institution)

Scope

The design, analysis, and evaluation of Intelligent Transportation Systems (ITS) requires a good knowledge of traffic flow modelling and control techniques as well as of powerful methodologies from the areas of optimisation, control, networks, and dynamic systems. The purpose of the intensive 5-day course is to cover the basic theory and tools necessary for efficient design and evaluation of ITS on highway networks. The course will begin with traffic flow modelling and validation that includes a coverage of the various traffic flow models, the modelling of traffic networks, and simulation tools. Measurement devices and estimation problems in traffic networks, that include automatic incident detection and O-D estimation, will be presented and discussed. The state-of-the art techniques on freeway control, road traffic control, and integrated control employing ramp metering, signal control, and route guidance via application of modern optimisation, control, and estimation techniques, together with several case studies will be presented. Some 40 exercises will be used for consolidation of the provided knowledge. Extensive written material, including all transparency copies, will be handed out.

Who Should Attend

Graduate students, engineers, researchers, consultants, and government employees who are interested in improving their understanding of advanced traffic flow modelling and control tools and in becoming familiar with their application in ITS.

For More Information

To take more information (Detailed Course Contents, About the Lecturer, Fee and Registration Form, Location, Accommodation, Evaluation of previous courses) please visit the site

http://www2.dssl.tuc.gr/en/ShortCourse/5thShortCourse.htm

or contact:

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A Glimpse on the Web

by Alessandra Fascioli

This department is dedicated to catching a glimpse on the WWW trying to discover interesting ITS related Web resources. Reviewed sites range from research programs and projects, to software packages, databases, associations, non-profit companies, and more.
Every suggestion or contribution is welcome and should be addressed to fascal@ce.unipr.it.

- **ITS 2013** is a new series of white papers, authored by key experts in PBS&Js ITS Division, which will examine and predict the next 10 years of ITS. The aim is help the ITS profession develop appropriate short-term ITS solutions that are beneficial and relevant for as long as possible, while avoiding duplication of efforts or missed opportunities. This set of vision papers will address a range of ITS-related topics and how ITS will impact and change key transportation market segments, such as highways, mass transit, tollways, and airports. The program will also look at the broader impacts ITS will have on issues such as transportation planning, transportation agency organization, and national transportation policy, including homeland security. ITS 2013 white papers can be accessed at: http://www.pbsj.com/ITS2013

- The **Universities' Transport Study Group (UTSG)** aims to promote transport teaching and research and to act as a focus for those involved in these activities in U.K. universities and institutions of higher education. Over 100 departments are involved in UTSG's activities. In addition to the U.K. membership, over 70 academic institutions are represented on its list of overseas correspondents. The main activities are annual conferences to discuss research needs and research in progress, liaison with users and sponsors of transport research aimed at promoting the benefits of university research and disseminating information on research opportunities, seminars and workshops to discuss specific research issues, ensuring financial support for transport research and education at all levels. Link to UTSG homepage: http://www.its.leeds.ac.uk/utsg

- **European Platform On Mobility Management (EPOMM)** is an international partnership aiming to promote and further develop Mobility Management in Europe and fine tune the implementation between the Member States of the EU and other countries in Europe. EPOMM provides a forum for all those interested in Mobility Management: representatives from EU member governments, local and regional authorities, researchers, major employers, transport operators and other user groups. EPOMM is funded and officially supported by the European Commission, DGVII (Transport) and ministries of several founding participating countries and regions. Link to EPOMM site: http://www.epommweb.org

- The work of the **Research Institute for Regional and Urban Development of the Federal State of North Rhine-Westphalia** is strongly geared towards applied research and includes the development and transfer of knowledge in close co-operation with the stakeholders or users in the field of sustainable mobility. Building networks plays an important role to ensure applicability of work results. Co-operation partners are, among others, cities and city associations, public transport companies, user associations, research and development agencies and NGOs. The particular fields of research and development currently include Transport information systems, Land use and transport, Mobility management, Mobility of children and young people, Leisure and shopping traffic, Car free housing, and Road safety. Link to Research Institute for Regional and Urban Development of the Federal State of North Rhine-Westphalia: http://www.ils.nrw.de/look/uebers/vi_engl.htm

Upcoming Conferences, Workshops, or Symposia

by Massimo Bertozzi

This section lists upcoming ITS-related conferences, workshops, or exhibits. Contributions are welcome; please send announcements to `itsconfs@ce.unipr.it`.

3rd Annual Intelligent Vehicles Systems Symposium
http://www.ndia.org/events/brochure/3570
Traverse City, USA
June 9–12

2nd SASITS Intl. Conference & Exhibition
Sandton, South Africa
June, 11–13

9th Intl. Congress European Automotive Industry Driving Global Changes
http://www.sia.fr/Manifestations/eaec2003.pdf
Paris, France
June 16–18

SAE Intl. Future Transportation Technology Conference
http://www.sae.org/calendar/ftt/index.htm
Costa Mesa, USA
June 23–25

Robotics and Applications (RA 2003)
http://www.iasted.org/conferences/2003/salzburg/ra.htm
Salzburg, Austria
June 25–27

Intelligent Systems & Control (ISC 2003)
http://www.iasted.org/conferences/2003/salzburg/isc.htm
Salzburg, Austria
June 25–27

11th Intl. Conference on Advanced Robotics (ICAR 2003)
http://www.isr.uc.pt/icar03
Coimbra, Portugal
June 30 - July 3

Artificial Intelligence and Soft Computing (ASC 2003)
http://www.iasted.org/conferences/2003/banff/asc.htm
Banff, Canada
July 14–16

IEEE Conference on Multisensor Fusion and Integration for Intelligent Systems (MFI)
http://www.cvl.iis.u-tokyo.ac.jp/mfi2003/
Tokyo, Japan
July, 29–August, 1

ITE 2003 Annual Meeting and Exhibit
http://www.ite.org/annualmeeting/default.asp
Seattle, USA
August, 24–27

9th Intl. Conference on Automated People Movers
http://www.apm2003.com.sg/
Singapore
September, 2–5

IEEE Intl. Conf. on Systems, Man & Cybernetics
Hyatt Regency, USA
October, 5–8

Intl. Task Force on Vehicle-Highway Automation
Chicago, USA
October, 16–18

IEEE Semiannual Vehicular Technology Conference (VTC2003 fall)
http://www.vtc2003.org/
Orlando, USA
November 4–9

Driving the Future Vehicle
London, UK
November, 11–12

2004 SAE World Congress
Detroit, USA
March, 8–11, 2004,
♢ submission by June, 1

FISITA 2004: World Automotive Congress
http://www.fisita2004.com
Barcelona, Spain
May 23–27, 2004,
♢ submission by May, 31

Future Car Congress
http://www.futurecarcongress.org
Washington, DC
June 27–30, 2004,
♢ submission by September, 22

Call for Papers

Call for Contributions: IEEE Intelligent Systems Magazine

by Alberto Broggi

IEEE Intelligent Systems Magazine
Call for Short Papers/Reports

IEEE Intelligent Systems Magazine has started a regular department on Intelligent Transportation Systems. This department (published in each issue) describes current trends and ideas for future systems/realizations/projects in the field of ITS.

People willing to share their ideas and disseminate the results of their projects are invited to prepare a short article (from 2 to 5 magazine pages) describing current trends, projects, research directions, and their experience in any field of Intelligent Transportation Systems.


Intelligent Transportation Systems

MyBus: Helping Bus Riders Make Informed Decisions

For further publication guidelines and for suggestions, contact the editor at broggi@ce.unipr.it with a possible outline of the proposed article or browse www.ce.unipr.it/broggi/is-department for a quick look at past installations of this department.

Thanks to an agreement with the Magazine, published articles are reprinted in this Newsletter.

CFP: Transport Systems Telematics Conference

by Katarzyna Trzaska

TRANSPORT
SYSTEMS
TELEMATICS

III INTERNATIONAL CONFERENCE
13-15 NOVEMBER 2003, Katowice-Ustron, POLAND
www.tst-conference.org

First Call

Organizers

Silesian University of Technology, Faculty of Transport

Centre of Excellence TRANSMEC
Warsaw Technical University
Radom University of Technology
Regional Centre of Road Traffic, Katowice

Scope and Contributions

Information-processing technologies and telematics play a fundamental role in the modern transportation systems of the control and management. The conference organizers invite contributors who are willing to present their outstanding works on the seminar in one of the conference themes. The principal aim of the conference is to expand the new solutions of the information and tele-transmission processes. It is also very important to keep promoting modern procedures of transport information and management systems. Participating in the convention will bring a huge opportunity to learn about the current techniques and future directions of transport information processes.

The approved papers will be published on CD (ISBN). Selected papers will be published in a special issue of "Zeszyty Naukowe", the publication of Silesian University of Technology in Transport series. The publisher has the high position in rankings of scientific periodicals.

For more details go to the web site: www.tst-conference.org

Conference Topics

Conference Topics The topics related to Telematics and its aplication in transport: papers and posters on following areas are welcome:
- Transport management systems,
- Intelligent Transport Systems (ITS),
- Structure of ITS,
- Telematic services for travellers,
- Telematic devices for vehicle equipment,
- Introduction of strategies for transport telematics solutions,
- Transport systems control,
- Tele-transmission and tele-navigation equipment,
- Traffic monitoring systems,
- Transport control and management safety,
- Transportation systems simulation,
- Standardization of telematic transport systems,
- Telematic in logistic services,
- European Framework Programs,
- Transport as the aspect of the accession of new member states to the EU,

Contact

secretariat of the conference:

mailing address:
Renata Skowronska
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Faculty of Transport
ul.Krasinskiego 8
PL 40-019 Katowice
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e-mail:
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tel/fax:
+4832 255-21-79

http://www.tst-conference.org