ITS WORLD CONGRESS 2017
Montréal | OCTOBER 29 - NOVEMBER 2

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ADDENDUM TO
EVENT PROGRAM & EXHIBITOR DIRECTORY

This addendum offers updated information regarding Opening/Closing Ceremonies, Executive Sessions, Special Interest Sessions, Technical/Scientific Sessions, Plenaries and Smart Cities Education Stage Programs as of October 22, 2017.

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A printed version of the 'official' Event Program & Exhibitor Directory, which was released in PDF form on September 29 and follows this addendum, will be provided to event attendees during onsite check-in. *The printed version will not include the updated information found in this addendum.*

Sunday 29 October 2017

SIS01 - Innovative C-ITS Services to Overcome Urban Mobility Challenges and Meet Policy Goals
Sunday 29 October 2017, 12:00 - 13:30 (515 ABC)
Topic: A. Connectivity and Autonomy

This session is dedicated to promoting innovative C-ITS services relevant to the urban environment—i.e., GLOSA, traffic signal priority to designated vehicles, park-and-ride information—that can contribute to solve current mobility challenges such as safety, traffic efficiency, and environment. Ongoing extensive piloting activities in all three regions are helping to develop a comprehensive knowledge on benefits. Speakers will share experiences with the most advanced urban C-ITS service implementation and operations from the point of view of local authorities as well as the industry to stimulate transfer of results and to foster replication in other cities.

Organizer
Andre Perpey, Geoloc Systems, France
Moderator
Andre Perpey, Geoloc Systems, France
Speakers
Toru Saito, Honda R&D Co., Ltd., Japan
Andre Perpey, Geoloc Systems, France
Patrick Son, National Operations Center of Excellence, USA
Abdelmename Hedhli, IFSTTAR, France

SIS02 - Connected and Automated Driving Research around the World
Sunday 29 October 2017, 12:00 - 13:30 (513 DEF)
Topic: A. Connectivity and Autonomy

Many of the challenges towards the deployment of Connected and Automated Driving (CAD) need to be addressed with an international mind set. It is very important to develop and maintain close information exchange among the regions of the world to exchange knowledge and best practices from existing research programs. The European Commission (EC), the United States Department of Transportation (USDOT) and the Japanese Road Bureau of Ministry of Land, Infrastructure, Transport and Tourism (MLIT) have a long history of sharing information on ITS (Intelligent Transportation Systems) activities. The EU-US-JP Trilateral Automation in Road Transportation Working Group has been especially active with Canada, Korean and Australia joining the group since 2013. The concept of “twinning arrangements” for CAD projects is being setup, initially between Europe and US, to consolidate the collaboration and broaden the impact of research efforts around the world. Further twinning is being considered with other regions. This session provides an overview of the ongoing research programs in US, Europe, Japan, Canada, Korea and Australia with discussions on future collaboration opportunities.

Organizer
Maxime Flament, ERTICO - ITS Europe, Belgium
Moderator
Maxime Flament, ERTICO - ITS Europe, Belgium
Speakers
Changki Kim, MOLIT, Korea
Takahiko Uchimura, ITS Japan, Japan
Stephanie Leonard, European Commission – DG MOVE, Belgium
David Michelson, University of British Columbia, Canada
Stuart Ballingall, Austroads, Australia
Ariel Gold, DOT, United States

Sunday 29 October 2017

SIS03 - Effective C-ITS Deployment: Analysis of Standards Gaps in a C-ITS Environment
Sunday 29 October 2017, 12:00 - 13:30 (513 BC)
Topic: A. Connectivity and Autonomy

Reference architectures are effective tools used by designers and implementers to ensure consistent, interoperable, well-engineered, comprehensive large-scale technology deployments. Harmonization Task Group 7 has developed a Harmonized Architecture Reference for Technical Standards (HARTS) to guide implementers from an overall large-scale C-ITS deployment architecture to a concept of an ITS service and then down to the individual standards they need to deploy while also alerting them to known issues. The Task Force, an international collaboration, has used this harmonized architecture superset to document where standards are needed throughout a C-ITS environment and to analyze gaps. Work to describe those gaps will be nearing completion and the Task Group is interested in gathering stakeholder and expert feedback on the analysis results as well as gaining input on next steps. This interactive session will describe the Group's approach to the analysis and provide results-to-date.

Organizer
Wolfgang Hoefs, European Commission, Belgium
Moderator
Suzanne Sloan, U.S. Department of Transportation, United States
Speakers
Tom Lusco, Iteris, United States
Knut Evensen, Q-Free, Norway

SIS04 - Is MaaS Real or a Utopian Dream?
Sunday 29 October 2017, 12:00 - 13:30 (514 BC)
Topic: B. Infrastructure Challenges and Opportunities

This session will focus on a hot topic: the push to share mobility data and to integrate mobility information and services. But behind the hype, how is it really playing out? Is Mobility-as-a-Service (MaaS) a pipe dream or realistic? What MaaS business models are working today and how will this change over the next several years? While there are some success stories, there are many barriers and challenges to a true MaaS model, including the scale and complexity of countries and organizations and traditional silos within and between public and private sector information and services. How can cities integrate MaaS across conventional mobility services such as metro lines, rail, taxis, and buses with new services such as parking, bike share, car/ride sharing, and other services? Panelists will share their success stories and learnings on how they have—or are planning to—overcome barriers that will enable them to provide innovative mobility services.

Organizer
Ali Savio, INRIX, United States
Moderator
Ted Trepanier, INRIX, USA
Speakers
Mads Gaml, City of Copenhagen, Denmark
Eduardo Felici, National Data Warehouse for Traffic Information, United States
Bernd Datler, ASFINAG Maut Service GmbH, Austria
Scott Sedlik, INRIX, United States
Stefan Myhrberg, Ericsson, Sweden

Sunday 29 October 2017

SIS05 - Digital Transformation: From ETC to IoT to Smart City
Sunday 29 October 2017, 13:45 - 15:15 (514 BC)
Topic: C. Smart(er) Cities

In recent years, with the ever-decreasing cost of OBU, the realization of mass adoption of ETC has become famous and popular. With nearly all vehicles with OBU installed based on ETC as the fundamental infrastructure, support for the Internet of Things (IoT), Smart City and Smart Service—such as smart payment, smart parking, smart security and smart safety—can be accomplished. But smart application based on ETC is not restricted to highway tolling. It can be used to transform the lives of the average citizen and allows for vast potential growth in the application of smart urban service planning and application, offering more efficient and transformative implementation of new technology in metropolitan areas. Full-scale implementation of digital transformation like this could go a long way towards the contribution of long-term growth for our societal economy and integrated smart ecosystem development.

Organizer
P.C. Peggy Liao, ITS Taiwan, Chinese-Taipei
Moderator
Jason Chang, National Taiwan University, Chinese Taipei
Speakers
Y. C. Chang, Far Eastern Electronic Toll Collection Co., Ltd., Chinese Taipei
Muhammad Aditya Arief NUGRAHA, CEO, Gamatechno, Indonesia
Azman MASBAH, Teras Teknologi Sdn Bhd, Malaysia
Chen-Yu Lee, Taipei Smart City Project Management Office, Chinese-Taipei
Yu-Sheng Lin, DoT, Taipei City Government, Chinese-Taipei

SIS06 - Personal Incentives on Mobile Devices for Sustainable and Efficient Transport Behavior
Sunday 29 October 2017, 12:00 - 13:30 (510 D)
Topic: F. Disruption and New Business Models

Incentives are well-known instruments to effectively change transport choices and contribute to more sustainable and efficient transport systems. New ITS solutions and applications on personal mobile devices allow for a more targeted and personalized deployment of incentives. The resulting business intelligence and policy relevant travel data furthermore supports new business models for deploying incentive policies long term in cooperation between the public and private sector. This session will make use of concrete case studies from Europe and the US. It will also bring together those who work on the interfaces between ITS and transport planners as well as other relevant expertise to discuss the financial, operational and organizational aspects concerning cost effective deployment of incentives through ICT for a sustainable and efficient transport system.

Organizer
Dirk van Amelsfort, RISE Viktoria, Sweden
Moderator
Susan Grant-Muller, Institute for Transport Studies, University of Leeds, UK
Speakers
Wendy Tao, Siemens ITS, USA
Anders Hjalmarsson Jordanius, RISE Viktoria, Sweden
Joe Castiglione, San Francisco County Transportation Authority, USA
Pedro Henrique Scherner Romanel, URBS Urbanizacao de Curitiba S/A, Brasil
Frances Hodgson, Institute for Transport Studies, University of Leeds, UK, United Kingdom

Sunday 29 October 2017

SIS07 - Implementation of C-ITS in Preparation for Automated Driving and Smart Cities
Sunday 29 October 2017, 13:45 - 15:15 (515 ABC)
Topic: A. Connectivity and Autonomy

Currently the EU, US, and Japan are developing ITS technologies such as connected vehicle, automated driving, smart cities, and urban ITS. There is an active effort to achieve societal implementation and one of the essential core technologies is Cooperative-ITS (C-ITS), which uses vehicle-to-vehicle communication (V2V) and vehicle-to-infrastructure communication (V2I). This session will focus on the trends in C-ITS development in the EU, US, Japan, and other countries as well as proving Field Operational Tests (FOTs) and other specific case studies. It will also discuss issues that must be resolved in preparation for deployment and implementation into society and measures to resolve these issues.

Organizer
Kazunari Nakamura, ITS Policy and Program Office, Road Transport Bureau, Ministry of Land, Infrastructure, Transport and Tourism, Japan
Moderator
Hironao Kawashima, Mobility Culture Research Center, Keio University, Japan
Speakers
Kazunari Nakamura, ITS Policy and Program Office, Road Transport Bureau, Ministry of Land, Infrastructure, Transport and Tourism, Japan
Brian Cronin, FHWA, USDOT JPO, USA

SIS08 - Standardization and Certification Needs for the Deployment of Automated Vehicles
Sunday 29 October 2017, 13:45 - 15:15 (513 DEF)
Topic: A. Connectivity and Autonomy

Connected and automated driving has the potential to solve many of the challenges faced in road transport in terms of safety, congestion, and sustainability. However, to guarantee successful deployment, these systems need to be reliable, robust, and safe. Standardization and certification are relevant tools to reach this objective. One of the main objectives of standardization, from the industry point of view, is to reduce development costs through common methodologies, procedures, and technical solutions that can be developed and shared. Public authorities and regulators have legal mechanisms to mandate standardization processes to standardization bodies. However, excessive standardization, a powerful tool, may also have negative features for the development of new technologies. This session will offer a discussion with topic experts on how standardization towards automation is currently driven and what the expected needs are in the short- and long-term; present challenges for the certification of automated road vehicles; foster the debate on views and recommendations for handling certification for automated road vehicles; and present the legal frameworks and related certification procedures in the some European Member states that today allow (in specific conditions) driverless vehicles on public roads. It will focus both on operational and infrastructural constraint and requirements as well as system versus device-level testing/certification. Benefits of a global testing framework for vehicle and system suppliers as well as system operators and road/transport/urban authorities will be illustrated.

Organizer
Maxime Flament, ERTICO - ITS Europe, Belgium
Moderator
Álvaro Arrúe, APPLUS+ IDIADA, Spain
Speakers
Francois Fischer, ERTICO ITS Europe, Belgium
Marcos Pillado, IDIADA, Spain
Adrian Zlocki, IKA, Germany
Gerben Feddes, RDW, Netherlands
Carl Andersen, Federal Highway Administration, United States

Sunday 29 October 2017

SIS09 - Mapping Intersections with Traffic Signals for C-ITS Applications
Sunday 29 October 2017, 13:45 - 15:15 (513 BC)
Topic: A. Connectivity and Autonomy

Intersections are the most complex parts of the network for vehicles to navigate. Traffic signals and complex intersections add further complexity to the interaction. C-ITS will progressively transform the way users interact with traffic signals at intersections on the road network. Vehicles that request priority at traffic signals and the traffic control system must both be aware of the relationships and communicate consistently. The mapping of intersections, their movements, and the traffic signals that control those movements and their relationships is critical for safe and efficient navigation. The mapping is central to the issue and critical for efficient control by the traffic control system. This session will explore the issues, methods, and technology involved in managing the mapping and relationships for traffic signals at intersections.

Organizer
Fraser Johnson, Roads and Maritime Services, Australia
Speakers
Norman Cheung, Roads and Maritime Services, Australia
Andrew Mehaffey, HMI Technologies, HMI Technologies Pty Ltd, Australia

SIS11 - A Programmatic Approach to Integrating Agency Data into Mobile Map Applications
Sunday 29 October 2017, 13:45 - 15:15 (510 A)
Topic: D. Data, Security and Privacy

Transportation agency collaboration with app-based mapping and navigation companies introduces institutional as well as technological challenges. The Port Authority of New York and Jersey is hosting this session as a dialog among representatives from Google Maps, the City of Toronto, Waze, and the Kentucky Transportation Cabinet on these challenges as well as on the potential benefits and early successes. The Port Authority will also share its perspective on making such partnerships a strategic priority backed with a programmatic approach including staff time, working with multiple companies, and mainstreaming into operations. The session discussion will include opportunities to share verified real-time enterprise data (incidents, construction, emergencies, and special events); to update basemap information including points of interest and pedestrian wayfinding; to target advanced notifications that support demand management; to improve safety through accurate roadways for GPS navigation and voice match to signs; and to access data for agency performance management. Another aspect of the discussion will be programmatic approaches to these endeavors such as assigning staff as single points of contact, working towards industry standards to streamline interfaces, developing data quality processes, and future expansion to complement connected and automated vehicles. This session also invites audience input on their own programs, goals, successes, and lessons learned.

Organizer
Kathleen Swindler, WSP, USA
Moderator
Robert Galvin, Port Authority of New York and New Jersey, USA
Speakers
Theodore Bobowsky, Port Authority of New York & New Jersey, USA
Adam Freid, Waze, USA
Chris Lambert, Kentucky Transportation Cabinet, USA
Gregg Loane, City of Toronto, Canada

Sunday 29 October 2017

SIS12 - Shared Mobility: Between Now and What's Possible
Sunday 29 October 2017, 13:45 - 15:15 (510 D)
Topic: F. Disruption and New Business Models

Shared mobility has started to slowly take shape in cities around the globe. It can take many forms: from the traditional public transit models to the new and innovative services such as on-demand micro-transit and, of course, Mobility as a Service. Automated transportation, in the not-so-distant future, will re-shape shared mobility within a completely modified mobility ecosystem. There are high hopes for shared mobility including emissions reductions, less congestion, and improved accessibility for all. But what can and should be done to reach those goals? Some cities have started making their first moves by partnering public transportation with private companies like TNCs. The International Transport Forum conducted a simulation in Lisbon to determine the impact if all the city's transportation was replaced by on-demand, shared mobility services. The simulation demonstrated astounding results and promise. The same simulation is currently being undertaken in Helsinki, Dublin, and Auckland. This session will explore the results of shared mobility from first movers, the lessons learned from the "shared mobility on steroids" model simulated for Lisbon and details on models in between. What is realistically accomplishable without government intervention, what can and should be done now to fulfill shared mobility's promises as well as the extent to which governments need to intervene to achieve these promises, particularly in a context where automated vehicular technology is creeping into the mobility landscape, will also be discussed.

Organizer
Krista Huhtala-Jenks, Ministry of Transport and Communication Finland, Finland
Moderator
Krista Huhtala-Jenks, Ministry of Transport and Communication Finland, Finland
Speakers
Catherine Kargas, MARCON, Canada
Sami Sahala, Forum Virium Helsinki, Finland
Jari Kauppila, International Transport Forum OECD, France
Richard Harris, HMI Technologies, UK
Sharon Feigon, Shared Use Mobility Center, USA
Andrew Salzberg, Uber, United States
Liu Xidi, Didi Chuxing, China

Sunday 29 October 2017

SIS13 - Connectivity: Needs and Challenges for the Deployment of Automated Vehicles
Sunday 29 October 2017, 15:30 - 17:00 (515 ABC)
Topic: A. Connectivity and Autonomy

Automated driving could leverage recent advances in telecommunication technologies (e.g., ITS G5, 4G/LTE/5G). Connectivity can extend the electronic horizon and the environment perception of on-board-sensors that have physical limitations. It can also work during harsh weather conditions (e.g., snow, fog, heavy rain) where some sensors are malfunctioning or providing significant errors. In Europe, several EU-funded projects (e.g., AutoNet2030, i-GAME, AdaptIVe) have addressed these topics and several EU initiatives (C-ITS Platform - European Automotive-Telecom Alliance) have been launched. Relevant initiatives have also developed in other regions. This session, gathering key players from industry and academia in the field of connected automation, will offer the opportunity to present the current initiatives, debating open needs and future challenges. All aspects related to connectivity will be discussed, including different technologies (ITS G5, LTE-V2X, LTE-advanced, 5G) and the following points: V2X communication protocols (e.g. updates needed for automated driving); ubiquitous connectivity/seamless use of different communication technologies; reliable and resilient communication considering harsh environments (e.g. truck platooning in tunnels) to ensure functional safety and a minimum quality of service; and cybersecurity to make automobiles tamper-proof in attacks from hackers.

Organizer
Maxime Flament, ERTICO - ITS Europe, Belgium
Moderator
Angelos Amditis, ICCS, Greece
Speakers
Maxime Flament, ERTICO - ITS Europe, Belgium
Panagiotis Lytrivis, ICCS, Greece
Brian Cronin, FHWA, USDOT JPO, USA
Jim Misener, Qualcomm Technologies, Inc., USA
Tim Leinmueller, Denso Automotive Deutschland GmbH, Germany

SIS14 - The Use of Big Data Analytics in Transportation
Sunday 29 October 2017, 15:30 - 17:00 (513 DEF)
Topic: D. Data, Security and Privacy

We have more data available now in transportation than at any other time in history. The challenge for transportation professionals and smart city advocates is how to make the best use of this data by converting it into information, developing new insight and understanding and then producing new strategies and responses based on the insight. Now, more than ever, it is important for the transportation profession to understand the capabilities of data analytics and data science. This session will provide an opportunity for big data and analytics solution providers to explain advances that have been made in managing big data and efficiently turning into insight and understanding. The presentations will address both technology and business models explaining how a Smart data exchange can provide the glue to hold the smart city together. This is an important time in transportation and smart cities and the session will help to build a bridge between data science and transportation by explaining the power and cost-effectiveness of new approaches to data management.

Organizer
Robert McQueen, Teradata Inc., USA
Moderator
Robert McQueen, Teradata Inc., USA
Speakers
Kyle Connor, Cisco Systems, USA
Waman Mainkar, KPIT Technologies, India
Peeter Kivestu, Teradata, United States
Jeff Cox, Radius IoT, United States

Sunday 29 October 2017

SIS15 - On-Demand Passenger Transport: Innovative Operation Models
Sunday 29 October 2017, 15:30 - 17:00 (513 BC)
Topic: F. Disruption and New Business Models

Crowded cities around the world are facing new challenges in terms of fast and efficient transport options that would ease congestion and increase mobility. Technology is paving a major path for citizens to choose more flexible transportation modes—rather than traditional bus-train-tram modes---through concepts such as car-sharing/car-pooling; electric, connected, and driverless cars; and on-demand transportation. While on-demand mobility has gained increasing popularity in highly concentrated urban areas, remote areas with low demand do not benefit from the same advantages. As an example, improving public transport services in these areas using an on-demand strategy seems a true challenge to tackle. This session will focus on presenting innovative ideas, concepts, and case studies from experts in the domain of on-demand mobility from around the world, with the aim of sharing lessons learned as well as discussing new strategies and methodologies to deal with fast-changes in every increasing urban infrastructures.

Organizer
Adriana Simona Mihaita, Data61, Australia
Moderator
Adriana Simona Mihaita, Data61, Australia
Speakers
David Adelman, VIA, United States
Yuming Ou, DATA61|CSIRO, Australia
Andreas Mai, Keolis North America, USA
Kevin Orr, Liftango, Australia
Yasuhiko Kumagai, Kochi University of Technology, Japan
Carol Schweiger, Schweiger Consulting LLC, United States
Gorazd Marinic, IRU Projects ASBL, Belgium

SIS16 - The Port of the Future
Sunday 29 October 2017, 15:30 - 17:00 (514 BC)
Topic: C. Smart(er) Cities

The Port of the future session will bring ports and cities together to discuss the ‘’present needs and challenges’’ and anticipate the ‘’future trends’’ of the next generation smart port city. The presentations will focus on best practices such as how we are promoting port cities circular economy, smart port cities policies, smart and connected port, and how we could achieve a smart cities and smart port integrated approach, next generation connecting city to hinterland.

Organizer
Lina Konstantinopoulou, ERTICO - ITS Europe, Belgium
Moderator
Manuela Flachi, ERTICO - ITS Europe, Belgium
Speakers
Sascha Westermann, Hamburger Hochbahn AG, Germany
Daniel Dagenais, Port of Montreal, Canada
Andre Perpey, Geoloc Systems, France
Hans Stapelfeldt, Port of Hamburg, Germany
Francois Thibodeau, City of Montreal, Canada

Sunday 29 October 2017

SIS17 - Towards Improving Quality of Mobility (QoM) from the Smart City's Perspective
Sunday 29 October 2017, 15:30 - 17:00 (510 A)
Topic: D. Data, Security and Privacy

Much of Quality of Life in smart cities is owed to Quality of Mobility (QoM). Among the variety of mobility modes, public transport is expected to be utilized efficiently based on individual preference, such as personal mobility vehicles (PMV), and the concept of the sharing economy is changing the traditional perception of transport. To overcome the challenges to choosing the most suitable mobility service for cities, it is necessary to have a unified framework for mobility services. A data-sharing scheme and security should be one of the important factors. This session will discuss how to improve QoM in smart cities by utilizing ICT technologies, such as IOT and big data, to achieve human-centric transport via needs-based or project-based approaches.

Organizer
Makoto Otsuki, ITS Japan, Japan
Moderator
Nobuyuki Ozaki, Toshiba Corporation, Japan
Speakers
Nobuyuki Ozaki, Toshiba Corporation, Japan
Satoru Nakajo, The University of Tokyo, Japan
Ram Kandarpa, Booz Allen Hamilton, United States
Rene Coutu, Société de transport de Montréal, Canada

TS01 - Using MaaS to Enable Smart Cities and Regions
Sunday 29 October 2017, 12:00 - 13:30 (512 D)
Topic: C. Smart(er) Cities

Moderator
Alfredo Escriba, Kapsch TrafficCom AG, USA

AM-SP0949 - Reduce Bay Area Commuting by 25% via "Fair Value Commuting"
Steve Raney, Joint Venture Silicon Valley, United States
EU-TP0984 - MaaS Service Combinations for Different Geographical Areas
Aki Aapaoja, VTT Technical Research Centre of Finland Ltd., Finland
EU-SP1013 - The Topology of Mobility as a Service: A Tool for Understanding Effects on Business and Society, User Behavior and Technical Requirements
Per-Erik Holmberg, RISE Viktoria, Sweden
EU-TP1076 - Mobility as a Service: The Role of City and Regional Governments
Mahmood Hikmet, HMI Technologies, New Zealand
AM-TP1307 - Optimizing Mobility Through the Integration of Data in Safe and IT Systems: The Montreal Real-Time Collaborative Solution
Francois Thibodeau, Ville de Montréal, Direction de l'exploitation du réseau artériel, Canada

Sunday 29 October 2017

TS02 - Connected Vehicle Communication Issues
Sunday 29 October 2017, 12:00 - 13:30 (511 C)
Topic: A. Connectivity and Autonomy

Moderator
Olle Isaksson, Ericsson, Netherlands

EU-TP0875 - Secure Hybrid ITS Communication with Data Protection
Horst Wieker, Hochschule für Technik und Wirtschaft des Saarlandes, Germany
EU-TP1144 - Adaptation Layer Based Architecture for Vehicular Hybrid Communication
Prachi Mittal, Denso Automotive Deutschland GmbH, Germany
AP-SP1202 - Performance Evaluation of LTE V2X Communications for Crash Warning Application
Ryoya Kawasaki, Nagoya University, Japan
AM-SP1290 - Combating Ground Reflections for Wireless Sensors
Ashutosh Tadkase, Carnegie Mellon University, USA

TS03 - Managing Major Incidents Using ITS
Sunday 29 October 2017, 12:00 - 13:30 (511 F)
Topic: A. Connectivity and Autonomy

Moderator
Daniel Lukasik, Parsons, United States

AM-TP0753 - Integrating Transportation Operations for Metro Detroit
Richard Beaubien, Beaubien Engineering, United States
EU-TP0776 - Implementation and Development of the "GLONASS+112" System in the Republic of Tatarstan
Geller Anatoly, Ministry of Informatization and Communication of the Republic of Tatarstan, Russia
AP-TP0816 - Answering Alarm Intelligent Positioning Practice for Emergency Incidents in Expressway
Yingjie Ma, China Academy of Transportation Sciences, China
AP-TP1050 - ITS Solutions for Keeping a Rural Highway Open and Operating for Our Customers Journeys
Sean Lewis, Green Signal Ltd, New Zealand

TS04 - Using ITS to Make Work Zones Smarter and Safer
Sunday 29 October 2017, 12:00 - 13:30 (512 A)
Topic: A. Connectivity and Autonomy

Moderator
Martha Morecock Eddy, HNTB, KCI Technologies, Inc, USA

EU-TP0862 - Distribution of Spatially Referenced Road Closure and Incident Information for Rendering in Mobile Devices Using TPEG Over DAB+
Olaf Czogalla, Institute of Automation and Communication Magdeburg, Germany
AM-TP1230 - Ministry of Transportation of Ontario's Guidelines for the Use of Temporary Queue Warning Systems for Planned and Unplanned Events
Mike Barnet, CIMA+, Canada
AM-TP1276 - Enhanced Speed Compliance for Work Zones (ESC4WZ) System Demonstration and Testing
Daryl Taavola, AECOM, U.S.A.
AP-TP1287 - MyRo Smart Work Zones Operational Experience and Benefits in Melbourne
Scott Benjamin, WSP | Parsons Brinckherhoff, Australia

Sunday 29 October 2017

TS05 - ALEXA - Is Speech Recognition the Next Big Thing in ITS?
Sunday 29 October 2017, 12:00 - 13:30 (512 B)
Topic: E. Integrated Approach: Planning, Operations and Safety

Moderator
Sam Shen, Ministry of Economic Affairs, Chinese-Taipei

AP-TP0982 - Research on Attracting Attention by the Abnormal Phenomenon Transmission Method Using Auditory Information
Hiroyuki Kameoka, Central Nippon Expressway Company Limited, Japan
AP-TP1039 - Robust Isolated Phrase Recognition System Using Running Spectrum Analysis
Mayuka Gomi, Hokkaido University, Japan
AP-TP1199 - Talking Humanoid Robot Verification in Tokyo Station
Manabu Sugasawa, East Japan Railway Company, Japan

TS06 - Using Simulation to Improve CAV: Part 1 of 3
Sunday 29 October 2017, 12:00 - 13:30 (512 C)
Topic: A. Connectivity and Autonomy

Moderator
Jesus Martinez, Southwest Research Institute, USA

EU-SP0792 - Impact of Automated Vehicles on Capacity of the German Freeway Network
Martin Hartmann, Karlsruhe Institute of Technology, Germany
AM-SP0904 - Online Trajectory Planning with a Modified Potential Field Method on Distributed Architectures for Autonomous Vehicles
Farid Bounini, UdeS, Canada
AM-SP1337 - Synthetic Time Series Technique for Predicting Network-wide Road Traffic
Kartik Kaushik, University of Maryland, United States

TS07 - Smart City Business Models and Scenarios
Sunday 29 October 2017, 13:45 - 15:15 (512 D)
Topic: C. Smart(er) Cities

Moderator
Steven Green, WSP, United Kingdom

EU-SP0918 - Impact Evaluation of Value Networks for ITS Services
Trond Foss, SINTEF Transport Research, Norway
EU-TP1234 - Smart Cities: A Case Study and Delphi Approach in Understanding the Role of Social Enterprise Business Models Toward Integrated Public Transportation
Liam Fassam, Institute of Logistics, Infrastructure, Supply & Transformation Travel. University of Northampton, United Kingdom
AM-SP1277 - Tactile Matrix for Real-Time Computation and 3D Projection Mapping of Smart City Scenario
Talmai Oliveira, Philips Lighting Research North America, United States
AM-SP1286 - Crowdsourced Smart Cities
Bob Iannucci, Carnegie Mellon University, USA
AM-SP1339 - Exploring an Energy-Mobility Nexus: A Framework for Curating and Comparing Data and Models Using Case Studies of Four 'Smart City' Finalists
Joshua Sperling, National Renewable Energy Laboratory, USA

Sunday 29 October 2017

TS08 - Electronic Tolling Operations - Best Practices
Sunday 29 October 2017, 13:45 - 15:15 (511 C)
Topic: A. Connectivity and Autonomy

Moderator
Brian McNiff, Kapsch TrafficCom North America, USA

AM-TP0957 - Connected Vehicle Applications for Tolling
Robert Edelstein, AECOM, USA
AP-TP1224 - Heavy Vehicle Toll Management Aimed at Reducing Life Cycle Cost with ITS Technology
Takao Goto, Faculty of Business Administration Kindai University, JAPAN
EU-TP1280 - SICE's Tolling Commercial Back Office System: "BIS"
Pablo Ruiz, SICE, Australia
AM-TP1282 - ITS 2017 Dynamic Pricing 1.0
Luis Carrera, SICE Canada Inc., Canada

TS09 - Integrating CAV with ADAS
Sunday 29 October 2017, 13:45 - 15:15 (511 F)
Topic: A. Connectivity and Autonomy

Moderator
Sue Bai, Honda, USA

AM-SP0796 - Connected Automated Vehicle (CAV) Implementation
Robert James, HNTB, United States
EU-TP0998 - Vehicle Perception Augmented by Cooperation V2X - PAC V2X Project
Oyunchimeg Shagdar, Institute VEDECOM, France
AM-TP1111 - Multiple Object Detection and Tracking for ADAS and Autonomous Car
Sotaro Tsukizawa, Panasonic Corporation, USA
AP-SP1124 - Design of an Adaptive Cruise Control and Collision Avoidance with Lane Keeping System Support for Vehicle Autonomous Driving
Hsiang-Chieh Hsu, Automotive Research and Testing Center, Chinese-Taipei
AP-SP1206 - Economic Effects of Combining Technologies in Advanced Driving Assistance Systems
Hiroaki Miyoshi, Doshisha University, Japan

TS10 - Signal Priority: Part 1 of 2
Sunday 29 October 2017, 13:45 - 15:15 (512 A)
Topic: C. Smart(er) Cities

Moderator
Robert Rausch, TransCore, U.S.A.

AM-SP0863 - Bus Queue Jump Lanes Utilization: A Case Study in Calgary, AB Canada
Muhammad Asim, The City of Calgary, Canada
AM-TP1201 - Impacts of Bus Preferential Measures on Service Planning at Laval Transit
Sylvain Boudreau, Société de transport de Laval, Canada
AP-TP1349 - A Proposal of Advanced PTPS Control Scheme by Applying Bus Convoy Operation
Shinji Tanaka, Yokohama National University, Japan

Sunday 29 October 2017

TS11 - ITS Planning
Sunday 29 October 2017, 13:45 - 15:15 (512 B)
Topic: A. Connectivity and Autonomy

Moderator
Louis Neudorff, CH2M HILL, USA

AM-SP0845 - Toward a Seamlessly Integrated Cyber-Physical Intelligent Transportation System of Systems
Mohamed Elshenawy, The University of Toronto, Canada
AM-TP1135 - Results-Based Alignment: Bringing Service Focus to ITS Programs
Jack Stickel, Alaska Department of Transportation and Public Facilities (retired), United States
AM-TP1274 - Applying Systems Engineering for Intelligent Transportation Systems Implementation: Process and Enhancements
Ming-Shiun Lee, AECOM, USA
AM-TP1318 - United States National ITS Architecture Version 8.0: Integrating ITS and Connected Vehicle
Clifford Heise, Iteris, Inc., United States
AP-TP1328 - Development of VicRoads Application Architecture Using TOGAF
William Ho, VicRoads, Australia

TS12 - Using Simulation to Improve CAV: Part 2 of 3
Sunday 29 October 2017, 13:45 - 15:15 (512 C)
Topic: A. Connectivity and Autonomy

Moderator
Loren Bartlett, HNTB, USA

EU-SP0762 - Implications of Automated Vehicles on Freeway Safety and Operations
Nassim Motamedidehkordi, Technical University of Munich, Germany
AP-TP1048 - Study of Energy-Saving Control Method for Hybrid Electric Vehicle
Yuji Igarashi, Mitsubishi Electric Corporation Advanced Technology R&D Center, Japan
AM-TP1102 - Improving Throughput of an Isolated Signalized Intersection in a Connected Vehicle Environment
Tony Qiu, University of Alberta, Canada
AM-SP1329 - Development and Evaluation of Real-Time Online Simulation Framework
Joyoung Lee, New Jersey Institute of Technology, USA

TS13 - The Impacts of Weather and the Provision of Actionable Information
Sunday 29 October 2017, 13:45 - 15:15 (513 A)
Topic: B. Infrastructure Challenges and Opportunities

Moderator
Andrew Gurr, Fusion Networks, New Zealand

AM-TP0887 - Advancements in Road Weather Information Systems in Canada
Robert Boggs, Amec Foster Wheeler, Canada
AP-TP1001 - Effect of Rainfall Impact on Traffic: Evidence from Shenzhen
Dai Jianjun, Shenzhen Urban Transport Planning Center Co., Ltd., China
AP-TP1362 - Efforts to provide travel time information immediately after the M-7.3 Kumamoto Earthquake
Toshihiro YOKOO, West Nippon Expressway Company Limited, Japan

Sunday 29 October 2017

TS14 - Using Integrated Corridor Management Techniques for Safety and Decision Support
Sunday 29 October 2017, 15:30 - 17:00 (512 D)
Topic: E. Integrated Approach: Planning, Operations and Safety

Moderator
Stephen Novosad, HNTB, USA

AP-TP0806 - Integrated Transport Management – Integration Alongside Personalization
Chris Bax, Cubic Transportation Systems, United Statescz
AM-TP0884 - Big Data and Decision Support for an Integrated Corridor Management System
Kevin Miller, Kapsch TrafficCom Transportation, USA
AM-TP0944 - Lower Hudson Transit Link/I-287 Integrated Corridor Management Overview
Brad Hartwig, Ove Arup & Partners Ltd, United States of America
AP-TP1228 - Operational Study of Impact of ITS on Urban Corridor Safety
Sourabh Jain, Indian Institute of Technology Roorkee, India
AM-TP1304 - I-80 SMART Corridor
Derek Pines, Parsons, United States

TS15 - Evaluation of CAV Enabling Technologies
Sunday 29 October 2017, 15:30 - 17:00 (511 C)
Topic: A. Connectivity and Autonomy

Moderator
Rakesh Sharma, HNTB, USA

AM-SP0756 - Dynamics of Driving Regimes Extracted from Basic Safety Messages Transmitted Between Connected Vehicles
Behram Wali, The University of Tennessee, United States
EU-SP1092 - Analysis of Scenario Classification Frameworks for Assessment of Automated Driving by Using Real-World Driving Data
Adrian Zlocki, IKA, Germany
AP-TP1207 - Sydney Enables Heavy Vehicle Priority via Vehicle to Infrastructure (V2I)
Norman Cheung, Roads and Maritime Services, Australia
AP-SP1265 - Field Measurements of IPv6 Routing Over DSRC Network with and without RSU Handover
Roy Lao Sahagun, Nanyang Tec, Singapore
AM-TP1324 - Dedicated Short Range Communications (DSRC) Radios Field Testing - A Case Study
Vijay Varadarajan, AECOM, USA

Sunday 29 October 2017

TS16 - Monitoring Driver Behavior
Sunday 29 October 2017, 15:30 - 17:00 (511 F)
Topic: C. Smart(er) Cities

Moderator
Sadahiro Kawahara, JTEKT Corporation, Japan

AP-SP0768 - Fuel Consumption Estimation System and Method with Lower Cost
Hsin-Han Shie, Telecommunication Laboratories, Chunghwa Telecom Co., Ltd., Chinese-Taipei
AP-SP0891 - Modeling Resting Behavior on Inter-Urban Expressways Considering Long-Sustained Rest with ETC Data
Ryota Horiguchi, i-Transport Lab. Co., Ltd., Japan
AP-TP0991 - Road Environment Anomaly Detection Based on Symbolization Approach
Hideaki Misawa, Denso Corporation, Japan
AP-SP0994 - Detection of Driving Behavior Based on the Segmentation and Reorganization of Sub-Behavior
Shaojun Liu, Tsinghua-Berkeley Shenzhen Institute, China
AM-SP1271 - Microscopic Road Safety Comparison Between Canadian and Swedish Roundabout Driver Behavior
Nicolas Saunier, Polytechnique Montreal, Canada

TS17 - Signal Priority: Part 2 of 2
Sunday 29 October 2017, 15:30 - 17:00 (512 A)
Topic: C. Smart(er) Cities

Moderator
Athena Hutchins, Niagara International Transportation Technology Coalition (NITTEC), United States

AM-TP0927 - NYC's Central Transit Signal Priority Operation Tools: Current and Future
Lihua Zhang, TransCore, United States
AM-TP1134 - Why a Specific Vehicle Centralized Preemption/Priority System Makes Sense for Montreal
Eric Bertrand, CIMA+, Canada
AM-TP1278 - ITS 2017 Public Transport Priority System 1.0
Tiago Kaniak, SICE Canada Inc., Canada

TS18 - Using Cameras and Lidar for Detection
Sunday 29 October 2017, 15:30 - 17:00 (512 B)
Topic: C. Smart(er) Cities

Moderator
Masami Mizutani, Fujitsu Laboratories of America, USA

AM-TP0824 - Traffic Sign Content Benefitting from Artificial Intelligence
Kamron Clifford, TomTom, USA
AP-TP0852 - Recognizing Driving Situation by the Sensor Fusion Using Monocular and Stereo Camera
Yuki Kurihara, Shibaura Institute of Technology, Japan
AP-TP0853 - 3D Reconstruction by Perspective Transformation Using Rear-View Camera
Naoyuki Konosu, Shibaura Institute of Technology, Japan
AP-SP1117 - Vehicle Logo Detection Using Edge Features and Prior Knowledge
Feng Wang, Henan University of Technology, China
AM-TP1239 - Solid-State LiDAR: Enabling High-Volume Optical Sensor Deployments in ITS Applications
Frederic Gagnon, LeddarTech, Canada

Sunday 29 October 2017

TS19 - Using Simulation to Improve CAV: Part 3 of 3
Sunday 29 October 2017, 15:30 - 17:00 (512 C)
Topic: A. Connectivity and Autonomy

AP-TP1126 - Development of Car-Following Model for Automated Vehicle in Microscopic Traffic Simulation Using Measured Data
Sangmin PARK, Ajou University, Korea
AP-TP1292 - Development of Personal Mobility Overturning Avoidance System Utilizing Physics Simulation
Wataru Takayanagi, AISIN SEIKI Co., Ltd., Japan
AM-SP1346 - Role of Vehicle's Intention on the Optimization of Collision Avoidance Strategies for Cooperative Driving
Giancarlo Colmenares, Université du Québec en Outaouais, Canada

TS20 - Learning Systems for Advanced Driving
Sunday 29 October 2017, 15:30 - 17:00 (513 A)
Topic: A. Connectivity and Autonomy

Moderator
Shunsuke Kamijo, The University of Tokyo, Japan

AP-SP0858 - Prediction of Potential Human Intention Using Supervised Competitive Learning
Masayoshi Ishikawa, Hitachi, Ltd., Japan
AM-SP0955 - Artificial Intelligence in ITS and Issues Challenging the Widespread Use of Autonomous Vehicles
Denis Gingras, Université de Sherbrooke, Canada
AP-SP1012 - Effect of Attentional Instruction on Driver Behavior in Transition from Automated Driving to Manual Driving
Tomoki Endo, Keio University, Japan

Monday 30 October 2017

ES01 - Breaking Silos to Pave the Way to Automated Vehicles (sponsored by Econolite)
Monday 30 October 2017, 12:00 - 13:30 (511 ABDE)
Topic: A. Connectivity and Autonomy

An ecosystem of industry and government partners must be established to contribute the necessary enabling components for the autonomous future. Auto and truck OEMs must work with technology partners to provide on-board sensors for cars and trucks as well as self-healing and accurate high-definition maps to support safe and effective autonomous driving. Full V2X connectivity must be implemented in a scalable and sustainable operating model. Finally, governments and industry must work together to regulate the entire process. This session will explore how these stakeholders can move from operating largely independently, as they do today, to cooperating effectively and quickly for a safe autonomous future.

Moderator
Shelley Row, Eberle Design Inc., United States
Speakers
Leslie Richards, Pennsylvania Department of Transportation, USA
Naohiko Kakimi, Electric Vehicle, Advanced Technology and ITS promotion Office, Ministry of Economy, Trade and Industry, Japan
Paul Campion, Transport Systems Catapult, United Kingdom
Walter Nissler, United Nations Economic Commission for Europe (UNECE), Switzerland

ES02 - Securing Critical ITS Infrastructure in a Connected World
Monday 30 October 2017, 13:45 - 15:15 (511 ABDE)
Topic: B. Infrastructure Challenges and Opportunities

Critical ITS infrastructure is vulnerable to physical and cyberattacks against computer systems, networks, applications, and mobile devices. With the Internet of Things (IoT) becoming more prevalent, our society is more 'networked' meaning that traditionally isolated control systems connecting business, government, and citizens become more vulnerable. To date, government agencies, business websites, and databases have been compromised, resulting in stolen personal data among other things. Some of these actual incidents include breaches in transportation operations. This session will address the policies needed and best practices that can be used to secure ITS systems, assuring the public they are safe when using connected transportation systems.

Moderator
Michael De Santis, Innovation MI-8, Canada
Speakers
Darran Anderson, Texas Department of Transportation, USA
Woo-Seok Choi, Convergence of New Industry Division, Ministry of Science, ICT and Future Planning (MSIP), Korea
Maurice Geraets, NXP, The Netherlands
Brian Ness, Idaho Transportation Department, USA

Monday 30 October 2017

ES03 - ITS Delivering Livability
Monday 30 October 2017, 15:30 - 17:00 (511 ABDE)
Topic: C. Smart(er) Cities

City transport has improved considerably over the last 20 years based on understanding traffic throughput, safety, and environmental impact. But today's city pressures are much wider ranging with many linked to demographic trends such as increasing and ageing urban populations. We need to make cities more pleasant places in which to work and live, but adding to city infrastructure is slow, expensive, and usually unwelcome. And in many cities, there also just isn't the space to extend infrastructure. To make cities more livable, we need to deliver transport and other services in new ways. We need to devise new tools for city managers that allow them to understand and address the best ways to balance supply and demand; reduce congestion and improve air quality; integrate all modes of transport and incorporate Mobility as a Service (MaaS); modernize public transport and make all city transport more accessible; upgrade the facilities for pedestrians and cyclists; reduce transport's energy consumption; allow passenger and freight services the best shared use of infrastructure; convert to electromobility; and supply better transport information, ticketing, and payment services. This session will explore whether we can deliver gains in all these areas by finding better ways to use what we have.

Moderator
Delphine Krieger, Eurometropolis of Strasbourg, France
Speakers
Randell Iwasaki, Contra Costa Transportation Authority, USA
Steffen Schaefer, HMI Technologies – Global, New Zealand
Morten Kabell, City of Copenhagen, Denmark
Jeff Brandes, The Florida Senate, United States

SCP01 - Can Cities Still be Smart Cities in Inclement Weather?
Monday 30 October 2017, 13:30 - 14:20 (Smart Cities Pavilion)
Topic: C. Smart(er) Cities

Panelist Discussion Topics
Jay Hietpas, Director, Office of Traffic, Safety and Technology, MnDOT: Inclement weather autonomous shuttle project and the snow plow project in Minnesota.
Sinan Yordem, Ph.D., Global Ecosystem Manager - 3M™ Connected Roads, Transportation Safety Division, 3M: Discussion of the redundancies necessary for inclement weather. Signs, lines and sensors and how they can be enhanced for the cars of the future.
Phil Magney, Founder & Principal Advisor, Vision Systems Intelligence (VSI): The CAV complicated ecosystem and technical vehicle challenges associated with the Adas systems for inclement weather.
Nichole Morris, Ph.D., Director at HumanFIRST Laboratory, University of Minnesota / Max Donath, Ph.D., Director, Roadway Safety Institute and Professor of Mechanical Engineering, University of Minnesota: Human Factors projects.

Moderator
Susan M. Mulvihill, Minnesota Department of Transportation, United States

Monday 30 October 2017

SCP02 - How Can Cities Reconfigure Their Road Infrastructure for the Future Car? Or How Can We Integrate Electric, Automated Cars Into Our City Spaces?
Monday 30 October 2017, 16:00 - 16:50 (Smart Cities Pavilion)
Topic: C. Smart(er) Cities

Within 15 years, the majority of vehicles sold will be electric, at least Level 4 autonomous, and used primarily by people who do not own them. During this same period, our cities are bracing for an accelerating influx of new inhabitants that will stretch their resources to the limit. • In the face of these unprecedented new demands on their transport and energy infrastructure, what solutions can cities adopt to successfully manage through this transition? • In this session, the panelists, drawing inspiration from real-world examples, consider how collaborative partnerships between the public and private sectors around data could be key.

Moderator
Monali Shah, HERE, United States

Opening Ceremony
Monday 30 October 2017, 08:30 - 10:00 (517)

The Opening Ceremony will be held Monday, October 30 at the Palais des congrès de Montréal. It will kick off the changing transportation environment around the world as well as the rapidly evolving technology of connected, autonomous, and electric vehicles. Special entertainment and several industry awards will also be featured.

Moderator
David St. Amant, ITS America, United States
Speakers
Grover Burthey, DOT, United States
Chris Philp, CIMA+, Canada
Cees de Wijs, ERTICO-ITS Europe and CEO, Dynniq, Belgium
Yutaka Hasegawa, National Police Agency, Japan

PL01 - Integrated Mobility with Urban Cities
Monday 30 October 2017, 10:00 - 11:00 (517)
Urban leaders will debate the benefits of Smart Cities solutions and the unique features of their cities driven by customer needs and city cultures.

Moderator
John Barton, Texas A&M University, United States
Speakers
Christopher Hart, -, USA
Michel Schilling, The Technical and Environmental Administration, City of Copenhagen, Denmark
Aref Salem, City of Montreal, Canada
Lianne Dalziel, Christchurch, New Zealand
Lam Wee Shann, Land Transport Authority of Singapore, Singapore

Monday 30 October 2017

SIS19 - Connected Vehicle Pilot Deployment Program (Session 1): Deployment Status and Demonstrating Impacts
Monday 30 October 2017, 12:00 - 13:30 (515 ABC)
Topic: A. Connectivity and Autonomy

This session is the first of three interrelated sessions focused on the USDOT CV Pilot Projects. It will provide a high-level conceptual overview and status report on three pilots. Each pilot site will be asked to present how the deployment will benefit travelers and other stakeholders as well as how the site will be tracking that these benefits are realized after deployment.

Organizer
Kate Hartman, U.S. Department of Transportation, USA
Moderator
Kate Hartman, U.S. Department of Transportation, USA
Speakers
Mohamad Talas, NYCDOT, USA
Tony English, Trihydro, U.S.A.
Bob Frey, Tampa-Hillsborough County Expressway Authority, USA

SIS20 - Smart Cities: Think Big, Start Small, Act Fast
Monday 30 October 2017, 12:00 - 13:45 (513 DEF)
Topic: C. Smart(er) Cities

In the summer of 2017, Canada will be launching the Smart Cities Challenge, which will offer five cities a chance to compete and secure funding up to $70 million. Smart Cities provide an opportunity to bring transformation to how people live, work, move, and play. It empowers citizens to choose their day-to-day interaction with amenities around them and ensures a sustainable, livable, safe, and secure community life. Technology and data constitute an important component of Smart Cities. The data seamlessly moves in and out of many different municipal and private systems for Smart Cities to be successful. Smart Cities also supports multi-modal transportation, integrated mobility, smart traffic lights, and smart parking. ITS play an important role in achieving these intended goals. With 85% of Canadian municipalities categorized as small and mid-size cities, how should they be thinking and innovating smart solutions that matter for residents? How should they set the goals? How can local governments address their smart mobility and smart energy challenges? With the rise of intelligent communities and intelligent communication technologies, how should public and private innovators collaborate? This extended, Canadian-focused session on Smart Cities involves industry experts discussing approached to developing Smart City strategies for small urban areas. Topics covered will include strategies for transforming neighborhoods and communities, infrastructure, public service, and the economy. The session will also discuss the strategies for funding.

Organizer
Janneke van der Zee, ITS Canada, Canada
Moderator
Trevor McIntyre, IBI Group, Canada
Speakers
Rajeev Roy, Regional Municipality of York, Canada
Bruno Peters, IBI Group, Canada
Randell Iwasaki, Contra Costa Transportation Authority, USA
Richard Easley, E-Squared Engineering, USA
Nishit Shah, Philips Lighing, Canada
Joani Gerber, investStratford, Canada
Josipa Petrunic, Canadian Urban Transit Research & Innovation Consortium (CUTRIC), Canada
Joseph K. Lam, Joe Lam & Associates, Canada
Barry Pekilis, National Research Council, Canada
Alan Allegretto, WSP USA Corp, United States

Monday 30 October 2017

SIS21 - Multi-State Collaboration: The SMART Belt Coalition
Monday 30 October 2017, 12:00 - 13:30 (513 ABC)
Topic: B. Infrastructure Challenges and Opportunities

The SMART Belt Coalition was established in June 2016 as a platform for transportation agencies, academic institutions, and others to collaborate on advanced mobility initiatives. Through this Coalition, members from Pennsylvania, Ohio, and Michigan foster collaboration involving research, testing, policy, standards development, outreach, and funding pursuits for AV and transportation technology in these three states.

Organizer
Matthew Smith, Michael Baker International, United States
Moderator
Matthew Smith, Michael Baker International, United States
Speakers
Robert Taylor, Pennsylvania Turnpike Commission, United States
Randy Cole, Ohio Turnpike and Infrastructure Commission, United States of America
Stan Caldwell, Carnegie Mellon University, USA
Collin Castle, Michigan Department of Transportation, United States
Daniel Farley, PennDOT, United States

SIS22 - Sensing, Visualizing and Enhancing the Last Mile of Urban and Metropolitan Freight
Monday 30 October 2017, 12:00 - 13:30 (514 BC)
Topic: C. Smart(er) Cities

The public sector has historically focused on long-hauls for freight planning, investments, and operations. The 'last mile' of freight—the first and last leg between freight origin or destination and the mainline transport corridor—is a blind spot. As a transportation industry, we do not fully understand what types of vehicles utilize these routes, what they are carrying, why these carriers make the route and schedule choices they do, or how loading and parking behavior contributes to congestion. Without a detailed understanding of last mile behavior, it is hard to propose operational changes, prescribe policy improvements, or inform new investments. New and emerging ITS technologies have created the opportunity to mitigate the last mile blind spot. Computer vision, cloud storage, deep learning, and augmented reality technologies are converging in a number of applications that can help improve freight observability–vehicle type, purpose, and behavior—in the last mile. This session will cover specific challenges—loading, parking, congestion, safety, parcel deliveries, and land use—and showcase the state of the technological art in addressing these challenges. Findings will be presented from a number of research projects including a two-year research project for the National Academy of Sciences Transportation Research Board and a number of local and regional initiatives in North America. Technology experts, academics, and public-sector representatives will debate state of the art technologies and point the way forward.

Organizer
Vivek Sakhrani, CPCS Transcom Inc., USA
Moderator
Vivek Sakhrani, CPCS Transcom Inc., USA
Speakers
Gary Carlin, INRIX, USA
Chris Pyke, PhD, Aclima, USA
Kurtis McBride, Miovision, Canada
Lauren Cordova, Panasonic CityNOW Smart Mobility and V2X Platform, USA

Monday 30 October 2017

SIS23 - Maximizing CV Benefits through Alternative Communications
Monday 30 October 2017, 12:00 - 13:30 (510 A)
Topic: A. Connectivity and Autonomy

Many cars are connected to the internet. Soon, many cars will be connected to each other and the infrastructure. This session with discuss effective methodologies for combining Dedicated Short-Range Communications (DSRC) with other communication protocols (Wi-Fi, Cellular, Satellite) to improve/maximize safety, mobility, and sustainability applications.

Organizer
Debby Bezzina, University of Michigan, USA
Moderator
Debby Bezzina, University of Michigan, USA
Speakers
Robert Dockemeyer, Delphi, USA
Richard Michalski, Sirius XM, USA
Ariel Gold, dot, United States
Kelly Frey, Verizon, USA

SIS24 - Mini-Not Mega-Projects: ITS and Smaller Highways Authorities
Monday 30 October 2017, 12:00 - 13:30 (510 C)
Topic: B. Infrastructure Challenges and Opportunities

This session will look at how smaller highways authorities work with ITS at the local level. It will showcase some best practice examples from around the world and discuss how smaller authorities keep up with new ITS developments, manage stakeholder involvement, business cases and internal decision making, the role of cross-boundary cooperation in ITS, support and advice from central or regional government, and other external sources of information and assistance.

Organizer
Jennie Martin, ITS United Kingdom, United Kingdom
Moderator
Darren Capes, IET, United Kingdom
Speakers
Trond Hovland, ITS Norway, Norway
Martin Russ, AustriaTech, Austria
Jennie Martin, ITS United Kingdom, United Kingdom
Young-Jun Moon, The Korea Transport Institute (KOTI), Korea
Stephanie Leonard, European Commission – DG MOVE, Belgium
Tami Koivuniemi, Finnpark, Finland

Monday 30 October 2017

SIS25 - Rural MaaS
Monday 30 October 2017, 12:00 - 13:30 (510 D)
Topic: F. Disruption and New Business Models

Mobility as a Service is being heralded as one of the possible saviors for urban mobility. At the same time, there are numerous mobility challenges in less-dense areas from the outskirts of cities to rural landscape. Whereas urban mobility looks to get people out their own cars, 'rural MaaS' promises an ability to live and function without owning one. In this session, the pioneering pilots will share early experiences and earned insights on what a rural MaaS would look like.

Organizer
Sami Sahala, Forum Virium Helsinki, Finland
Moderator
Sami Sahala, Forum Virium Helsinki, Finland
Speakers
Krista Huhtala-Jenks, Ministry of Transport and Communication Finland, Finland
Janne Lonsethagen, Sør-Trøndelag County Authority, Norway
Christoph Henseler, TU Berlin, Germany
Valerie Lefler, Liberty Mobility Now Inc, United States

SIS26 - Connected Vehicle Pilot Deployment Program Session 2: Technical Challenges and Proposed Solutions
Monday 30 October 2017, 13:45 - 15:15 (515 ABC)
Topic: A. Connectivity and Autonomy

This is the second session of three back-to-back sessions focusing on the technical issues and challenges related to the USDOT CV Pilot projects. Topics that will be addressed include but are not limited to certification, app and device development, SCMS, FCC licensing, interoperability, data management/ODE, etc. Each presenter will offer overarching challenges and proposed solutions.

Organizer
Kate Hartman, U.S. Department of Transportation, USA
Moderator
Kate Hartman, U.S. Department of Transportation, USA
Speakers
Robert Rausch, TransCore, U.S.A.
Tony English, Trihydro, U.S.A.
Stephen Novosad, HNTB, USA

Monday 30 October 2017

SIS27 - 5G in ITS: Powered by Satellite Communications
Monday 30 October 2017, 13:45 - 15:15 (513 ABC)
Topic: A. Connectivity and Autonomy

This session will focus on the challenges to ITS connectivity that countries with large geographical territories, extensive road networks in remote locations, and cross border transportation pose. With 5G and new satellite constellations (OneWeb, Iridium Next, etc.) in the near future and the convergence of terrestrial and satellite technology, the provisioning of seamless connectivity on the move—in urban, rural and wilderness—will become a reality and pave the way for richer ITS services. 5G has the ambition to enable harmonious integration of heterogeneous networks whether terrestrial and satellite. It is forecasted that by 2025, 27.2% of automotive use cases will use satellite connectivity. Through its global reach, satellite communication plays a key role in creating a seamless and affordable connectivity fabric for both infrastructure and vehicles. Vehicular connectivity can be achieved through satellite using devices no larger than a smart phone. Such connectivity is sufficient for the deployment of essential ITS services including emergency calls, fleet management, remote diagnostics, and road tolling. The deployment of such ITS services in countries with extended urban areas, sparsely populated area, large geographical landmass, and extensive road networks poses technological challenges. In many cases these challenges can only be addressed adequately by combining terrestrial and space technologies. Satellite technologies—in conjunction with their terrestrial counterparts—not only have the potential to address existing challenges, but also to unlock new areas of exploitation leading to a compelling value proposition for ITS services and applications for the future.

Organizer
Ashweeni Beeharee, Satellite Applications Catapult, United Kingdom
Moderator
Ashweeni Beeharee, Satellite Applications Catapult, United Kingdom
Speakers
Joel Schroeder, Inmarsat, United Kingdom
Tim Last, Iridium, United States

SIS28 - Success Stories: Improving Mobility by Applying Advanced Traffic Management Technology
Monday 30 October 2017, 13:45 - 15:15 (514 BC)
Topic: B. Infrastructure Challenges and Opportunities

From coast to coast, cities are facing the challenges of increasing congestion and limited opportunities for capacity expansion. Some cities are utilizing existing and new advanced traffic management technologies to creatively solve problems without roadway modifications. In fact, applying new combinations of detection and traffic management is allowing locations like Seattle (WA), Arlington (TX), and Montgomery County (MD) to achieve improved vehicular, pedestrian, and transit operations. This session will explore their success stories. Seattle invested in a new integrated traffic management technology platform to combine the traffic control system, the City's dynamic message sign management system, the local travel time system, and the Washington Department of Transportation freeway system data, automating processes across the systems. Arlington developed a set of peer-to-peer algorithms in the local controller to function as an adaptive traffic control system. Montgomery County moved from a system under signal default mode—that could not be adjusted for traffic flow—to a reliable home-grown system with a central computer to handle the coordination of all traffic signals. By sharing the experience of each agency and how they overcame the issues of congestion through investment in technology, we can showcase how intelligent traffic systems can be used for improving regional mobility.

Organizer
Wendy Tao, Siemens ITS, USA
Moderator
Marcus Welz, Siemens ITS, USA

Speakers
Adiam Emery, Seattle Department of Transportation, USA
Del Nichols, Jr., Siemens ITS, USA
Richard R. Dye, Maryland Department of Transportation, USA
Yang Tao, City of Madison, Institute of Transportation Engineers Wisconsin Section, United States

Monday 30 October 2017

SIS29 - Understanding the Interactions Between Vehicle Sensing Systems and Physical Highway Infrastructure
Monday 30 October 2017, 13:45 - 15:15 (510 A)
Topic: B. Infrastructure Challenges and Opportunities

In this session, speakers will present their research results as well as concepts related to the broad theme of enhancing highway safety through a better understanding of the interactions between vehicle sensing technologies and physical highway infrastructure. Vehicle sensing technologies include camera-based vision systems, LiDAR, radar, and experimental sensor systems. Traditional and experimental infrastructure will include road signs and pavement markings as well as work zone devices and garments. On-going and planned NCHRP research to provide pavement marking performance criteria designed to offer reliable detection with today's camera-based vision systems will be summarized. Objectives and results from the I75 corridor project sponsored by the Michigan DOT will be presented from both the DOT and automotive perspectives. The goal of this corridor project is to test sensor interactions with infrastructure components such as construction signing and pavement markings. Finally, work zone applications, including retroreflective garments designed for maximum visibility of workers by vehicle vision systems, will also be presented.

Organizer
Dr. Kenneth Smith, 3M Co., USA
Moderator
Dr. Kenneth Smith, 3M Co., USA
Speakers
Paul Carlson, Texas Transportation Institute (TTI), USA
Michael McCoy, 3M Co Personal Safety Division, USA
Bodo Seifert, Magna Electronics, Inc, USA
Kirk Steudle, Michigan Department of Transportation, USA

SIS30 - Truck Platooning: The Next Challenge!
Monday 30 October 2017, 13:45 - 15:15 (510 C)
Topic: A. Connectivity and Autonomy

Developments around truck platooning are changing rapidly, especially after the European Truck Platooning Challenge held last year and the initiatives deployed around the world. A strong demand from the transportation companies now adds to the wishes of the (inter)national authorities, truck OEMs, and suppliers, who want to reap the benefits of platooning, including fuel savings, reduced emissions, decarbonization, road safety, infrastructure capacity, and new ways in driver- and truck operations. Truck platooning has been progressing as well as the technologies for cooperative and automated vehicles. However, some pending issues remain under investigation, in particular multi-brand implementation, user acceptance, impact on traffic and infrastructure and operation and business models. Full implementation requires actions by all stakeholders: technology providers, OEMs, roads operators, designers, and construction companies as well as regulators and public authorities. The European Truck Platooning Challenge consortium is still active and working on getting platooning on the road in Europe. Other initiatives and companies are starting up in North America, Australia, and Asia. This session will include status updates on Europe, North America, and Asia as well as a discussion to identify the next steps towards real-life implementation of platooning.

Organizer
Bastiaan Krosse, TNO, Netherlands
Moderator
Bastiaan Krosse, TNO, Netherlands
Speakers
Maxime Flament, ERTICO - ITS Europe, Belgium
Steve Boyd, Peloton Technology, United States
Daan De Cloe, TNO, the Netherlands

Monday 30 October 2017

SIS31 - Cybersecurity Challenges for CAVs: Fact versus Myth
Monday 30 October 2017, 13:45 - 15:15 (510 D)
Topic: D. Data, Security and Privacy

Deployment of connected and automated vehicles poses new cybersecurity threats that concern auto manufacturers, vehicle owners, fleet operators, transportation infrastructure managers, and those concerned with individual privacy. Demonstrations have proven that once an attacker has physical access to a vehicle, they can compromise every component…from the entertainment system to the electronic control units that operate the engine, brakes, and even the steering wheel. Research is underway to prove attackers can exploit vulnerabilities without physical access (e.g., through wireless means such as Bluetooth, TPMS, telematics, etc.). The risks are even greater with deployment of additional safety systems in modern cars that now self-park and have lane-departure avoidance systems. As connected and automated vehicles (CAVs) become more automated and connected, they will depend completely on sensor systems, lidar and satellite positioning, internal monitoring systems, and large amounts of data transfer. Connected vehicle technology connects cars/infrastructure in a one-to-many wireless broadcast communications approach, thus introducing the potential to attack many vehicles/infrastructure nodes by successfully attacking one. This session will examine how in-vehicle systems will deal with an attacker, assure safety awareness and standards are considered when designing these new internal systems, exceed industry standards for secure vehicle communications systems, and examine best practices and ways to raise public confidence in the safety, security and resilience of CAVs and infrastructure.

Organizer
C Douglass Couto, Independent Consultant, USA
Moderator
C Douglass Couto, Independent Consultant, USA
Speakers
Glenn Geers, Australian Road Research Board, Australia
Michael Dinning, Volpe Center, USA
Peter Vermaat, TRL, United Kingdom
Dan Klinedinst, CERT Carnegie Mellon University, USA
Val Mukherjee, Cyber Future Foundation, United States
Marisa Ramon, Southwest Research Institute, USA

SIS32 - MaaS: Roadmap to the Future of Mobility
Monday 30 October 2017, 13:45 - 15:15 (512 D)
Topic: F. Disruption and New Business Models

While several MaaS are being deployed across Europe and beyond, the European MaaS Alliance has been working to produce a roadmap and define a common approach to MaaS. Boundary conditions defining regulatory and business framework are very different across European countries and the debate is open between industry and policy makers with academic support and consultation from public and private operators. Different scenarios are depicted while investment on proof of concepts is accelerating the deployment and shaping the future of mobility. This session will present the latest activities of the MaaS Alliance in Europe and the approach taken by public and private operators, transport authorities, cities, and the industry.

Organizer
Monica Giannini, IRU Projects, Belgium
Moderator
Jacob Bangsgaard, ERTICO - ITS Europe, Belgium
Speakers
Sylvain Haon, UITP, Belgium
Andy Taylor, Cubic Transportation Systems, United Kingdom
Gorazd Marinic, IRU Projects, Belgium
Sascha Westermann, Hamburger Hochbahn AG, Germany

Monday 30 October 2017

SIS33 - Connected Vehicle Pilot Deployment Program (Session 3): Evaluating Performance and Long-Term Sustainment
Monday 30 October 2017, 15:30 - 17:00 (515 ABC)
Topic: A. Connectivity and Autonomy

This is the third session of three back-to-back sessions focusing on the challenges and approaches selected to evaluate the effectiveness of the CV pilot deployments beyond the performance measurement activity conducted by each pilot site. Presenters will cover the following topics: the overall evaluation approach and goals being used by USDOT to evaluate these pilot sites; the safety evaluation approach, including the Safety Pilot evaluation experiences and the safety evaluation plan/concept for CV Pilots; the mobility, environmental, and public agency efficiency evaluation plans; and the institutional and sustainability evaluation goals.

Organizer
Kate Hartman, U.S. Department of Transportation, USA
Moderator
Kate Hartman, U.S. Department of Transportation, USA
Speakers
Emily Nodine, USDOT/Volpe, USA
Mike Lukuc, Texas A&M Transportation Institute, U.S.A.
Meenakshy Vasudevan, Noblis, USA
Kate Hartman, U.S. Department of Transportation, USA

SIS35 - 5G Automotive Alliance (5GAA): On the Road Towards LTE-V2X
Monday 30 October 2017, 15:30 - 17:00 (513 ABC)
Topic: A. Connectivity and Autonomy

The mobile network as enabler for direct Vehicle-to-Vehicle (V2V) communication – fact or fiction? With the advent of LTE V2X standardization, this may become a reality. Join this session and learn more about the status and roadmap plans of LTE V2X and its relevance for current and future challenges in urban and inter-urban mobility. Experts from the Telecom and Automotive industries share their view on the matter. The session will be moderated by the director the 5G Automotive Alliance (5GAA).

Organizer
Sander Maas, Ericsson, Netherlands
Moderator
Olle Isaksson, Ericsson, Netherlands
Speakers
Stefano Sorrentino, Ericsson, Sweden
Tim Leinmueller, Denso Automotive Deutschland GmbH, Germany
Jovan Zagajac, Ford Motor Company, USA
Jim Misener, Qualcomm Technologies, Inc., USA

Monday 30 October 2017

SIS36 - Public Policy Strategies for Advancing Automated and Connected Vehicles
Monday 30 October 2017, 15:30 - 17:00 (514 BC)
Topic: A. Connectivity and Autonomy

Drawing upon the findings of the newly-released NCHRP Report 845, this session will cover policy strategies at the state, regional, and local government levels that, if implemented, could influence choices regarding connected and automated vehicles (CV/AVs) toward outcomes that benefit society. With a staggering level of private investment, companies are developing new consumer products that are poised to disrupt traditional transportation systems. Emerging business models in mobility are introducing market-based services and transforming travel behavior. Vehicles that are increasingly automated and connected have the potential to change personal, freight, and public transportation profoundly. Some impacts can be foreseen. Others are uncertain. All are complex. What should state and local governments do? Governments use available policy levers to ensure the safe and efficient operation of transportation networks and foster equity across users of the system. Overseeing and guiding the positive introduction of CVs and AVs through policy actions is a natural extension of this longstanding role. The challenge for governments is to find the right balance in its actions to accelerate the benefits of CVs and AVs while mitigating the risks. The session will discuss a range of 18 policy strategies grouped by four outcomes. Panelists will represent a range of state, regional, and local perspectives to speak to the viability of the strategies and the prospects for implementation.

Organizer
Ginger Goodin, Texas A&M Transportation Institute, USA
Moderator
Ginger Goodin, Texas A&M Transportation Institute, USA
Speakers
Jack Hall, Contra Costa Transportation Authority, USA
Blaine Leonard, Utah DOT, USA
Robert Spillar, City of Austin, Texas, USA

SIS37 - Reflecting Technology-Driven Mobility: Challenges in Modeling
Monday 30 October 2017, 15:30 - 17:00 (510 A)
Topic: B. Infrastructure Challenges and Opportunities

The new and rapidly-changing transportation landscape relies more and more on technology. However, many of the models that predict and help plan for future transportation are old and have not been updated to reflect the factors that affect mobility. For example, most models do not account for the shift in travel decision making and behavior, particularly by Millennials and Centennials; new transportation providers, such as transportation network companies (TNCs) and autonomous vehicles, shifting away from car ownership; the effects of new schemes, such Mobility as a Service (MaaS); and changes in land use. This session will explore the current work being done to develop new transportation models that incorporate these elements to accurately reflect the future.

Organizer
Carol Schweiger, Schweiger Consulting LLC, United States
Moderator
Carol Schweiger, Schweiger Consulting LLC, United States
Speakers
Brendon Hemily, Independent Consultant in Public Transportation, Canada
Jason Chang, National Taiwan University, Chinese Taipei
Marije de Vreeze, Connekt, Neth
Paul Campion, Transport Systems Catapult, United Kingdom

Monday 30 October 2017

SIS39 - Transport Management on the Road Network of Megacities
Monday 30 October 2017, 15:30 - 17:00 (510 D)
Topic: C. Smart(er) Cities

This session will explore topics related to transport management in megacities. Intelligent, advanced, smart, and integrated transport management on road and transport networks in megacities is essential to maintaining sustainable activities and business with minimum environmental impacts and achieving living amenity there. A well-balanced transport arrangement between freight and passengers should be achieved with strategic routing, charging, traffic management schemes. It is also important to minimize traffic volume going through the heart of the megacities utilizing outer ring roads. A real-time traffic monitoring system and traffic information provision system would serve to keep the traffic congestion inside the megacities at a moderate level in addition to introducing an effective demand management scheme and multi-modal transport management plan. The transport management strategies mentioned above are also important particularly to managing big events such as sports festivals like the Olympics, large-scale road network restorations, and big disasters such as earthquakes, floods, and tsunamis.

Organizer
Takashi Oguchi, The University of Tokyo, Japan
Moderator
Takashi Oguchi, The University of Tokyo, Japan
Speakers
Tetsuo Shimizu, Tokyo Metropolitan University, Japan
Young-Jun Moon, The Korea Transport Institute (KOTI), Korea
Toshinori Nemoto, Hitotsubashi University, Japan
Ryota Horiguchi, i-Transport Lab. Co., Ltd., Japan
Kian-Keong Chin, Land Transport Authority, Singapore
Paul Hutton, Qvision, United Kingdom

SIS40 - Key Technical and Policy Design Challenges for Security Credential Management Systems
Monday 30 October 2017, 15:30 - 17:00 (512 D)
Topic: A. Connectivity and Autonomy

The use of V2X safety and mobility applications to transmit information between transportation entities creates great promise in transforming the way Americans travel. The benefits of V2X technologies are enabled by a communication system that users can trust. Users of safety and mobility applications must be confident that their identity and the data contained within basic safety messages is protected. The source of each message needs to be trusted and the message content needs to be protected from outside interference. In order to create this system of trust, a Public-Key-Infrastructure (PKI) approach was used to develop a Security Credential Management System (SCMS). The SCMS utilizes security certificates to sign and verify basic safety messages as a method for message authentication. By the fall of 2017, the SCMS will be operational as a proof-of-concept system to support newly launched C-ITS deployments. The session will focus on the history leading up to the development of the SCMS, including why a PKI approach was selected and how the system evolved to its current state. The panel will outline technical and policy challenges associated with the system, such as root management, certificate management and lifecycle parameters, device installation, and misbehavior reporting. The session will conclude with a discussion on the many challenges associated with establishing a national SCMS. The panel will highlight lessons learned from the proof-of-concept system and discuss financial viability and sustainability of a national system, large-scale certificate management, system policy and governance, operational oversight, misbehavior detection, and root certificate management.

Organizer
Jeffrey Bellone, United States Department of Transportation, USA
Moderator
John Harding, U.S. Department of Transportation, National Highway Traffic Safety Administration, United States
Speakers
Michael Shulman, Ford Motor Company, USA
Bill Lattin, Green Hills Software INTEGRITY Security Services, USA
Robert Kreeb, NHTSA, USA

Monday 30 October 2017

SIS41 - Artificial Intelligence Algorithms for Traffic Video Analysis in Smart(er) Cities
Monday 30 October 2017, 15:30 - 17:00 (511 C)
Topic: C. Smart(er) Cities

Traffic managers have one ultimate goal: to assure that traffic flows without disturbance, with as few incidents, casualties, and damage as possible. If they achieve this goal, it would solve the problem that costs hundreds of millions of dollars annually in urban regions around the globe. The key for resolving this problem is prompt action, interrupting incidents immediately, as they happening and/or preventing them in the first place. Incidents are often a consequence of slow traffic, traffic jams, fallen objects on road, weather conditions, movement of people or certain vehicles on unforeseen paths, etc. All these causes have common characteristics: humans, which are very intuitive and noticeable when seen on video. For traditional ITS systems, these causes are demanding for detection because almost all of them require different sensors for detection, which is not practical nor economical. On the other hand, CCTV technologies are developing rapidly. The quality of video compression technologies enables traffic managers to have previously unimagined levels of visible details in front of them in the control center. But there's a catch: humans are not able to analyze hundreds or thousands of video feeds in real-time, 24/7. If there would be a technology that performs video analysis in real-time, almost as well as humans, it would be a breakthrough in traffic safety and management, leading to smarter traffic management center for smarter cities. This session will explore various efforts to use advanced video analytics for traffic surveillance.

Organizer
Jelena Koller, TELEGRA, Croatia/Hrvatska
Moderator
Branko Glad, TELEGRA, United States
Speakers
Ryan Williams, WSP, United States
Habib Shamskhou, Stantec, United States

TS21 - Approaches to Automated Parking
Monday 30 October 2017, 12:00 - 13:30 (512 D)
Topic: A. Connectivity and Autonomy

Moderator
Graham Hanson, department for transport, United Kingdom

AP-TP0780 - Parking Space Detection with Motion Stereo Camera applying Viterbi algorithm
Tokihiko Akita, AISIN SEIKI Co., Ltd., Japan
EU-TP1241 - A Winning Strategy to Park
Noémie Meunier, AISIN AW - AWTC Europe, Belgium
EU-SP1252 - Fully Automated Valet Parking in Underground Garages through External Positioning Information Over DSRC
Oliver Sawade, Fraunhofer FOKUS, Germany
AM-SP1313 - Doing More with Less - LEAN Asset Deployment for Parking Occupancy Detection
Soumya Dey, District Department of Transportation, USA

Monday 30 October 2017

TS22 - ITS Data Collection and Using It to Deliver Innovation
Monday 30 October 2017, 12:00 - 13:30 (511 C)
Topic: G. Innovation, What's Next? The New Ideas

Moderator
Bruce Eisenhart, ConSysTec, USA

AP-TP0960 - Utilising Fibre Optic Cable as an Incident Detection System on Road Corridors
Jeff Sharp, Downer EDI Ltd, Australia
AM-SP0993 - On Designing an Underground Induction Antenna for Vehicle Identification
Mikhail Molchanov, Matsur & Co, Inc., USA
AP-TP1073 - Innovation Delivery Framework: How to Enable and Accelerate the Delivery of ITS Innovations
Henry Wu, JYW Consulting, Australia
AM-TP1200 - Data Collection System for Transportation Infrastructure
Parth Bhavsar, Rowan University, United States

TS23 - Deployment of Connected Vehicle Infrastructure: Part 1 of 3
Monday 30 October 2017, 12:00 - 13:30 (511 F)
Topic: A. Connectivity and Autonomy

Moderator
Steve Sprouffske, Kapsch TrafficCom, USA

AM-TP0840 - NYC Connected Vehicle Pilot Deployment
John Tipaldo, NYC DOT Traffic Operation Division, United States
AM-TP0962 - Summary of Phase I Efforts from the Wyoming Connected Vehicle Pilot for Performance Measurement, Safety and Human Use Approval
Rhonda Young, Gonzaga University, USA
AM-TP1022 - Urban Connected Vehicle Applications – Real and Available Now
Joerg Rosenbohm, Kapsch TrafficCom, USA
AM-TP1104 - V2I Deployment: The Utah MMITSS Project
Blaine Leonard, Utah DOT, USA
AM-TP1319 - Vehicle to Infrastructure Program Outreach in the United States
Clifford Heise, Iteris, Inc., United States

TS24 - Planning for Operations from Architecture to CONOPS and Beyond
Monday 30 October 2017, 12:00 - 13:30 (512 A)
Topic: E. Integrated Approach: Planning, Operations and Safety

Moderator
Kevin Miller, Kapsch TrafficCom Transportation, USA

AM-TP0865 - Cutting Edge ITS Planning at MR MPO
Nathan Masek, Mid Region Council of Governments (MRCOG), USA
AM-TP1019 - Maintaining and Updating Regional ITS Architectures in California: Opportunities and Challenges
Glenn Havinoviski, Iteris, Inc., USA
AM-TP1107 - Potential Implications of Connected and Automated Vehicles for Transportation Infrastructure and Local Planning Decisions
Adela Spulber, Center for Automotive Research, United States
AP-TP1216 - Western Ring Route Concept of Operation
Blair Monk, Aurecon, New Zealand

Monday 30 October 2017

TS25 - Preparing for Automated Vehicles: Part 1 of 4
Monday 30 October 2017, 12:00 - 13:30 (512 B)
Topic: A. Connectivity and Autonomy

Moderator
Phil Blythe, department for transport, United Kingdom

EU-TP0769 - A Sophisticated Intelligent Urban Road-Transport Network and Cooperative Systems Infrastructure for Highly Automated Vehicles
Meng Lu, Dynniq, The Netherlands
AM-SP1097 - Adapting Highway Geometric Design to a Fully Autonomous Vehicle Environment
Anthony Kwok, Carleton University, Canada
AP-TP1212 - Study on the Behaviors of Autonomous Vehicles Based on Driving Comfortability on the Road with Autonomous and Manually Driven Vehicles
Akira Suwa, Sumitomo Electric Industries, Ltd., Japan

TS26 - Vulnerable Road Users: Part 1 of 3
Monday 30 October 2017, 12:00 - 13:30 (512 C)
Topic: A. Connectivity and Autonomy

Moderator
Koji OGURI, Aichi Prefectural University, Japan

AM-TP0956 - Vehicle to Pedestrian Safety Communication System
Sue Bai, Honda, USA
AP-TP0771 - Mobile Detection in Blind Spot using Fog Computing and Mobile Network
Masatoshi Ito, Denso Corporation, Japan
AP-TP0888 - A Study on UWB Positioning System at the Crossing
Naoto Shimada, Tokyo University of Science, Japan
AP-TP1225 - Evaluation Verification of Sensor Specification to Detect Pedestrian and Vehicle Separately
Masaki Hiro, Central Nippon Expressway Company Limited, Japan

TS27 - Pedestrian Safety in Smart Cities
Monday 30 October 2017, 13:45 - 15:15 (511 C)
Topic: B. Infrastructure Challenges and Opportunities

Moderator
Anna Quinones, Tampa Hillsborough Expressway Authority, USA

AP-TP0818 - A Study on the Implementation of Safe Route Guidance Services Using Public Data
Kyung-Hoon Kang, Erom CNS, Korea
AM-TP0909 - Impact of Curb Radius Reduction on Pedestrian Safety: A Before-After Surrogate Safety Study in Toronto
Jesse Coleman, City of Toronto, Canada
AP-TP0912 - Development and Verification of a Mobility Support System
Yukiko Hatazaki, Nippon Signal Co., Ltd., Japan
AM-TP1009 - Smart Cities and Visually Impaired Pedestrians - Montreal's Vision Leading the Pack!
Roger Bibaud, City of Montreal, Canada

Monday 30 October 2017

TS28 - Deployment of Connected Vehicle Infrastructure: Part 2 of 3
Monday 30 October 2017, 13:45 - 15:15 (511 F)
Topic: A. Connectivity and Autonomy

Moderator
Loren Bartlett, HNTB, USA

AP-TP0807 - The National Connected Multi-Modal Transport Test Bed – Progress to Date, Melbourne, Australia
Dr. Majid Sarvi, The University of Melbourne, Australia
AP-TP1006 - Dissemination of Traffic Light Signal Status to Support Singapore Autonomous Vehicle Initiative
Yee Ling Charlene Kwan, Land Transport Authority, Singapore, Singapore
EU-TP1020 - Catalonia Living Lab: A Comprehensive Framework for the Testing of Connected and Automated Vehicles
Álvaro Arrúe, APPLUS+ IDIADA, Spain
EU-TP1219 - Proving Grounds 3.0: Methodology for Designing Test Facilities for Connected and Automated Vehicles
Stefan de Vries, Applus IDIADA, Spain
AP-TP1244 - The Development of Infrastructure-to-Vehicle (I2V) in Taiwan
Jaching Chou, Institute of Transportation, Ministry of Transportation and Communications, Chinese-Taipei

TS29 - Strategies to Detect Drowsiness and Driver Distraction
Monday 30 October 2017, 13:45 - 15:15 (512 A)
Topic: E. Integrated Approach: Planning, Operations and Safety

Moderator
Robert Heller, Southwest Research Institute, United States

AP-TP0785 - Comparison of the Effectiveness of Occlusion and EGDS Testing of In-Vehicle Task Acceptance
Hiroshi Uno, Japan Automobile Research Institute, Japan
AP-TP1061 - Early Driver Drowsiness Detection Using Gaze Features in Combination with Driving Features
Fumiharu Tomiyasu, FUJITSU laboratories, JAPAN
AP-TP1114 - A Basic Study of a Driver's Gaze Area Detection System
Shunsuke Kogure, AISIN SEIKI Co., Ltd., Japan

TS30 - Preparing for Automated Vehicles: Part 2 of 4
Monday 30 October 2017, 13:45 - 15:15 (512 B)
Topic: A. Connectivity and Autonomy

Moderator
Phil Blythe, department for transport, United Kingdom

EU-TP0855 - Infrastructure-Based Cooperative, Connected and Automated Driving in a Transition Phase
Meng Lu, Dynniq, The Netherlands
EU-TP0871 - Adaptation of Automated Vehicle Systems in Adverse Weather Conditions
Matti Kutila, VTT Technical Research Centre of Finland Ltd., Finland
AM-TP1090 - Security Considerations for Connected Autonomous Vehicles
Harold Garza, Southwest Research Institute, United States of America
AM-TP1268 - Who is Managing the Network in the Era of Autonomous Vehicles?
Mara Bullock, WSP|MMM, Canada

Monday 30 October 2017

TS31 - Vulnerable Road Users: Part 2 of 3
Monday 30 October 2017, 13:45 - 15:15 (512 C)
Topic: A. Connectivity and Autonomy

Moderator
Julie Castermans, ERTICO - ITS Europe, Belgium

AM-SP0954 - Pedestrian Conflicts Time Proximity Measures vs. Evasive Action Measures Across Different Traffic Environments
Tarek Sayed, University of British Columbia, Canada
AP-TP1085 - Design of a Multipurpose People Counter Based on Infrared Thermal Imaging
Yong Yao YANG, Supcon Information Technology Co Ltd, China
EU-SP1160 - Concept of an Enhanced Cost-Function-Based Pedestrian Prediction Model for Active Safety Systems
Jens Kotte, fka - Forschungsgesellschaft Kraftfahrwesen mbH Aachen, Germany
EU-TP1259 - Autonomous Emergency Braking Systems to Increase the Safety of Vulnerable Road Users: The PROSPECT Project
Laura Sanz, Applus IDIADA, Spain

TS32 - Deployment of Connected Vehicle Infrastructure: Part 3 of 3
Monday 30 October 2017, 15:30 - 17:00 (511 F)
Topic: A. Connectivity and Autonomy

Moderator
Angelos Amditis, ICCS, Greece

AP-TP0869 - Consideration of Feasibility to Utilize ETC2.0 Probe Data
Yasufumi Iino, Denso Corporation, Japan
AP-TP0910 - A Study of Infrastructure Radar Technologies Using 79GHz Band on V2I Application for Merging Support at Highway Junction
Toshiteru Hayashi, Panasonic Corporation, Japan
AP-TP0971 - A Study of the Abilities of the ETC2.0 Probe Data for Logistics Management
Tatsuyuki Negishi, ITS Division, National Institute for Land and Infrastructure Management(NILIM), Ministry of Land, Infrastructure, Transport and Tourism, JAPAN, Japan
EU-SP1237 - Impact Assessment of Connected and Automated Transport Services: Moving from the Method-Driven Tradition to a Theory-Based Evaluation Approach
Lone-Eirin Lervåg, SINTEF Technology and Society, Norway

Monday 30 October 2017

TS33 - Mobility on Demand
Monday 30 October 2017, 15:30 - 17:00 (512 A)
Topic: A. Connectivity and Autonomy

Moderator
Risto Murto, Ministry of Transport and Communications Finland, Finland

EU-SP0839 - A Case Study for the Assessment of a Dynamic Passenger Ride Sharing Mobility Service
Mari Paz Linares, Universitat Politècnica de Catalunya, Spain
EU-TP1053 - Multi-Modal Activity-Based Models to Support Flexible Demand Mobility Services
Ecaterina McCormick, Transport Systems Catapult, UK
AP-TP1222 - On-Demand Shared Mobility Trials in NSW, Australia: Focusing on a Great Customer Experience
Kevin Orr, Liftango, Australia
EU-SP1295 - Short-Term Spatio-Temporal Demand Forecasting in Digital Ride-Hailing Service
Melvin Wong, Polytechnique Montreal, Canada
AM-SP1301 - Initial Assessment and Modeling Framework Development for Automated Mobility Districts
Stanley Young, NREL, USA

TS34 - Network Technologies for CAV
Monday 30 October 2017, 15:30 - 17:00 (512 B)
Topic: A. Connectivity and Autonomy

Moderator
Nixon Ng, ST Electronics (Infocomm Systems) Pte Ltd, Singapore

AP-TP0826 - Evaluation of the Communication System of Vehicle Location Information for Cooperative ITS via Mobile Network
Makoto Fujinami, NEC Corporation, Japan
AP-TP0913 - V2V Channels for DSRC Communication in the Presence of Big Vehicles
Hieu Nguyen, Nanyang Technological University, Singapore
AM-TP1036 - Design and Deployment of a Broadband Wireless Network with Integrated Dedicated Short-Range Communications (DSRC) Radios and Other ITS Devices
Vahid Sathi, CIMA+, Canada
AP-TP1243 - A Feasibility Study of a Vehicle Approach Warning System Using V2V Communication via a Cellular Network
Tomotaka Nagaosa, Kanto Gakuin University, Japan
AM-SP1347 - A Variant of the AnthocNet Routing Protocol: Empirical Study with Application to Communications Between Emergency Vehicles
Ilham Benyahia, Université du Québec en Outaouais, Canada

Monday 30 October 2017

TS35 - Vulnerable Road Users: Part 3 of 3
Monday 30 October 2017, 15:30 - 17:00 (512 C)
Topic: A. Connectivity and Autonomy

Moderator
Sue Bai, Honda, USA

AM-TP0811 - Cooperative Vehicle-Infrastructure Situational Awareness to Improve Vulnerable Road User Safety
Eric Thorn, Southwest Research Institute, USA
AP-SP0860 - Crossing Pedestrian Detection Using Deep Learning by On-Board Camera
Toshio Ito, Shibaura Institute of Technology, Japan
AM-SP0951 - Large-Scale Pedestrian Movement Analysis Using a Network of Wi-Fi Sensors
Alexandra Beaulieu, École Polytechnique de Montréal, Canada

Tuesday 31 October 2017

ES04 - Freight Technology: How Do We Ensure Public Safety
Tuesday 31 October 2017, 08:00 - 09:30 (511 ABDE)
Topic: F. Disruption and New Business Models

Freight companies have considerable expectations from new technologies, but the impacts on public safety are not necessarily being considered. Private fleet truck platooning systems are emerging, freight drone deployments are rapidly becoming a reality, and unmanned commercial vehicle inspection systems are being deployed that minimize human intervention, greatly reduce delays to scheduled delivery times, and make supply chains cheaper. Public agencies must engage with the freight industry to ensure safety while not unduly inhibiting efforts to improve freight movements. This session will bring together global shippers, freight movers, regulatory agencies, and technology companies to explore how these groups can work together to improve both freight operations and public safety.

Moderator
Richard Easley, E-Squared Engineering, USA
Speakers
Peter Sweatman, CAVita LLC, USA
Paul Retter, National Transport Commission, Australia
Bill Panos, Wyoming Department of Transportation, USA
Catherine Trautmann, Strasbourg Eurometropolis and Strasbourg Autonomous Port, France

ES05 - Practical Aspects of Deploying Connected and Automated Vehicles (sponsored by Econolite)
Tuesday 31 October 2017, 13:15 - 14:45 (511 ABDE)
Topic: A. Connectivity and Autonomy

Connected and automated vehicles development continue to accelerate, but routine deployment is still many years away so it is timely to begin planning for a smooth transition. Deployment requires critical technology developments and has been the focus of a lot of innovation and trials within the ITS community. Some key technical and standardization challenges still need to be addressed (e.g. seamless connectivity, robust positioning, driver interaction), but in general the technical issues are better understood than the practical challenges and the impact on other transport stakeholders. Much more testing in real-world conditions – and especially in cities – is required to fully understand whether…and if so how…automated vehicles can run alongside traditional traffic on legacy infrastructure. Will automated vehicles benefit or damage a city's public transport? Questions regarding the financial impact and benefits on society, interoperability across jurisdictions, and robustness against cyber threats are yet to be answered. There may also be a need to manage travel demand in new ways, develop new policies, and encourage the social acceptance of the new mobility to ensure all stakeholders can benefit from it. This session will steer debate away from technology to focus on the practical deployment aspects.

Moderator
Angelos Amditis, ICCS, Greece
Speakers
Masato Sahashi, Road Transport Bureau, MLIT / JASIC, Japan
Shailen Bhatt, Colorado Department of Transportation, USA
Andrew McKellar, FIA, France
Andrew Mehaffey, HMI Technologies, HMI Technologies Pty Ltd, Australia
Brian Negus, RACV, Collaborative ITS Consulting Australia, Victorian Chamber of Commerce and Industry, Australia
Klaus Schierhackl, ASFINAG, Austria

Tuesday 31 October 2017

ES06 - Smart Connected Cities Promote Smart Mobility
Tuesday 31 October 2017, 15:00 - 16:30 (511 ABDE)
Topic: C. Smart(er) Cities

Smart Cities involve the application of advanced technologies, including ITS, within an urban environment. Smart Connected Cities enable information, including transport data, to be collected, analyzed and – along with energy grids, buildings, utilities, and communications systems – utilized to enhance urban services. Furthermore, Smart Cities enable better citizen engagement, social networking, and data analysis. Connecting these services and activities will result in information shared among agencies and the public to improve travel experiences and efficiencies. For example, travelers in this connected environment will be able to monitor and manage their own carbon footprint, which can in turn influence travel choices. This session brings together senior government and private sector leaders to discuss how ITS can contribute to Smart Cities and urban mobility.

Moderator
Jane Lappin, Toyota Research Institute, United States
Speakers
Tan Kok Yam, Smart Nation Program Office, Prime Minister's Office, Singapore
Hermann Meyer, Continental Automotive GmbH/Regensburg, Germany
T. Russell Shields, Ygomi, USA
Klaus Kröll, Kapsch TrafficCom AG, Austria

SCP03 - Microsoft CityNext: Empowering Cities & Citizens
Tuesday 31 October 2017, 11:30 - 11:55 (Smart Cities Pavilion)
Topic: C. Smart(er) Cities

Cities have always been centers of learning, innovation, government policy, and protection; they are the economic engines of our societies. Today, with increasing migration trends, they are growing in importance – what happens in cities drives our future. As populations continue to grow and the trend to city migration continues, the topic of transportation and urban mobility becomes one of the largest challenges faced by civic leaders to the sustainable economic growth of their urban centers. During this session we will share how Microsoft CityNext is working with cities around the world to address the challenges they face.

Speakers
Omar Rashid, Microsoft, United States

SCP04 - Role of ITS in Christchurch, New Zealand – Post Earthquake
Tuesday 31 October 2017, 11:30 - 12:20 (Smart Cities Pavilion)
Topic: C. Smart(er) Cities

This panel session will provide the audience with an insight into the smart use of ITS in Christchurch as it recovered from recent earthquakes and how it is helping Christchurch to become a smart city.

Moderator
Dean Zabrieszach, HMI Technologies Pty Ltd, Australia
Speakers
Dave Verma, HMI Tech, New Zealand
Ryan Cooney, Christchurch Transport Operations Centre (CTOC), New Zealand
Stephen Hewett, Beca, New Zealand

Tuesday 31 October 2017

SCP05 - Weaving CAVs into the Smart City
Tuesday 31 October 2017, 13:30 - 14:20 (Smart Cities Pavilion)
Topic: C. Smart(er) Cities

Moderator
Steven Dellenback, Southwest Research Institute, USA

SCP06 - What's Driving Smart Communities?
Tuesday 31 October 2017, 15:00 - 15:50 (Smart Cities Pavilion)
Topic: C. Smart(er) Cities

Rapid urbanization and climate change are recognized as the main drivers of smart communities in the developing world, and the developing world is fast tracking infrastructure and smart cities development by attracting private sector participation. Developed countries are challenged with legacy infrastructures, and a less rapid movement is underway to facilitate the optimal use of existing infrastructure resources for smart community applications. This panel will dialogue the necessary collaboration between public and private sector partners to provide infrastructure solutions that place sustainable transportation at the center of smart communities. The conversation will be framed by the Montreal Protocol, an environmental milestone achieved 30 years ago to control substances that deplete the ozone layer. Parallels will be considered with today's need to control greenhouse gas emissions from the transportation sector. New markets and new business opportunities will be explored for our shared, electrified, eco-friendly connected and autonomous transportation systems at the center of smart communities.

Moderator
John Lower, Iteris, Inc., USA
Speakers
Rene Coutu, Société de transport de Montréal, Canada
Rana Sen, Deloitte Consulting Public Sector, United States
Coco Briseno, California Department of Transportation (Caltrans), United States
Huei Peng, Mcity, United States

SCP07 - The Data Ecosystem and the Interaction Between OEMs to State and City DOTs. Who Owns What?
Tuesday 31 October 2017, 16:00 - 16:50 (Smart Cities Pavilion)
Topic: C. Smart(er) Cities

As we get closer to connected vehicle and autonomous vehicle deployment, what will the data ecosystem look like and how will it work? Questions considered will include:• Who will own the data?• What access will be given to others and under what business assumptions?• What States and Cities will ask for?• Will OEMs share with States and Cities data that is of public interest for safety, environmental reasons and in general public interest? What that will data be?• What data will be openly shared with 3rd parties?• How OEMs and Cities envision this ecosystem? Who will be the major player on this value chain?

Moderator
Alfredo Escriba, Kapsch TrafficCom AG, USA
Speakers
Gary Smyth, General Motors Research & Development Labs, United States
Cordell Schachter, New York City DOT, United States

Tuesday 31 October 2017

PL02 - The Evolution of Transportation within Our Society
Tuesday 31 October 2017, 11:15 - 12:15 (517)

Industry leaders from the three regions (Americas, Europe and Asia-Pacific) will discuss and debate the evolution of transportation within the global society.

Moderator
Mark Garneau, Canada, Canada
Speakers
Cees de Wijs, Dynniq, Belgium
Rupert Soames, Serco Group, UK
Paul Gray, Cohda Wireless, Australia
Rick Snyder, Michigan, USA
Mark Garneau, Canada, Canada
Stephen Carlisle, General Motors of Canada, Canada

SIS10 - Innovation and Disruption: The Challenges Facing ITS Start-ups
Tuesday 31 October 2017, 16:45 - 18:00 (512 B)
Topic: G. Innovation, What's Next? The New Ideas

A discussion with founders on the challenges facing transportation start-ups. Discuss the rolls of the existing market, government, and research to encourage innovation in the marketplace.

Organizer
Jeff Davis, ITS America, United States
Moderator
Rebecca Hunter, Crown Castle, USA
Speakers
Egbert Jaspers, Vinotion, USA
Joao Felix, Mobiag, USA
Bjorn Wamelink, Quatoz, USA
Tim Streck, Acyclica, USA

SIS42 - CAV Data: Who Wants it and Why - Addressing Concerns of End Users
Tuesday 31 October 2017, 08:00 - 09:30 (515 ABC)
Topic: D. Data, Security and Privacy

Collection of transportation data has been going on for years without fully leveraging the value of what's captured. But connected and autonomous vehicle (CAV) technology now offers a viable opportunity to make the best use of real-time data. One of the greatest challenges to doing so is overcoming public perception of what that means. Fears of Big Brother and Orwellian citizens monitoring ebb and flow with each press release and subsequent public education process. This session will present the potential uses and value of the data in moving society towards safer, eco-friendlier, and improved mobility as well as discuss steps being taken to ensure privacy concerns are addressed.

Organizer
Steven Johnson, HNTB, USA

Moderator
Kate Hartman, U.S. Department of Transportation, USA

Speakers
Steven Johnson, HNTB, USA
Emily Nodine, USDOT/Volpe, USA
Michael Scrudato, Munich Reinsurance America Inc., USA
Cheryl Brown, Ph.D., University of North Carolina, Charlotte, USA

Tuesday 31 October 2017

SIS43 - Sustainable Smart Cities: Adaptability from Collaboration and Empowerment
Tuesday 31 October 2017, 08:00 - 09:30 (513 DEF)
Topic: C. Smart(er) Cities

Urbanization is on the rise as more and more people live and work in the dense city core, changing the landscape of urban environments. At the same time, a continuous string of innovations emerges to enhance the mobility, safety, economy and, sustainability of our cities. These local and global trends are forcing cities to re-think infrastructure, public services, and the way they manage roadways and parking. Unfortunately, public agencies are struggling to integrate these technologies or to adapt to social changes. Lack of budget and the fear of uncertainty are the biggest hurdles to overcome. In this session, speakers will offer insights on how cities can break through these barriers by striving for change and becoming adaptable organisms. Attendees will learn how to increase adaptability in public services through modern tools and incremental changes in processes. We will discuss topics such as collaboration, crowd-sourcing, and Mobility-as-a-Service (MaaS). There will also be a conversation about how open, flexible, secure, and interoperable software and hardware platforms are going to play an essential role in the path to a sustainable Smart City. We will discuss how important it is for various stakeholders to securely access the same data and collaborate with one another to improve the flow of people, goods, and data within a city.

Organizer
Christian Chénard-Lemire, Genetec Inc., Canada
Moderator
Christian Chénard-Lemire, Genetec Inc., Canada
Speakers
Christian Chénard-Lemire, Genetec Inc., Canada
Patrick Ricci, Urban Mobility Management Center (CGMU), Canada
Patrick Lauzière, Orange Traffic Inc., Canada
Patricia Elizondo, Conduent, United States

SIS44 - The ITS Road to 5G
Tuesday 31 October 2017, 08:00 - 09:30 (513 ABC)
Topic: A. Connectivity and Autonomy

This session explores the potential benefits for ITS and the roadmap to 5G. In this roadmap, the first milepost consisting of improved 4G features aimed specifically at V2V, V2I, V2P, and V2N transportation use cases will be described. Another milepost will be the first vestige of 5G, what the telecommunications industry calls enhanced mobile broadband (eMBB). For the transportation industry, eMBB translates to faster and more ubiquitous connectivity to enhance mobility applications for the individual traveler and the road operator alike. But the journey does not end there. Further down the road, 5G networks will provide significantly higher data rates coupled with lower latency and extremely high reliability. 5G enabled services will allow direct communications among vehicles, pedestrians, and the roadside…plus the network…and perhaps concurrently. 5G is also aiming to support improving localization, one of the major challenges of road automation. It will certainly transform connected automation and mobility transformation. The session will make clear that the journey starts with the just-released version of LTE and continues onward to true 5G. Collectively, the panel is the builder of the 5G roadmap for transportation, engaged in current and impending trials around the world and members of the ecosystem of trade associations and task forces (e.g., 5G Automotive Association, Next Generation Mobile Network, ERTICO, ITS America, ITS Asia-Pacific).

Organizer
Jim Misener, Qualcomm Technologies, Inc., USA
Moderator
Jim Misener, Qualcomm Technologies, Inc., USA
Speakers
Tim Leinmueller, Denso Automotive Deutschland GmbH, Germany
Jovan Zagajac, Ford Motor Company, USA
Jason Eillis, Qualcomm Technologies, Inc, USA
Dirk Dudenbostel, SWARCO, Germany

Tuesday 31 October 2017

SIS45 - The Next Mobility Revolution Starts with Technology that Connects Us All
Tuesday 31 October 2017, 08:00 - 09:30 (514 BC)
Topic: A. Connectivity and Autonomy

With two-thirds of the world's population expected to live in cities by 2050, economic success and a growing population cannot be sustained without addressing infrastructure needs. The stress on current systems is certainly seen in transportation. The average urban commuter is stuck in traffic an estimated 38 hours every year, which equates to 5.5 billion hours in lost productivity. America's current infrastructure is unable to effectively mitigate the growing congestion. These increasingly complex traffic situations at urban intersections require more intelligent solutions. In 2015, the USDOT awarded $42 million to conduct three connected vehicle pilots in New York, Tampa, and Wyoming. This session will explore the lessons learned from those pilots thus far.

Organizer
Franziska Wagner, Siemens, USA
Moderator
Marcus Welz, Siemens ITS, USA
Speakers
Bob Frey, Tampa-Hillsborough County Expressway Authority, USA
Dave Miller, Siemens, USA
Stephen Novosad, HNTB, USA
David McNamara, Brandmotion, USA

SIS46 - Traffic Sensing by Various Manners
Tuesday 31 October 2017, 08:00 - 09:30 (510 A)
Topic: B. Infrastructure Challenges and Opportunities

Traffic sensing is the key for traffic monitoring. Traditionally, sensing devices, such as loop counter and ultrasonic detector, are embedded into the road infrastructure. Thanks to ICT technology, traffic volume data created from probe cars or smartphone applications becomes one of the promising sources for visualizing traffic conditions. Or, it may collect from advanced sensing technology such as image processing and active sensing by either OBU or RSU. However, data from different sources have different characteristics. This session will try to bring various approaches together to discuss in wide range their advantages and disadvantages from various applications point of views. New and challenging ways of traffic control will be discussed from both seed and need sides.

Organizer
Nobuyuki Ozaki, Toshiba Corporation, Japan
Moderator
Nobuyuki Ozaki, Toshiba Corporation, Japan
Speakers
Chris Philp, CIMA+, Canada
Adam Lyons, Iteris, Inc., USA
Nobuyuki Ozaki, Toshiba Corporation, Japan
Robert Ferguson, University of Calgary,
Daisik Nam, University of California, Irvine, United States
Mika Rytkönen, HERE, Finland

Tuesday 31 October 2017

SIS47 - Infrastructure Connectivity for Smart Communities and Corridors
Tuesday 31 October 2017, 08:00 - 09:30 (510 C)
Topic: C. Smart(er) Cities

An expert panel will explore the implications, challenges, and opportunities for infrastructure integration of community & economic service systems. This session will engage global thought leaders - both on the panel and in the audience - in Smart Cities development, multimodal transportation technology solutions, IoT platform and infrastructure creation, and public policy innovation. The discussion will begin to define a framework for—and consensus on actions to commence—a global alignment of transportation infrastructure connectivity within the broader context of civic infrastructure systems.

Organizer
John Corbin, Federal Highway Administration - Office of Operations, USA
Moderator
Eric Rensel, GANNETT FLEMING INC, USA
Speakers
Lauren Cordova, Panasonic CityNOW Smart Mobility and V2X Platform, USA
Paul Trombino, McClure Engineering Company, USA
Bill Schrier, First Responder Network Authority (FirstNet), USA
Michelle Maggiore, Cisco Smart and Connected Transportation, USA
Jeff Purdy, Pennoni, USA

SIS48 - Pan European Platform for Logistics and Security Optimization Including Dangerous Goods
Tuesday 31 October 2017, 08:00 - 09:30 (510 D)
Topic: E. Integrated Approach: Planning, Operations and Safety

Prevailing thoughts are that ITS can support optimizing transport of goods thanks to an overall efficiency of the logistics system. But ITS can't do it alone, and it is primordial to integrate new innovative ITS solutions with existing logistics tools. This can be done through a global platform available to every actor of the supply chain and capable of providing several secured services (e.g., interoperability of data, compatibility of tools, integration of standards, shared dashboard). Transport operators, by gaining time, could more easily measure and work on a reduction of their environmental impacts by reducing CO2 emission and fuel consumption. This session will focus on how interoperability of data can optimize each transport leg (e.g., customs, port loading/unloading, estimated time of arrival coupled with cargo slot appointment, management of port entry and navigation), show how dangerous goods could be managed in innovative ways (e.g., port automated control, advanced risk assessment, accident management, C-ITS tracking), and discuss the usefulness of inter-connected platforms between several countries as demonstrated in the security management of the transport of dangerous goods. Featured will be the results of two on-going ambitious European projects (CORE and AEOLIX) and two deployed living labs in Bordeaux and between two countries (France and Italy).

Organizer
Andre Perpey, Geoloc Systems, France
Moderator
Andre Perpey, Geoloc Systems, France
Speakers
Eric Louette, Ministère de l'Environnement, de l'Energie et de la Mer, France
Manuela Flachi, ERTICO - ITS Europe, Belgium
Martin Russ, AustriaTech, Austria

Tuesday 31 October 2017

SIS49 - Automated Vehicle Test Sites: Compete or Complement?
Tuesday 31 October 2017, 08:00 - 09:30 (512 D)
Topic: A. Connectivity and Autonomy

During the past few years, test sites for automated driving have sprung up in different parts of the world. Most of the sites and areas are research-oriented while some are more product development oriented. Some are located in restricted access areas whereas some are located on open roads. Test sites exist in cities, on motorways, on rural roads, and in campus areas. Some are established due to a national or local interest for improving road safety or throughput, while some are set up for a specific vehicle manufacturer to provide a testing facility. The establishment of quite similar test sites in different parts of the world may indicate a competition between the test sites. In a big picture, it could be useful if the different test sites would also complement each other so that each site would have a specific added value to the whole. This session describes the existing and planned test sites in different regions, focusing on the specific features of each site that differentiates them for others. Panelists will discuss the potential for cooperation and coordination between the test sites and how this cooperation should be set up so that the requirements of the various stakeholders could be met.

Organizer
Risto Kulmala, Finnish Transport Agency, Finland
Moderator
Risto Kulmala, Finnish Transport Agency, Finland

Speakers
Stuart Ballingall, Austroads, Australia
Brian Cronin, FHWA, USDOT JPO, USA
Masato Minakata, Toyota, Japan
Serge van Dam, Rijkswaterstaat, Netherlands

SIS50 - Transforming Freight Movement through ITS - Part 1 of 4: Freight Transport Efficiency
Tuesday 31 October 2017, 09:45 - 11:15 (515 ABC)
Topic: F. Disruption and New Business Models

This four-part symposium seeks to mobilize the communities of road freight transport, heavy vehicle technology, weigh-in-motion, infrastructure, ITS, regulation and compliance, and telematics. Engagement is sought with emerging transformational technologies in mobility, including connected and automated vehicles (CAV), shared mobility, big data, cybersecurity and the Internet of Things (IoT). Presentations and panel discussions will promote the use of ITS and transformational technology solutions for freight transport and heavy vehicle operation, and will facilitate networking between road freight transport stakeholders and the broader ecosystem of 21st Century mobility. This first session will focus on freight transport efficiency. Topics will include energy, environment and safety (eco-driving, eco-routing, electrification/e-Highway, benefits of platooning and automation, driver behavior and support) and traffic efficiency and productivity (traffic and truck management and monitoring on highways, and high capacity vehicles (HCVs).9:45-11:15 - Part 1 - SIS50: Freight Transport Efficiency (Bernard Jacob, moderator). This first session will focus on freight transport efficiency. Topics will include energy, environment and safety (eco-driving, eco-routing, electrification/e-Highway, benefits of platooning and automation, driver behavior and support) and traffic efficiency and productivity (traffic and truck management and monitoring on highways, and high capacity vehicles (HCVs).

Organizer
Peter Sweatman, CAVita LLC, USA
Bernard Jacob, IFSTTAR, France
Moderator
Bernard Jacob, IFSTTAR, France
Speakers
Bernard Jacob, IFSTTAR, France
Patrick Duprat, Alstom, France
Ryan Klomp, Transport Canada, Canada
John Woodrooffe, Woodrooffe & Associates, Canada

Tuesday 31 October 2017

SIS51 - Macro Impacts of Autonomous Vehicles
Tuesday 31 October 2017, 09:45 - 11:15 (513 DEF)
Topic: A. Connectivity and Autonomy

Much of the analytic and political focus of autonomous vehicles has been on individual industries—trucking, for example, or specific types of impacts such as safety. While important, this scale of analysis misses non-linear changes that occur on a broader scale. These impacts are usually understood only in retrospect. Examples from previous network-scale investments range from the Interstate Highway System in the US to the internet or wireless communication. These investments can cause significant shifts in economic structure, often generating new industries, new markets, and shifts in social structure with access to new services. This session will review possible lessons learned from other network scale investments and discuss about possible long-term effects on the economy and society.

Organizer
Richard Mudge, Compass Transportation and Technology, Inc., USA
Moderator
Richard Mudge, Compass Transportation and Technology, Inc., USA
Speakers
Risto Kulmala, Finnish Transport Agency, Finland
Alain Kornhauser, Princeton University, USA
Hiroaki Miyoshi, Doshisha University, Japan
Michael L. MacDonald, Senate of Canada, Canada

SIS52 - Implementation of Weigh-In-Motion Systems for Direct Weight Enforcement
Tuesday 31 October 2017, 09:45 - 11:15 (513 ABC)
Topic: B. Infrastructure Challenges and Opportunities

The application of Weigh-In-Motion (WIM) systems for direct weight enforcement has been a thing for the future for many years. Direct enforcement means that the fine for an overloaded vehicle is directly based on the WIM measurement without any secondary measurements. Recent developments in WIM sensor and system technology, a new international standard on WIM, and experiences with a number of pilot implementations have brought the future a step closer. This session will investigate exactly how close and what is still needed. It will present the status quo in the area of WIM for direct enforcement, what are the ongoing developments in the market, and what is needed for the future. The discussion will focus on what steps should be considered for a successful implementation of WIM for direct weight enforcement and different aspects—like legal acceptance of the measurements, system testing and certification, and the guarantee of system performance during operation—will be feature to show the practical experience from actual implementation project(s). The session will also investigate the possibilities of using the same type of WIM systems for other advanced applications like high-speed, free-flow tolling by weight.

Organizer
Hans van Loo, Corner Stone International SAGL., Switzerland
Moderator
Chris Koniditsiotis, TCA (Transport Certification Australia), Australia
Speakers
Randy Hanson, IRD (International Road Dynamics), Canada
Cock Oosterman, NMi Certin b.v., The Netherlands
Hans van Loo, Corner Stone International SAGL., Switzerland
Lukáš Valenta, CAMEA, spol s.r.o., Czech Republic
Libor Susil, CROSS, zlin, a.s., Czech Republic
Valter Tani, UFSC/Labtrans, Brazil

Tuesday 31 October 2017

SIS53 - The Importance of Network Communications Infrastructure for ITS Initiatives
Tuesday 31 October 2017, 09:45 - 11:15 (514 BC)
Topic: B. Infrastructure Challenges and Opportunities

Since 2012, the City of Montreal has been deploying an integrated telecommunications network in order to support ITS proliferation. This network is required to enable real-time communication between transport-related equipment in the field and the urban mobility management center, thus allowing Montreal to become a smart city through better traffic control and modernized parking management. The first part of the session will give an overview of Montreal's current telecommunications network and the challenges encountered, spanning from physical installation constraints to daily operations restrictions. Challenges faced by the current infrastructure to become a failure-free network to support future ITS applications (e.g. automated and connected vehicles) as well as the City's plan to overcome some of these difficulties will also be discussed. How do cities navigate the myriad of telecommunications choices, knowing that today's integrated transportation systems are growing in complexity and scale? Typically, it begins with the building of mission critical networks. The second part of the session will explore the technical and ROI considerations that IT and CTO personnel must evaluate as cities assess their network infrastructures to support desired transportation systems and requirements. Today's complex public transportation systems agenda goes well beyond whether the telecommunications infrastructure can properly support passenger information systems, real-time CCTV, vehicle health monitoring, and traffic optimization. It also must demonstrate that these integrated systems are performing optimally while also helping to streamline operations, enhance safety, and generate revenue for the city.

Organizer
Thi Mai Thanh Do, City of Montreal, Canada
Moderator
Eric Labrie, IS5, Canada
Speakers
Thi Mai Thanh Do, City of Montreal, Canada
Geoff Smith, Rajant, USA
Rock Lacroix, CIMA+, Canada
Dava Baumann, Rajant, USA

SIS54 - Parking Management: Past, Present and Future
Tuesday 31 October 2017, 09:45 - 11:15 (510 A)
Topic: C. Smart(er) Cities

Parking management is experiencing big changes driven by new technologies, lifestyle changes, and an emphasis on mobility. Terms such as 'road diets' and 'complete streets' are now part of the planning lexicon. This session will explore how intelligent parking management can contribute to the success of these new priorities. The discussion will include progress made to date and explore the future. A generation ago, on-street parking meters were stand-alone units, many capable of downloading data to a handheld computer that could be batch processed to a server. Off-street parking facilities were also stand-alone units with limited parking guidance information. Parking management set prices based on a judgement call of what the market would bear. Today on-street parking meters are capable of providing data on a real-time basis. Occupancy sensors are available to provide data for parking guidance, for demand-based parking pricing, and for guided parking enforcement. Off-street facilities have internal parking guidance systems to make the parking experience more pleasant and to achieve better utilization of the available parking space. Comprehensive parking guidance is now available. It uses many media, including the internet, 511, apps, static signs, and dynamic message signs. Parking availability and parking policies are published through the guidance system. This session will also develop several scenarios of what the future may bring, examining the impact of other forms of mobility, the use of services such as Uber and Lyft, the decline in car ownership, and the impact of autonomous vehicles.

Organizer
Peer Ghent, Los Angeles Dept. of Transportation, USA
Moderator
Peer Ghent, Los Angeles Dept. of Transportation, USA
Speakers
Scott Sedlik, INRIX, United States
Thomas Hohenacker, Cleverciti Systems GmbH, Germany

Tuesday 31 October 2017

SIS55 - Benefit of IoT and Big Data for Automated Driving and User Trust Challenge
Tuesday 31 October 2017, 15:00 - 16:30 (510 A)
Topic: D. Data, Security and Privacy

What benefits are actually expected from the Internet of Things and Big Data to improve the safety and reliability of automated driving vehicles? How can the increase of automated driving performances—gained by the use of millions of objects collecting information thanks to the Internet of Thing frameworks—be evaluated? How can the user's acceptance for these technologies be assessed, including concerns about data privacy and cyber security, ensuring users will trust automated vehicles using connected objects? This session will answer these questions and present the large-scale pilot activities expecting to address these issues.

Organizer
Olivier Lenz, Federation Internationale Automobile, Belgium
Moderator
Francois Fischer, ERTICO ITS Europe, Belgium
Speakers
Jeff Walker, Canadian Automobile Association, Canada
Hajime Amano, ITS Japan, Japan
Oihana Otaegui, Vicomtech, Spain

SIS56 - Reinventing Public Transport with SmartShuttles
Tuesday 31 October 2017, 09:45 - 11:15 (510 D)
Topic: F. Disruption and New Business Models

This session will focus on the valuable findings – presented for the first time – of a 2016 project for autonomous shuttles in Sion, Switzerland, which involved more than 50,000 passengers. This will be an opportunity to introduce the technology used in more depth, to share scientific and market data, and to discuss future fields of research to a greater extent.

Organizer
Vincent Galland, MSc, Swiss Business Hub Canada, Consulate General of Switzerland, Canada
Moderator
Markus Reubi, Swiss Business Hub Canada, Consulate General of Switzerland, Canada
Speakers
Martina Müggler, PostBus Mobility Solutions Ltd, Switzerland
Raphael Gindrat, BestMile, Switzerland
Florian Evequoz, HES-SO Valais, Switzerland

Tuesday 31 October 2017

SIS57 - Transforming Freight Movement through ITS - Part 2 of 4: Recent International Progress on Truck Platooning
Tuesday 31 October 2017, 13:15 - 14:45 (515 ABC)
Topic: F. Disruption and New Business Models

This four-part symposium seeks to mobilize the communities of road freight transport, heavy vehicle technology, weigh-in-motion, infrastructure, ITS, regulation and compliance, and telematics. Engagement is sought with emerging transformational technologies in mobility, including connected and automated vehicles (CAV), shared mobility, big data, cybersecurity and the Internet of Things (IoT). Presentations and panel discussions will promote the use of ITS and transformational technology solutions for freight transport and heavy vehicle operation, and will facilitate networking between road freight transport stakeholders and the broader ecosystem of 21st Century mobility. This second session will report the past experiences of platooning, the on-going research works and main challenges / issues of truck platooning, in North America and Europe. Some solutions will be proposed and discussed. An insight on fully automated truck will be given as a future perspective. 13:15-14:45 - Part 2 – SIS57: Recent international Progresses on Truck Platooning (Steve Shladover, moderator). This second session will report the past experiences of platooning, the on-going research works and main challenges / issues of truck platooning, in North America and Europe. Some solutions will be proposed and discussed.

Organizer
Peter Sweatman, CAVita LLC, USA
Bernard Jacob, IFSTTAR, France
Moderator
Steven Shladover, University of California PATH Program, USA
Speakers
Steven Shladover, University of California PATH Program, USA
Brian McAuliffe, National Research Council Canada, Canada
Bastiaan Krosse, TNO, Netherlands
Steve Boyd, Peloton Technology, United States

SIS58 - Shared Mobility in a Digital City
Tuesday 31 October 2017, 13:15 - 14:45 (513 DEF)
Topic: A. Connectivity and Autonomy

As we move from the status quo to a mobility ecosystem populated with autonomous vehicles, governments will need to make decisions that will impact citizens' lives. To make optimal decisions, governments will need to assess the impact of this vehicular technology and accompanying business models on pollution (and the jurisdiction's ability to meet GHG emissions reductions commitments), public health, congestion, infrastructure, and private business operations as well as public expenditures and revenues. In addition, governments will need to determine how to protect citizens' privacy and balance the above against interests to attract businesses and promote innovation in mobility business models. This session will discuss each of the above considerations and present solutions aimed at balancing the goal for innovation and attracting private businesses to populate the new mobility ecosystem with the need to protect citizens' privacy, the environment, and public health all while considering private business needs, congestion issues, and the impact on public budgets. The emphasis of the panel will be on the benefits of shared multi-modal mobility and the co-benefits associated with urban land use by citizens, complementary with public transit as well as others.

Organizer
Félix Gravel, Conseil régional de l'environnement de Montréal, Canada
Moderator
Catherine Kargas, MARCON, Canada
Speakers
Jean-Francois Barsoum, IBM Canada, Canada
Catherine Kargas, MARCON, Canada

Tuesday 31 October 2017

SIS59-1 - Data Collection and Data Sharing: Needs and Challenges for Automated Vehicle Pilots: Part 1
Tuesday 31 October 2017, 13:15 - 14:45 (512 D)
Topic: D. Data, Security and Privacy

During the past years numerous Field Operational Tests (FOT) and Naturalistic Driving Study (NDS) have been performed worldwide and currently companies and research organizations are developing large-scale FOTs and Pilots for automated vehicles. The open research questions to be answered by FOTs will take into account several aspects and a massive amount of data, including a larger variety of data, need to be collected to investigate both short- and long-term impacts. Several issues have to be faced about data acquisition (e.g. standard data format and the related attributes, new kinds of data), which data to share and under which conditions, data sharing practices to improve significance, comparability and transferability of up-coming FOT results supporting the involved stakeholders. Capitalizing on the previous experience (e.g. FESTA methodology, the results from EU-funded project FOT-NET Data – FOT-Net Data Sharing Platform, the Research Data Exchange – RDE portal), the session aims to discuss the next challenges, highlighting the research needs and possible solutions for FOTs and Pilots for automated vehicles; to engage research and industrial stakeholders on the topic in the different regions of the world; and to answer the questions of how to perform data collection, analyze data and foster data sharing to make the data available for a larger research community.

Organizer
Maxime Flament, ERTICO - ITS Europe, Belgium
Moderator
Yvonne Barnard, University of Leeds, UK
Speakers
Helena Gellerman, SAFER Vehicle and Traffic Safety Centre at Chalmers University of Technology, Sweden
Ariel Gold, dot, United States
Jim Sayer, University of Michigan Transportation Research Institute, United States
Takahiko Uchimura, ITS Japan, Japan
Jan Hellaken, Lindholmen Science Park, Sweden

SIS59-2 - Data Collection and Data Sharing: Needs and Challenges for Automated Vehicle Pilots: Part 2
Tuesday 31 October 2017, 15:00 - 16:15 (512 D)
Topic: D. Data, Security and Privacy

This session is the continuation of SIS 59 - Data collection and data sharing: needs and challenges for automated vehicle pilots, Part 1. For several years now, FOT-Net has been organizing an international workshop in conjunction with ITS World Congresses. FOT-Net was established in 2008 as a support action by the European Commission to create a networking platform for stakeholders interested in Field Operational Tests (FOTs) and foster cross-region (Europe, Asia-Pacific and North America) cooperation on common FOT and pilot issues, such as data handling and sharing, methodology and deployment. The European project CARTRE operates the network activities during 2017–2018. With CARTRE focus on automation, the session will present the outcome from trilateral expert meetings discussing (1) things we would like to share (e.g. data, knowledge, experience); (2) things we need to facilitate (e.g. policies) and (3) things we would like to know (e.g. Key Performance Indicators) to suit connected automated vehicle pilots. It will then open the discussion regarding the steps forward.

Organizer
Maxime Flament, ERTICO - ITS Europe, Belgium
Moderator
Yvonne Barnard, University of Leeds, UK
Speakers
Helena Gellerman, SAFER Vehicle and Traffic Safety Centre at Chalmers University of Technology, Sweden
Adrian Zlocki, IKA, Germany
Yvonne Barnard, University of Leeds, UK

Tuesday 31 October 2017

SIS60 - Technology for Public Transport: New Solutions for Integrated Mobility
Tuesday 31 October 2017, 13:15 - 14:45 (514 BC)
Topic: C. Smart(er) Cities

For many years, public transport agencies have relied on traditional on-board and central technology systems, such as automatic vehicle location systems, to manage operations and provide real-time information. However, in this new age, where there are more transportation modes and services (e.g., Uber, Bridj), public transport is utilizing new techniques to secure a prominent position in the transportation ecosystem. This session will explore some of the new techniques being utilized by public transport providers to focus more on integrated mobility solutions.

Organizer
Carol Schweiger, Schweiger Consulting LLC, United States
Moderator
Randell Iwasaki, Contra Costa Transportation Authority, USA
Speakers
Mika Kulmala, City of Tampere, Finland
Lenae Boykin, TransLoc, USA
Stephanie Leonard, European Commission – DG MOVE, Belgium
Alexandre Savard, GIRO, Canada
Kyuok KIM, Ph. D, The Korea Transport Institute, South Korea

SIS61 - The Role of V2X in Automated Vehicles
Tuesday 31 October 2017, 13:15 - 14:45 (510 A)
Topic: A. Connectivity and Autonomy

The session will focus on the role of V2X for automated vehicles infrastructure and answer questions such as: Can there be Level 4 and Level 5 automation without V2X? What is the role of the government to define rules of the spectrum that is needed for V2X connectivity? Is the future of V2X based on DSRC or cellular technologies?

Organizer
Ravi Puvvala, Savari, Inc., USA
Moderator
Ravi Puvvala, Savari, Inc., USA
Speakers
Stephen Novosad, HNTB, USA
Peter Samson, On-Board Security, USA
Stephen Smith, RideCell, United States

Tuesday 31 October 2017

SIS62 - Disruptive Technology Delivered via Connected Vehicles that Transforms User Experience
Tuesday 31 October 2017, 13:15 - 14:45 (510 C)
Topic: F. Disruption and New Business Models

The session will show how combined public sector and crowd sourced multimodal data can use new disruptive technology to deliver a very different and much more effective user experience. Comparisons with existing unfused data feeds and current relatively inefficient means of delivering travel information via radio or navigation systems will be used to demonstrate that new technology can deliver all types of drivers with an enhanced experience that, whilst actually delivering less data by volume, actually only provides useful and relevant content 24x7. In this way, road safety benefits are achieved and travel data is used more effectively. Additionally, revenue opportunities and customer relationship benefits can be provided for service providers and OEMs.

Organizer
Paul Hutton, Travel for Media, United Kingdom
Moderator
Ian Patey, Mouchel, UK
Speakers
Barry Einsig, Cisco Systems, United States
Nick Kiernen, TrafficCast, United States
Paul Hutton, Travel for Media, United Kingdom
Mahmood Hikmet, HMI Technologies, New Zealand

SIS63 - Energy Efficient Mobility Systems: The US DOE's Research on SMART Mobility
Tuesday 31 October 2017, 13:15 - 14:45 (510 D)
Topic: G. Innovation, What's Next? The New Ideas

The U.S. Department of Energy (DOE) recently launched the new Energy Efficient Mobility Systems (EEMS) Program within its Office of Vehicle Technologies, with the goal of understanding the energy implications associated with the coming transformation of the transportation system and initiating research, development, and deployment efforts to support a maximum-mobility, minimum-energy future through connectivity, automation, electrification, and shared mobility. As part of the EEMS Program, multiple national laboratories have formed a consortium to focus on Systems and Modeling for Accelerated Research in Transportation (SMART) Mobility, with an emphasis on five primary research thrusts: mobility decision science, connectivity and automation, multimodal transportation, urban science, and advanced fueling infrastructure. Through the SMART Mobility Lab Consortium, DOE will collaborate with the U.S. Department of Transportation (DOT) to better tap each agency's expertise in transportation system technologies. This effort was initiated recognizing that there is a disruption occurring in transportation, which provides an important opportunity to accelerate transportation system R&D with Big Data, modeling of advanced control systems, and advanced vehicle design. As this SMART Mobility research progresses, this effort will help transportation planners decide how to best focus investment dollars to maximize energy efficiency. This session will bring together experts from across DOE's National Laboratories and from each of the five focus areas. It will provide details on the collaborative efforts and discuss results to date including advancements made with datasets, modeling efforts, and analysis techniques.

Organizer
David Anderson, US Department of Energy, USA
Kevin Walkowicz, National Renewable Energy Laboratory, USA
Moderator
David Anderson, US Department of Energy, USA
Speakers
Anand Gopal, Lawrence Berkeley National Laboratory, USA
John Smart, Idaho National Laboratory, USA
David Smith, Oak Ridge National Laboratory, USA
Aymeric Rousseau, Argonne National Laboratory, United States
Stanley Young, NREL, USA

Tuesday 31 October 2017

SIS64 - Measuring the Benefits of ITS Using Big Data (IBEC Session)
Tuesday 31 October 2017, 13:15 - 14:45 (513 ABC)
Topic: D. Data, Security and Privacy

One of the hardest tasks in traffic engineering is determining the impact of an ITS installation on network performance. In simple cases, such as signalizing a junction, the results are obvious, but if changes to existing signal operating parameters are made, the changes to network performance may be hard to discern. In this session, recent progress in the use of Big Data analytics in determining post-treatment impacts will be discussed.

Organizer
Glenn Geers, Australian Road Research Board, Australia
Moderator
Glenn Geers, Australian Road Research Board, Australia
Speakers
Ian Espada, Australian Road Research Board, Australia
Robert Bertini, University of South Florida, USA
Andy Taylor, Cubic Transportation Systems, United Kingdom
Monali Shah, HERE, United States

SIS65 - Transforming Freight Movement through ITS - Part 3 of 4: Infrastructure and Communication
Tuesday 31 October 2017, 15:00 - 16:30 (515 ABC)
Topic: F. Disruption and New Business Models

This four-part symposium seeks to mobilize the communities of road freight transport, heavy vehicle technology, weigh-in-motion, infrastructure, ITS, regulation and compliance, and telematics. Engagement is sought with emerging transformational technologies in mobility, including connected and automated vehicles (CAV), shared mobility, big data, cybersecurity and the Internet of Things (IoT). Presentations and panel discussions will promote the use of ITS and transformational technology solutions for freight transport and heavy vehicle operation, and will facilitate networking between road freight transport stakeholders and the broader ecosystem of 21st Century mobility. This third session will focus on infrastructure and communication. Topics will include infrastructure requirements and compliance (infrastructure planning, design and operation for CAVs, Intelligent Access Program (IAP), load effects assessment and monitoring, bridge loading (dynamics, bridge formula), dedicated lanes, parking, V2I and I2V communication] and urban freight infrastructure (last mile delivery, smart cities and logistics, space sharing and allocation, and multimodal approaches).15:00-16:30 - Part 3 – SIS65: Infrastructure and Communication (Chris Koniditsiotis, moderator)This third session will focus on infrastructure and communication. Topics will include infrastructure requirements and compliance (infrastructure planning, design and operation for CAVs, Intelligent Access Program (IAP), load effects assessment and monitoring, bridge loading (dynamics, bridge formula), dedicated lanes, parking, V2I and I2V communication] and urban freight infrastructure (last mile delivery, smart cities and logistics, space sharing and allocation, and multimodal approaches).

Organizer
Peter Sweatman, CAVita LLC, USA
Bernard Jacob, IFSTTAR, France
Moderator
Chris Koniditsiotis, Transport Certification Australia, Australia
Speakers
Laetitia Dablanc, IFSTTAR, France
Chris Koniditsiotis, Transport Certification Australia, Australia
Bernard Jacob, IFSTTAR, France
Chris Poe, Texas A&M Transportation Institute, USA

Tuesday 31 October 2017

SIS66 - Cooperation and Collaboration in AV Trials Conducted Across Multiple Countries
Tuesday 31 October 2017, 15:00 - 16:30 (513 DEF)
Topic: A. Connectivity and Autonomy

This session will describe experiences across four countries - Australia, New Zealand, Singapore and the USA - in conducting AV trials. The four countries, through HMI Technologies in Australia and New Zealand, Contra Costa Transport Authority (GoMentum Station) in the USA and the Land Transport Authority in Singapore have recently signed an MoU to collaborate and cooperate in the development of the trials and the provision of the research outcomes.

Organizer
Dean Zabrieszach, HMI Technologies Pty Ltd, Australia
Moderator
Dean Zabrieszach, HMI Technologies Pty Ltd, Australia
Speakers
Andrew Mehaffey, HMI Technologies, HMI Technologies Pty Ltd, Australia
Randell Iwasaki, Contra Costa Transportation Authority, USA
Kian-Keong Chin, Land Transport Authority, Singapore
Dougal Morrison, HMI Technologies Ltd, New Zealand
Dean Economou, Telstra, Australia

SIS67 - Integrated Road Infrastructure for Mixed Vehicle Traffic Flows
Tuesday 31 October 2017, 15:00 - 16:30 (513 ABC)
Topic: A. Connectivity and Autonomy

Automated vehicle (AV) manufactures are planning for the market introduction of vehicles with more and more automated functionalities. Steps towards the deployment of AV are progressing fast, but the success of the transition towards AVs will largely be determined by the acceptance and actions of stakeholders that have so far not been part of the debate: motorway operators, urban road authorities, and other infrastructure related stakeholders. To be prepared for the gradual insertion of automated vehicles, there is an inherent need for adaptations at the infrastructure side, ensuring uninterrupted, predictable, safe, and efficient traffic. These can be divided into two main categories: advancements in the digital infrastructure and upgrades in the physical infrastructure. Due to lack of resources for major investments in the physical part of the road infrastructure in the recent years, and the corresponding low upgrade rate of the infrastructure, efforts are focusing on the digital infrastructure. Those two instantiations of the infrastructure should be consistent and complementary. For example, in case a speed limit is adapted in the digital world, then this should be visualized in the physical one and vice versa. This session will present and discuss the current activities in the field of 'hybrid' road infrastructure and highlight how it can support, in a cost-efficient manner, the introduction of different levels of AVs in existing road networks including conventional vehicles.

Organizer
Angelos Amditis, ICCS, Greece
Moderator
Angelos Amditis, ICCS, Greece
Speakers
Andreas Kerschbaumer, VIRTUAL VEHICLE, Austria
Julian Schindler, Institute of Transportation Systems at the German Aerospace Center (DLR), Germany
Steven Shladover, University of California PATH Program, USA
Bernd Datler, ASFINAG Maut Service GmbH, Austria
Bernard Gyergyay, Rupprecht Consult, Germany
Martin Russ, AustriaTech, Austria

Tuesday 31 October 2017

SIS68 - Traffic Signal Control System for Connected and Automated Vehicles
Tuesday 31 October 2017, 15:00 - 16:30 (514 BC)
Topic: G. Innovation, What's Next? The New Ideas

This session will present the R&D framework of the next generation traffic signal control system for connected and automated vehicles utilizing information and communication technology to detect the vehicles approaching the intersections instead of the conventional detectors. The detection technology might include the connected vehicle with V2X communication and a few promising sensors installed in the infrastructure. New hardware and software systems are integrated with an innovative concept of control and management algorithms. A methodology of how to test a system on the road will be discussed in terms of performance measures to be evaluated and validated.

Organizer
Young-Jun Moon, The Korea Transport Institute (KOTI), Korea
Moderator
Young-Jun Moon, The Korea Transport Institute (KOTI), Korea
Speakers
Youngje Jeong, Korea Road Traffic Authority, Korea
Kitae Jang, KAIST, Korea
Sangsun Lee, Hanyang University, Korea
Jae-Hyoung Park, Metabuild Inc., Korea
Jinhwan Jang, Korea Institute of Civil Engineering and Building Technology, Korea
Ji-Yeon Lee, ITS Korea, Korea

SIS69 - New Evaluation Methods for Piloting Automated Road Transport (IBEC Session)
Tuesday 31 October 2017, 09:45 - 11:15 (510 C)
Topic: A. Connectivity and Autonomy

In the coming years, large-scale pilots will be conducted with different types of road automation. In Europe, FOTs on advanced driver support and cooperative systems have been designed, performed, and evaluated according to the FESTA methodology. International experiences and lessons-learned have been exchanged in the last decade on how to evaluate these tests and on how to assess the potential impact of wide-spread ITS. Now it is time to address the next step. Assessing the impact on a wide variety of areas requires new ways of conducting evaluation, while continuing with a structured approach, scientifically based methods and providing evidence to decision makers through thorough analysis of the effects. This session will feature experts from CARTRE (Coordination of Automated Road Transport Deployment for Europe), the trilateral working group on impact assessment of automated road transport, and other international experts discussing what the needs are for new methods and what promising approaches can be identified to be ready to gather evidence on the potential of road automation, its opportunities, and its problems. Included in the session will be a short explanation of the currently available methodologies, evaluation frameworks and methods, and introductions on a series of new approaches. Examples include visioning methods, scenario development, data mining and machine learning analysis techniques, automated video analysis, anonymization of data in order to enable wide sharing of data, automated scenario detection, and new ways of measuring user acceptance and performing stakeholder analyses.

Organizer
Yvonne Barnard, University of Leeds, UK
Moderator
Yvonne Barnard, University of Leeds, UK
Speakers
Helena Gellerman, SAFER Vehicle and Traffic Safety Centre at Chalmers University of Technology, Sweden
Adrian Zlocki, IKA, Germany
Ding Zhao, University of Michigan Transportation Research Institute, USA
Nobu Uchida, Japan Automobile Research Institute, Japan

Tuesday 31 October 2017

SIS70 - Transforming Freight Movement through ITS - Part 4 of 4: CAV Technology and Freight Vehicle Applications
Tuesday 31 October 2017, 16:45 - 18:00 (515 ABC)
Topic: F. Disruption and New Business Models

This four-part symposium seeks to mobilize the communities of road freight transport, heavy vehicle technology, weigh-in-motion, infrastructure, ITS, regulation and compliance, and telematics. Engagement is sought with emerging transformational technologies in mobility, including connected and automated vehicles (CAV), shared mobility, big data, cybersecurity and the Internet of Things (IoT). Presentations and panel discussions will promote the use of ITS and transformational technology solutions for freight transport and heavy vehicle operation, and will facilitate networking between road freight transport stakeholders and the broader ecosystem of 21st Century mobility. This fourth session will explore connected and automated vehicle (CAV) technology as it impacts heavy vehicles in freight operations. What are the most practical and immediate applications, and how do they relate to other technological developments in freight vehicles such as performance based standards (PBS)?16:45 – 18:00 - Part 4 – SIS70: CAV Technology and Freight Vehicle Applications (Peter Sweatman, moderator). This fourth session will explore connected and automated vehicle (CAV) technology as it impacts heavy vehicles in freight operations. What are the most practical and immediate applications, and how do they relate to other technological developments in freight vehicles such as performance based standards (PBS)?

Organizer
Peter Sweatman, CAVita LLC, USA
Bernard Jacob, IFSTTAR, France
Moderator
Peter Sweatman, CAVita LLC, USA
Speakers
Steven Shaw, Roads and Maritime Services, Australia
Maxime Flament, ERTICO - ITS Europe, Belgium
Richard Easley, E-Squared Engineering, USA
Richard Bishop, Bishop Consulting, USA
Peter Sweatman, CAVita LLC, USA

TS36 - Big Data for Mobility
Tuesday 31 October 2017, 08:00 - 09:30 (511 C)
Topic: C. Smart(er) Cities

Moderator
Jeff Adler, Kapsch TrafficCom North America, USA

EU-TP0919 - Urban Mobility - Driven by Data
Mahmood Hikmet, HMI Technologies, New Zealand
AP-TP0985 - Applications in Public Transportation of Big-Data-Based Analysis Results
Wang Qiang, Jinan Public Transport Company, China
AM-TP1026 - Stepping Away from the RDBMS: Scalability for Big Data
John Miller, Kapsch TrafficCom, USA
AM-TP1331 - Building a Modern Transportation Data Analytics Team in Toronto
Jesse Coleman, City of Toronto, Canada

Tuesday 31 October 2017

TS37 - Future Mobility Innovations for Smart Cities and Their Transportation Agencies
Tuesday 31 October 2017, 08:00 - 09:30 (511 F)
Topic: F. Disruption and New Business Models

Moderator
Richard Harris, HMI Technologies, UK

AM-TP0820 - TX Innovation Alliance: A Public-Private Partnership Model for Smart Cities
Kristie Chin, University of Texas at Austin, United States
AM-TP0843 - Managing Innovation in the Department of Transportation
Lekshmy Sankar, CDOT, USA
EU-TP1167 - Breaking New Ground: Upstream – Next-Level Mobility GmbH
Reinhard Birke, Upstream Mobility, Austria
EU-SP1264 - Travel Persona Composition for Future Mobility: Segmentation of Travel Characteristics in Relation to Future Modes of Transport for Regions in Europe and the United States
Aykut Mehmet Oymagil, TomTom, USA

TS38 - Public Procurement
Tuesday 31 October 2017, 08:00 - 09:30 (512 A)
Topic: B. Infrastructure Challenges and Opportunities

Moderator
Anthony Ferguson, department for transport, United Kingdom

AP-SP0882 - Australian National ITS Product Type Approval Process
Dr. Charles Karl, Australian Road Research Board, Australia
EU-TP1187 - Roadside ITS Station Specification
Trond Foss, SINTEF Transport Research, Norway
EU-TP1296 - Innovative Procurement Method and Piloting of Real-Time Traffic Information Snapshot
Mika Kulmala, City of Tampere, Finland
EU-TP1358 - Raising Awareness of Using Public Procurement as an Instrument for Implementation of ITS
Mikkel Balskilde Hansen, City of Copenhagen, Denmark

TS39 - Recent Developments in Adaptive Signal Control
Tuesday 31 October 2017, 08:00 - 09:30 (512 B)
Topic: C. Smart(er) Cities

Moderator
John Hibbard, Georgia Department of Transportation, USA

AP-SP1183 - On Alleviating Off-Ramp Spillback Congestions: An Adaptive Signal Control Involving Coordinated Critical Paths
Chien-Pang Liu, MOTC, Chinese-Taipei
EU-TP1251 - Model-Based Adaptive Signal Control in Developing Countries
Luca Paone, PTV Group, Italy
AM-TP1317 - Wireless Turn Bay Queue Overflow & Adaptive Response
Yeatland Wong, The City of Calgary, Canada

Tuesday 31 October 2017

TS40 - Using ITS to Mitigate the Impacts of Winter Weather
Tuesday 31 October 2017, 08:00 - 09:30 (512 C)
Topic: B. Infrastructure Challenges and Opportunities

Moderator
Dougal Morrison, HMI Technologies Ltd, New Zealand

AM-TP0778 - Mobile Road Weather Information System Pilot Report, Alberta Transportation, Winter 2015-2016
Beata Bielkiewicz, Alberta Transportation, Office of Traffic Safety, Canada
AM-SP1106 - Evaluating the Traffic Impacts of the Federal Government Decisions-Related to Winter Weather in Washington, D.C.
Mark Franz, Center for Advanced Transportation Technology Laboratory, USA
AM-TP1108 - Weather-Responsive Incident Prediction for Metro Detroit Region: A Data-Driven Solution
Oladayo (Dayo) Akinyemi, Southeast Michigan Transportation Operations Center (SEMTOC), Michigan Department of Transportation, United States
AM-TP1189 - York Region's Winter Maintenance AVL/GPS System Innovations Result in Improved Road Safety
Kerry Brazel, Regional Municipality of York, Canada

TS41 - Developments in ITS Infrastructure
Tuesday 31 October 2017, 09:45 - 11:15 (512 D)
Topic: C. Smart(er) Cities

Moderator
Kazunori Inoue, Panasonic Corp., Japan

AP-TP1031 - Detection of Sudden Braking of a Motor Vehicle by Using Accelerometer Measurements with Eliminating Bouncing Events Arising When Driving Over Uneven Road Surfaces
Kentaro Kondo, Fujitsu, Limited, Japan
AP-TP1130 - A Light-weight and Robust Network Analysis Platform
Peter Bathgate, Resolve Group, New Zealand
AM-TP1330 - Sensorless Traffic Adaptive Roadway Lighting
Talmai Oliveira, Philips Lighting Research North America, United States

TS42 - Ensuring Driver Safety through ADAS and Automated Vehicles
Tuesday 31 October 2017, 09:45 - 11:15 (511 C)
Topic: A. Connectivity and Autonomy

Moderator
Tien-Pen Hsu, Institute of Civil Eng. National Taiwan University, Chinese-Taipei

AP-SP0916 - The Study of the Effects and Social Perception of ADAS in Japan - Focusing on Advanced Emergency Braking System
Yasuhide Nishihori, Toyota Transportation Research Institute, Japan
AM-TP1018 - Driver Safety Notifications
Enrique Cramer, Drivewyze, Canada
AP-TP1029 - Are They Safe? Australia's Progress Towards a Safety Assurance System for Automated Vehicles
James Williams, National Transport Commission, Australia
AP-SP1041 - Estimation of Driver Injury Severity Associated with Automotive Crash
Hyungmok Yoo, The Korea Transport Institute, Korea
AP-TP1051 - Direct Yaw Moment Control That Can Turn a Vehicle Even on an Icy Road
Tatsuya Hiromura, ADVICS CO., LTD, Japan

Tuesday 31 October 2017

TS43 - ITS for Customer Information
Tuesday 31 October 2017, 09:45 - 11:00 (511 F)
Topic: E. Integrated Approach: Planning, Operations and Safety

Moderator
Jessica Lin, THI Consultants Inc., Chinese-Taipei

AP-TP0788 - Investigating How Colors and Color Tones Make Waiting Times Feel Shorter
Hiroko Mori, Aichi Shukutoku University, Japan
AP-SP1145 - Development of Content Variable Integrated Signage System for Railway Guidance
Yosuke Hidaka, East Japan Railway Company, Japan
AM-TP1298 - A Customer-Focused Methodology for Determining Prediction Accuracy Using Automatically Collected Data
Farah Machlab, IBI Group, United States of America

TS44 - Sharing the Ride
Tuesday 31 October 2017, 09:45 - 11:15 (512 A)
Topic: D. Data, Security and Privacy

Moderator
Yasuhiko Nakano, Fujitsu Ten (Europe) GmbH, Germany

AP-SP0782 - On Generic Properties of Extended Environment Values
Mikio Sasaki, Music Scene Research, Japan
AM-TP0838 - Modeling Demand and Supply Interaction in Multiple Stations Shared Vehicle Systems
Ata Khan, Carleton University, Canada
AP-SP0968 - Investigating the Macroscopic and Microscopic Feature of Electric Carsharing System in Shanghai
Tao Fu, Tongji University, China
AP-SP1007 - Free-Floating Public Bicycle Sharing System in Shanghai: The Spatial-Temporal Patterns from GPS-Data
Fuwen Deng, Tongji University, China

TS45 - Simulation Applications
Tuesday 31 October 2017, 09:45 - 11:15 (512 B)
Topic: B. Infrastructure Challenges and Opportunities

Moderator
Amy Guo Haggart, Newcastle University, United Kingdom

AM-TP0748 - An Evaluation of Current Simulation Analysis Capabilities and Near-Term Needs for Modeling Connected Vehicle Applications
Vassili Alexiadis, Cambridge Systematics, USA
AP-TP1059 - Framework Design Method of Customized Macroscopic Traffic Model System
He Liu, Shenzhen Urban Transport Planning Center Co., LTD, China
AP-SP1214 - A Pipeline Multiagent Architecture for Road Traffic Simulation
Masayuki Hayashi, Nagoya Institute of Technology, Japan
EU-TP1255 - Microsimulation Model Application to Assess Ambulances Advanced Priority Strategies
Ecaterina McCormick, Transport Systems Catapult, UK

Tuesday 31 October 2017

TS46 - Using ITS to Determine Pricing for Parking and Transportation
Tuesday 31 October 2017, 09:45 - 11:15 (512 C)
Topic: E. Integrated Approach: Planning, Operations and Safety

Moderator
Monsak Socharoentum, National Electronics and Computer Technology Center (NECTEC), Pathum Thani, 12120, Thailand

AM-SP0789 - Rank Eight Congestion Reduction Pricing Policies via the Delphi Method
Steve Raney, Joint Venture Silicon Valley, United States
AP-SP0861 - Estimating and Pricing Transport Emissions on Urban Road Networks
Kai Zhang, Shenzhen Urban Transport Planning Center (SUTPC), China
AP-SP0883 - Estimating Parking Price Elasticity Using Automatic Parking Transaction Data: A Case Study of Shanghai Hongqiao International Airport
Chenglong Liu, Tongji University, China
AP-TP1293 - Dynamic Pricing for Public Transport
Archana Ramakrishnan, Conduent Labs India, India

TS47 - Air Quality in Smart Cities
Tuesday 31 October 2017, 13:15 - 14:45 (511 C)
Topic: C. Smart(er) Cities

Moderator
Tim Gammons, Arup, United Kingdom

AP-SP0781 - Reducing Air Pollution Exposure in a Road Trip
Chunyang Ma, IBM Research, China, China
EU-TP0933 - The Real $$$ Cost of Pollution: Environment Fines and What Can Be Done
Eneko Aritza Aldama, Kapsch TrafficCom, Spain
EU-TP1014 - Autonomous and Connected Vehicles for Cleaner Air (ACCRA)
Simon Bottomley-Sanchez, Transport Systems Catapult, United Kingdom

TS48 - Bicycles in Smart Cities
Tuesday 31 October 2017, 13:15 - 14:45 (511 F)
Topic: C. Smart(er) Cities

Moderator
Mads Gaml, City of Copenhagen, Denmark

EU-SP0814 - Effective Parameters on Trip Length of Bike Sharing Systems
Kiarash Ghasemlou, İstanbul Technical University, Turkey
AP-TP1002 - Bicycle Anti-Roll-Down System Using Gyro Effect
Atsushi Kutsuwa, Shibaura Institute of Technology, Japan
EU-TP1082 - FLOW: Using Transport Models to Evaluate the Congestion Reduction Potential of Walking and Cycling Measures
Nora Szabo, PTV Group, Germany

Tuesday 31 October 2017

TS49 - Cyber Security: Part 1 of 2
Tuesday 31 October 2017, 13:15 - 14:45 (512 A)
Topic: D. Data, Security and Privacy

Moderator
Joerg Rosenbohm, Kapsch TrafficCom, USA

AP-TP0854 - Auto SIEM: Security Information and Event Management for Connected Vehicles
Takeshi Kishikawa, Panasonic Corporation, Japan
AM-TP0864 - Cybersecurity Vulnerabilities in Autonomous Vehicle Development
Adam Mistick, Carnegie Mellon University, USA
AM-TP1291 - Cybersecurity: System Assurance at the Intersection and V2X
Eric Raamot, Econolite Group, Inc., USA

TS50 - Preparing for Automated Vehicles: Part 3 of 4
Tuesday 31 October 2017, 13:15 - 14:45 (512 B)
Topic: A. Connectivity and Autonomy

Moderator
C Douglass Couto, Independent Consultant, USA

AP-TP0975 - Scalable and Real-Time Distribution of Layered Dynamic Information for Autonomous Vehicle
Takahiro Yoneda, Panasonic Corporation, Japan
AP-SP0986 - Velocity Profile Adjustment Approach to Improve Automated Vehicle Comfort-Based on V2I Communication
Chenglong Liu, Tongji University, China
EU-TP0992 - Testing Automated Driving in the Context of ITS
Alain Vouffo, Spirent Communications, UK
EU-TP1021 - A New Method for Ground Vehicle Access Control and Situation Awareness: Experiences from a Real-Life Implementation at an Airport
Cristofer Englund, RISE Viktoria, Sweden
AM-TP1025 - Managing Massive Shared Fleets of Automated Vehicles
Bern Grush, Grush Niles Strategic, Canada

TS51 - Improvement in Freight Transport Using ITS
Tuesday 31 October 2017, 13:15 - 14:45 (512 C)
Topic: E. Integrated Approach: Planning, Operations and Safety

Moderator
Eric Louette, Ministère de l'Environnement, de l'Energie et de la Mer, France

EU-TP0821 - Exploring the Market Acceptability of Cooperative Freight Transport Services
Manuela Flachi, ERTICO - ITS Europe, Belgium
EU-TP0889 - FORMICA - Multipurpose Rail Freight Innovative Concept
Miroslav Haltuf, H-Comp Consulting, Czech Republic
EU-TP1284 - A Model for Improving the Planning of Truck Transport Journeys
Gideon Mbiydzenyuy, NetPort Science Park/University of Borås, Sweden

Tuesday 31 October 2017

TS52 - Payment Technology-Incentive Schemes and Modal Choice
Tuesday 31 October 2017, 15:00 - 16:30 (510 C)
Topic: B. Infrastructure Challenges and Opportunities

Moderator
Damian McHale, Northcliffe Limited, UK

AM-TP0911 - A Cooperative Environment to Incorporate Comfort and Safety on Modal Choices and Trip Assignment
Alireza Mohammadi, Concordia University, Canada
AP-TP1060 - Urban Mobility Powered by New Digital Payment System
Syahrunizam Samsudin, Touch 'n Go, Malaysia
EU-SP1147 - Rewarding Sustainable Transportation Choices
Anders Hjalmarsson Jordanius, RISE Viktoria, Sweden
EU-SP1258 - The Potential for Embedding Retail Loyalty Models to Encourage Modal Shift to Public Transport
Frances Hodgson, Institute for Transport Studies, University of Leeds, UK, United Kingdom

TS53 - Signal Control: Part 1 of 2
Tuesday 31 October 2017, 15:00 - 16:30 (510 D)
Topic: C. Smart(er) Cities

Moderator
Hartmut Beintken, HMI Tech, New Zealand

EU-TP0760 - Mapping Split Cycle Offset Technique to Signal Frames-Based Control
Thomas Riedel, Adaptive Traffic Control AG and Verkehrs-Systeme AG, Switzerland
AP-TP0974 - Definition and Utilization of Indicator for Traffic Conditions
Teppei Kuroda, Sumitomo Electric System Solutions Co., Ltd, Japan
AP-TP1057 - Field Experiments for Cooperative Signal Control Systems
Masafumi Kobayashi, UTMS Society of Japan, Japan

TS55 - Innovative Operations and Management Strategies
Tuesday 31 October 2017, 15:00 - 16:30 (511 C)
Topic: C. Smart(er) Cities

Moderator
David Markt, Q-Free ASA, USA

AM-TP0823 - New Agency Business Models for Advancing Innovative Operations and Management Illustrated by the Port Authority of New York and New Jersey's Agency Operations Center (AOC) Program
Theodore Bobowsky, Port Authority of New York & New Jersey, USA
AM-TP1120 - Cooperation and Collaboration at COMTEC: A State-of-the-Art Operations Center
John Abraham, Macomb County Department of Roads, USA
AM-TP1184 - Procuring, Managing and Evaluating the Performance of Contracted Transportation Operations Centre (TOC) Services for the City of Toronto
Rajnath Bissessar, City of Toronto, Canada
AM-TP1260 - The Nation's First Coast, the Nation's First Smart Region
Terry Shaw, HNTB, USA
AM-TP1270 - PennDOT Regional Traffic Management Center Relocation - Enhancing Regional Coordination and Interagency Operations
Jambala Ruit, Jacobs Engineering, USA

Tuesday 31 October 2017

TS56 - Open and Shared Data
Tuesday 31 October 2017, 15:00 - 16:30 (511 F)
Topic: D. Data, Security and Privacy

Moderator
Josh Johnson, Southwest Research Institute, USA

EU-TP0794 - Sharing and Cataloging Field Operational Test Datasets
Sami Koskinen, VTT Technical Research Centre of Finland Ltd., Finland
EU-TP0996 - Open Transport Data: A New Hope to Reality Strikes Back
Trevor Brennan, Hertfordshire County Council, UK
EU-TP1015 - Smarter Mobility: Not Just for the Smart Cities
Tim Gammons, Arup, United Kingdom
EU-TP1223 - Assessing the Benefits of Data Sharing in the Smart Mobility Context
Khalid Nur, Ove Arup & Partners Ltd, United Kingdom
AM-TP1246 - Public Authorities' Role in Data Economy in Road Transport Sector
Tom Voege, International Transport Forum OECD, France

TS57 - Cyber Security: Part 2 of 2
Tuesday 31 October 2017, 15:00 - 16:30 (512 A)
Topic: D. Data, Security and Privacy

Moderator
Steven Johnson, HNTB, USA

EU-SP0803 - An Automotive Public Key Infrastructure Design for Limited Embedded Hardware Resources
Reiner Kriesten, University of Applied Sciences Karlsruhe, Germany
AM-TP1094 - An Enrollment and Registration Service for Secure V2X in ITS Systems
Brian Romansky, TrustPoint Innovation Technologies Ltd., Canada
AM-TP1153 - Securing ITS Field Networks and Understanding V2X Implications
Marisa Ramon, Southwest Research Institute, USA
EU-SP1281 - On Reliability Assessment Approaches in Vehicular Communications
George Dimitrakopoulos, Harokopio University of Athens (HUA), Greece

TS58 - Preparing for Automated Vehicles: Part 4 of 4
Tuesday 31 October 2017, 15:00 - 16:30 (512 B)
Topic: A. Connectivity and Autonomy

Moderator
Jean-Charles Pandazis, ERTICO - ITS Europe, Belgium

AM-TP0842 - HIGH System [High-Speed Interstate Ground Highway]
Steve Dickerson, Georgia Institute of Technology, United States
EU-TP0990 - How to Get a Driving License for an Automated Vehicle
Gerben Feddes, RDW, Netherlands
AM-SP1166 - Autonomous Vehicle Hardware Standards
Richard McLay, Private Sector, U.S.A.
EU-TP1272 - Aurora Snowbox - The Intelligent Test Ecosystem for Snowtonomous Driving in Finland
Reija Viinanen, Finnish Transport Agency, Finland

Tuesday 31 October 2017

TS59 - Truck Platooning
Tuesday 31 October 2017, 15:00 - 16:30 (512 C)
Topic: A. Connectivity and Autonomy

Moderator
Chris Mentzer, Southwest Research Institute, USA

AP-SP0751 - Research on the Time Interval of Platoon Dispersion Model
Liang Rui, Beijing University of Technology, China
AM-TP0914 - An Assessment of Emerging Truck Platooning V2V Technologies
Mark Jensen, Cambridge Systematics, Inc., USA
EU-TP1017 - Developing a Platooning System for a Real-World, Long-Term Road Trial
Eric Chan, Ricardo, United Kingdom
EU-TP1236 - ITS/Connectivity as Key Enabler for Truck Automated Driving
Luetzner Joerg, Continental, Germany
AP-SP1249 - Study on HMI Design of Truck Platoon System in Lane Change
Toshiyuki Sugimachi, The University of Tokyo, Japan

TS60 - Travel Speed Prediction
Tuesday 31 October 2017, 16:45 - 18:00 (513 DEF)
Topic: D. Data, Security and Privacy

Moderator
Mahmood Hikmet, HMI Technologies, New Zealand

AP-TP0817 - Real-Time Advisory and Alternative Road Analysis System Using eTag
Kuen-Rong Lo, Telecommunication Laboratories, Chunghwa Telecom Co., Ltd., Chinese-Taipei
AP-TP0819 - Traffic State Estimation Using Traffic Measurement from the Opposite Lane: An Application of Variational Theory
Katsuya Kawai, Mitsubishi Electric Corporation, Japan
AP-TP1058 - A Neural Network-Based Approach for Road Speed Estimation under Incomplete Measurement Data
Yong Yao YANG, Supcon Information Technology Co Ltd, China
AM-SP1110 - Travel Speed Prediction Using Machine Learning Techniques
Maha Gmira, École Polytechnique de Montréal, Canada

TS61 - Applications of Advanced Traffic Management
Tuesday 31 October 2017, 16:45 - 18:00 (513 ABC)
Topic: B. Infrastructure Challenges and Opportunities

Moderator
Roberto Perez, Parsons Corporation, USA

AM-TP1083 - Michigan DOT US-23 Flex Route Project
Collin Castle, Michigan Department of Transportation, United States
AM-TP1116 - Modeling and Simulation of Prediction-in-the-Loop Active Traffic Management
Ram Kandarpa, Booz Allen Hamilton, United States
AP-TP1121 - Aeronautical Information Processing for Volcanic Ash Response System
Doohee Nam, Hansung University, Korea
AM-TP1210 - Tracking Managed Lanes Procedures and Activations
Lynne Randolph, Southwest Research Institute, Bexar

Tuesday 31 October 2017

TS62 - Exploring Traffic Safety and Notification
Tuesday 31 October 2017, 16:45 - 18:00 (514 BC)
Topic: E. Integrated Approach: Planning, Operations and Safety

Moderator
Murphy Sun, ITS Taiwan, Chinese-Taipei

AP-TP1024 - Validation Study on Evaluation of Traffic Safety Using fNIRS Final Edition
Toshiyuki Sugimachi, The University of Tokyo, Japan
AP-TP1063 - Features of the Korean Emergency Call (e-Call) System
Sangjo Park, THE KOREA TRANSPORT INSTITUE, Korea
AM-TP1191 - Integrating Human Factors into Design and Evaluation of an Intelligent Rural Intersection Conflict Warning System
Ray Starr, Minnesota Department, United States

TS63 - Smart Parking
Tuesday 31 October 2017, 16:45 - 18:00 (510 A)
Topic: C. Smart(er) Cities

Moderator
Kurt Bucheler, Streetline, Inc., USA

AP-SP1011 - A Modified Gravity Model of Parking Distribution Among Shared Parking Lots
Weina Fan, Tongji University, China
AP-SP1034 - Parking Management Under Spatial Mismatch Between Supply and Demand
Chenwei Wang, Tongji University, CHINA
AM-TP1123 - Montreal's New Dynamic Parking Guidance System
Olivier Audet, Ville de Montréal, Canada
AM-TP1316 - The Hunt for Perfect Parking Occupancy Detection: An Evaluation of On-Street Parking Occupancy Detection Technology and Their Ability to Address Urban Challenges
Soumya Dey, District Department of Transportation, USA
EU-TP1348 - Take Smart Parking a Step Beyond
Thomas Hohenacker, Cleverciti Systems GmbH, Germany

TS64 - Autonomous and Electric Transit Vehicles
Tuesday 31 October 2017, 16:45 - 18:00 (510 C)
Topic: A. Connectivity and Autonomy

Moderator
Josef Czako, Moving Forward Consulting, Germany

EU-SP0784 - Modeling and Planning Charging Infrastructure for Electrically Driven Buses
Hubert Buechter, Fraunhofer-Institute for Material Flow and Logistics, Germany
AM-TP1096 - Advancements in Connected Vehicle Technology in Transit
Jeffrey Arch, Battelle, USA
AM-TP1101 - Minnesota Autonomous Bus Pilot
Jay Hietpas, Minnesota Department of, U.S.A.

Tuesday 31 October 2017

TS65 - Signal Control: Part 2 of 2
Tuesday 31 October 2017, 16:45 - 18:00 (510 D)
Topic: B. Infrastructure Challenges and Opportunities

Moderator
Graham Hanson, department for transport, United Kingdom

AM-TP0755 - Data Analytics with the DA-300 and iCITE
Matt Zinn, Reno A&E, United States
AP-SP1192 - A Vehicle Priority Control Based on Automated Driving Technology and Traffic Signal Controls
Jaehyun So, The Korea Transport Institute, Korea

TS66 - Applications of ITS Technologies for Truck Enforcement Activities
Tuesday 31 October 2017, 16:45 - 18:00 (512 D)
Topic: B. Infrastructure Challenges and Opportunities

Moderator
Eric Louette, Ministère de l'Environnement, de l'Energie et de la Mer, France

EU-TP0761 - Implementation of Weigh-In-Motion Systems for Direct Enforcement of Overloading
Hans van Loo, Corner Stone International SAGL., Switzerland
AP-TP0774 - High-Speed Weigh-in-Motion on Expressway is Now Starting to Make Road Safety in Japan
Masatoshi Yokota, East Nippon Expressway Company Limited, Japan
AP-TP1078 - A New System for Vehicle Weight Enforcement
Yotaro Nagai, West Nippon Expressway Company Limited, Japan
EU-TP1091 - Innovative Use of Bridge Weigh-in-Motion System on Roads with Asymmetrical Traffic Load
Bajko Kulauzovic, Cestel d.o.o., Slovenia
AM-TP1275 - Automation Technologies for Commercial Vehicle Safety Screening
Rish Malhotra, IRD (International Road Dynamics), Canada

TS67 - Big Data Management
Tuesday 31 October 2017, 16:45 - 18:00 (511 C)
Topic: D. Data, Security and Privacy

Moderator
Vera Jin, SopraSteria Asia, Singapore

AM-TP1299 - AZTech Regional Archived Data System (RADS): ITS Data Hub Deployment in Maricopa County
Faisal Saleem, Maricopa County DOT, Maricopa County
AM-TP1303 - Southern California Regional Big Data Solution
Daniel Lukasik, Parsons, United States
AP-TP1357 - Building Data Center as a Service as Centralized and Integrated Urban Traffic Data Management
Zohari Akob, Ministry of Works Malaysia, Malaysia

Tuesday 31 October 2017

TS68 - Innovative Freeway Operations Using the Shoulder as a Lane
Tuesday 31 October 2017, 16:45 - 17:45 (511 F)
Topic: E. Integrated Approach: Planning, Operations and Safety

Moderator
Ian Patey, Mouchel, UK

AP-TP0835 - Developing an Effective Freeway Shoulder Operation by Using a Smartphone Application
Wen Jing Huang, CECI Engineering Consultants, Inc., Chinese-Taipei
EU-TP1149 - Lessons Learnt from a Benchmark of Innovative Traffic Management Measure in Europe
Sylvain Belloche, Cerema, France

TS69 - ITS in Rail Passenger Management
Tuesday 31 October 2017, 16:45 - 18:00 (512 A)
Topic: C. Smart(er) Cities

Moderator
Stephen Mathews, HMI Technologies Ltd., New Zealand

AP-TP0790 - Framework Design of Real-time Passenger Flow Status Evaluation for Urban Rail Transit
Bo Wang, Beijing Transportation Information Center, China, China
AP-TP1030 - Estimation Methodology for Number of Passengers on Shinkansen Trains
Kazutaka Ito, East Japan Railway Company, Japan
AP-TP1064 - Development and Verification of Station Congestion Visualization Tool
Toru Sahara, East Japan Railway Company, Japan

TS71 - Preventing Wrong Way Crashes-New Approaches to a Serious Challenge
Tuesday 31 October 2017, 16:45 - 18:00 (512 C)
Topic: E. Integrated Approach: Planning, Operations and Safety

Moderator
Patrick Lauzière, Orange Traffic Inc., Canada

AP-TP0827 - Basic Study of Cognitive Function of MCI for Prevention of Wrong-Way Driving
KENSUKE MATSUSHITA, Nexco-East Engineering Company Limited, Japan
AM-TP0885 - Countermeasures for Wrong-Way Driving on Freeways and Expressways
Douglas Tomlinson, P.E., Pennsylvania Department of Transportation (USA), USA
AP-TP1038 - Using ITS to Protect Motorists Against Wrong-Way Drivers
Andrew Stevens, Auckland Motorway Alliance, New Zealand

Wednesday 1 November 2017

ES07 - ITS Deployment Policies
Wednesday 1 November 2017, 08:00 - 09:30 (511 ABDE)
Topic: A. Connectivity and Autonomy

The deployment of autonomous vehicles is moving forward at a rapid pace. The private sector is investing in this technology with the expectation that it will become commonplace. However, the rate of deployment is far outpacing public sector investment and preparation. How are transportation planners and government officials thinking about and preparing for autonomous vehicles? How do planners adjust their investment decisions based on the expected deployment of connected and autonomous vehicles (CAV)? While no one knows when this technology will be prevalent or how the mix of vehicles and modes will function, planners must consider the impacts of CAV. In this session, government leaders will discuss roadmaps to ITS deployment – focusing on automated driving systems based on the latest market trend and technology development status – and exchange their thoughts on how to make wise investment choices for the future given the potential impacts their decision-making and investments.

Moderator
Atsushi Yano, Sumitomo Electric Industries, Ltd., Japan
Speakers
Koji Hachiyama, Cabinet Secretariat, Japan
Kirk Steudle, Michigan Department of Transportation, USA
Xiaojing Wang, China ITS Industry Alliance, China
Kenneth Leonard, United States Department of Transportation, USA
Claire Depré, European Commission, Belgium

ES08 - Mobility as a Service
Wednesday 1 November 2017, 13:15 - 14:45 (511 ABDE)
Topic: F. Disruption and New Business Models

Mobility as a Service (MaaS) has the potential to break the traditional link between mobility and vehicle ownership. It offers the promise of 'pure movement' where customers are offered journeys on demand for all modes of transport. But delivering MaaS is difficult, especially in a deregulated environment. Service providers need to supply reliable travel in real time without necessarily controlling the means of transport. Transport providers must offer responsive services that will compete with private cars using collective or shared transport. MaaS will require changing a business model from one where you hope for a near-monopoly to one where you accept that you are a partner in a new type of enterprise with a smaller share…but that share is part of a much larger overall market. But whether start-ups or existing providers take the lead, the prizes on offer are potentially huge. Successful operators will learn about the end-to-end journey patterns of their customers, a potential treasure trove of marketing information. So, while the challenges of delivering MaaS are significant, the benefits are equally substantial. This session will explore how to change suppliers' attitudes and develop new private-private partnerships.

Moderator
Jacob Bangsgaard, ERTICO - ITS Europe, Belgium
Speakers
Muhan Wang, MOTC, Chinese-Taipei
Thomas Sedran, Volkswagen, Germany
Alex Mackenzie-Torres, Toyota Research Institute, United States
Anita Curnow, VicRoads, Australia

Wednesday 1 November 2017

ES09 - Better Traveler Information Technology and Institutional Issues for Automated Driving
Wednesday 1 November 2017, 15:00 - 16:30 (511 ABDE)
Topic: B. Infrastructure Challenges and Opportunities

Travelers now have an increasing number of alternatives to utilize when making their journeys. Many of these mobility options incorporate technology to facilitate operations and customer information. Further, multimodal operations (e.g., Integrated Corridor Management) and V2X cooperative systems are likely to significantly increase in the future, including adoption of Signal Phase & Timing (SPaT) information. Finally, there will be an increase in the number of connected and autonomous vehicles (CAV). Improved 'situational awareness' will be a key part of delivering future transportation services. This session will explore: how the industry and government are working together to provide road users with relevant and accurate transportation information and technology to facilitate travel decision making; what are the expected changes in travel behavior as a result of better traveler information and technology; and what is a status of insight for institutional issues between international framework and domestic regulation for automated driving. A discussion will also occur on how to overcome the challenges to implement innovative technologies.

Moderator
Takashi Oguchi, The University of Tokyo, Japan
Speakers
Yuko Sano, National Police Agency, Japan
Judith Zielke, Federal Department of Infrastructure and Regional Development, Australia
Phil Blythe, department for transport, United Kingdom
Susan M. Mulvihill, Minnesota Department of Transportation, United States

SCP08 - Integrated Mobility in Montréal
Wednesday 1 November 2017, 11:30 - 12:20 (Smart Cities Pavilion)
Topic: C. Smart(er) Cities

Speakers
Philippe Schnobb, Société de transport de Montréal, Canada
Jean-Francois Tremblay, Institut de l'électrification et des transports intelligents, Canada
Lidia Divry, TechnoMontréal, Canada
Claude Carette, Service des infrastructures, de la voirie et des transports, Ville de Montréal, Canada

SCP09 - Can't We All Just Get Along? Tech and Policy Approaches for Data Sharing in a Smart City EcoSystem
Wednesday 1 November 2017, 15:00 - 15:50 (Smart Cities Pavilion)
Topic: C. Smart(er) Cities

Especially in a smart city context, we all know that the solutions to our urban mobility challenge are to be found in the bringing together of disparate data sets: from transit usage to accidents and crime reports to ride sharing demand. And yet the obstacles to share this data for common analysis are enormous. Not just between the public and private sectors, but between different agencies and departments in the public sector. What are some best practices to overcome these challenges. How can technology help? What type of policies are required? Are there any successes?

Moderator
Omar Rashid, Microsoft, United States
Speakers
Mike Geertsen, Microsoft Government Solutions, United States
Cordell Schachter, New York City DOT, United States

Wednesday 1 November 2017

PP01 - AASHTO State DOT Roundtable (sponsored by HNTB)
Wednesday 1 November 2017, 08:30 - 09:30 (517)

Moderator
Ananth Prasad, HNTB Corporation, United States
Bud Wright, AASHTO, United States
Speakers
David Bernhardt, Maine DOT, United States
Shailen Bhatt, Colorado Department of Transportation, USA
Leslie Richards, Pennsylvania Department of Transportation, USA
Jennifer Cohan, Delaware DOT, United States
Brian Ness, Idaho Transportation Department, USA
Mike Patterson, Oklahoma DOT, United States
James Barna, Ohio Department of Transportation, United States
Coco Briseno, California Department of Transportation (Caltrans), United States
Susan M. Mulvihill, Minnesota Department of Transportation, United States
Roger Millar, Washington State Department of Transportation, United States

PP02 - The Impact of ITS Technologies on Society Policy Plenary with Governor Rick Snyder and State Transportation Leaders
Wednesday 1 November 2017, 09:30 - 10:30 (517)
State leadership and transportation managers will discuss deployment of intelligent transportation systems in their states and resulting safety and economic benefits.

Moderator
Kirk Steudle, Michigan Department of Transportation, USA
Speakers
Rick Snyder, Michigan, USA
John Schroer, Tennessee DOT, United States
Carlos Braceras, Utah DOT, United States
Pete Rahn, Maryland DOT, United States
Bill Panos, Wyoming Department of Transportation, USA

SIS100 - Canada's Unique Challenges, Strategies and ITS Solutions
Wednesday 1 November 2017, 15:00 - 16:30 (510 C)
Topic: B. Infrastructure Challenges and Opportunities

Canada has its own set of unique problems and challenges: harsh winters, sprawling low density cities, unique geographies, and…more harsh winters. This session will showcase some of the most difficult challenges and innovative solutions from across Canada, including dealing with the treacherous mountainous roads of British Columbia and its variable speed limits, preparing for future connected vehicles in Ontario, synchronizing intermodal metropolitan mass transit in Quebec, and optimizing snow plowing in Ontario with GPS pre-emption. Additionally, developing a unique Canadian national ITS Architecture has created its own challenges and opportunities. This discussion will highlight case studies from across Canada and will include both provincial and municipal levels of government as well as private industry.

Organizer
Yeatland Wong, The City of Calgary, Canada
Moderator
Yeatland Wong, The City of Calgary, Canada

Speakers
Paul Nause, Regional Municipality of York, Canada
Cory Edgar, Systems Engineer, Canada
Geoff Knapp, MMM Group, Canada
Chris Philp, CIMA+, Canada
Hoi Wong, Ministry of Transportation, Canada
Mark Conrad, Parsons, Canada

Wednesday 1 November 2017

SIS101 - Partnership Pioneers for Smart City-States: Collaborative Models for Innovation and Deployment
Wednesday 1 November 2017, 15:00 - 16:30 (510 D)
Topic: C. Smart(er) Cities

Cities are at a pivotal moment, where the rate of population growth, infrastructure needs, and technological advancement are challenging their abilities to provide quality mobility services. Faced with rapid change, it is critical to manage this disruption proactively rather than allow it to stifle innovation. Creative partnerships among public agencies, research institutions, and industry leaders will become the standard for delivering mobility solutions in the 21st century. This panel will highlight next generation partnerships from around the world, including the Texas Innovation Alliance as well as European, Asian, and Australian collaborations. Each of the panelists will offer a perspective on the role that government, research, and industry have to play in a smart city. Critical success factors for developing public-private partnerships, engaging stakeholders in active collaboration, and tackling data sharing strategies will be offered. Discussions and information shared will encourage organizations to work across silos to develop ITS strategies for connected and automated vehicles, traffic management, freight and logistics, big data, and shared mobility. Together, organizations can leverage their collective capacity and capability to develop a mobility system for the coming transformations.

Organizer
Dr. C. Michael Walton, The University of Texas at Austin, USA
Moderator
Jason JonMichael, HNTB Corporation, USA
Speakers
Darran Anderson, Texas Department of Transportation, USA
Richard Harris, HMI Technologies, UK
Damian McHale, Northcliffe Limited, UK
Mohit Kochar, KPIT Technologies Ltd., India
Dr. Majid Sarvi, The University of Melbourne, Australia

SIS102 - Advanced Technologies in Operation and Maintenance of ITS Facilities
Wednesday 1 November 2017, 15:00 - 16:30 (512 D)
Topic: E. Integrated Approach: Planning, Operations and Safety

Needless to say, the operation and maintenance of ITS facilities is important to keep good conditions and get the benefits from the systems. ITS has passed nearly 20 years from its commencement and it may be time to consider what is an effective method to replace it. This session will discuss the management of ITS facilities and the method of replacement and related advanced technologies.

Organizer
Takahiro Azuma, West Nippon Expressway Facilities Co. Ltd., Japan
Moderator
Masao Kuwahara, Tohoku University, Japan
Speakers
Kenji Obatake, West Nippon Expressway Engineering Shikoku co., LTD, Japan
Shinsuke Suzuyama, West Nippon Expressway Company Limited, Japan
Takahiro Azuma, West Nippon Expressway Facilities Co. Ltd., Japan
Takeshi Takayama, West Nippon Express Facilities Company Ltd., Japan
Yasuhiko Kumagai, Kochi University of Technology, Japan
Yotaro Nagai, West Nippon Expressway Company Limited, Japan
Michel Lavigne, Ardmore Roderick, USA

Wednesday 1 November 2017

SIS103 - Roundtable: Motorcycles Talk ITS
Wednesday 1 November 2017, 16:45 - 18:00 (515 ABC)
Topic: A. Connectivity and Autonomy

In the coming years, ITS technologies will help different means of transport become safer, more reliable, and more efficient. This is especially true for motorcycles. In this round table discussion, representatives from Europe, the U.S., and Asia will examine some of the most important initiatives in this field as well as the challenges and opportunities offered by cooperative ITS. Indeed, if motorcycles are to become part of the connected world, the industry will need to develop systems that are specifically designed for this vehicle, with dedicated human-machine interfaces. Cross-vehicle interoperability will also be instrumental in ensuring that cooperative ITS solutions are successfully deployed across the world.

Organizer
Veneta Vassileva, Association of European Motorcycle Industry (ACEM), Belgium
Moderator
Antonio Perlot, Association des Constructeurs Européens de Motocycles, Bel
Speakers
Matthias Mörbe, Robert Bosch GmbH, German
John Lenkeit, Dynamic Research Inc, US
Huei-Ru Tseng, Industrial Technology Research Institute / Taiwan Association of Information and Communication Standards, Chinese-Taipei
Hennes Fischer, Yamaha Motor Europe N.V, Germany
Claire Depré, European Commission, Belgium
Robert Kreeb, National Highway Traffic Safety Administration (NHTSA), USA

SIS124 - Parking Technologies in Transportation – "Tomorrow Is a New Day"
Wednesday 1 November 2017, 16:45 - 18:00 (514 BC)
Topic: A. Connectivity and Autonomy

This session will serve as a roundtable session to discuss the leading-edge technologies of today (and the reasons they have come into existence) and forecast how parking and associated technologies will function and help shape transportation in the next 20 years

Organizer
Richard Easley, E-Squared Engineering, USA
Moderator
Richard Easley, E-Squared Engineering, USA
Speakers
Tami Koivuniemi, Finnpark, Finland
Kurt McCaw, Calgary Parking Authority, Canada
Alan Allegretto, WSP USA Corp, United States
Mara Bullock, WSP|MMM, Canada

Wednesday 1 November 2017

SIS71 - Vehicle-To-Infrastructure Deployment Coalition
Wednesday 1 November 2017, 08:00 - 09:30 (515 ABC)
Topic: A. Connectivity and Autonomy

In 2015, stakeholders involved in the development and deployment of vehicle-to-infrastructure (V2I) realized there was a need to work collaboratively on coordinating deployment, research technologies, and jointly develop standards. To that end, the V2I Deployment Coalition, sponsored by AASHTO, ITS America, and the Institute of Transportation Engineers, was developed. This session will discuss why the Coalition has proven to be successful in meeting the goals established and speak to the plan being developed to move forward over the next 24 months.

Organizer
Matthew Smith, Michael Baker International, United States
Moderator
Matthew Smith, Michael Baker International, United States
Speakers
Ray Starr, Minnesota Department, United States
Edward Seymour, Texas A&M University, United States
Faisal Saleem, Maricopa County DOT, Maricopa County
Collin Castle, Michigan Department of Transportation, United States

SIS72 - Freight Innovations for Integrated Transportation and Trade Corridor Management
Wednesday 1 November 2017, 08:00 - 09:30 (513 DEF)
Topic: E. Integrated Approach: Planning, Operations and Safety

Freight innovations are changing the way we operate and manage freight movements from port to customer door. This session will explore some of the changes that are possible with new technologies, new strategies and new customer/stakeholder demands. We'll look at changes that have been made and also changes that must be made. Freight movements today and tomorrow will require education, integration, allocation, and participation.

Organizer
Janneke van der Zee, ITS Canada, Canada
Moderator
Richard Easley, E-Squared Engineering, USA
Speakers
Peter Appel, AlixPartners, USA
Richard Easley, E-Squared Engineering, USA
Daniel Dagenais, Port of Montreal, Canada
Jeff S. Loftus, Federal Motor Carrier Safety Administration, United States

Wednesday 1 November 2017

SIS73 - Concept of Operations with Connected and Automated Vehicles
Wednesday 1 November 2017, 08:00 - 09:30 (513 ABC)
Topic: A. Connectivity and Autonomy

Road operators worldwide are just beginning to test and operate deployments of highly automated vehicles on their networks. CAVs offer new opportunities to manage traffic to enhance safety and increase productivity. How will roads operate with connected and automated vehicles (CAVs) travelling together with today's vehicles? Considerations include the operation of dedicated lanes and platooning for CAVs, the need for geo-fencing of CAV operations, management and control, compliance, monitoring, infrastructure changes, driver and vehicle requirements, parking, and the use of shoulders. This session will bring together the emerging ideas about concepts of operations from US, European, Asian, and Australian perspectives.

Organizer
Dr. Charles Karl, Australian Road Research Board, Australia
Moderator
Dr. Charles Karl, Australian Road Research Board, Australia
Speakers
Kian-Keong Chin, Land Transport Authority, Singapore
Stuart Ballingall, Austroads, Australia
Leslie Richards, Pennsylvania Department of Transportation, USA
Serge van Dam, Rijkswaterstaat, Netherlands

SIS74 - An Industry-Based Sustainable Certification Model Program for DSRC-Based Services
Wednesday 1 November 2017, 08:00 - 09:30 (514 BC)
Topic: A. Connectivity and Autonomy

In 2015, the U.S. Department of Transportation (USDOT) partnered with three certification service providers to develop certification tests for cooperative intelligent transportation systems (C-ITS) technologies with a specific focus on device interoperability. The goal of the initiative was to create a set of policies, plans, procedures, and tools for the industry to perform testing for conformance to message protocols and performance requirements. With these resources in place, the industry has the ability to organize a self-sustaining certification program. In 2017, this program is moving from a research-phase into a commercial certification phase, organized in the US by an industry trade association. This session will present the history of the effort and provide the audience with a plan for next steps as the program is transferred into the private sector.

Organizer
Suzanne Sloan, U.S. Department of Transportation, United States
Moderator
Suzanne Sloan, U.S. Department of Transportation, United States
Speakers
Dmitri Khijniak, 7layers, United States
Michael Brown, Southwest Research Institute (SWRI), United States
Andrew Donaldson, Danlaw, Inc., United States
Jason Conley, OmniAir Consortium, United States

Wednesday 1 November 2017

SIS76 - Big Data and Its Positive Impacts on Transport Planning and Operations Decision-Making
Wednesday 1 November 2017, 08:00 - 09:30 (510 C)
Topic: D. Data, Security and Privacy

Crowd-sourced data such as floating car data, Internet of Things sensors, and cloud-based processing and storage solutions are rapidly changing how transport professionals monitor, measure, operate, and improve their transport network. These extended data sources and the insights derived from them affect many aspects of transport planning and management…from traffic and congestion management to driver safety…leveraging origin-destination information to optimize the movement of people and goods. This session will provide case studies of ongoing projects across Europe and North America and deployments where Big Data is providing visibility and improvements to the Transport Network more quickly and cost-effectively than ever before. Topics to be discussed include European-wide freight and vehicle movement modeling leveraging FCD data for origin-destination and path routing to arterial corridor performance monitoring and improvement.

Organizer
Ali Savio, INRIX, United States
Moderator
Rick Schuman, INRIX, USA
Speakers
Darcy Bullock, Purdue University, USA
Olaf Vroom, National Data Warehouse for Traffic Information, Netherlands

SIS77 - Incident Management ITS Needs and Benefits
Wednesday 1 November 2017, 08:00 - 09:30 (510 D)
Topic: E. Integrated Approach: Planning, Operations and Safety

Protecting first responders while enroute and at highway incidents has become a critical safety challenge with increased driver technologies distractions. With connected and autonomous vehicle innovations being implemented into the OEM and commercial fleets, ITS solutions should continue to take into account first responder safety, secondary crash reductions and increase driver awareness of incidents affecting their route of travel. This first responder track will include the following sessions addressing key ITS benefits: Driver Distractions; Secondary Crash Reduction; Emergency Connected Vehicles; Wrong-Way Vehicle Detection; Diversion Routing; Cost and Means to Integrate First Responder Its Improvements; Local and Regional Agency Incident Management and Response.

Organizer
Bob Murphy, AECOM, USA
Moderator
Bob Murphy, AECOM, USA
Speakers
Patrick Son, National Operations Center of Excellence, USA
Steve Cyra, HNTB Corporation, United States
Joseph Sagal, Maryland Department of Transportation State Highway Administration, Office of CHART & ITS Development, United States
Martin C. Knopp, Office of Operations, Federal Highway Administration, United States

Wednesday 1 November 2017

SIS78 - From Smart Cities to Smart States Using Big Data to Advance Transportation Initiatives
Wednesday 1 November 2017, 08:00 - 09:30 (512 D)
Topic: D. Data, Security and Privacy

With the increased number of IoT devices deployed and the tsunami of data that they are generating, data management and analytics are needed by agencies. This Big Data and the information that is derived from it are being used in support of Smart Cities and Smart State initiatives. Successfully deploying advanced transportation technology relies on this information to achieve promised benefits and make the return on investment case.

Organizer
Pete Costello, Iteris, Inc., USA
Moderator
Pete Costello, Iteris, Inc., USA
Speakers
Beth Kigel, Florida Transportation Commission, United States
Jesse Coleman, City of Toronto, Canada
Robert Cary, P.E, Virginia Department of Transportation, United States

SIS79 - Reducing Vehicle to Bicycle Accidents with V2X Technology
Wednesday 1 November 2017, 10:45 - 12:15 (515 ABC)
Topic: A. Connectivity and Autonomy

This panel will discuss cyclist detection in future production vehicles, exploring the technology needed to enable cyclists to integrate a battery operated V2X platform to interact with vehicles and create potential possibilities of how to warn cyclist and drivers.

Organizer
Ravi Puvvala, Savari, Inc., USA
Moderator
Paul Sakamoto, Savari, Inc., USA
Speakers
Mohamad Talas, NYCDOT, USA
Brent Massey, Ridar Systems, USA
Yaniv Sulkes, Autotalks, Israel
Peter Esser, NXP Semiconductors USA, Inc., USA

Wednesday 1 November 2017

SIS80 - The Internet of Things and Transportation: Now and Future
Wednesday 1 November 2017, 10:45 - 12:15 (513 DEF)
Topic: C. Smart(er) Cities

The rapidly emerging landscape of the Internet of Things (IoT) will forever alter perceptions of the physical world as it is digitized and the power of digital analysis—applied to the collective of gathered data—results in new insights and improved decision making among other outcomes. Benefits include safer streets, safer drivers, greater efficiencies, and lower costs—but most important—fewer fatalities. This is not some view of future nirvana. Rather it is reality and it is unfolding now! This session will include real use cases of advanced application of IoT and how it is changing lives, including real-world solutions, emerging trends, and how technological advances are re-writing the possible, perhaps only gated by the ability to imagine and innovate.

Organizer
Murray Marven, Bell Mobility, Canada
Moderator
Murray Marven, Bell Mobility, Canada
Speakers
James Delamere, Stinson Equipment, Canada
Jean Pilon-Bignell, Geotab, Canada
Pascal Lamoureux, Electromega, Canada
Claude Arpin, Bell Mobility, Canada
Charles Truong, Solutions Transport, Technologies de l'information et innovation, Canada

SIS81 - Autonomous Vehicles: Reimagining an Accessible Transportation System for People with Disabilities
Wednesday 1 November 2017, 10:45 - 12:15 (513 ABC)
Topic: A. Connectivity and Autonomy

Approximately 15% of the world's population has some type of disability. This often results in reduced mobility for individuals because many transportation networks and modalities either present significant barriers or are completely inaccessible. Furthermore, when a disability limits transportation options, this can result in reduced economic opportunities, exacerbation of medical conditions, and an overall diminished quality of life. As new transportation technologies such as on-demand mobility solutions and, in the foreseeable future, autonomous vehicles enter the mainstream, they offer significant potential for reducing transportation obstacles for people with disabilities. The emergence of fleet-based autonomous vehicles could provide meaningful opportunities for independent and accessible transportation when combined with ITS that provide smart wayfinding and navigation options for those who are blind, deaf, or have ambulatory difficulties. A recent analysis from Securing America's Future Energy (SAFE) found that utilizing autonomous vehicles to mitigate transportation-related obstacles for individuals with disabilities would enable new employment opportunities for approximately 2 million individuals and save $19 billion annually in healthcare expenditures from missed medical appointments. However, the stark reality is that there is no guarantee that these new technologies will be accessible to the broader disabled community when they are deployed, which could result from a combination of narrow technological development and inflexible, restrictive policies. This session invites technology developers and stakeholders in the disability community as well as other experts to discuss how to ensure the transportation systems of the future are accessible to everyone.

Organizer
Jeff Gerlach, Securing America's Future Energy, USA
Moderator
Jeff Gerlach, Securing America's Future Energy, USA
Speakers
Brian Cronin, FHWA, USDOT JPO, USA
John Paré, National Federation of the Blind, United States
Shawn Kimmel, Booz Allen Hamilton, Inc., United States
Tommy Hayes, Lyft, USA

Wednesday 1 November 2017

SIS82 - Strategy of Practical Implement of V-I Cooperative Systems for Traffic Accident Avoidance
Wednesday 1 November 2017, 10:45 - 12:15 (514 BC)
Topic: A. Connectivity and Autonomy

The most important problem for many countries is to prevent road traffic users from having a traffic accident, which often occurred by human error. If drivers could recognize dangerous situations in advance, this might allow them to avoid the accident. ITS technology can assist in this reality, especially with V-I Cooperative systems for traffic accidents avoidance, which are indispensable technologies during rapid development of connected and automated vehicles around the world. An example is the development and deployment of Driving Safety Support Systems (DSSS), a version of V-I Cooperative systems, which is in use by Japanese police. DSSS have been promoted by Cross-Ministerial Strategic Innovation Promotion Program (SIP), Automated Driving Systems (Auds) in Japan since 2014. The V-I Cooperative systems are also being developed and deployed in the US and EU. This session aims to introduce the development and deployment of V-I Cooperative systems and to discuss some technological and political impacts for traffic accidents avoidance.

Organizer
Shuetsu Shibuya, National Police Agency, Japan
Takashi Kimura, UTMS Society of Japan, Japan
Moderator
Takashi Oguchi, The University of Tokyo, Japan
Speakers
Carl Andersen, Federal Highway Administration, United States
Shuetsu Shibuya, National Police Agency, Japan
Ryohei Yasui, UTMS Society of Japan, Japan
Yuichi Takayanagi, UTMS Society of Japan, Japan
Martin Boehm, AustriaTech – Federal Agency for Technological Measures Ltd., Austria
Maxime Flament, ERTICO - ITS Europe, Belgium

SIS83 - Disruptive Mobility Services Utilizing IoT Big Data for Smart Cities
Wednesday 1 November 2017, 10:45 - 12:15 (510 A)
Topic: C. Smart(er) Cities

Many activities are implemented all over the world to make a city's mobility smarter. Some of the IT giants have announced that they will provide anonymized citizen transport data obtained through their own application to the city authority to visualize the city's real-time mobility. IIC (Internet ITS Consortium) is now working on better city mobility with disruptive technologies and services in a certain urban area of Japan. This session will discuss how to implement these new technologies and services for creating a smart city.

Organizer
Shigeru Yokoyama, Internet ITS Consortium, Japan
Moderator
Makoto Maekawa, NEC Corporation, Japan
Speakers
Takuro Yonezawa, Keio University, Japan
Monali Shah, HERE, United States
Stefan Myhrberg, Ericsson, Sweden
Takayuki Ichikawa, YAZAKI Corporation, Japan

Wednesday 1 November 2017

SIS84 - Connected City Operations: Real-world Examples of Intelligent City Mobility Management
Wednesday 1 November 2017, 10:45 - 12:15 (510 C)
Topic: C. Smart(er) Cities

In this panel discussion system integrators, city representatives and solution providers will share and evaluate real-world cases of cities which have already deployed intelligent City Mobility Management solutions. The panelists will not only talk about the benefits of implementing a centralized operational intelligence solution, but will also discuss the current challenges cities face and will look at current and future solutions to make cross-departmental decision-making more efficient. The panel will be moderated by Scott MacDonald, Co-founder and Managing Partner of McRock Capital, a venture capital firm focused exclusively on the Industrial Internet of Things (IIoT), and will be hosted by Ignasi Vilajosana, CEO and Co-founder of Worldsensing, a smart city pioneer and leading operational intelligence solutions provider.

Organizer
Ignasi Vilajosana, Worldsensing, Spain
Moderator
Scott McDonald, McRock Capital, Canada
Speakers
Ignasi Vilajosana, Worldsensing, Spain
Farid Mobasser, Fortran Traffic Systems Limited, Canada
John Munevar, SKG Tecnologia, Colombia
Dr. Remi Tachet des Combes, Microsoft Maluuba, France

SIS85 - Using ITS to Protect Motorists Against Wrong Way Drivers
Wednesday 1 November 2017, 10:45 - 12:15 (510 D)
Topic: E. Integrated Approach: Planning, Operations and Safety

Wrong way driving occurs when a driver either inadvertently or deliberately drives against the traffic flow. On a divided road, particularly motorways and expressways, wrong way driving results in a serious safety risk due to the high speeds that tend to be involved when a collision occurs. This session will focus on the development and implementation of various technologies to detect, warn and manage wrong way driver situations on high speed median divided roads. This will cover items including Activated Static Signage; Variable Message Signs; Messaging and legal view points; Detection and tracking tools including Loops, Radar, Cameras, CCTV, Thermal imaging; Traffic Signal control; Roadwork site protection; Civil works; Traffic operation Centre and Police Responses; world first use of military developed tools; and what it means for wrong way driving in a connected vehicle environment. This session will have speakers sharing their experiences from Tokyo, Japan; Auckland, NZ; Arizona, Texas and California, USA. These cities have trailed and implemented various technologies to detect, warn of, monitor and prevent wrong way driving incidents. The presentations will cover the challenges faced, how these were overcome and the successes of the different tools used.

Organizer
Rojina Baisyet, Beca Ltd, New Zealand
Moderator
Rojina Baisyet, Beca Ltd, New Zealand
Speakers
Kevin Balke, Texas A&M Transportation Institute, USA
Sarah Simpson, United Civil Group Corporation, USA
Masatoshi Yokota, East Nippon Expressway Company Limited, Japan
Coco Briseno, California Department of Transportation (Caltrans), United States

Wednesday 1 November 2017

SIS86 - If Autonomous Vehicles are So Great, Why are Public Programs the Same?
Wednesday 1 November 2017, 10:45 - 12:15 (512 D)
Topic: F. Disruption and New Business Models

A growing list of analytic studies show that the rate of return from deploying autonomous vehicles is likely to exceed that from traditional infrastructure. The absolute value appears greater as well—one example is offered in US Treasury: Proposed Transportation and Water Infrastructure Projects of Major National Significance (December 2016)—yet most public programs continue largely unchanged from past decades. While many have discussed possible public investments (i.e., improved lane markings), are there larger scale investments that make sense (i.e., V2I, intercity high-speed bus routes)? What financial tools exist that might help speed deployment (i.e., tax credits, subsidies for early deployment)? What strategic investments might make sense? For example, would large scale demonstration projects, retro fit kits, and/or incentives to speed deployment? Should the traditional relationship between public and private agencies be changed? This session will explore those topics.

Organizer
Richard Mudge, Compass Transportation and Technology, Inc., USA
Moderator
Richard Mudge, Compass Transportation and Technology, Inc., USA
Speakers
Eric Sampson, Newcastle University, UK
Shailen Bhatt, Colorado Department of Transportation, USA
Antti Vehviläinen, Finnish Transport Agency, Finland
Peter Vermaat, TRL, United Kingdom

SIS87 - Radiocommunication Technologies for Cooperative ITS and Automated Driving
Wednesday 1 November 2017, 13:15 - 14:45 (515 ABC)
Topic: A. Connectivity and Autonomy

World Radio Conference 2019 (WRC-19) Agenda Item 1.12 is on global or regional spectrum harmonization of ITS Applications. V2X communications, Vehicle to Vehicle (V2V) Communication and Vehicle to Infrastructure (V2I) Communication at 760 MHz have been already deployed in Japan. The 5.9 GHz Wireless Access in Vehicular Environments (WAVE) for Cooperative ITS and automated driving will also be used soon in Europe and North America. This session features representatives from ITU-R, Europe, United States, Japan, and automaker who will discuss ITS radiocommunication policies, standards, and technologies, including sharing and compatibility studies between DSRC and RLAN (Wi-Fi) at 5.8/5.9 GHz, LTE-V2X, and others. The session will also include a discussion on current issues and solutions of international harmonization of ITS radiocommunication standards toward WRC-19.

Organizer
Kazuhiro Wada, Ministry of Internal Affairs and Communications, JAPAN, Japan
Moderator
Satoshi Oyama, Association of Radio Industries and Businesses (ARIB), Japan
Speakers
Colin Langtry, International Telecommunication Union (ITU), Switzerland
Kazuhiro Wada, Ministry of Internal Affairs and Communications, JAPAN, Japan
John Kenney, Toyota InfoTechnology Center, United States
Niels Peter Skov Andersen, Car 2 Car - Communication Consortium, Denmark
Toru Saito, Honda R&D Co., Ltd., Japan

Wednesday 1 November 2017

SIS88 - Real World Challenges of Deploying V2I Applications
Wednesday 1 November 2017, 13:15 - 14:45 (513 DEF)
Topic: A. Connectivity and Autonomy

The vision of connected vehicles is quickly becoming a reality. This session focuses on practical challenges to deploying V2I applications and on working to overcome them. The discussion will offer perspectives from both the public and private sectors through representatives of state and local public agencies, the automotive industry, and the U.S. Department of Transportation. A particular emphasis will be placed on the opportunity for traffic signal applications to lead the way in V2I deployment and the importance of effective stakeholder outreach and communications.

Organizer
Jeff Lindley, Institute of Transportation Engineers, USA
Moderator
Ram Kandarpa, Booz Allen Hamilton, United States
Speakers
Edward Bradley, Toyota, USA
Blaine Leonard, Utah DOT, USA
Dan Mathieson, City of Stratford, Canada
Kate Hartman, U.S. Department of Transportation, USA

SIS89 - Driverless Future: A Policy Roadmap for City Leaders
Wednesday 1 November 2017, 13:15 - 14:45 (513 ABC)
Topic: A. Connectivity and Autonomy

The exponential advancement of autonomous vehicle technology and ride sourcing services like Uber and Lyft will impact public transit ridership, licensing and tax revenues, the future of parking structures, and residential shift if public policies are not in place sooner than later. Through the cost modeling examples of three major U.S. cities—New York, Los Angeles, and Dallas—estimates show a shift of nearly 7 million drivers to autonomous vehicles or ridesharing services like those being introduced by uberPOOL. This potential shift across these three areas illustrates how cities could be greatly impacted and highlights the complex issues city leaders face. This session will review six major priorities for policymakers to consider in order to protect cities from the risks that driverless cars and ride sourcing services can bring, suggesting instead to use this transportation evolution to complement urban cities for an improved future. The priorities are leverage IoT technologies; prioritize and modernize public transit; initiate dynamic pricing strategies; plan for mixed-use, car-light neighborhoods; encourage development of adaptable parking lots and parking garages; and promote equitable access for disadvantaged populations.

Organizer
Michelle Long, Arcadis, United States
Moderator
Mark De la Vergne, City of Detroit, USA
Speakers
Marwan Abboud, Arcadis, United States
Joe Iacobucci, Sam Schwartz, United States
Akhil Chauhan, Arcadis, United States
Richard Harris, HMI Technologies, UK
Glenn Havinoviski, Iteris, Inc., USA

Wednesday 1 November 2017

SIS90 - Using ITS Infrastructure to Improve Hurricane Response
Wednesday 1 November 2017, 13:15 - 14:45 (514 BC)
Topic: B. Infrastructure Challenges and Opportunities

Two major hurricanes produced significant damage in Florida, Georgia and Texas. ITS played a major role in the major evacuations performed as well as the aftermath as major cleanup efforts were required to restore a number of communities. The speakers will focus on what was done and the lessons learned from the state DOT perspective.

Organizer
Steven Dellenback, Southwest Research Institute, USA
Moderator
Josh Johnson, Southwest Research Institute, USA
Speakers
John Hibbard, Georgia Department of Transportation, USA
Joe Waggoner, Tampa Hillsborough Expressway Authority (THEA), USA
Cordell Schachter, New York City DOT, United States
Darran Anderson, Texas Department of Transportation, USA

SIS91 - Is the Roadway Infrastructure Ready for Automation?
Wednesday 1 November 2017, 13:15 - 14:45 (510 A)
Topic: B. Infrastructure Challenges and Opportunities

There is debate on how soon Automated Driving Systems will appear in the hands of consumers. Is the roadway infrastructure ready? Can the infrastructure accelerate things? This session will cover the limitations of the infrastructure and opportunities for improvement as it pertains to these emerging systems. It will explore the perspectives of automotive OEMs, tier one suppliers, the signage industry, and State DOTs.

Organizer
Ryan Lamm, SwRI, USA, USA
Moderator
Ryan Lamm, SwRI, USA, USA
Speakers
Sue Bai, Honda, USA
Patrick Brunett, Quanergy, USA
Michael Brown, Southwest Research Institute (SWRI), United States
Shawn Kimmel, Booz Allen Hamilton, Inc., United States
Thomas Hedblom, 3M Co Traffic Safety and Security Division, USA

Wednesday 1 November 2017

SIS92 - Next Traffic Management with Fusion of Public and Private Open Data
Wednesday 1 November 2017, 13:15 - 14:45 (510 C)
Topic: C. Smart(er) Cities

Toward the realization of the next generation traffic management systems for Smart Cities, the expectation for various types of applications utilizing probe data collected by vehicles is getting higher with the spread of connected vehicles. These include resolving a negative legacy brought by motorized societies, such as traffic congestion and traffic accidents, as well as increasing comfort for travel and enabling the development of cooperated and automated driving in the near future. On the other hand, conventional public sectors also possess valuable big data such as road sensor information and traffic signal information. At this time, each one possesses its own information, and the integration of public and private data has not advanced. Therefore, it is expected that eliminating big barriers and realizing the fusion of this data will create new value for society. This session will present case studies of actual deployment of the use of probe data in some regions and discuss some technological and political subjects of fusion of public and private open data.

Organizer
Masafumi Kobayashi, Sumitomo Electric Industries, Ltd., Japan
Moderator
Masafumi Kobayashi, Sumitomo Electric Industries, Ltd., Japan
Speakers
Takenaka Masahiko, Mitsubishi Heavy Industries Machinery Systems, Ltd., Japan
Hajime Sakakibara, Sumitomo Electric Industries, Ltd., Japan
Sorawit Narupiti, Chulalongkorn University, Thailand
Jaya Shankar P, Institute for Infocomm Research, Singapore

SIS93 - The Public Transport (R)evolution: Leveraging Data to Redefine/Expand the Role of Transit
Wednesday 1 November 2017, 13:15 - 14:45 (510 D)
Topic: C. Smart(er) Cities

The transportation landscape is changing rapidly. New technologies, services, and business models are constantly emerging, seeking to increase mobility in different ways. Even so, public transport remains the most efficient way to move large numbers of people in major urban areas. But in today's ever-changing landscape, the mission and impact of public transport are being challenged. What will its role become? How should authorities and operators evolve so that public transport remains the backbone of urban mobility? Should they act as MaaS operators or partner with these emerging new suppliers? And how can they use data and new technologies to increase integration with other mobility services, optimize their assets, and redefine their services to be more adapted and flexible to meet today's and tomorrow's travelers' expectations? Based on experiences of public transport authorities and operators around the world, GIRO—a world leader in Public Transport software solutions—will highlight how some are taking the lead in their communities by using data and powerful software tools. Examples include one important public transport operator was able to increase its connectivity to other networks using timetable-synchronization techniques, another is using powerful optimization engines to increase asset usage and decrease costs, and an agency in the Montreal area is redesigning its network to offer on-demand services and integrate with third-party ride-sharing suppliers. This session will focus on how the public transport industry can—using data and new technology as tools for transformation—increase its impact on communities and take the lead as mobility manager.

Organizer
Alexandre Savard, GIRO, Canada
Moderator
Jean-Francois Barsoum, IBM Canada, Canada
Speakers
Vincent Dionne, Société de transport de Laval, Canada
Alexandre Savard, GIRO, Canada
Mohsen Nazem, Réseau de transport métropolitain (RTM), Canada

Wednesday 1 November 2017

SIS94 - The Key to Spread of Image-Recording Type Driving Event Video Recorder
Wednesday 1 November 2017, 13:15 - 14:45 (512 D)
Topic: E. Integrated Approach: Planning, Operations and Safety

The image-recording type driving event video recorder (DR) has been contributing greatly to road traffic accidents reduction just like the flight recorder. This SIS has constructed a global consensus through last seven World Congresses that DR technology is capable with effective traffic accidents reduction combined with well-designed software application. Some 9 million units of DR are distributed in Japan at early 2017 and similarly widely spread in East Asia among professional drivers of taxi, bus and trucks as well as private cars. Nowadays DR justify much social attention not only as the reactive function, but also as the proactive function. More than 60% of newly introduced passenger car in the Japanese market are considered to install device of ADAS. So, semi-ADAS device that is a modified version to ensure warning function of DR is highly recommended to install on existing cars. More concerns with a diversified application mode of DR for safety management are increasing nowadays particularly among chartered sightseeing bus since MLIT enforced to install DR as the compulsory safety device and as the educational tool for driver after experienced serious and miserable skiing chartered bus accident occurred in 2016. Even if "automated driving" spreads, the traffic accident will never disappear as far as the mixed traffic of "an automated driving car" & "the conventional manually driving car" continues for another few decades at least. We will discuss together in the session what key factors are and how to spread DR technology in appropriate way.

Organizer
Koji Ukena, UK-Consultant, JAPAN
Moderator
Koji Ukena, UK-Consultant, JAPAN
Speakers
Koji Ukena, UK-Consultant, JAPAN
Kwang Il Park, PLK Technologies Co. Ltd, Korea
Hiroshi Matsuki, Panasonic Taiwan, Chinese-Taipei
Joe Ye, ULSee Inc., Chinese-Taipei
Daishi Watabe, Saitama Institute of Technology, Japan

SIS95 - Utilizing V2X to Create the Future of Connected Motorcycles
Wednesday 1 November 2017, 15:00 - 16:30 (515 ABC)
Topic: A. Connectivity and Autonomy

Connected vehicles is vital for improved transport efficiency, safety, sustainability, mobility, and environmental performance. In Asia, mixed traffic with motorcycle is a major traffic type and will cause hazardous situations on the roads. Over the last few years, numerous initiatives to enhance the motorcycle safety with V2X connectivity have been undertaken by many countries. Connected motorcycle is getting significant attention as it is already and will be an important mode in the future. At this session, panelists will introduce the technology and challenges to achieve practical connected motorcycles. Audiences will have the opportunity to learn more about the latest connected motorcycles practices from US, Europe, and Chinese-Taipei, and expose themselves to the whole picture of connected world and rethink their position in the ecosystem, and also be part of the task forces that define the future of connected motorcycles with guides and recommended practices.

Organizer
Huei-Ru Tseng, Industrial Technology Research Institute / Taiwan Association of Information and Communication Standards, Chinese-Taipei
Moderator
Ching-Yao Chan, Partners for Advanced Transportation Technology (PATH), University of California, Berkeley, United States
Speakers
Muhan Wang, MOTC, Chinese-Taipei
Niels Peter Skov Andersen, Car 2 Car - Communication Consortium, Denmark
Arne Purschwitz, BMW Motorrad, Germany
John Lenkeit, Dynamic Research Inc, US
Michael Van Auken, Dynamic Research, Inc, US

Wednesday 1 November 2017

SIS96 - Innovative Procurement Models for ITS Products and Services
Wednesday 1 November 2017, 15:00 - 16:30 (513 DEF)
Topic: F. Disruption and New Business Models

Innovation in the ITS industry has often been stifled by international and national procurement rules that aim to establish an open and fair procurement community but, in reality, prevent optimum exploitation of new ideas. From a purchaser's point of view, the common approach has been to produce a request for proposals that matches a prescribed specification. In doing so, the written specification reduces the opportunity to introduce innovation. From a vendor's point of view, intellectual property (IP) that forms part of an innovation cannot be released for general consumption without compromising the IP owner's commercial position too early. In many countries, procurers are increasingly using framework agreements to reduce procurement costs and speed up delivery. This is a very effective approach to purchasing, but where framework agreements are not sufficiently flexible, this can stifle innovation by restricting access to new technology. Work is needed to ensure the organizations, which operate at a national level to manage frameworks, understand technology sufficiently to minimize this risk. This session will look at new procurement models for accelerating innovation in transport from locations around the world. The benefits, pitfalls and challenges of these procurement models will be discussed with the objective of ascertaining if these models can be used for deployment of next generation technology solutions for the ITS sector.

Organizer
Anna Bonne, IET, United Kingdom
Moderator
Darren Capes, IET, United Kingdom
Speakers
Kian-Keong Chin, Land Transport Authority, Singapore
Andrew Mehaffey, HMI Technologies, HMI Technologies Pty Ltd, Australia
Martin Leak, Resolve Group Limited, New Zealand
Tim Gammons, Arup, United Kingdom
Stanley Young, NREL, USA

SIS97 - PIARC (WRA): Autonomous Vehicles: Road Authorities and Network Managers' Perspective
Wednesday 1 November 2017, 15:00 - 16:30 (513 ABC)
Topic: A. Connectivity and Autonomy

This session will feature international experts from the World Road Association (PIARC), road authorities and road operators, and provide insight on their perspectives on the deployment of autonomous vehicles and their impact on road infrastructure. PIARC members, road authorities and road operators, are keenly aware of the rapid development of autonomous vehicles and want to be part of the global conversation. The session will focus on policy issues and will be part of road authorities' strategy to engage with car manufacturers, IT companies, equipment manufacturers and service providers.

Organizer
Richard Harris, HMI Technologies, UK
Patrick Mallejacq, World Road Association, PIARC - AIPCR, France
Moderator
Patrick Mallejacq, World Road Association, PIARC - AIPCR, France
Speakers
Takashi Nishio, ITS Policy and Program Office, Road Bureau, Ministry of Land, Infrastructure, Transport and Tourism, Japan
Reija Viinanen, Finnish Transport Agency, Finland
Martin Thibault, Stantec, Canada-Quebec
Jacques Ehrlich, ISFTTAR, France
Anne-Marie Leclerc, Ministère des Transports, de la Mobilité durable et de l'Électrification des transports, Québec, Canada

Wednesday 1 November 2017

SIS98 - Digital Transformation for Automated Vehicles: Needs and Challenges
Wednesday 1 November 2017, 15:00 - 16:30 (514 BC)
Topic: A. Connectivity and Autonomy

Digital Transformation of business and organizations could have a profound influence on mobility in the next few years. This is valid for Connected and Automated Driving which will require much greater demands on all kind of data ranging from map content to positions of neighboring road users. It is essential to understand today what is the form and the content of the static and dynamic digital representation of the physical world with which automated vehicles will interact to operate safely. Several aspects need to be addressed such as for instance standardized representations, content types, guarantee quality, collection and minimum requirements. In addition, different concepts are discussed as to where the data should be processed: electronic horizon in the cloud, mobile edge computing, etc. This Special Interest Session focusses the needs and challenges the connected and automated vehicles will pose on the forthcoming digitalization of transport. Both public authorities and industry will need to prepare together this digital transformation if we want to see automated vehicles on the roads. The discussion in this session benefits from the contribution of the European CARTRE (connectedautomateddriving.eu) Working Group on Digital Infrastructure and of the Trilateral Automation in Road Transportation WG which fosters international cooperation, between US, Japan, Europe and beyond.

Organizer
Maxime Flament, ERTICO - ITS Europe, Belgium
Moderator
Maxime Flament, ERTICO - ITS Europe, Belgium
Speakers
Ahmed Nasr, HERE, Belgium
Jun Shibata, Japan Digital Road Map Association, Japan
Risto Kulmala, Finnish Transport Agency, Finland
Aykut Mehmet Oymagil, TomTom, USA
Carl Andersen, Federal Highway Administration, United States

SIS99 - Leveraging Intersection Connectivity to Improve Transit and Traffic Management
Wednesday 1 November 2017, 15:00 - 16:30 (510 A)
Topic: A. Connectivity and Autonomy

Rapid proliferation of Internet-connected devices is driving innovation in smart cities, specifically allowing better traffic management and transit efficiencies. This session will examine two case studies—Winnipeg and New York—to show how cities can realize significant benefits from infrastructure connectivity. In less than two years, the City of Winnipeg implemented the city's first Transportation Management Centre (TMC), connecting 100% of the its 650 signalized intersections and a network of traffic monitoring cameras using a citywide LTE network. In this session, the City of Winnipeg will share how the sole use of Machine-to-Machine LTE connectivity has allowed the city to provide an unprecedented real-time understanding of transportation activity in the city. Attendees will learn why the city selected LTE communication over other technologies, how interconnectivity was implemented, the challenges that were overcome, and the benefits that have been rapidly realized. For New York, agencies needed a way to reduce congestion through the dense Wall Street Financial district in Lower Manhattan. Congested streets make bus travel among the slowest in the U.S. for New York's 2.3 million daily riders. The project involved implementing a software-only solution that leveraged existing infrastructure–the cabinets, controllers, and cellular connectivity–to introduce an Opticom Transit Signal Priority system for the MTA's M15 SBS route. TSP holds traffic signals green to allow for the reduction of delays and better schedule adherence. The session will also feature a discussion on how cities further leverage infrastructure connectivity to enable smarter decisions through data analytics, consumer applications, and other emerging technologies.

Organizer
Victor Darias, Global Traffic Technologies, Canada
Moderator
Victor Darias, Global Traffic Technologies, Canada
Jonathan Foord, City of Winnipeg, Canada
Speakers
Victor Darias, Global Traffic Technologies, Canada
Chad Mack, Global Traffic Technologies, USA
Jonathan Foord, City of Winnipeg, Canada

Wednesday 1 November 2017

TS100 - Traffic Modeling and Monitoring Studies
Wednesday 1 November 2017, 16:45 - 18:00 (511 F)
Topic: B. Infrastructure Challenges and Opportunities

Moderator
Wen Jing Huang, CECI Engineering Consultants, Inc., Chinese-Taipei

AM-SP1095 - Development of a Trip Energy Estimation Model Using Real-World Global Positioning System Driving Data
Jacob Holden, National Renewable Energy Laboratory, United States
AP-TP1232 - Monitoring the Flow of People with Wi-Fi Packet Sensors: Changes in the Flow of People Made by People-Attracting Events
Yuichi Kinuta, The Institute of Behavioral Sciences, Japan
AP-TP1333 - Performance Measures to Evaluate Volatility of Motorway Network Congestion Patterns Following the Opening of the Waterview Tunnel, Auckland, New Zealand
Andy Hooper, Auckland Motorway Alliance, New Zealand

TS101 - Travelers Information from the Roadside to Statewide
Wednesday 1 November 2017, 16:45 - 18:00 (512 A)
Topic: E. Integrated Approach: Planning, Operations and Safety

Moderator
Javier Cobo, Independent, Canada
AM-TP0797 - 511PAConnect - The Next Evolution of Traveler Information
Robert Taylor, Pennsylvania Turnpike Commission, United States
AM-TP0890 - Systems Engineering for Real-Time Integration of Arrow Board Messages into Traveler Information Dissemination Systems
Elise Feldpausch, MDOT, USA
AP-SP0988 - The Impact of Road Sign Symbols on Visibility and Readability of Proximity VMS Display at Expressway Junction
Masaki Kasai, Central Nippon Highway Engineering Tokyo Company Limited, Japan

TS102 - Using ITS to Increase Safety on Urban Roadways
Wednesday 1 November 2017, 16:45 - 18:00 (512 B)
Topic: E. Integrated Approach: Planning, Operations and Safety

Moderator
Moe Zarean, Iteris, Inc., USA

AP-SP0798 - Development of Traffic Safety Risk Index for Local Governments Using In-Vehicle Digital Tachograph (DTG) Data
Cheol Oh, Hanyang University, Korea
AP-TP0932 - Implementation of 30km/h Zones: The Public Awareness Campaign and the Future Tasks
Kazuo Namikawa, Tokyo Metropolitan Police Department, Japan
AM-SP1195 - Developing a Two-Dimensional Key Performance Indicator of Safety and Mobility for Intersections: A Case Study of Hefei, China
Shan Jiang, Rutgers, The State University of New Jersey, USA
AM-TP1310 - Applying Big Data Analytics to Automated Traffic Enforcement to Achieve Vision Zero Goals: A Case Study from Washington, D.C.
Soumya Dey, District Department of Transportation, USA

Wednesday 1 November 2017

TS103 - Weather Condition Detection Analysis and Simulation
Wednesday 1 November 2017, 16:45 - 18:00 (512 C)
Topic: E. Integrated Approach: Planning, Operations and Safety

Moderator
Dave Verma, HMI Tech, New Zealand

AM-SP1098 - Automatic Roadway Condition Detection with an Artificial Neuron Network
Richard Drouin, Ministère des Transports, de la Mobilité durable et de l'Électrification des transports, Canada
AM-SP1136 - Analysis of Present Weather Detector Precipitation Rate Estimates
Jack Stickel, Alaska Department of Transportation and Public Facilities (retired), United States
AP-TP1204 - Driving Simulator + VISSIM Simulation-Based Traffic Flow State Evaluation Platform for Adverse Weather
Chen, Beijing University of Technology, China

TS72 - Traffic Management Case Studies
Wednesday 1 November 2017, 08:00 - 09:30 (511 C)
Topic: C. Smart(er) Cities

Moderator
Jim Montgomery, Kapsch TrafficCom North America, USA

AP-TP0787 - DEVELOPMENT OF INFRASTRUCTURE-BASED AUTONOMOUS DRIVING SUPPORT SYSTEM USING DYNAMIC MAPS
KEISUKE HIROSE, Mitsubishi Electric Corporation KAMAKURA WORKS, Japan
AM-TP1027 - Leveraging Public Private Partnerships to Transform Traffic Management into a Regional Smart City Intelligent Transport System
Brenda Connor, Ericsson North America, USA
EU-TP1080 - Principles for Public-Private Cooperation in Interactive Traffic Management
Tiffany Vlemmings, National Datawarehouse for Traffic Information, Netherlands
AM-TP1113 - Smart Solution for a Traffic Management Center in Montreal
Patrick Ricci, Urban Mobility Management Center (CGMU), Canada
AP-TP1141 - Innovative, Agile Stepping Stones for Our Multi-Modal, Technology-Enabled Transport Management Center Transformation
Dr. Bradley Rolfe, Transport for NSW, Australia
AP-TP1253 - Saturation Flow of Shared Lanes with Mixed Traffic Flow
Chien-Pang Liu, MOTC, Chinese-Taipei

TS73 - Mapping the Environment
Wednesday 1 November 2017, 08:00 - 09:30 (511 F)
Topic: A. Connectivity and Autonomy

Moderator
Jean-Charles Pandazis, ERTICO - ITS Europe, Belgium

AM-SP0886 - Asset Extraction Using Street-Level LiDAR Data for Connected Vehicle Applications
Rakesh Nune, DDOT, United States
EU-TP1220 - The Road to Automation – Road Operators' Challenges in the Introduction of Automated Driving
Nemec Martin, ASFINAG Maut Service GmbH, Austria
AP-TP1354 - Three-Dimensional Positioning on Sloping Roads Using 79GHz Band Radar Module
Takashi Matsuoka, Panasonic Corp., Japan

Wednesday 1 November 2017

TS74 - Public Transit Routing and Scheduling
Wednesday 1 November 2017, 08:00 - 09:30 (512 A)
Topic: A. Connectivity and Autonomy

Moderator
Andreas Rau, TUM Create, Singapore

AP-SP1004 - Investigating the Performance of Large Scale Bus Network Operation Status Using GPS Data
Liu Haode, China Academy of Transportation Sciences, China, China
AP-TP1165 - Classification of Bus Stopping Precision Using Deep Artificial Neural Network on GNSS-Based Bus Tracking Data
Satidchoke Phosaard, Suranaree University of Technology, Thailand
AM-TP1309 - Intelligent Taxi Hailing System for Smart Cities with Connected Vehicles
Phil Pfeiffer, East TN State University, United States
EU-TP1342 - The Stochastic Vehicle Routing Problem
Elenna Dugundji, CWI, Netherlands

TS75 - Recent Advancements in Traffic Sensing Technologies
Wednesday 1 November 2017, 08:00 - 09:30 (512 B)
Topic: B. Infrastructure Challenges and Opportunities

Moderator
Sang Hyup Lee, KICT, Korea

AM-SP0946 - Traffic Density Estimation Using Radar Sensor Data from Probe Vehicles
Daisik Nam, University of California, Irvine, United States
AP-TP0966 - Development of a Freeway Network Automatic Incident Detection System
Robin Marston, VicRoads, Australia
EU-SP1137 - Road User Behavior Analyses Based on Video Detections: Status and Best Practice Examples from the RUBA Software
Niels Agerholm, Aalborg University, Denmark
AM-TP1170 - Detection Systems at the Melocheville Tunnel
René Marcouiller, CIMA+, Canada

TS76 - ITS in Transit Operations: Part 1 of 2
Wednesday 1 November 2017, 08:00 - 09:30 (512 C)
Topic: C. Smart(er) Cities

Moderator
Liam Fassam, Institute of Logistics, Infrastructure, Supply & Transformation Travel. University of Northampton, United Kingdom

AP-TP0870 - New Transport Arrangements Using ICT
Sei Sakairi, East Japan Railway Company, Japan
AM-TP1209 - Bus Toll Lanes and CV – Sustainable Option Building on Today's Transportation
Bob Frey, Tampa-Hillsborough County Expressway Authority, USA
EU-TP1242 - Simulating the Benefits of an ATS Over an Existing Saturated Line: A Stochastic Approach
Christophe Jehannin, setec its, France
AP-SP1314 - Operation and Monitoring of Bus Lanes in Congestion Areas: A Case in Macao
Ku Weng Keong, University of Macau, Macao

Wednesday 1 November 2017

TS77 - Advanced Traffic Management from Planning to Managing Change and Implementation
Wednesday 1 November 2017, 10:45 - 12:15 (511 C)
Topic: C. Smart(er) Cities

Moderator
Sylvain Belloche, Cerema, France

EU-TP0917 - From Four Legacy ATMS Systems into One Single Cockpit Ready for the Future
Eneko Aritza Aldama, Kapsch TrafficCom, Spain
AM-TP1180 - Implementation of CapTOP ATMS in the District of Columbia
Jason Tao, DDOT, USA
AM-TP1185 - LaGuardia Airport Redevelopment Program - Early Action ITS Deployment and Transportation Management Plan Implementation
Rizwan Baig, PANYNJ, USA
AP-TP1312 - Effective Change Management for ITS Systems
Stephen Griffith, Resolve Group, New Zealand

TS78 - Improved Methods of Collecting and Analyzing Probe Data
Wednesday 1 November 2017, 10:45 - 12:15 (511 F)
Topic: D. Data, Security and Privacy

Moderator
Masafumi Kobayashi, Sumitomo Electric Industries, Ltd., Japan

AP-SP0754 - Applying Travel Time Estimation Techniques for Probe-Based Systems
Jinhwan Jang, Korea Institute of Civil Engineering and Building Technology, Korea
AP-TP0900 - A Study of Various Aggregating Methods of Vehicle Probe Data
Kazunori Inoue, Panasonic Corp., Japan
AP-TP1042 - Generating Traffic Information for Automated Vehicles Based on Probe Data
Kentaro Takaki, Sumitomo Electric Industries, Ltd., Japan
AM-SP1300 - Estimating Highway Volumes Using Vehicle Probe Data – Proof of Concept
Stanley Young, NREL, USA

TS79 - Recent Developments in Traffic Signal Management
Wednesday 1 November 2017, 10:45 - 12:15 (512 A)
Topic: A. Connectivity and Autonomy

Moderator
Ian Patey, Mouchel, UK

AP-SP0879 - Eco Approaching at an Isolated Signalized Intersection Under Partially Connected and Automated Vehicles Environment
Jia Hu, Ph.D., Turner Fairbank Highway Research Center, USA
AM-TP0925 - Signal Optimization Tool for an Integrated Corridor Management System
Matthew Juckes, Kapsch TrafficCom Transportation, USA
AP-TP0930 - Deployment and Operation of Traffic Signal Prediction Systems
Yasuaki Ito, Tokyo Metropolitan Police Department, Japan
AP-TP0931 - Traffic Signal Control Advancement Efforts Toward Tokyo 2020 Games
Tsuyoshi Kobayashi, Tokyo Metropolitan Police Department, Japan
EU-TP1233 - Scandinavian Experience with Traffic Light Assistance
Ørjan Tveit, NPRA, Norway

Wednesday 1 November 2017

TS80 - Ridesharing in Smart Cities
Wednesday 1 November 2017, 10:45 - 11:45 (512 B)
Topic: C. Smart(er) Cities

Moderator
Dirk van Amelsfort, RISE Viktoria, Sweden

EU-TP0836 - Evaluation of the SAKHAR Sensor: Vehicle Occupancy Sensor Promotes Carpooling
Jérémie Bossu, Cerema, France
AM-TP0873 - A User-Centered Approach for Analyzing Data Collected as Part of a Rideshare-Integrated First and Last Mile Service Offering
Leonid Antsfeld, NAVER LABS, France

TS81 - ITS in Transit Operations: Part 2 of 2
Wednesday 1 November 2017, 10:45 - 12:15 (512 C)
Topic: D. Data, Security and Privacy

Moderator
Chris Bax, Cubic Transportation Systems, United States

AP-SP0977 - A Data Analytic Approach to Monitor Citywide Bus Journey Speed Using Smartcard and GPS Location Data: A Case Study in Singapore
Li Qian, Land Transport Authority, Singapore, Singapore
EU-SP0987 - Using Automated Vehicle Location Data for the Diagnosis of Irregularity Sources
Benedetto Barabino, CTM SpA, Italy
AP-TP1032 - Smart Bus Operation Management System
Jessica Lin, THI Consultants Inc., Chinese-Taipei

TS82 - Congestion Analysis in Smart Cities
Wednesday 1 November 2017, 13:15 - 14:45 (511 C)
Topic: C. Smart(er) Cities

Moderator
Young-Kyun Lee, Intelligent Transport Society of Korea, Korea

AM-SP0752 - Density-Based Road Traffic Analysis and Control
Ting Han, University of Arkansas at Little Rock, USA
AP-TP0905 - Study of New Probe Data-Based Congestion Control/Traffic Safety Control Measures
Kenta Tabuchi, Traffic Regulation(Control) Division Traffic Department, Japan
AP-SP1000 - Analysis and Prevention control of Gridlock Phenomenon on a Signalized Single Grid Network
Koichiro Iwaoka, Panasonic System Networks Co., Ltd., Japan
AP-TP1052 - Development of a Real-time Traffic Congestion Index System for Keqiao District Using On-Road Surveillance Camera Network
Wang-Zhong MO, SUPCON Information Technology Co. Ltd., China
AP-TP1133 - Macroscopic Analysis of Traffic Congestion and Its Sign in Large Tourist City Based on Fixed Observation Data
Sachi Fukumoto, Japan Road Traffic Information Center, Japan

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TS83 - Estimating and Measuring Congestion Conditions
Wednesday 1 November 2017, 13:15 - 14:45 (511 F)
Topic: D. Data, Security and Privacy

Moderator
Brian Negus, RACV, Collaborative ITS Consulting Australia, Victorian Chamber of Commerce and Industry, Australia

AP-TP0972 - Estimating Cost of Congestion for Perth: A Methodology Review
Ian Espada, Australian Road Research Board, Australia
AP-TP0973 - Comparison of Probe Data and Congestion Data
Toshiya Yoshioka, Sumitomo Electric System Solutions Corporation, Japan
AP-TP1044 - Sizing an Urban Freeway Facility Using 20th Hour of Delay
Zhongren Wang, California Department of Transportation, USA
EU-TP1056 - Introducing Extra Ordinary Queuing Alert
Åke Egemalm, Danish Road Directorate, Denmark
AP-SP1154 - Measuring Excessive Congestion Cost by Using Alternative Data Sources
Dr. Charles Karl, Australian Road Research Board, Australia

TS84 - Localization Technologies: Part 1 of 2
Wednesday 1 November 2017, 13:15 - 14:45 (512 A)
Topic: A. Connectivity and Autonomy

Moderator
Ashweeni Beeharee, Satellite Applications Catapult, United Kingdom

AM-TP0779 - Accurate and Resilient Positioning Solutions for Connected/Automated Vehicles
Hirofumi Onishi, Alpine Electronics Research of America, USA
AP-TP1070 - A Proposal for Lane Level Location Referencing
Satoru Nakajo, The University of Tokyo, Japan
AP-TP1140 - Auxiliary Positioning System for V2X Based on UWB Technology
Hao Zhou, Beijing Wanji Technology Co., Ltd., China
EU-TP1238 - Autonomous Vehicles: Get Necessary Redundancy in Positioning with Enhanced GNSS and Maps
David Betaille, IFSTTAR, France

TS85 - MaaS-The Next Revolution of ITS
Wednesday 1 November 2017, 13:15 - 14:15 (512 B)
Topic: F. Disruption and New Business Models

Moderator
Gorazd Marinic, IRU Projects, Belgium

EU-TP0876 - Integrating E-mobility in ITS – Recommendations and Architecture
Wolfgang Schulz, Zeppelin University, Germany
EU-TP1087 - Electric Mobility: A Cornerstone of the Third Industrial Revolution
Florent Zanoto, setec its, France

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TS86 - Sensors for Automated Vehicles: Part 1 of 2
Wednesday 1 November 2017, 13:15 - 14:45 (512 C)
Topic: A. Connectivity and Autonomy

Moderator
Dean Zabrieszach, HMI Technologies Pty Ltd, Australia

AP-TP1005 - Estimating the Visual Evaluation Rank of Lane Markings Deterioration from Event Data Recorder's Image
Yumi Ishino, Graduate School of Information Science and Technology, Aichi Prefectural University, Japan
AM-SP1023 - An Efficient, High-Resolution System to Detect Traffic Lights
Matt Ginsberg, Connected Signals, Inc., USA
AP-TP1320 - Implementation for Multi-Target Detection in Night-time Traffic Scenes
Mitsuru Ochi, Vehicle Information and Communication System Center (VICS), Japan

TS87 - Applications of ITS for Disaster Management
Wednesday 1 November 2017, 15:00 - 16:30 (511 C)
Topic: B. Infrastructure Challenges and Opportunities

Moderator
Kim Siah Ang, ST Electronics (Infocomm Systems) Pte Ltd, Singapore

AM-SP0892 - Incorporating Speed Data to Analyze Evacuation Route Resiliency
Thomas Brennan, The College of New Jersey, USA
EU-SP1033 - Use of Intelligent Transport System Technologies by Under-Developed, Flood-Affected Communities
Izza Anwer, Institute for Transport Studies, University of Leeds, UK, United Kingdom
AM-TP1103 - Enhancing Situational Awareness in Highway Emergency Response: A Conceptual Design
Shen-Chang Lin, Disaster Science and Management Program, University of Delaware, USA
AP-TP1157 - Tunnel Disaster Prevention on the Metropolitan Expressway
Shoji OHCHIKA, Oriental Consultants Co., Ltd., ja
AP-SP1338 - Emergency Evacuation Modeling of Auckland
Prakash Ranjitkar, University of Auckland, New Zealand

TS88 - Exciting Advancements in Freight Logistics
Wednesday 1 November 2017, 15:00 - 16:30 (511 F)
Topic: C. Smart(er) Cities

Moderator
Manuela Flachi, ERTICO - ITS Europe, Belgium

EU-TP0896 - What Do Data Tell Us? The Story of the European Logistics and Road Freight Transportation Sector
Manuela Flachi, ERTICO - ITS Europe, Belgium
EU-TP0902 - Managing Loading Zones in City Centers: Using ITS for Space Optimization
Eneko Aritza Aldama, Kapsch TrafficCom, Spain
EU-TP1146 - Disrupting Automotive Logistics Through a Combined Intelligent and Autonomous Transport Solution
Anders Hjalmarsson Jordanius, RISE Viktoria, Sweden
EU-TP1221 - Logistics Information Exchange Platforms: Insights of the AEOLIX Project
Manuela Flachi, ERTICO - ITS Europe, Belgium
EU-SP1266 - Is Logistics Ready for 4.0? - Key Findings of an Extensive Market Research
Alexia Fenollar Solvay, IMA, RWTH Aachen University, Germany

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TS89 - Localization Technologies: Part 2 of 2
Wednesday 1 November 2017, 15:00 - 16:30 (512 A)
Topic: A. Connectivity and Autonomy

Moderator
Makoto Itami, Tokyo University of Science, Japan

AP-TP0812 - Study on Interpolation Methods for GNSS Positioning in Expressway Toll Collection
Tsuyoshi Ikeda, Nippon Expressway Research Institute Company Limited, Japan
AP-SP0940 - A Vehicle Navigation System with Multi-Hypothesis Map Matching and Robust Feedback
Shaojun Liu, Tsinghua-Berkeley Shenzhen Institute, China
EU-TP1229 - Data Fusion Architectural Concept for Geolocation Referencing Sub-Systems
Paulus Spaanderman, PaulsConsultancy BV, Netherlands

TS90 - Measuring Traveler Behavior
Wednesday 1 November 2017, 15:00 - 16:30 (512 B)
Topic: B. Infrastructure Challenges and Opportunities

Moderator
Jean-Michel Henchoz, Senior Technical Manager, Belgium

AP-TP0859 - Travel Behavior Changes and Responses to Travel Information with the Progress of Disaster Recovery: A Case Study of Tohoku Heavy Rainfall Disaster
Jun Sakamoto, Kochi University, JAPAN
EU-TP0950 - Changing the Behavior of Travelers in Urban Areas Using a Smart Route Analytics Platform
Ward Koopmans, CGI The Netherlands, The Netherlands
AM-SP1340 - A Convergence of Public-Private Benefits in Denver, USA: Surveys and Analyses to Inform Urban Mobility-, Energy- and Infrastructure Services-Related Innovation
Joshua Sperling, National Renewable Energy Laboratory, USA

TS91 - Sensors for Automated Vehicles: Part 2 of 2
Wednesday 1 November 2017, 15:00 - 16:30 (512 C)
Topic: A. Connectivity and Autonomy

Moderator
Toru Saito, Honda R&D Co., Ltd., Japan

AP-SP0964 - Remote Sensing of Winter Road Conditions Using Near Infrared Spectroscopy
Naoto Takahashi, Civil Engineering Research Institute for Cold Region, Japan
AP-TP1003 - Reconstruct 3D Model Using 2D LiDAR and Monocular Camera
Toshio Ito, Shibaura Institute of Technology, Japan
AP-SP1016 - Improving Function Detecting General Object for On-Board Computer Vision by Artificial Neural Network
Jittima Varagul, Shibaura Institute of Technology, Japan
EU-TP1129 - State of the Art Analysis for Connected and Automated Driving within the SCOUT Project
Adrian Zlocki, IKA, Germany

Wednesday 1 November 2017

TS92 - Innovations in Freight-Truck Parking, Data Management and Port Access
Wednesday 1 November 2017, 16:45 - 18:00 (513 DEF)
Topic: B. Infrastructure Challenges and Opportunities

Moderator
C Douglass Couto, Independent Consultant, USA

EU-TP0809 - Obtaining Real-Time Data for Intelligent Truck Parking by Means of Vehicle On-Board Tolling Devices
Andy Apfelstädt, University of Applied Sciences Erfurt, Germany
AM-TP0872 - Changing Commercial Truck Driver Parking Behaviors to Produce Safer Highways
Davonna Moore, Kansas Department of Transportation, United States
AM-TP0947 - Deltaport Vehicular Access Control System
Ian Steele, PBX Engineering, Canada
AM-TP0961 - Innovations in Central Data Management for Truck Compliance and Mobility - Vehicle Information in Motion
Michael Wieck, IRD (International Road Dynamics), USA
EU-TP1273 - Intelligent Truck Parking in Network Perspective
Raza Muhammed, Danish Road Directorate, Denmark

TS93 - ITS Data Quality
Wednesday 1 November 2017, 16:45 - 18:00 (513 ABC)
Topic: D. Data, Security and Privacy

Moderator
Yvonne Barnard, University of Leeds, UK

EU-TP0759 - Calculating Time Loss by Impulse Detector Data for Transport Quality Measurement
Thomas Riedel, Adaptive Traffic Control AG and Verkehrs-Systeme AG, Switzerland
AP-TP0846 - Learnings Arising from the Fusion of Traffic Data from Multiple Sources
David Johnston, Intelligent Transport Services, Australia
AP-TP1240 - Data Quality Evaluation of Traffic Information Initiated by Private and Public Partnership
Keechoo Choi, Ajou University, Korea

TS95 - Spectrum Sharing
Wednesday 1 November 2017, 16:45 - 18:00 (510 A)
Topic: A. Connectivity and Autonomy

Moderator
Justin McNew, JMC ROTA INC, United States

AM-TP0763 - Composition of Wireless Technologies for Connected Vehicles
Hirofumi Onishi, Alpine Electronics Research of America, USA
AP-TP0935 - 60 GHz Multi-Gigabit Wireless Technology for Connected Vehicles
Masataka Irie, Panasonic Corp. Automotive & Industrial Systems Company, Japan
AM-TP1308 - Technical Challenges of Sharing DSRC Band at 5.9GHz in US
John Kenney, Toyota InfoTechnology Center, United States

Wednesday 1 November 2017

TS96 - Using the Basic Safety Message to Improve CAV Performance
Wednesday 1 November 2017, 16:45 - 18:00 (510 C)
Topic: A. Connectivity and Autonomy

Moderator
Jaching Chou, Institute of Transportation, Ministry of Transportation and Communications, Chinese-Taipei

AM-SP0831 - Tracking RSSI in Vehicle-to-Vehicle Networks for Collision Avoidance
Billy Kihei, Georgia Tech, USA
AM-SP1086 - Impact of Distances Estimation Errors on the Communication Reliability in DSRC-Based Vehicular Networks
Jean Marchal, Université de Sherbrooke, Canada
AP-SP1119 - Positioning and Collision Alert Investigation for DSRC-Equipped Light Vehicles Through a Case Study in CITI
Adriana Simona Mihaita, Data61, Australia
AM-TP1311 - Identifying Factors That Impair the Lane-Keeping Efficiency of Drivers
Phil Pfeiffer, East TN State University, United States

TS97 - Utilizing Machine Learning for Transportation Analysis
Wednesday 1 November 2017, 16:45 - 18:00 (510 D)
Topic: D. Data, Security and Privacy

Moderator
Henry Meng, Institute for Information Industry, Chinese-Taipei

AP-TP0929 - Transportation Mode Detection Using Machine Learning Classifier
Hiroyuki Kumazawa, Osaka Sangyo University, Japan
AP-SP1010 - Person Trip Survey System Combining Transportation Estimation Method by Accelerometer and Web Diary System
Koichi Miyashita, Mitsubishi Research Institute, Inc., Japan
AP-TP1045 - Study on Association Between Heart Rate and Thermal Sensation by Cabin Temperature Change
Aki Yokoyama, Shibaura Institute of Technology, Japan

TS98 - Connected Vehicle Data
Wednesday 1 November 2017, 16:45 - 17:45 (512 D)
Topic: D. Data, Security and Privacy

Moderator
Susan Spencer, Susan Spencer & Associates, Canada

AM-TP0945 - Outcome Assessment Using Connected Vehicle Data to Justify Signal Investments to Decision Makers
Jijo Mathew, Purdue University, USA
AM-TP1254 - The Flood is Coming, Build an Ark: Automated and Connected Vehicle Data
Stephen Novosad, HNTB, USA

Wednesday 1 November 2017

TS99 - ETC Planning Case Studies
Wednesday 1 November 2017, 16:45 - 18:00 (511 C)
Topic: B. Infrastructure Challenges and Opportunities

Moderator
Joe Waggoner, Tampa Hillsborough Expressway Authority (THEA), USA

AP-TP0915 - Transition to Toll According to Travel Distance Using Free Flow Tolling with ETC
Toru Shimizu, East Nippon Expressway Company Limited, Japan
EU-TP0934 - The Future of Toll in the Czech Republic - Starting Interoperability and Technological Platform
Karel Feix, Kapsch Telematic Services, Czech Republic
AM-TP0952 - Pre-Entry DMS Operational Needs and Lessons Learned
Amber Reimnitz, PMP, Pennsylvania Turnpike Commission, USA

Thursday 2 November 2017

ES10 - Resilient, Safe and Smart Infrastructure
Thursday 2 November 2017, 08:15 - 09:45 (511 ABDE)
Topic: E. Integrated Approach: Planning, Operations and Safety

The design, operation, and management of transport infrastructure is already very complex. Traditional physical systems are just a start. Modern infrastructure must provide digital services to support traveler information, the operation of connected and highly automated vehicles, and adaptive area-wide traffic management. Our infrastructure must be able to cope with traffic jam, man-made incidents, and deliberate attacks as well as exceptional weather conditions such as drought, flooding, and extreme temperatures. And transport systems must be robust, sustainable, and resilient if they are to support daily life under all conditions. And they need to be composed of infrastructure that degrades gracefully and safely. There must be seamless integration of services across all modes, and networks need to be reconfigurable so that local incidents can be isolated and traffic re-routed. ITS can contribute to proactive maintenance tools, before and on-trip traveler information, and the optimization of operations in order to ensure continuous everyday mobility. This session will look at different strategic approaches to – and the concept, design, structure, and evaluation of – resilient systems in addition to smart use and smart investment of infrastructure.

Moderator
Sorawit Narupiti, Chulalongkorn University, Thailand
Speakers
Takashi Nishio, ITS Policy and Program Office, Road Bureau, Ministry of Land, Infrastructure, Transport and Tourism, Japan
Sang Heon Lee, ITS and Road Safety Division, MOLIT, Korea
Klaas Rozema, Dynniq, The Netherlands
Roger Millar, Washington State Department of Transportation, United States
Stephanie Leonard, European Commission – DG MOVE, Belgium

ES11 - Communication Options for Connected, Cooperative and Automated Transport
Thursday 2 November 2017, 10:00 - 11:30 (511 ABDE)
Topic: A. Connectivity and Autonomy

Recent developments in telecommunication, sensor, and information technologies have enabled substantial progress in the domain of transport automation. Cooperative and automated driving are expected to bring substantial benefits in terms of safety, comfort, and (traffic and fuel) efficiency. As an ambition, fully automated (or autonomous) driving has captured the public's imagination. While technologies at the lower end of the automation spectrum are readily available, substantial development and maturity is required to realize full automation. There are particular challenges in terms of competing communication technologies, reliability, harmonization, and standardization that create an ideal opportunity for governments, ICT infrastructure providers, and transport stakeholder to intervene and support cooperative driving to realize key benefits in the near future. This session will explore the communications challenges and opportunities presented by connected and automated systems.

Moderator
Young-Jun Moon, The Korea Transport Institute (KOTI), Korea
Speakers
Gaku Nakazato, Ministry of Internal Affairs and Communications, Japan
Ming-Whei Feng, Institute for Information Industry, Chinese-Taipei
Joaquín Torrecilla, DEKRA Testing and Certification, Germany

Thursday 2 November 2017

ES12 - New Business Models
Thursday 2 November 2017, 11:45 - 13:15 (511 ABDE)
Topic: F. Disruption and New Business Models

Traditional models of supply and demand are being disrupted. We are used to travelers driving cars and trucks that they own with an associated tax, using fuel that is taxed, and with fees for using infrastructure provided and paid for by government. Available public transport is – in most countries -- planned and managed in terms of what operators want to supply rather than services driven by for what users want and are willing to pay. But the old model is crumbling. Some vehicles can now perform driving tasks better than most people and will soon be able to move without needing a driver. What might this mean for bus services…or regular freight deliveries? Electromobility is depressing the revenue from liquid fuel taxes. There is a strong shift to sharing transport rather than owning it. There is a huge availability of transport data and organizations are making money selling it or/and using it. What do all these developments mean for traditional business models? Do we need new forms of public-private partnerships with different risk management? Do policy makers need to re-think regulation to encourage innovative services? How will governments sustain transport expenditures in a sharing economy? This session asks those questions and explores answers to them.

Moderator
Krista Huhtala-Jenks, Ministry of Transport and Communication Finland, Finland
Speakers
Patrick F. McGowan, Serco Inc., USA
James Barna, Ohio Department of Transportation, United States
Martin Matthews, HMI Technologies, Former Secretory of Transport, New Zealand
Michael Hurwitz, transport for London, United Kingdom

SCP10 - Moving to the Security Mindset – Rethinking Security in the World of Connectivity
Thursday 2 November 2017, 13:00 - 13:50 (Smart Cities Pavilion)
Topic: C. Smart(er) Cities

Moderator
Will Overstreet, GRIDSMART, USA

Closing Ceremony
Thursday 2 November 2017, 16:00 - 17:00 (517)

The Closing Ceremony — to be held Thursday, November 2 at the Palais des congrès de Montréal — will provide a summary of the Congress and future perspectives. This event will also feature several awards as well as the “Passing of the Globe” ceremony.

Moderator
David St. Amant, ITS America, United States
Speakers
Jacob Bangsgaard, ERTICO - ITS Europe, Belgium
Claude Carette, Service des infrastructures, de la voirie et des transports, Ville de Montréal, Canada
Morten Kabell, City of Copenhagen, Denmark
Hajime Amano, ITS Japan, Japan
Andrew Chow, ITS Singapore, Singapore

Thursday 2 November 2017

PL03 - Conducting Business within Our Transportation Industry
Thursday 2 November 2017, 15:00 - 16:00 (517)

Leaders from various sectors of the intelligent transportation industry discuss and debate the opportunities and challenges in conducting business within the transportation domain.

Moderator
Kirk Steudle, Michigan Department of Transportation, USA
Speakers
Giles Gherson, Ministry of Economic Development and Growth, Province of Ontario, Canada
Chris Murray, Kapsch TraffiCom North America, United States
Mika Rytkönen, HERE, Finland
Malcolm Johns, Christchurch International Airport, New Zealand

SIS104 - Advance the Development of CAV Technologies Through Effective Testing
Thursday 2 November 2017, 08:15 - 09:45 (515 ABC)
Topic: A. Connectivity and Autonomy

The advancement of connected and autonomous vehicle technologies and the path to production for their associated products and services is predicated on the ability to validate these technologies and develop acceptable standards. The availability of accessible and comprehensive test facilities is necessary to provide controlled environments for testing replicating various real-world scenarios to provide a broad range of confirmation and validation capabilities. Although each facility or test environment possesses its own unique features and characteristics, they all include a combination of controlled situations and real-world scenarios that together form the environment for advanced product development and validation necessary to move toward real world deployment. This session will bring together both national and international leaders of test centers representing each of the ITS World Congress Organizations. The discussion will provide an opportunity for each test center leader to share some specifics about the unique features of their test environments as well as share how their business plans provide for them to grow and expand to meet customer and user demands into the future.

Organizer
Mark Chaput, American Center for Mobility, USA
Moderator
Mark Chaput, American Center for Mobility, USA
Speakers
Andrew Smart, American Center for Mobility, USA
Chris Reeves, HORIBA - MIRA, UK
Jack Pokrzywa, Society of Automotive Engineers, USA

Thursday 2 November 2017

SIS105 - Canada's Partnerships for Innovation
Thursday 2 November 2017, 08:15 - 09:45 (513 DEF)
Topic: G. Innovation, What's Next? The New Ideas

Innovation and solutions can be achieved quickly through a partnership approach, working hand in hand to solve problems. This special interest session will feature successful partnership projects from across Canada – collaborations between public entities, vendors, consultants, and/or private entities, to achieve incredible results, in the classic Canadian way

Organizer
Judy Yu, Associated Engineering, Canada
Moderator
Judy Yu, Associated Engineering, Canada
Speakers
Yeatland Wong, The City of Calgary, Canada
Varouj Artokun, General Electric, Canada
Richard Chylinski, Parsons Canada, Canada
Garreth Rempel, TRAINFO, Canada
Robert Bruce, TPA North America Inc., Canada
Jonathan Foord, City of Winnipeg, Canada
Javed Khan, City of Mississauga, Canada

SIS106 - Automation as a Solution: Addressing 21st Century Mobility Challenges Through AV Deployment
Thursday 2 November 2017, 08:15 - 09:45 (513 ABC)
Topic: A. Connectivity and Autonomy

21st century transportation systems face challenges of aging infrastructure, increasing congestion, limited budgets, and significant fatalities. Autonomous vehicle technology promises to deliver broad-reaching solutions to many of these challenges and yield transformative societal savings: tens of thousands of lives, hundreds of thousands of dollars, and billions of barrels of oil. However, without deliberate planning and effective policy some challenges may go unaddressed or even be exacerbated. Congestion can decrease if AV riders share trips, vehicles navigate more efficiently, and crashes are reduced, or congestion could increase if cars travel closer together, commute distances rise, and unoccupied vehicles clog roads. Access to mobility will expand as the blind, young, elderly, and disabled take advantage of new technology, or access will stratify as AV deployment is limited to higher-income, urban areas. This session will review how the application of private sector data sets can inform public sector decision making that lays the ground work for AV testing and deployment.

Organizer
Ali Savio, INRIX, United States
Moderator
Avery Ash, INRIX, United States
Speakers
Dave Verma, HMI Tech, New Zealand
Laura Schewel, Streetlight Data, USA
Karla Taylor, City of Austin, USA

Thursday 2 November 2017

SIS107 - Challenges on Data Necessary to Serve Automated Driving
Thursday 2 November 2017, 08:15 - 09:45 (514 BC)
Topic: A. Connectivity and Autonomy

Many initiatives/groups in the world are rapidly developing automated vehicle technologies involving data from different sources (digital map, sensors, traffic information, traffic management information, etc.), but there is a need for coherency and for a careful look at the whole data chain that will enable automated driving. This session will present an overview of the different elements of this data chain, with a focus on the interaction between vehicle data and data clouds leading to higher data quality and consistency offered by this sharing process. The challenge of having the right data necessary for automated driving, its consistency, and the way forward will be discussed by international world-wide experts.

Organizer
Jean-Charles Pandazis, ERTICO - ITS Europe, Belgium
Moderator
Jean-Charles Pandazis, ERTICO - ITS Europe, Belgium
Speakers
Prokop Jehlicka, HERE, Germany
Volker Sasse, NavInfo Co. Ltd, China
Andras Csepinkszky, NNG, Hungary

SIS108 - Impact of Automated Vehicles on Traffic flow and Environment
Thursday 2 November 2017, 08:15 - 09:45 (510 A)
Topic: A. Connectivity and Autonomy

There is growing interest in automated vehicles and their development has been advanced throughout the world. In general, automated vehicles are expected to improve traffic flow and reduce traffic congestion and energy consumption, but they can have a negative impact depending on the settings of vehicle control. This session invites speakers from Europe, the US, and Asia Pacific to introduce projects related to impact assessments of automated vehicles on traffic flow and CO2 emissions, and to exchange views on how to introduce the new technology into the real world.

Organizer
Takashi Oguchi, The University of Tokyo, Japan
Moderator
Masao Kuwahara, Tohoku University, Japan
Speakers
Daisuke Oshima, Pacific Consultants Co., Ltd., Japan
Peng Hao, University of California-Riverside, USA

Thursday 2 November 2017

SIS109 - Evaluation of Connected and Autonomous Vehicle Trials
Thursday 2 November 2017, 08:15 - 09:45 (510 C)
Topic: A. Connectivity and Autonomy

In an era of rapid technological changes, connected and autonomous vehicles (CV/AV) seem to be the perfect solution for dealing with challenging problems such as congestion, pollution, and space optimization in urban areas. The main objective of multiple transport agencies is to improve road safety by providing reliable and flexible solutions to all drivers on the roads. While significant efforts are put together for dealing with regulations, standard adoption, and setting up trial cases, various questions regarding the performance and impact of such technologies are still to be tackled. As an example, studying the effect of failed collision alerts from connected vehicles on driving behavior is of major interest in order to understand how this novel technology may succeed to gain popularity and face an early adoption. As well, simulating the impact of CV/AV on traffic flow during peak hours is still regarded as a black box with currently more questions than answers. This session aims to present various on-field or simulation trials around the world using CV/AV and to assess the difficulty and challenges faced before, during, and after the implementation of the trial/simulation study.

Organizer
Adriana Simona Mihaita, Data61, Australia
Moderator
Chen Cai, DATA61|CSIRO, Australia
Speakers
Angelos Amditis, ICCS, Greece
Adriana Simona Mihaita, Data61, Australia
Louis Berghold, Roads and Maritime Services (RMS)/Transport for NSW (TfNSW)/JYW Consulting, Australia
Alexandre Torday, TSS – Transport Simulation Systems, Australia
Dean Economou, Telstra, Australia
Scott Belcher, SFB Consulting, LLC, U.S.A.

SIS110 - What Were We Discussing 25 Years Ago at the World Congress
Thursday 2 November 2017, 08:15 - 09:45 (510 D)
Topic: G. Innovation, What's Next? The New Ideas

As we approach the 25th anniversary of the ITS World Congress, this session will take a retrospective look at what topics were being discussed 25 years ago within the ITS industry. Advances in technology have greatly changed the landscape as has the move towards connected and automated vehicles—the future of the industry—which promises many new challenges.

Organizer
Steven Dellenback, Southwest Research Institute, USA
Moderator
Eric Sampson, Newcastle University, UK
Speakers
Patrick F. McGowan, Serco Inc., USA
Eric Sampson, Newcastle University, UK
Jason Chang, National Taiwan University, Chinese Taipei
Young-Jun Moon, The Korea Transport Institute (KOTI), Korea
Richard Harris, HMI Technologies, UK

Thursday 2 November 2017

SIS111 - Using Data to Manage Traffic, Reduce Congestion & Prioritize Spending
Thursday 2 November 2017, 10:00 - 11:30 (515 ABC)
Topic: B. Infrastructure Challenges and Opportunities

This session will feature speakers from Denmark, Germany, UK and the US, with a focus on using new data sources to identify and prioritize system needs. The panel will feature specific examples of how GPS probe data was used to efficiently provide systemwide insight and ranked needs.

Organizer
Ted Trepanier, INRIX, USA
Moderator
Ted Trepanier, INRIX, USA
Speakers
Charlotte Naumanen Holstrøm, Vejdirektoratet (Danish Road Directorate), Denmark
Bill Eisele, Texas A&M Transportation Institute, USA
Graham Cookson, INRIX, UK
Joachim Wahle, TraffGo Road GmbH, Germany
Bob Pishue, INRIX, USA

SIS112 - Canadian Activities in Connected and Automated Vehicles
Thursday 2 November 2017, 10:00 - 11:30 (513 DEF)
Topic: E. Integrated Approach: Planning, Operations and Safety

Connected and automated vehicles (CV/AV) have the potential to change all aspects of mobility. CV/AV is creating a paradigm shift from driver to autopilot by incorporating a range of different technologies aimed at enhancing the safety and efficient movement of people and goods. The potential societal benefits from these emerging CV/AV technologies are significant, particularly with regards to: enhancing road safety; increasing transport efficiency and productivity; improving environmental outcomes by reducing emissions from transport; as well as enabling advancements in intelligent transportation systems (ITS) as part of the broader Smart City concept thus changing the way governments plan and develop infrastructure for future cities and towns. CV/AV technologies are some of the most heavily researched automotive technologies and a number of initiatives within Canada are currently underway that are facilitating the development and commercialization of innovation in CV/AV. This special interest session will present several of the most active programs in Canada with a particular emphasis on research and demonstration sites for proof of concept activities.

Organizer
Janneke van der Zee, ITS Canada, Canada
Moderator
Pino Porciello, TrustPoint Innovation Technologies Ltd., Canada
Speakers
Warren Ali, Automotive Parts Manufacturers' Association (APMA), Canada
Ross McKenzie, University of Waterloo, Canada
Tony Qiu, University of Alberta, Canada
David Michelson, University of British Columbia, Canada
Josipa Petrunic, Canadian Urban Transit Research & Innovation Consortium (CUTRIC), Canada

Thursday 2 November 2017

SIS113 - Integration of ITS Planning and Operations Activities in a New Era
Thursday 2 November 2017, 10:00 - 11:30 (513 ABC)
Topic: E. Integrated Approach: Planning, Operations and Safety

With the advent of integrated mobility strategies and connected and autonomous vehicles (CAVs), the integration of regional transportation operations initiatives and ITS architectures needs to reflect both a variety of new stakeholders and the ongoing standardization of various operational functions and wireless communications. The session will look discuss how regions are modifying their approach to transportation planning and operations programs and is ITS becoming better integrated as a result?

Organizer
Glenn Havinoviski, Iteris, Inc., USA
Moderator
Glenn Havinoviski, Iteris, Inc., USA
Speakers
Scott Perley, Iteris, Inc., USA
Mark Jensen, Cambridge Systematics, Inc., USA

SIS114 - Mobility as a Service: New Business and Service Approaches
Thursday 2 November 2017, 10:00 - 11:30 (514 BC)
Topic: F. Disruption and New Business Models

Mobility as a Service solutions will put users at the heart of the transport network, offering tailor-made travel services based on their preferences. MaaS has the potential to become the mobility service of choice for future generations, disrupting the traditional link between mobility and vehicle ownership. It will provide the means to achieve the smarter, simplified transportation landscape envisioned and expected by future users. This session will drill down into the details of MaaS and examine the current status of development and deployment as well as the different approaches being applied. It will also discuss the industry, city, and regional perspectives of MaaS as well as focus on developments in business, service, and policy aspects of this trending topic and the partnerships that are delivering them.

Organizer
Richard Harris, HMI Technologies, UK
Moderator
Andrew Mehaffey, HMI Technologies, HMI Technologies Pty Ltd, Australia
Speakers
Sampo Hietenan, MaaS Global, Finland
Susan Zielinski, SMART (Sustainable Mobility & Accessibility Research & Transformation) at University of Michigan, United States
Richard Harris, HMI Technologies, UK
Roman Pickl, Fluidtime Data Services, Austria
Carol Schweiger, Schweiger Consulting LLC, United States
Graeme Scott, IBI Group, United Kingdom

Thursday 2 November 2017

SIS115 - International Perspectives on Technology Shifts and Collaboration Between Public and Private Sectors
Thursday 2 November 2017, 10:00 - 11:30 (510 A)
Topic: F. Disruption and New Business Models

As new technologies transform public transportation into the more personal world of mobility, new use cases and business models are emerging. From policy and planning challenges arising from the incoming advent of autonomous vehicles to the rise of solutions such as Mobility as a Service and the related infrastructure requirements, an unprecedented need for collaboration between public and private sector is required. This session will focus on initiatives either under way or in planning that envisage close links between public and private sector. Business models, use cases, funding, and collaboration tools will be explored, coming from an international panel comprised of experts from consultancy, transport agencies, and tech companies. Additionally, answers to the following questions will be discussed: What are the main use cases arising from the move from public transport to personal mobility? Is there enough being done to foster collaboration between public and private sector? Are the right business cases being built and is there appropriate funding tools available?

Organizer
Jennie Martin, ITS United Kingdom, United Kingdom
Moderator
Jennie Martin, ITS United Kingdom, United Kingdom
Speakers
Ian Patey, Mouchel, UK
Daniel Haufschild, WSP|MMM, Canada
Carol Kuester, Metropolitan Transportation Commission, United States
Mike Masserman, Lyft, United States
Ella Taylor, Centre for Connected and Autonomous Vehicles, United Kingdom
Michael Hurwitz, transport for London, United Kingdom

SIS116 - Automated Flying Cars
Thursday 2 November 2017, 10:00 - 11:30 (510 C)
Topic: G. Innovation, What's Next? The New Ideas

As if autonomous vehicles were not disruptive enough, the next disruptive transportation is already in development: Personal Airborne Transportation (PAT), or to use its more familiar term, flying cars. Dubai's Roads and Transportation Authority has announced that it has tested a flying taxi based on drone technology that is capable of carrying passengers. Dubai hopes to have the autonomous taxis, which are made by the Chinese company Ehang, operational by mid-2017. Airbus has announced that it plans to have its prototype flying by the end of 2017. And Uber has announced it would like to offer a commercial service using flying cars within 10 years. This session will address the current status of PAT, the vision, the likely deployment scenarios, and the impact on the current ground-based transportation ecosystem.

Organizer
Barrie Kirk, Canadian Automated Vehicles Centre of Excellence (CAVCOE), Canada
Moderator
Barrie Kirk, Canadian Automated Vehicles Centre of Excellence (CAVCOE), Canada
Speakers
Sasha Rao, Maynard Cooper and Gale, USA
Barrie Kirk, Canadian Automated Vehicles Centre of Excellence (CAVCOE), Canada

Thursday 2 November 2017

SIS117 - Do Automated Vehicles Mean Go Time or Slow Time for Other Innovations in Transportation?
Thursday 2 November 2017, 11:45 - 13:15 (515 ABC)
Topic: A. Connectivity and Autonomy

Automated Vehicles appear likely to disrupt many if not all aspects of surface transportation planning, policy and industry. But AVs will be highly interactive with other major changes sweeping the transportation landscape. There are a number of federally funded pilot projects exploring the potential of replacing fuel taxes with a road usage charge, is a lively debate about the merits of doing so. How would such a system incorporate changing technology such as AVs? This panel will explore how emerging ideas on RUCs and AVs intersect in a complex environment that includes conventional fuel taxes but also tolling and congestion pricing. New models for ownership of transportation assets are emerging, with the sharing economy becoming an ever more important part of transportation services, offering new choices, and new complications for policy and planning. This panel will look at shared ownership approaches already in the market and how they might interact with AVs. AV's create the opportunity for many related policy and planning innovations from information systems for passengers, partnerships with public transit, specialized paratransit services, and reshaping of demand for transportation infrastructure. This panel will include a city leadership perspective on the opportunities and challenges presented by all of these changes that come with AVs. These changes may be more or less than the sum of their parts. A solution in one area may create a challenge in another, or some solutions may have economies of scale or scope that bring unexpected benefits. This panel will include a synthesizing discussion to explore how all of these changes may clash or may collude to change the fabric of transportation as we know it.

Organizer
Rachel Hiatt, San Francisco County Transportation Authority, United States
Moderator
Rachel Hiatt, San Francisco County Transportation Authority, United States
Speakers
Ken Buckeye, Minnesota Department of Transportation, United States
Adrian Moore, Reason Foundation, United States
Annie Nam, Southern California Association of Governments (SCAG), United States

SIS118 - Stop Waiting for Crashes to Occur: Video Analytics for Road Safety Analysis
Thursday 2 November 2017, 11:45 - 13:15 (513 DEF)
Topic: E. Integrated Approach: Planning, Operations and Safety

Every year, 1.25 million lives are lost through road traffic crashes. That is the equivalent of eight Boeing 747 planes crashing every day. Many cities in the world have adopted Vision Zero, acknowledging that traffic crashes are not accidents but preventable incidents. Why, then, the heavy reliance on historical crash data to understand how to prevent crashes? With recent advances in technology and video analytics, including developments in computer vision and machine learning, it has become easier to detect and quantify areas of risk before crashes occur. These advances present promising potential for wide-scale implementation and could significantly improve road safety. This session will explore various techniques for non-crash based road safety analysis, provide an overview of state-of-the-practice for surrogate safety analysis, highlight a partnership that leverages video analytics and machine learning systems to document traffic conflict events, highlight the application of surrogate safety measures in developing countries, offer details on a computer vision tracker that automatically identifies conflicts between road users in very low resolution video and uses thousands of hours of traffic video each week to continuously improve its artificial intelligence, and share results from deployments of automated safety analyses and continuous traffic monitoring on video collected from temporary traffic cameras and video streamed directly from connected cameras.

Organizer
Annie Chang, SAE International, USA
Moderator
Annie Chang, SAE International, USA
Speakers
Luis Miranda-Moreno, McGill University, Canada
Charles Chung, Brisk Synergies Tech Corp, Canada
Nicolas Saunier, Polytechnique Montreal, Canada
Ganesh Ananthanarayanan, Microsoft Research, USA

Thursday 2 November 2017

SIS119 - Allocation of Liability in Car Crashes of the Future
Thursday 2 November 2017, 11:45 - 13:15 (513 ABC)
Topic: A. Connectivity and Autonomy

As vehicle systems assume more and more responsibility for the driving task, the human occupants of the vehicle will see a corresponding decrease in liability for injuries and damage in the event of a crash. In the absence of special legislation, courts will apply traditional legal principles to increasingly complex arrangements involving jointly developed software dependent on external data sources. The prospect of having to eat a larger 'slice' of the proverbial liability pie is currently one of the biggest hurdles to the widespread deployment of connected and automated vehicle systems. With a focus on practical solutions for product developers, this session will feature legal and policy experts discussing how prevailing liability principles would apply to a crash involving an autonomous vehicle and explore possible regulatory alternatives to the status quo.

Organizer
Tom Mangenello, Warner Norcross & Judd LLP, USA
Moderator
Tom Mangenello, Warner Norcross & Judd LLP, USA
Speakers
Patrick Seyferth, Bush Seyferth & Paige PLLC, USA
Emily Frascaroli, Ford Motor Company, USA
James Derian, Delphi Automotive Systems, LLC, USA

SIS120 - Low Cost ITS and Big Data: A New Approach of Road Network Operation?
Thursday 2 November 2017, 11:45 - 13:15 (514 BC)
Topic: B. Infrastructure Challenges and Opportunities

The activities of the World Road Association (PIARC) are structured around a 4-year Strategic Plan. The current plan covers years 2016 to 2019 and encompasses 22 Technical Committees (TC) or Task Forces (TF) and among them the Technical Committee B.1 on Road network operations and ITS.PIARC members, road authorities and road operators, are keenly aware of the rapid development of Probe Vehicle and IoT (Internet of Things). Thanks to these new technologies an accurate and real-time knowledge of road network status is becoming possible and new services for the end-user will be available at low cost. However, these new technologies generate huge amount of heterogeneous data that need to be processed. This is supported by new approaches based on the concept of Big Data. The role of PIARC and especially to TCB1 is to explore in-depth these new paradigms and to facilitate the dialogue between stakeholders especially those of the world of OEM (Car manufacturers and equipment suppliers) and those of the world of infrastructure (Road Network operator, services providers etc.).In this session after a brief presentation of the Road Network Operation and ITS Web Manual, four speakers will present :- the concept of "Low Cost ITS" in its various aspects : technical and non-technical (costs and business model, value chain, legal aspects etc.)- the potential of Big Data for road network operation and the underlying challenges and chances.

Organizer
Jacques Ehrlich, ISFTTAR, France
Moderator
Valentina Galasso, BIP, Italy
Speakers
Jacques Ehrlich, ISFTTAR, France
Sylvain Belloche, Cerema, France
Martin Boehm, AustriaTech – Federal Agency for Technological Measures Ltd., Austria
Dieter Hintenaus, ASFINAG, Austria
Keechoo Choi, Ajou University, Korea

Thursday 2 November 2017

SIS121 - Integrated Corridor Management: Project Planning to Operations Lessons Learned
Thursday 2 November 2017, 11:45 - 13:15 (510 A)
Topic: E. Integrated Approach: Planning, Operations and Safety

The vision of Integrated Corridor Management (ICM) is that transportation networks will realize significant improvements in the efficient movement of people and goods through institutional collaboration and aggressive, proactive integration of existing infrastructure along major corridors. Through an ICM approach, transportation professionals manage the corridor as a multimodal system and make operational decisions for the benefit of the corridor as a whole. Through the ICM initiative, the U.S. DOT has been providing guidance to assist agencies in implementing ICM and creating supporting analysis tools, approaches, and technical standards. Several major ICM initiatives have been undertaken in different regions of the US. Additionally, similar Corridor Management initiatives have been undertaken internationally in countries like Canada, Australia, and the United Kingdom. These ICM initiatives have been undertaken at different levels of institutional, operational, and technical integration and are at various stages of the project lifecycle. This session offers a review of these initiatives and the lessons learned at various stages of the project lifecycle can provide a valuable reference for the planning and development of future ICM projects.

Organizer
Brad Hartwig, Ove Arup & Partners Ltd, United States of America
Moderator
Brad Hartwig, Ove Arup & Partners Ltd, United States of America
Speakers
Athena Hutchins, Niagara International Transportation Technology Coalition (NITTEC), United States
Andrew Weeks, New York City Department of Transportation, USA
Tim Gammons, Arup, United Kingdom
Joel Ticatch, Kapsch TrafficCom North America, United States
Susan Catlett, NJDOT, United States

SIS122 - Mobility as a Service for Rural and Small Urban Areas
Thursday 2 November 2017, 11:45 - 13:15 (510 C)
Topic: F. Disruption and New Business Models

The primary focus of Mobility as a Service (MaaS) systems has been on deployment in major urban areas. There are a limited number of deployments in rural and small urban areas, causing questions as to whether or not MaaS can be successful in these environments. Obviously, there are not as many transportation options in rural areas, making it more challenging to offer packages of services to meet customers' needs. This session will explore the potential to develop and implement MaaS in rural and small urban areas, and how these differ from MaaS in urban areas.

Organizer
Carol Schweiger, Schweiger Consulting LLC, United States
Moderator
Carol Schweiger, Schweiger Consulting LLC, United States
Speakers
Dwight Mengel, Tompkins County Dept. of Social Services, United States
Susan Zielinski, SMART (Sustainable Mobility & Accessibility Research & Transformation) at University of Michigan, United States
Hany Eldaly, MaaS Australia, Australia

Thursday 2 November 2017

SIS123 - Lessons Learned from International Collaboration in ITS
Thursday 2 November 2017, 11:45 - 13:15 (510 D)
Topic: G. Innovation, What's Next? The New Ideas

Governments around the world face similar challenges in ensuring safety, mobility, and sustainability. Through international ITS research exchange, participating nations and regions can learn from each other and improve their ability to address these challenges. Recent activities include both technical and policy research and have focused on security, standards, human factors, automated vehicles, and probe data…among other topics. In this session, leaders from several nations will discuss the role of international collaboration in their current research and deployment activities as well as their plans for the future. Lessons learned from international collaboration and the results of collaborative work will be discussed.

Organizer
Steven Dellenback, Southwest Research Institute, USA
Moderator
Richard Harris, HMI Technologies, UK
Speakers
Jane Lappin, Toyota Research Institute, United States
Johanna Tzanidaki, ERTICO, Belgium
Stephanie Leonard, European Commission – DG MOVE, Belgium

TS104 - Applying Technology to Assess Travel and Provide Safe Roadways
Thursday 2 November 2017, 08:15 - 09:45 (512 D)
Topic: D. Data, Security and Privacy

Moderator
Max Miwa, JAPAN, NEC Solution Innovator, Japan

AM-TP0948 - Wildlife Detection System
Ian Steele, PBX Engineering, Canada
AP-TP1118 - An Expressway Network Video Surveillance and Control System Integration Study
Zhongren Wang, California Department of Transportation, USA
AP-TP1194 - Auckland Over Height Detection System - Learnings from When ITS Isn't Enough
Dean Parker, Auckland Motorway Alliance, New Zealand
AP-TP1356 - Development of a Wireless Telemetry-Based Traffic Sensor Technology to Overcome the Lead Cable Breakage in AVC
Sang Hyup Lee, KICT, Korea

Thursday 2 November 2017

TS105 - CAV Deployment Issues: Part 1 of 2
Thursday 2 November 2017, 08:15 - 09:45 (511 C)
Topic: D. Data, Security and Privacy

Moderator
Ron Pati, WSP, USA

EU-TP0979 - Legalization for Automation: A Governmental Roadmap
Gerben Feddes, RDW, Netherlands
EU-TP1109 - Semi-Autonomous Vehicles in a Changing Transport Risk and Liability Environment
Cian Ryan, University of Limerick, Ireland
AM-SP1197 - Black Box, Trolley Problem and PrefixAI Machine Decision Based on Topology & Gödel's Incompleteness Theorem, Principles of Intelligent Infrastructure & Driverless Vehicle
Aiken Nijiantong, AEIO Laboratory, United States
EU-TP1261 - V2X - Beyond the Horizon
Oliver Brandl, Kapsch TrafficCom AG, Austria
AM-SP1267 - Assessment of Link Level Variation of Connected Vehicle Market Penetration
Mohammed Hadi, Florida International University, USA

TS106 - Safety of CAV Systems: Part 1 of 3
Thursday 2 November 2017, 08:15 - 09:45 (511 F)
Topic: A. Connectivity and Autonomy

Moderator
Cheol Oh, Hanyang University, Korea

AP-SP0893 - Influence of AR Visual Marker Type on Depth Perception When Using an Automotive 3D Head-Up Display
Ryo Noguchi, Keio University, Graduate School of Science and Technology, Japan
AM-SP0928 - The Disengagement Dilemma of Automated Vehicles
Christopher Flores, Sensys Networks, Inc, USA
AP-TP1161 - Effect of Haptic Guidance Control on Driving Maneuver After Transmission of Automated to Manual Driving
Kimihiko Nakano, The University of Tokyo, Japan
AP-TP1175 - Influence of Subtask in Driver Characteristics When Take-Over from Automated Driving
Kenta Takeda, Graduate School of Engineering and Science, Shibaura Institute of Technology, Japan
EU-TP1257 - Safety Homologation Process for Connected Automated Vehicles
Tom Jansen, Ricardo Netherlands BV, Netherlands

Thursday 2 November 2017

TS107 - ITS TSMO and Connectivity and Their Impacts on Transportation Agencies
Thursday 2 November 2017, 08:15 - 09:45 (512 A)
Topic: E. Integrated Approach: Planning, Operations and Safety

Moderator
Ken Philmus, Conduent Transportation, USA

AM-TP0878 - A Connected Region: Moving Technological Innovations Forward in the NITTEC Region
Athena Hutchins, Niagara International Transportation Technology Coalition (NITTEC), United States
AM-TP1105 - Pennsylvania's TSMO Program
Jeffrey Kupko, Michael Baker International, USA
AP-TP1217 - How ITS Will Transform Taiwanese Transport Services
Chien-Pang Liu, MOTC, Chinese-Taipei
AM-TP1262 - Delaware's History of Integrated Transportation Management Allows for Easy Transition to Emerging Transportation Technologies
Jennifer Duval, Jacobs, USA
AM-TP1285 - Integrating New Intelligent Transportation Systems Technology into Agency Business Practices
Matthew Smith, Michael Baker International, United States

TS108 - Exploring the MaaS Eco-System from Payments to Shared Mobility
Thursday 2 November 2017, 08:15 - 09:45 (512 B)
Topic: F. Disruption and New Business Models

Moderator
Liam Fassam, Institute of Logistics, Infrastructure, Supply & Transformation Travel. University of Northampton, United Kingdom

AM-TP0849 - Bringing Mobility as a Service to the United States: Accessibility Opportunities and Challenges
Carol Schweiger, Schweiger Consulting LLC, United States
AP-TP0936 - An Integrated Shared Mobility Service in Shanghai and Its Mobile App Design
Lei Wang, Tongji University, China
EU-SP0980 - Procuring Mobility as a Service: Exploring Dialogues with Potential Bidders in West Sweden
Göran Smith, Chalmers University of Technology, Sweden
AP-TP1112 - Mobility Marketplace
Martin McMullan, NZ Transport Agency, New Zealand
AP-TP1226 - Purchasing Power Reflecting Movement Data
Tomohito Kanzaki, East Japan Railway Company, Japan

Thursday 2 November 2017

TS109 - Detection Technologies for Asset Management
Thursday 2 November 2017, 08:15 - 09:45 (512 C)
Topic: B. Infrastructure Challenges and Opportunities

Moderator
Andrew Heath, Georgia Department of Transportation, USA

AP-TP0874 - The Virtual Reality Inspection Training for Power Reception and Distribution Facilities at Expressway
Junichi Itou, Central Nippon Highway Engineering Nagoya Co., Ltd., Japan
AP-SP0995 - Improvement of the Crack-Growth Detection Model Eliminate Interference Zones and Classify by Logarithmic Functions
Xiaoming Zhang, Tongji University, China
AP-TP1196 - Investigation of On-Board Sensing Technology for Use in Road Management Task
Kazunori Ooshima, National Institute for Land and Infrastructure Management (NILIM), Japan
AM-SP1326 - All About the Road: Detecting Road Type, Road Damage and Road Conditions
Nikitha Poddatur, Carnegie Mellon University, USA

TS110 - Infrastructure-Based Safety Systems and the Applications
Thursday 2 November 2017, 10:00 - 11:30 (510 D)
Topic: B. Infrastructure Challenges and Opportunities

Moderator
René Marcouiller, CIMA+, Canada

AP-TP0813 - A Study on Assistance for Safe Driving at a Crossing with No Traffic Lights
Shintaro Uno, Aichi University of Technology, Japan
AP-TP1125 - Preliminary Experiments on Analysis for Evaluation of Standing-type Personal Vehicle
Naohisa Hashimoto, AIST, Japan
AM-TP1128 - Using Technology to Improve Safety at Rural Stop Controlled Intersections: Rural Intersection Conflict Warning Systems in Minnesota
Brian Scott, SRF Consulting Group, Inc., USA
AP-SP1205 - Economics of Lane-Departure Prevention Technologies: Benefits Resulting from Reduced Traffic-Accident Losses and Effects of Mandatory Installation Policies
Hiroaki Miyoshi, Doshisha University, Japan
AM-SP1248 - Evaluation of Freeway Merging Assistance System Using Driving Simulator
Joyoung Lee, New Jersey Institute of Technology, USA
AM-TP1321 - Bridge Slippery Conditions Advisory and Deicing Systems – An Extensive Pilot and Comparative Study
Frederic Champagne, Ministère des Transports du Québec (Ministry of Transportation of Quebec), Canada

Thursday 2 November 2017

TS111 - Developments in Tolling Technologies and Processes
Thursday 2 November 2017, 10:00 - 11:30 (512 D)
Topic: A. Connectivity and Autonomy

Moderator
Takenaka Masahiko, Mitsubishi Heavy Industries Machinery Systems, Ltd., Japan

AP-TP0941 - Application of Radio Frequency Identification Technology to Toll Collection System
Kazuyoshi Kitajima, Mitsubishi Heavy Industries, LTD., Japan
AP-TP1049 - Evaluation of DSRC Antenna for Multi-Lane Free Flow on Toll Road
Hirokazu Misu, Nippon Expressway Research Institute Company Limited, Japan
AP-TP1174 - Improvement of Automatic Toll Collection Machine
Kaito Hattori, Mitsubishi Heavy Industries, LTD., Japan
AM-TP1245 - Mobile Tolling Services
Thomas Siegl, Kapsch TrafficCom, Austria

TS112 - CAV Deployment Issues: Part 2 of 2
Thursday 2 November 2017, 10:00 - 11:30 (511 C)
Topic: A. Connectivity and Autonomy

Moderator
Amy Guo Haggart, Newcastle University, United Kingdom

EU-TP0868 - V2X Communication Enabling New Service Concepts
Mikko Tarkiainen, VTT Technical Research Centre of Finland Ltd., Finland
AP-TP1035 - Report on Public–Private Joint Research for the Possibility of C-ITS on Expressway Merging Sections
Satoshi Sawai, National Institute for Land and Infrastructure Management (NILIM), Ministry of Land, Infrastructure, Transport and Tourism (MLIT), Japan
EU-TP1150 - How Would the Introduction of Connected and Autonomous Vehicles Impact on Highway Infrastructure and Its Operation?
Gareth Ledsham-James, Arup, United Kingdom
AP-TP1159 - Study on Possibility of Detecting Look-ahead Information for Automated Driving
Shin Sakaki, NILIM, MLIT, Japan
AM-TP1164 - The Case for Alternative Business Models for Funding V2I Deployments
Matthew Smith, Michael Baker International, United States

TS113 - Safety of CAV Systems: Part 2 of 3
Thursday 2 November 2017, 10:00 - 11:30 (511 F)
Topic: A. Connectivity and Autonomy

AP-TP0939 - Trend Analysis at Potential Incidents by Fleet Vehicle with Probe Data
Yukio Shikatani, Panasonic Corporation, Japan
EU-TP0953 - Safety Requirements for Automated Driving Testing on Spanish Public Roads
Álvaro Arrúe, APPLUS+ IDIADA, Spain
AP-TP1008 - Multivariate Analysis of Drivers Biological Effects of Differences in Driving Simulator Characteristics
Kota Torii, Aichi Prefectural University, Japan
EU-TP1132 - New Safety & Security Methodologies Required for Connected Automated Vehicle Development
Eric Chan, Ricardo, United Kingdom

Thursday 2 November 2017

TS114 - Smart City Mobility
Thursday 2 November 2017, 10:00 - 11:30 (512 A)
Topic: C. Smart(er) Cities

Moderator
Sami Sahala, Forum Virium Helsinki, Finland

EU-SP0800 - ITS Service Life Cycle Seen from an Impact Evaluation Point of View
Trond Foss, SINTEF Transport Research, Norway
AM-TP0895 - Car Free Earth Day for New York City 2016 - Modal Choice and Retail Impact Assessment
Andy Taylor, Cubic Transportation Systems, United Kingdom
EU-TP0897 - Enabling Traveler Choices Through Integrated Multi-Modal Real-Time Information and Journey Planning
Ken Karnes, Cubic Transportation Systems, USA
AM-TP1127 - Interoperability! Myth or Reality?
Isabelle Lessard, City of Montreal, Canada
EU-TP1186 - Intelligent Traffic Solutions for Sustainable Urban Mobility in Copenhagen
Mads Gaml, City of Copenhagen, Denmark

TS115 - Using Predictive Technologies Across the Spectrum of ITS
Thursday 2 November 2017, 10:00 - 11:30 (512 B)
Topic: E. Integrated Approach: Planning, Operations and Safety

Moderator
Mohammed Hikmet, HMI Technologies Limited, New Zealand

AP-SP0793 - Short-Term Traffic Flow Prediction Using Deep Learning Algorithms
Xuxin Chu, Beijing University of Technology, China
AP-TP0799 - Advanced Predictive Technology, Analyze Stop/Deceleration Positions for Predictive Efficient Drive
Toru Sakamoto, AISIN AW Co., Ltd., Japan
AP-TP0851 - Development of a Real-Time Traffic Congestion Prediction System Based on Vehicle Data
Tatsuo Yamamoto, YAZAKI Energy System Corporation, Japan
AP-TP0920 - Research and Application of Traffic Law Enforcement Supervision and Early Warning Based on Large Data Analysis Model
Wanhua Luo, China Academy of Transportation Sciences, China, China
AM-SP1088 - WIMAP-P: A Work Zone Impact Prediction Tool Using Big Data Analytics
Steven Chien, New Jersey Institute of Technology, USA
AP-SP1227 - Bus Arrival Time Prediction: A Deep Learning Approach
Monsak Socharoentum, National Electronics and Computer Technology Center (NECTEC), Pathum Thani, 12120, Thailand

Thursday 2 November 2017

TS116 - Transit Service Performance
Thursday 2 November 2017, 10:00 - 11:30 (512 C)
Topic: C. Smart(er) Cities

Moderator
Peeter Kivestu, Teradata, United States

AM-SP0764 - Exploring the Feasibility of Bluetooth and Wi-Fi Technologies for Measuring Transit Passengers Wait-Times and Origin-Destination Travel Times
Brian Park, University of Virginia, USA
EU-TP1055 - Free Rail Tickets: Using Bluetooth and WiFi Sensor Network Tracking Data to Estimate Impact on Passenger Flows
Kristian Hegner Reinau, Department of Civil Engineering, Aalborg University, Denmark
AM-TP1283 - Using Open GTFS and GTFS Real-Time Data to Measure Transit Agency Performance
Ritesh Warade, IBI Group, United States of America

TS117 - Innovative Applications of Probe Data
Thursday 2 November 2017, 11:45 - 13:15 (512 D)
Topic: B. Infrastructure Challenges and Opportunities

Moderator
Mariko Okude, Hitachi, Ltd., Japan

AP-TP0830 - Efforts to Enhance Service Quality on Expressways by Using Big Data
Kazuyuki Murakami, Nexco-East Innovation & Communications Company Limited, Japan
AP-TP0942 - Congestion Control Study using ETC 2.0 Probe Data, Operation of Temporary 2-lanes at Ebina JCT
Takashi Yamamoto, Central Nippon Expressway Company Limited, Japan
AP-SP1081 - Analysis of Vehicle Speeds on Two-Way, Two-Lane Motorways Using Probe Data
Yoshiyasu Murashige, Japan Expressway Technical Research Institute, Inc., Japan

TS118 - Travel Time Estimation
Thursday 2 November 2017, 11:45 - 13:15 (511 C)
Topic: C. Smart(er) Cities

Moderator
Masahiko Ikawa, Mitsubishi Electric Corporation, Japan

AM-TP0777 - Travel Time Reliability Study in Calgary Using the Crowdsourcing Technique
Shahram Tahmasseby, The City of Calgary, Canada
AP-SP0963 - Application of Pattern Matching to Short-Term Prediction of Speed with Combination of Probe Cars and Traffic Detectors
Masaki Imai, Nippon Expressway Research Institute Company Limited, Japan
AM-TP1037 - Monitoring Arterial Mobility Performance via Bluetooth/Wi-Fi
Ken Yang, AECOM, USA
AP-TP1062 - Estimation of Road Travel Time Based on the Surveillance Vehicle Data
Yong Yao YANG, Supcon Information Technology Co Ltd, China

Thursday 2 November 2017

TS119 - Safety of CAV Systems: Part 3 of 3
Thursday 2 November 2017, 11:45 - 13:15 (511 F)
Topic: A. Connectivity and Autonomy

Moderator
Huei-Ru Tseng, Industrial Technology Research Institute / Taiwan Association of Information and Communication Standards, Chinese-Taipei

AP-TP0832 - Accident Analysis and Proposed Prevention Strategies with Connected Motorcycle
Wei-Lun Hsiao, National Taiwan University, Chinese-Taipei
AP-TP0989 - Implementation of In-Vehicle Traffic Light with a Real Car Based on Vehicle-to-Infrastructure Communication
Bo Yang, The University of Tokyo, Japan
AP-TP1054 - Proposal on Cooperative ITS for Safe and Sustainable Transportation in Japan
Koichi Sakai, Institute of Industrial Science, The University of Tokyo, Japan
AM-TP1177 - Sharing Real Time Signal Data for Connected Vehicles Applications in Washington D.C.
Rakesh Nune, DDOT, United States

TS120 - Traffic Monitoring
Thursday 2 November 2017, 11:45 - 13:15 (512 A)
Topic: C. Smart(er) Cities

Moderator
Mike Barnet, CIMA+, Canada

AP-SP0970 - Road Use Pattern Mining Based on Traffic Detection Data
Zhiyong Liu, Tsinghua University, China
AM-TP1100 - Data Mining for Traffic Monitoring: Using Signal Logs to Analyze Operations
Joshua Fink, Macomb County Department of Roads (AECOM), USA
AM-SP1343 - Analysis of LoRaWAN Technology for Traffic Sensing Applications
Samarth Mathur, Carnegie Mellon University, United States

TS121 - Innovative Asset Management Strategies
Thursday 2 November 2017, 11:45 - 13:15 (512 B)
Topic: B. Infrastructure Challenges and Opportunities

Moderator
Brent Becker, Southwest Research Institute, USA

AM-SP0808 - Evaluating the Possibility of Using Markov Analysis Method for Predicting Highway Bridge Condition Rating
Alireza Jamalipour, Western New England University, USA
AM-TP0810 - Conceptual Approach to Proactive Appraising and Forecasting Cost of Major Bridge Rehabilitation
Alireza Jamalipour, Western New England University, USA
AM-TP0926 - Generating Cost Savings Through Effective Management of Infrastructure in the Public Right-of-Way
Nicholas Vanderzwan, Collins Engineers, Inc., USA
AP-TP1074 - Infrastructure Challenges and Opportunities – Asset Management
Henry Wu, JYW Consulting, Australia

Thursday 2 November 2017

TS122 - Regional Planning and Project Prioritization Strategies
Thursday 2 November 2017, 11:45 - 13:15 (512 C)
Topic: B. Infrastructure Challenges and Opportunities

Moderator
Jennie Martin, ITS United Kingdom, United Kingdom

AP-SP0757 - Issues and Challenges for Implementing PPP in China 13-5 Urban Transport
Edmond Chang, EDCPC, Inc., USA
EU-SP0959 - Aligning Transport Authorities Needs with Real Solutions
Akbar Rahman, InterDigital Europe, Canada
AM-TP1327 - Toward an Intelligent Forestry Transportation System Architecture for Canada
David Michelson, University of British Columbia, Canada

ITS WORLD CONGRESS 2017

Montréal | OCTOBER 29 - NOVEMBER 2

Next Generation Integrated Mobility: Driving Smart Cities

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Welcome

Welcome to the International ITS Community,

I am thrilled that Montréal is hosting the 24th Intelligent Transportation Systems World Congress… we welcome you: Bienvenue à Montréal!

As Chair of the Organizing Committee for the Congress, I can attest to the enormous efforts that have been made since 2013 by all members of the ITS communities of the Americas to deliver this event in the pattern of excellence expected by our industry colleagues. We will be relentless in our attention to make sure that your participation will be a memorable experience for both the technical knowledge that you will acquire in the coming days and the connections that you will establish from around the world.

As a city transportation officer in Montréal, I strongly believe that the mobility of today and tomorrow belongs to the digital world and that data is taking a prominent place. We need to find common solutions to prevent possible pitfalls—to avoid reinventing the wheel—so that we do not waste valuable resources and energy…and save time and money.

Next Generation Integrated Mobility: Driving Smart Cities is the theme for the ITS World Congress 2017. A highlight of the event within the Exhibit Hall will be the Smart Cities Pavilion, a lynchpin collection of dynamic exhibitions highlighting some of the world's best examples of Smart City solutions. In addition, we have created a 'technology demonstration showcase' adjacent to the convention centre. A wide range of technologies will be on display, including connected and autonomous vehicles, sensor technology, parking automation and management, advanced traffic control devices, etc. In many cases, prototype connected or automated vehicles will be available for attendees to experience firsthand, including an arterial loop that will demonstrate V2I through DSRC technology integrated with local traffic signal controllers.

In the tradition of ITS World Congress, plenary, scientific, technical, commercial, and interactive sessions have been included in the program—more than 250 sessions at last count—and more than 300 confirmed exhibitors will be showcasing their exciting products and services in Viger Hall. During Procurement Day, linking solution providers with public sector operators will benefit both parties by providing the best solutions to meet user needs. Various member agencies from four regions—the Americas, Asia-Pacific, Europe, and the Middle East—will describe future ITS procurement and timelines. To compliment this, B2B One-on-Ones will follow Procurement Day to help link businesses together where smaller companies have been unable to connect with the right people within larger corporations.

As a Congress participant, you are in for a special treat at the Palais des Congrès. Located in the heart of the city centre, at the convergence of Old Montréal and the Quartier International, the Palais has a reputation second to none in its ability to hold such large-scale events and it is your gateway to the city. Montréal is a multicultural metropolis that encompasses two great cultures—English and French—providing a blend of European flair and a North American can-do attitude. It is well known for its cultural and sporting events, gastronomy, entertainment, architecture, innovation and, of course, for the warm hospitality of Montréalers, especially as this year the city celebrates its 375th anniversary and our Canadian Confederation celebrates its 150th anniversary.

To all participating at the Congress, let it be known that your contributions during the event are critical to ensuring safer and better transportation solutions for all! And for all the members of the Organizing Committee, I sincerely thank you for your great efforts in making this 24th edition of the Congress another success story as a result of the international collaboration of our three ITS regions.

Enjoy the Congress!

Claude Carette
Director of Infrastructure, Roads and Transportation - City of Montréal
Chair, ITS World Congress 2017 Organizing Committee

Welcome to the 24th Intelligent Transportation Systems World Congress!

This event, produced by ITS America in conjunction with ITS Canada and co-organized by ERTICO-ITS Europe and ITS Asia-Pacific, builds on the knowledge, insights, and advancements made since we met last year in Melbourne. As is customary, thousands of people—academics, researchers, policymakers, businesses, entrepreneurs, investors, implementers, and the media—from the transport, automotive, telecommunications, and technology sectors will gather to seek and share solutions in an attempt to address the very real challenges facing our mobile, connected societies today and in the future.

The exchange of ideas will be ever present as we see, hear, and experience the latest innovative concepts, active prototypes, and live systems throughout the event, including at the highly anticipated Smart Cities Pavilion. A special feature of this year's Exhibit Hall, the Pavilion will showcase Smart Cities from around the world through discussions on and displays of how policy can advance the future of integrated mobility and how technological solutions and the Internet of Things are rapidly changing metropolitan areas. The City of Montréal will offer evidence of this as it highlights some of its active innovations and becomes a live testbed, featuring street demonstrations of connected and autonomous vehicles, sensor technology, parking automation and management, advanced traffic control devices, and more.

Between these dynamic experiences and those available through the plenaries, Technical Tours, B2B One-on-Ones, Procurement Day, Gala and, of course, the Exhibit Hall, ITS World Congress 2017 promises everyone who participates an opportunity to significantly benefit. For this and more I wish to thank the dedicated staff and leadership of ITS Canada, ERTICO-ITS Europe, and ITS Asia-Pacific as well as the leadership and staff of ITS America for ensuring this year's event continues a pattern of excellence expected by our ITS industry colleagues.

David St. Amant
Interim President and Chief Executive Officer, ITS America

As chair of ITS Canada, it is my pleasure to welcome you to Montréal for the ITS World Congress from October 29 to November 2, 2017. We are very glad you came and invite you to celebrate with us.

The theme of the conference is Next Generation Integrated Mobility: Driving Smart Cities, which provides the perfect opportunity to showcase the City of Montréal as both a Smart City and one that boasts a transportation system that exemplifies integrated mobility. You will find examples of integrated mobility abound around the conference, from renting bicycles to explore the shores of the St. Lawrence River to car share opportunities. Be sure to get an Opus card as this single resource allows you to travel to and from the conference as well as around the City on your selection of several modes of transportation.

Be sure, as well, to visit the Smart Cities Pavilion where experts from the City of Montréal and others around the globe will present advancements in the integration of technologies and information to assist in providing optimum service to citizens and businesses. Smart Cities are the future, and the ITS World Congress is the place to learn more about them.

The ITS industry in Canada is thriving. Montréal is home to a wide range of ITS projects where technology has been harnessed to improve safety, reduce congestion, improve the flow of goods, and maximize the use of the transportation system. In fact, Canada is host to many other examples of ITS projects and systems across the country, from safely managing some of the heaviest traffic flows in North America to establishing some highly recognized programs dedicated to the advancement of Automated and Connected vehicles. We are proud of our accomplishments and are very optimistic about our future in ITS. We encourage you to check out the many Technical Tours available throughout the World Congress to see first-hand some of these projects.

Not only are we celebrating the conference—and all the amazing and informative events, displays, pavilions, and sessions—but 2017 also marks the 150th anniversary for Canada, the 375th anniversary for the City of Montréal, and ITS Canada's 20th anniversary! You won't want to miss a minute of the World Congress, but please think about coming early and staying after to help us celebrate Canada and the City of Montréal.

Venez célébrer avec nous!

Chris Philp,
Director, Transportation, CIMA+
Chairman and Chief Executive Officer, ITS Canada

Welcome

On behalf of ERTICO–ITS Europe and its partners, I would like to welcome you all to the 24th ITS World Congress in Montréal.

The theme of this year's World Congress—Next Generation Integrated Mobility: Driving Smart Cities—couldn't be more relevant. As more and more people move daily into cities, we need smart solutions to ease their journeys, make them safer, and more efficient. The Smart Cities Pavilion in the exhibition area will present some of the star cities worldwide that adopted or are developing smart mobility solutions through national policies, infrastructure developments, transport-sharing schemes, and technology advancements.

ITS World Congress is the opportunity to get in touch with fellow professionals from the transport, automotive, telecommunications, and technology sectors and to find out more about megatrends such as connected and automated driving, data, security and privacy, transport operation planning, and new mobility models and services.

In Montréal, through more than 250 sessions and workshops, we will engage in debates on the challenges of our society, such as congestion, accessibility, and environmental needs, and how ITS support can overcome them. As representative of the European ITS community, ERTICO is very much looking forward to this event and to learning more about the multicultural City of Montréal and its outstanding developments in the mobility sector.

ERTICO–ITS Europe is proud to co-organize this event with our partners ITS Canada, ITS America, and ITS Asia-Pacific to continue strengthening our cooperation in deploying and promote intelligent transport systems and services around the globe.

Jacob Bangsgaard
CEO, ERTICO-ITS Europe

On behalf of ITS Asia-Pacific, I would like to welcome you to the 24th ITS World Congress in Montréal.

We are now opening the doors to a totally new realm of mobility. Both technological and social innovations keep evolving and rapidly penetrating our society.

Innovative on-board technologies combined with cooperative systems are further integrated with global cloud systems to realize Connected and Automated vehicles. The boundary between public transportation and personally driven cars is becoming blurred under the concept of Mobility as a Service, where large scale car sharing is integrated as a part of urban transportation systems.

Highly automated vehicles will significantly reduce traffic accidents and congestion. Application of those technologies to public transportation and freight operation will provide our society with higher efficiency. Innovative mobility services will dramatically enhance accessibility to a variety of opportunities, which will contribute to a more inclusive society, where diverse people in diverse communities actively participate in enhancing both wellness of individuals and economic development.

However, technologies alone will not bring about solutions. We need to take an integrated approach, combining state-of-the-art technologies with social innovations. This is where the concept of Smart Cities enters.

Under the theme of Next Generation Integrated Mobility: Driving Smart Cities, the ITS World Congress in Montréal is exactly where you will find experts from industries, academic societies, and government agencies deeply involved in creating the new realm of transportation.

I hope the ITS World Congress Montréal will trigger a massive process of creating Smart Cities.

Hajime Amano
Secretary General, ITS Asia-Pacific

Welcome to Montréal for the ITS World Congress 2017! You are visiting Canada's second largest city at an auspicious time. Montréal is celebrating its 375th anniversary this year—an occasion that allows the residents of this city to reflect on the path forward and its rich history, which is built on its colonial legacy as well as the indigenous people who lived on the island before that.

Today, this city pulses with the vibrant energy and creativity of its diverse and highly skilled workforce. That's why Montréal has become a destination for people from around the world who have made this city a global hotbed for innovation, especially in the fields of artificial intelligence, simulation technologies, aerospace, entertainment software, and electric vehicles.

At this conference, you will meet entrepreneurs, innovators and community builders who, through their partnerships, are dissolving the lines that separate traditional sectors such as transportation and telecommunications. Think about today's cars and jets, which increasingly have more computer chips and software in them than smartphones do. In fact, as the lines separating cars and computers dissolve, Canada is where many of the enabling technologies for self-driving cars are being developed. As a result, brand new industries are being created, which result in better jobs and opportunities for everyone.

The Government of Canada has a bold plan to support the research, development, and adoption of enabling technologies, such as artificial intelligence and quantum computing. These technologies have the potential to shape the future of transportation and communication. Canada owes its success to the optimism, ambition, and risk-taking of generations of innovators and entrepreneurs from around the world who have found in this country a place to fulfill their potential.

Our country benefits from the talent and hard work of newcomers, who contribute by creating jobs, opportunity, and prosperity for Canadians. We are a better country as a result. I hope that, as you learn from each other at this conference, you will consider Canada a destination where you can turn your big ideas into innovative solutions.

The Honorable Navdeep Bains
Minister of Innovation, Science and Economic Development of Canada

---

On behalf of the Government of Canada, I am delighted to welcome you to the 24th World Congress on Intelligent Transportation Systems.

I am pleased to see that this gathering is taking place in my home City of Montréal. It's a big year for us: 2017 marks the 375th anniversary of the founding of Montréal as well as the 150th anniversary of Canada's Confederation.

As Canada celebrates its past and looks to the future, the theme of the conference–Next Generation Integrated Mobility: Driving Smart Cities–fits in well with our government's efforts to foster innovation. We know that the future of transportation will involve smart vehicles on smart roads in smart cities, and we are taking significant actions to make our transportation system in Canada work better, smarter, cleaner, and safer. Our ultimate goal is a modern, highly integrated transportation system in which all modes can talk to each other and coordinate their activities. This is where intelligent transportation systems play a key role.

Technology is changing the way people work and live. The Government of Canada is working with industry to test new transportation technologies like connected and automated vehicles, zero emission vehicles, and drones. We are funding new physical infrastructure. We are also investing in transportation information infrastructure. These innovations will not just improve transportation; they will ultimately transform our way of life.

I wish you a very successful Congress!

The Honourable Marc Garneau
Minister of Transport of Canada

Welcome

The arrival of the 21st century brought to Québec and the rest of the world a wave of change whose scale we are only just beginning to appreciate. In this new world, our government's goal has been to foster the modernization of the sectors that drive our economy, as well as the emergence of new niches of excellence.

In short, we have made innovation a priority. It is by supporting our researchers and businesses in finding solutions to the challenges of our day that we will enhance Québecers' quality of life. To do so, we need to rethink our modes of transportation and optimize the mobility of people and goods—actions that hinge on new technologies.

Over the past three years, we have unveiled the ambitious Transportation Electrification Action Plan. Québec is one of the world's largest producers of hydroelectricity. In using this clean energy to power our transportation, we are at once preserving our environment and securing our prosperity. Our government has also established an industrial cluster for electric and smart vehicles. In Québec, upwards of 60 companies rely on this industry for their operations, which is mobilizing a wide range of actors to work concertedly.

The 24th edition of the Intelligent Transportation Systems Congress is the perfect opportunity to further explore this sector of the future and consolidate our leadership. And having just inaugurated this past spring the Institute for Electrification and Intelligent Transportation—formally known as the Institut de l'électrification et des transports intelligents—what better place than Montréal to host this gathering. In just a few years, moreover, this city will bring to life the world's fourth-largest automated public transit network, the 67-kilometre Réseau électrique métropolitain. It is one of Québec's most innovative and ambitious projects to date.

In closing, I wish you all a warm welcome to our city, which is celebrating its 375th anniversary this year. Have a great time at the Congress!

Philippe Couillard
Premier of Québec

Welcome to Montréal!

It gives me great pleasure to welcome the 24th ITS World Congress to our metropolis as we celebrate the 375th anniversary of our founding. This anniversary is an opportunity for Montréalers to both reconnect with their past and look toward the future. And this future, for us as for many other cities, will involve intelligent mobility.

Over the past few years, Montréal has made a major shift in response to the imperatives of sustainable development and the energy transition. At the same time, we have put in place an impressive program to transform Montréal into a smart digital city. The results of these various initiatives are particularly noticeable in the transportation domain. Reducing congestion, increasing the use of public transit and active mobility, reducing greenhouse gas emissions and making our roads safer: these are challenges that most cities are facing.

In Montréal, we have chosen to address each of these challenges by relying on innovation, research and collaboration, three characteristics that define smart cities. Your participation in the ITS World Congress 2017 will give you an opportunity to familiarize yourself with some of our made-in-Montréal intelligent mobility initiatives, such as our Bixi network of self-service bicycles or our Centre for the Management of Urban Mobility (the CGMU), which centralizes all traffic information.

You will also see that Montréal innovates on all fronts of intelligent mobility, particularly in transport electrification. At this very moment, we are installing some 400 roadside charging stations. The first 100% electric buses have begun rolling in our streets and, in four years' time, a large part of the Island of Montréal will also be served by an electric light rail system, the "Réseau électrique métropolitain" or REM, which will include 27 stations and will be connected to the Montréal Métro (subway).

To augment innovation and research, we have established the Institute for Electrification and Smart Transportation, which has a mandate to foster greater synergy between sustainable mobility partners in the field of research and development and stimulate the marketing of innovations. With the work of the Institute, the know-how of our businesses and the expertise of our universities and research centres, Montréal is positioning itself as a fertile ground for innovation and urban experimentation.

Last year, Montréal was awarded the "Intelligent Community of the Year" prize by the Intelligent Community Forum, an independent association dedicated to the development of smart cities. Holding the ITS World Congress 2017 in Montréal will therefore be an opportunity to show you how we apply the principles of the smart city to urban mobility. This will also be an opportunity for our designers, partners and local businesses to discuss with leaders from the entire world their diverse experiences of intelligent and sustainable mobility.

I hope with all my heart that this important Congress, with its discussions and exchanges, will allow us to create even more links with cities across the world. Because collaboration is the key to innovation.

Enjoy your stay in Montréal and have a great Congress!

Denis Coderre
Mayor of Montréal

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Sunday 29 October	7:00 – 18:00
Monday 30 October	7:00 – 17:00
Tuesday 31 October	7:00 – 16:30
Wednesday 1 November	7:00 – 17:00
Thursday 2 November	7:00 – 17:00

Exhibit Hours (tentative, subject to change)

Monday 30 October	11:00 – 18:30
Tuesday 31 October	9:00 – 18:30
Wednesday 1 November	9:00 – 18:00
Thursday 2 November	10:00 – 15:00

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Sunday 29 October	9:00 – 18:00
Monday 30 October	7:00 – 17:00
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Sunday 29 October	8:00 – 17:00
Monday 30 October	7:30 – 19:00
Tuesday 31 October	7:30 – 19:00
Wednesday 1 November	7:30 – 19:00
Thursday 2 November	7:30 – 17:30

Access to Papers & PPTs

In early October 2017, a link and password to access the technical and scientific papers will be/was emailed to all registered attendees of the World Congress. Select speaker presentations will be made available on the ITS World Congress 2017 website soon after the event closes. Your unique registration confirmation number will be required in order to access these presentations. This confirmation number was provided as part of your registration letter (listed below the barcode). If you have any questions regarding your confirmation number, please contact customer service at 800-424-5249 (domestic) or 847-996-5829 (international).

Associated Organizations' Meeting Schedule

Participation in the following meetings is governed by the host organization(s). Please check with a host organization representative or the Registration Desk for details prior to the meeting to inquire about participation details.

AASHTO International Day
Sunday 29 October | 8:00 - 12:00
Room 516C

Now in its 14th year as an integral part of the ITS World Congress, AASHTO International Day—presented by the American Association of State Highway and Transportation Officials and National Operations Center for Excellence (NOCOE) in partnership with the Transportation Association of Canada (TAC)—brings together transportation officials from around the world to take on topics of consequence addressing the transportation challenges and opportunities facing public agencies. All who are participating in the ITS World Congress are welcome to attend this event! The 14th Annual AASHTO International Day (AID) has as its purpose:

To seek the perspective of policy experts and practitioners representing each of the three ITS regions (ITS America, ITS Europe (ERTICO), and ITS Asia Pacific) on the state of art of integration of technology and infrastructure operations.

The 2015 ITS World Congress AASHTO International Day was dedicated to an information exchange on infrastructure readiness for connected and automated vehicle (CV/AV) initiatives. At the 2016 ITS World Congress AASHTO International Day experts discussed on the importance of integrating and adapting current ongoing ITS deployments and operations with the CV, AV and other emerging technologies.

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General Event Information

This year's event shifts to focused peer-exchange sessions on the range of current CAV deployments, pilots and initiatives now taking place around the United States, Canada, and internationally with specific attention to:

1. Policies and Programs to support CV and AV Deployment with specific emphasis on Government relations, Institutional Framework, and Infrastructure owner and operator roles.
2. CV and AV Technical programs and field deployment initiatives including CV and AV pilots, testing and reporting results, planning level scenarios, Research and Development to integrate current and upcoming technologies to mainstream ITS, CV and AV systems, Standards, Cyber Security, Privacy and Security Certificate Management Systems.

CEO Meeting
Sunday 29 October | 8:00 - 9:00
Room 524A

ITS America State Chapters Meeting
Sunday 29 October | 10:00 - 12:00
Room 510C

ITS Region Board Meetings
Sunday 29 October I 10:30 - 11:30

Americas – Room 521B

Asia Pacific – Room 524A

ERTICO – Room 522A

ITS America Board of Directors Lunch
Sunday 29 October | 12:00 - 12:30
Room 510C

ITS America Board of Directors Meeting
Sunday 29 October | 12:30 - 14:30
Room 510C

ITS Canada Board Meeting
Sunday 29 October | 16:30 - 17:30
Room 510C

ITS Canada Membership Meeting
Sunday 29 October | 17:30 - 19:30
Room 524B

ITS Annual Membership Meeting
Sunday 29 October | 16:30 - 17:00
Room 516C

ITS America's mission is "to create a policy environment that drives ITS and IoT development and deepens industry engagement." The organization facilitates collaboration between private companies, public agencies, research institutions, and academia while informing the public about the importance of intelligent transportation systems. Its advocacy translates business objectives into policy, creating market opportunities through legislative and regulatory initiatives, grassroots coalition building, educational efforts, policy-aligned conferences and programs, and standards development. Join ITS America leadership for this informative and interactive meeting, where members will learn more about and be invited to offer input and feedback on the organization's current and future priorities.

VIP Dinner (Invitation Only)
Monday 30 October | 19:00
Théâtre St-James, 265 St Jacques St,
Montreal, QC H2Y 1M6, Canada

sponsored by

ITS Nationals Meeting
Wednesday 1 November | 4:00 - 16:00
Room 524B

ITS National Associations are invited to participate in this session where the theme of ITS World Congress 2017 -- Integrated Mobility Driving Smart Cities -- will be explored. A research project on this topic will be presented by a team of graduate students led by Dr. Catherine Morency. Following the presentation will be an open discussion involving all attendees. Shortly after the Congress concludes, the research team will publish a report on their findings, including feedback from the National Associations at this session.

World Congress Board Meeting
Thursday 2 November | 17:00 - 18:30
Room 525B

Tourist Information

Tourisme Montréal is delighted to welcome ITS World Congress 2017 attendees and has provided general information about Montréal, ideas for fun free-time activities, and tips on getting to and around the city: http://its.alaMontréal.com.

Persons with Disabilities

Establishments have been assessed by Kéroul, an organization devoted to making tourism and culture accessible to persons with limited physical ability, according to criteria approved by the Ministère du Tourisme du Québec. To find out more on tourism and culture for people with restricted physical ability 514-252-3104 (phone) or www.keroul.qc.ca.

Climate

The average temperature in Montréal in the Fall is 9.2°C (48.6°F).

Time

Montréal switches to Eastern Daylight Time (summer time zone) on the second Sunday of March and returns to Eastern Standard Time (winter time zone) on the first Sunday of November. The time difference between Montréal time and Greenwich Mean Time is less than 5 hours in the winter.

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General Event Information

Currency

Canadian currency is the dollar, which is divided into 100 cents. There are 5, 10, 20, 50, and 100 dollar bills. One and two-dollar bills have been replaced by coins, sometimes referred to as "Loonies" (the bird on the $1 is a loon) and "Toonies" ($2). Current exchange rates can be obtained from your bank or online. Most credit cards are accepted in Canada, including American Express, Discover, MasterCard, and Visa. In general, the use of credit cards and automated teller machines will provide a far more favorable exchange rate than exchanging currency or traveler's checks at banks or hotels.

Gratuity

Service is not included in restaurant prices. It is customary to add a 15% tip to the total before taxes (if you're with a group, 15% for service may be automatically added to your bill). Taxi drivers, hairdressers, etc. are also normally tipped 15%. Bellhops, porters, doormen, etc. generally receive at least $1 per suitcase or per service rendered.

Electricity

Canada uses the metric system. Electrical outlets in Canada provide the same current as in the USA–120 volts (60 cycles).

Internet

Most Canadian hotels offer wired or wireless high-speed Internet connections in their guest rooms. Most hotels also have a Business Center with available computers and printers for their guests use. To find out more, visit: www.zap.coop. The Palais offers free WiFi.

Language

The official language of the ITS World Congress is English. French is Québec's official language but English is widely spoken in Montréal. The city has more than 120 cultural groups and more than 20% of the population speaks three languages.

Smoking

There is no smoking indoors in Canada. There are designated smoking locations outside most public facilities, clearly marked by signs.

Water

Water throughout the country is potable and safe for drinking. Bottled water is available at hotels, restaurants, supermarkets, etc.

Québec Road Sign System

Québec uses the metric system, so speeds are indicated in kilometres (100 km/h = 62 mph) and gas is sold in litres (3 3/4 litres = 1 US gallon). Even though road signs are in French, most of them use international symbols. Right turn: Although turning right on a red light is authorized across Québec (except at intersections where a sign indicates this is not permitted), rights on reds are strictly prohibited on the island of Montréal. Cell Phone: Use of a hand-held cell phone that does not have a "hands-free" function is prohibited while driving. For more information, visit https://saaq.gouv.qc.ca/.

Insurance

The Organizing Committee of ITS World Congress 2017 can accept no responsibility for accidents or damage to the private property of participants. Please make your own arrangements for health insurance and any other necessary insurance. Children under 18 years are not allowed at the Congress.

Emergencies

The number for emergencies is 9-1-1. The service is always available, free from any pay phone, and available in French and English. Operators are in contact with emergency firefighter, police and ambulance services at all times. The phone number for Québec Poison Control Centre is 1-800-463-5060.

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Current method is a fixed design with centrally located barriers, utilities and drainage

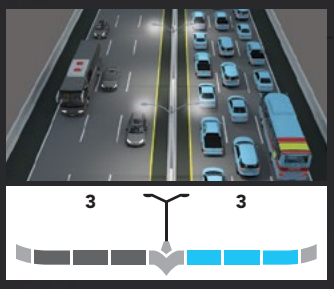
- Rigid lane structure
- Inflexible design cannot adapt to unknown future capacity
- Inability to expand current capacity
- Cannot adjust to changes in traffic delays

VS

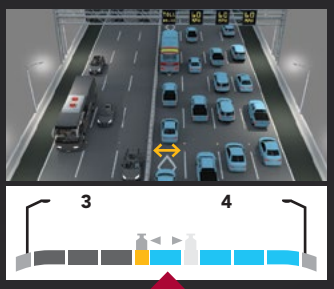
New method for future flexibility uses moveable barriers to replace fixed structures

- Multiple configurations over time
- Flexibility for changing commuter patterns
- Maximized congestion pricing of unused lanes
- A new system for improving travel time

Fixed median with utilities and drainage in the center does not allow for cost effective capacity expansion.



Moveable median with utilities and drainage located on the side of the roadway creates flexibility and cost savings.



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Awards

World Congress Hall of Fame Awards

The World Congress Hall of Fame Awards recognize the highest standards in achievement from the Americas, Europe, and Asia-Pacific in the high-tech transportation community across the categories of Industry, Local Government, and Personal Lifetime Achievement. Recipients are selected annually from each region based on their leadership and performance in the transportation technology arena. For biographies on this year's award winners as well as details on when the awards will be presented, download the ITS World Congress 2017 event app sponsored by ERoad or visit ITSWorldCongress2017.org.

Lifetime Achievement Award

Americas

Michael C. Doyle, Chairman & CEO, Econolite Group, Inc.

Asia-Pacific

Datuk Ir. Hj. Ismail Bin Md Salleh, Director General, Malaysian Highway Authority

Europe

Christer Karlsson, CEO, ITS Sweden

Local Government Award

Americas

Colorado Department of Transportation

Asia-Pacific

Taipei City Government, Chinese-Taipei

Europe

Ministry of Transport and Communications, Finland

Industry Award

Americas

Savari, Inc.

Asia-Pacific

Touch'n Go

Europe

Partnership Talking Traffic
Dynniq, Sweco, Swarco, Vialis, Royal HaskoningDHV, Ziut, Ko Hartog Verkeerstechniek, KPN, Be-Mobile, Ericsson, Simacan, Siemens, Flitsmeister, Locatienet, MTVNL, The Netherlands

World Congress Technical & Scientific Papers Awards

Americas

Technical: AM-TP1094 An Enrollment and Registration Service for Secure V2X in ITS

Authors: Pino Porciello, Brian Romansky - TrustPoint Innovation Technologies Ltd., Canada; David Michelson - University of British Columbia, Canada; Tony Qiu - University of Alberta, Canada

Scientific: AM-SP1337 Synthetic Time Series Technique for Predicting Network-wide Road Traffic

Authors: Kartik Kaushik, Cinzia Cirillo, Partha Lahiri, Ying Han - University of Maryland, United States

Asia-Pacific

Scientific: AP-SP0858 Prediction of Potential Human Intention Using Supervised Competitive Learning

Authors: Masayoshi Ishikawa, Mariko Okude, Takehisa Nishida, Kazuo Muto - Hitachi, Ltd., Japan

Technical: AP-TP0846 Learnings Arising from the Fusion of Traffic Data from Multiple Sources

Author: David Johnston - Intelligent Transport Services, Australia

Europe

Scientific: EU-SP0784 Modelling and Planning Charging Infrastructure for Electrically Driven Buses

Author: Hubert Buechter - Fraunhofer-Institute for Material Flow and Logistics, Germany

Technical: EU-TP0794 Sharing and Cataloguing Field Operational Test Datasets

Author: Sami Koskinen - VTT the Technical Research Centre of Finland, Finland

EU-TP1053 Multi-Modal Activity-Based Models to Support Flexible Demand Mobility Services

Author: Patrizia Franco - UK Transport Systems Catapult, UK

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For the most up-to-date details, download the ITS World Congress 2017 event app sponsored by EROAD or visit ITSWorldCongress2017.org.

World Congress Student Essay Competition

sponsored by SwRI

The Student Essay Competition, sponsored by Southwest Research Institute® (SwRI®), encourages engineering students to help advance transportation technologies by sharing their ideas and concepts in an original essay. The winning essay will be selected based on the thought-provoking insights expressed about the future of the intelligent transportation industry. The winning student will receive a $1,000 cash prize and complimentary registration, including air and hotel expenses, to attend ITS World Congress 2017. This year's topic for the 2,000-word essay is: "How do you envision the city of the future (10-year horizon) will address transportation through the use of new innovative technologies?" Student Essay Competition award ceremony Sunday 29 October from 12:30 - 14:00 during the ITS America Board of Directors Meeting.

2017 ITS America State Chapter Award

The ITS America State Chapter Award is given annually to the State Chapter(s) that has/have demonstrated a superb level of programming, fostered the highest qualities of leadership amongst members, advocated for ITS solutions at the state and regional levels, and provided outstanding value overall to their membership. ITS America's Board of Directors and State Chapters Council recognize the Best Outstanding Chapter and the chapter with the greatest growth in its membership each year. The State Chapter Awards will be presented at the ITS America State Chapter meeting on Sunday 29 October.

ITS America Hall of Fame Awards

The ITS Hall of Fame was established to recognize members whose contributions to the profession and service to ITS America has been significant, substantial, and long-standing. Inductees are selected annually based on their leadership in the intelligent transportation arena. Recipients personify achievement of the ultimate standards for a leader in the ITS field, including but not limited to being an outstanding leader in the organization(s) he or she has led; a thought leader in the ITS field; and a champion of the ITS vision The ITS America Hall of Fame Award will be presented at the ITS America Board of Directors meeting on Sunday 29 October.

Smart Cities Pavilion

By the year 2025, experts predict that approximately 58% of the world's population–4.6 billion people–will live in urban areas. By 2050, they expect the urban populations to double, adding the equivalent of seven New York cities to the planet each year. In developed regions, this means urban residents may account for up to 81% of the total population.

Given these estimations, it is not surprising that global Smart Cities markets will increase to be valued at more than US $1.5 trillion by 2020. Likewise, it is no surprise then that Intelligent Transportation Systems (ITS) World Congress 2017 is planning to continue the discussion and debate around how policy can advance the future of integrated mobility, how transportation is moving to the center of the Internet of Things (IoT), and how technological solutions and the IoT are rapidly challenging metropolises around the world.

The Future Envisioned

A highlight of the event and its Exhibit Hall this year will be the SMART CITIES PAVILION, a lynchpin collection of dynamic exhibitions highlighting some of the world's best examples of Smart City solutions. These exhibitions will be experiential, allowing those who display to showcase their leadership and innovation and those who visit to see how cities across the globe are using technology to create their vision of next generation integrated mobility solutions in urban settings. With and through the themes of Urban Mobility, Engaged Citizenry, Smart Security, Economic Cluster, and Smart Democracy, these demonstrations will illustrate how transformative transportation and integrated mobility solutions are the epicenter of Smart Cities' critical infrastructure, which seeks to provide seamless connectivity, improved systems delivery, and a better, more equitable quality of life for citizens. Anticipated display components include innovation related to traffic management, roadways, rail, parking, bike share, transit, car share, traveler information, connected and autonomous vehicles, integrated mobility, artificial intelligence, dependencies on transportation, addressing equity issues, smart security, smart energy, smart buildings, smart healthcare, smart government, smart fleet, and more.

To date, the cities that will be participating as exhibiting communities within the Pavilion are:

- **Montréal, Québec (Canada)**
- **Christchurch (New Zealand)**
- **Columbus, Ohio (USA)**
- **Copenhagen (Denmark)**
- **Singapore**

Smart Cities Education Stage

The Education Stage in the Smart Cities Pavilion will feature keynotes and panel discussions from the cities exhibiting in the Pavilion, ITSWC sponsors, leading members of ITS America, and other key stakeholders. Presentations will focus on the challenges and opportunities—including the necessary public policies—involved in creating a smart city and will address such issues as data sharing, CAVs, urbanization, climate change, impact of inclement weather, and the role of ITS in general. For a complete listing of Education Stage activities, visit the ITS World Congress 2017 event app sponsored by ERoad or ITSWorldCongress2017.org.

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Special Features

Some descriptions below may have been edited to fit available print space. For the most up-to-date details, download the ITS World Congress 2017 event app sponsored by ERoad or visit ITSWorldCongress2017.org.

Opening Ceremony

Monday 30 October | 9:00 – 10:00 | Room 517ABC

The Opening Ceremony will include the official welcome by ITS Canada and Canadian Government representatives as well as the three regions: ITS America and ERTICO-ITS Europe, and ITS Asia-Pacific.

Closing Ceremony

Thursday 2 November | 16:00 – 17:00 | Room 517ABC

The Closing Ceremony will highlight moments from the 24th ITS World Congress and will feature the Rapporteur's Report presented by Professor Eric Sampson. An invitation to the 25th ITS World Congress in Copenhagen will be offered during the official 'Passing the Globe' Ceremony.

Plenaries

Integrated Mobility with Urban Cities
Monday 30 October | 10:00 - 11:00 | Room 517ABC

Urban leaders will debate the benefits of Smart Cities solutions and the unique features of their cities driven by customer needs and city cultures.

The Evolution of Transportation within Our Society
Tuesday 31 October | 11:15 - 12:15 | Room 517ABC

Industry leaders from the three regions (Americas, Europe and Asia-Pacific) will discuss and debate the evolution of transportation within the global society.

State Deployment of ITS
Wednesday 1 November | 9:30 - 10:30 | Room 517ABC

State leadership and transportation managers will discuss deployment of intelligent transportation systems in their states and resulting safety and economic benefits.

Conducting Business within Our Transportation Industry
Thursday 2 November | 15:00 - 16:00 | Room 517ABC

Leaders from various sectors of the intelligent transportation industry discuss and debate the opportunities and challenges in conducting business within the transportation domain.

V2X Global Future Workforce Program

Monday 30 October | 9:00-16:00 | Room 516D

From what seemed futuristic a few years ago to today's landscape of a burgeoning industry, the ITS movement is here to stay, and we need a workforce to support it.

ITS America has partnered with Mobile Comply to present the V2X Global Future Workforce Program at ITS World Congress 2017. The program will bring together high school students on a global scale to participate in cutting-edge, vehicle-cyber, and Vehicle-to-Infrastructure workshops supported by the SAE Cyber Truck Challenge and Square One Education Network.

The two-part immersive program is designed to build an understanding and appreciation for transportation systems using sensors, coding, and vehicle hacking technology. The sessions will be open to companies from around the world, giving students and the companies a chance to interact and discuss plans — i.e. education, internships, employment — for the future. By putting students at the forefront of ITS together with industry, we are investing in the workforce that will make create the next generation of our mobile reality.

High-Level Policy Roundtable (Invitation Only)

Tuesday 31 October | 14:00 – 15:30

The High-Level Policy Roundtable has always been a key event at the annual ITS World Congress. Keeping with this tradition, the Government of Canada in partnership with ITS Canada is pleased to host this year's roundtable, which will focus on Digital Innovation and Integration for 21st Century Transport and Mobility. The roundtable will convene public and private-sector leaders, including Ministers and industry executives. It will explore the opportunities and challenges associated with the rise of transformative technologies in the transportation sector, both nationally and globally.

The Roundtable Objectives are to:

- Gain insight into the opportunities and challenges associated with the rise in disruptive technologies in the transportation sector.
- Identify policy, regulatory, and other actions that would support the promotion of innovation in the transportation sector and maximize the benefits of new and emerging technologies, globally.
- Explore how best to support effective public and private sector partnerships that are required to deepen the collective understanding of innovation in the transportation sector.

Trends and Drivers
Transportation is being revolutionized by new and emerging technologies that have broad economic, social, and environmental implications, with the potential to improve transportation system safety and security, enhance efficiency and mobility, and reduce environmental footprints and congestion. A series of converging trends, both technological and social, seem poised to shape the ways that people and goods move.

- **Five key mega-trends**: Automation; electrification; diverse and shared mobility; connectivity and digitalization; and artificial intelligence and machine learning. Additionally, these trends are in related areas and, as such, reinforce one another.
- **Technology and service clusters:** vehicles (automated, connected and electric), infrastructure (physical, digital and energy), and transportation users (mobility- and transportation-as-a-service).
- This is resulting in changes to the status-quo, including:
  - new technology-driven solutions and software-driven innovation;
  - new entrants and new business models;
  - ever-increasing levels of connectivity and automation being integrated into vehicles ranging from road vehicles to large freight trucks, and unmanned air vehicles / drones;
  - a growing emphasis on data-driven analytics and a user-centered paradigm (e.g., physical assets connected to the Internet of Things via sensor technologies and digitally connected citizens);
  - a confluence of shared, on-demand transport via ridesharing, carsharing and new mobility services

(and this is beginning to impact other passenger and freight/logistics services, and even spurring new arrangements between businesses);

- a movement towards smart cities to address urban transportation challenges;
- a transition to alternative energy options and supporting energy infrastructure; and
- shifts in consumer preferences and public acceptance

- **Integration of digital technologies** within existing transportation systems is creating new possibilities for transport operations and services, improvements to safety and efficiency, environmental sustainability, and economic opportunities for jobs and investments.

ITS World Congress 2017 Gala: A Ghoulishly Good Time

Tuesday 31 October 19:00 | Room 710AB

Does an evening of fright sound alright? The annual World Congress Gala falls on Halloween, so get set for a ghoulishly good time! Come dressed to impress for the 'Best Costume' Award, enjoy a special food and drink menu, and learn how different cultures observe one of the oldest – and most diverse – holidays still celebrated the world over. Tickets are $200 and can be purchased online during registration prior to the event or onsite through the Registration desk.

IBM Info Sessions

Wednesday 1 November | Room 510B

IBM will be hosting multiple Info Sessions addressing various topics ranging from autonomous vehicles, cognitive transportation systems, smarter cities, weather and traffic management. Bringing in external experts, IBM will set the stage for an interactive dialogue on artificial intelligence and how it is shaking up the transportation industry.
For the most up-to-date details, download the ITS World Congress 2017 event app sponsored by ERoad or visit ITSWorldCongress2017.org.

State Department of Transportation (DOT) Policy Roundtable

Wednesday 1 November | 8:30 - 9:30 | Room 516C
Sponsored by HNTB

State DOT executives in charge of intelligent transportation deployment decisions will discuss their states' experiences, successes, failures, challenges and lessons learned in launching ITS projects while, on a broader scale, endeavoring to prepare infrastructure to meet and support tomorrow's ITS mobility demands.

Co-Hosts:

ITS America, American Association of State Highway and Transportation Officials (AASHTO)

Moderators:

Ananth Prasad, HNTB
Bud Wright, AASHTO
David St. Amant, ITS America

Panelists:

Shailen Bhatt, Colorado Department of Transportation
Carlos Braceras, Utah Department of Transportation
John Schroer, Tennessee Department of Transportation
Kirk Steudle, Michigan Department of Transportation
Sue Mulvihill, Minnesota Department of Transportation
Jennifer Cohan, Delaware Department of Transportation
Peter Rahn, Maryland Department of Transportation

Procurement Day

Thursday 2 November | 8:00 - 10:00

Procurement Day will welcome agencies from around the world to provide presentations highlighting their upcoming 2017-2018 procurement opportunities. Agencies representing the Americas, Asia-Pacific, Europe, and the Middle East will be on hand to describe future ITS procurements and timelines. Each agency will have 45 minutes to present followed by 15 minutes of Q&A. This will allow private sector companies to glean important information to help them successfully navigate the business opportunities that exist within the countries, states, regions or cities represented. To hear from all the various agencies, organizations are encouraged to bring more than one team member to take advantage of this efficient and cost-effective opportunity. Handout material is the option of the specific agencies and the sessions will not be video recorded.

Business-to-Business (B2B) One-on-Ones

Thursday 2 November | 10:00 - 14:00

One of the key benefits of this event will be the opportunity for large and small companies—entrepreneurs, investors, and implementers—to connect for tangible business ventures in the ITS market. The B2B One-on-Ones is a four-hour special event feature intended to offer critical time and unparalleled access for decisionmakers to meet and discuss viable ideas that will move the ITS industry forward. Large corporations from all three ITS regions—Americas, Asia-Pacific, and Europe—will hear up to eight pitches from emerging businesses. Meetings are first-come, first-served (maximum four meetings per pitch company) with content expected to include discussions of innovative solutions and/or potential opportunities to work together.

Schedule At-A-Glance

Sunday 29 October

8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	13:00	13:30	14:00	14:30
American Association of State Highway and Transportation Officials (AASHTO) Day 8:00 - 12:00													
				ITS America State Chapters Meeting (Invite Only) 10:00 - 12:00									
								Conference Programming 12:00 - 17:00					
									ITS America Board of Directors Meeting 12:30 - 14:30				

Monday 30 October

8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	13:00	13:30	14:00	14:30
		Opening Ceremony 8:30 - 10:00											
				Plenary 10:00 - 11:00									
				#THISisITS Demonstrations 10:00 - 15:00									
						Exhibit Hall Opening / Exclusive 11:00 - 12:00							
						Smart Cities Education Stage 11:00 - 17:00							
								Conference Programming 12:00 - 17:00					
						Exhibit Hall 11:00 - 18:30							
								Lunch Available (Exhibit Hall) 12:00 - 13:00					

Tuesday 31 October

8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	13:00	13:30	14:00	14:30
#THISisITS Technical Tours 8:00 - 17:00													
		Exhibit Hall 9:00 - 18:30											
Conference Programming 8:00 - 11:15													
				#THISisITS Demonstrations 10:00 - 15:00									
							Plenary 11:15 - 12:15						
						Smart Cities Education Stage 10:30 - 17:00							
								Lunch and Exclusive Hour (Exhibit Hall) 12:15 - 13:15					

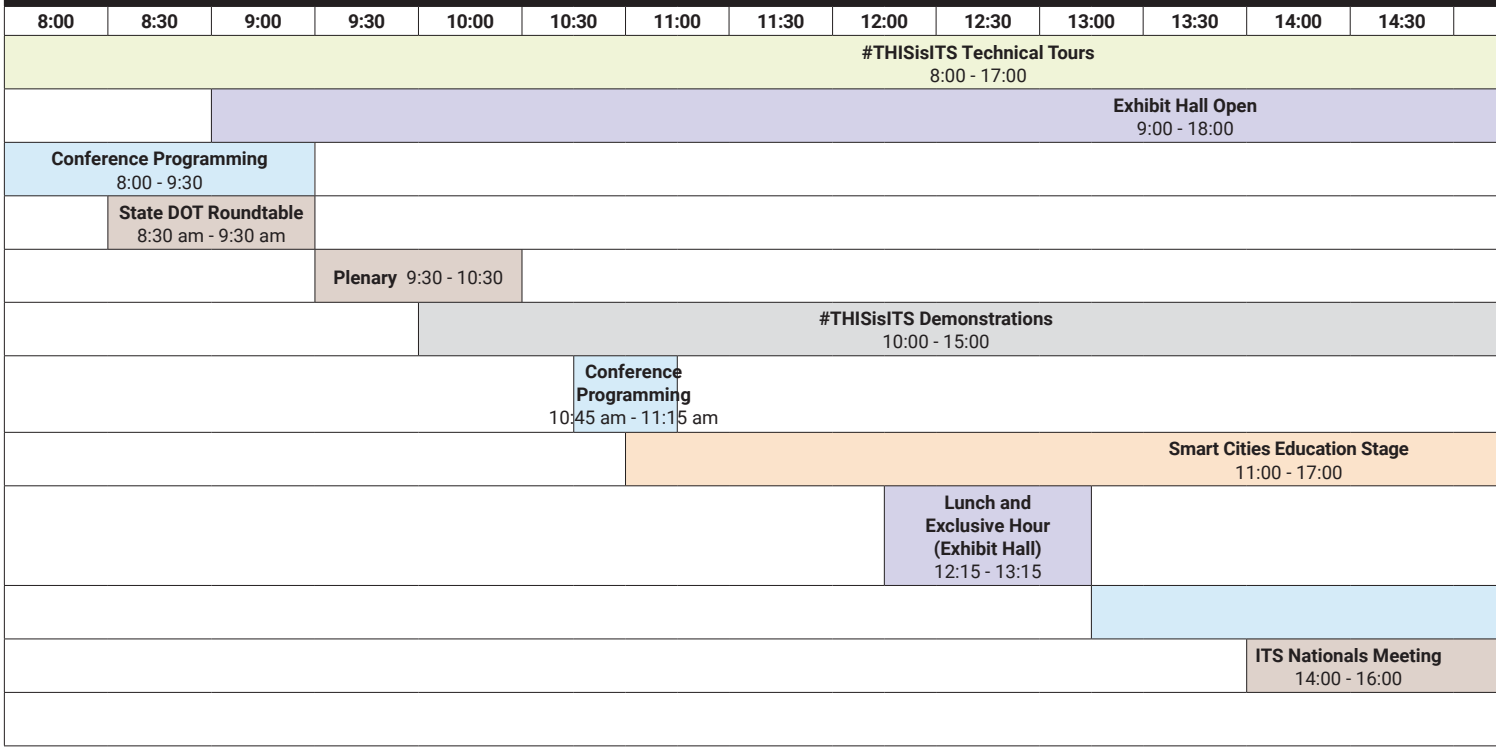
	15:00	15:30	16:00	16:30	17:00	17:30	18:00	18:30	19:00	19:30	20:00	20:30	21:00	21:30
				ITS Annual Membership Meeting 16:30 - 17:30										
						ITS Canada Membership Meeting (Invitation Only) 17:30 - 19:30								

	15:00	15:30	16:00	16:30	17:00	17:30	18:00	18:30	19:00	19:30	20:00	20:30	21:00	21:30
					Exhibitor Welcome Reception 17:00 - 18:30									

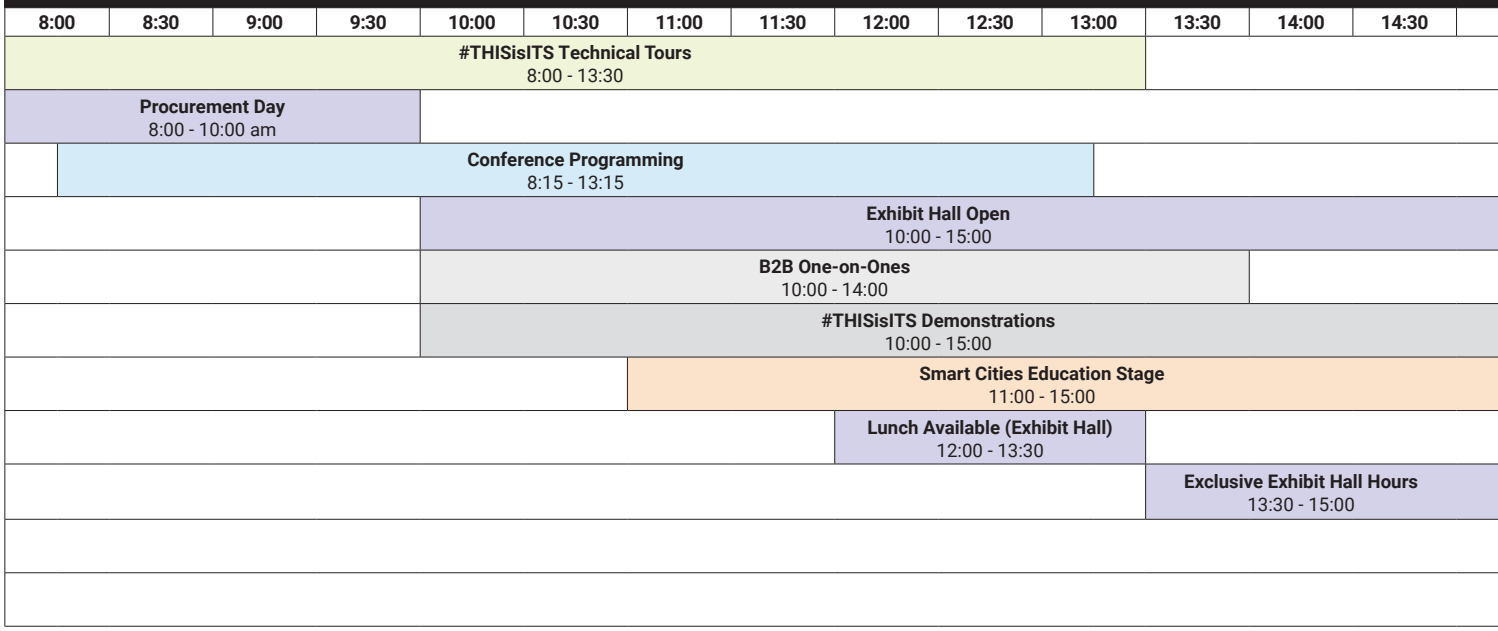
	15:00	15:30	16:00	16:30	17:00	17:30	18:00	18:30	19:00	19:30	20:00	20:30	21:00	21:30
Conference Programming 13:15 - 18:00														
					Smart Cities Reception 17:00 - 18:30									
									Gala 19:00 - 22:00					

Schedule At-A-Glance

Wednesday 1 November



Thursday 2 November



	15:00	15:30	16:00	16:30	17:00	17:30	18:00	18:30	19:00	19:30	20:00	20:30	21:00	21:30
	Conference Programming 13:15 - 18:00													
					State DOT Reception 17:00 - 18:30									

	15:00	15:30	16:00	16:30	17:00	17:30	18:00	18:30	19:00	19:30	20:00	20:30	21:00	21:30
	Plenary 15:00 - 16:00													
			Closing Ceremony 16:00 - 17:00											

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Sessions At-A-Glance

Sunday, October 29

TIME	515 ABC	513 DEF	513 BC	514 BC	510 A	510 D
12:00 - 13:30	**SIS01** Innovative C-ITS Services to Overcome Urban Mobility Challenges and Meet Policy Goals	**SIS02** Connected and Automated Driving Research around the World	**SIS03** Effective C-ITS Deployment: Analysis of Standards Gaps in a C-ITS Environment	**SIS04** Is MaaS Real or a Utopian Dream?		**SIS06** Personal Incentives on Mobile Devices for Sustainable and Efficient Transport Behavior
13:45 - 15:15	**SIS07** Implementation of C-ITS in Preparation for Automated Driving and Smart Cities	**SIS08** Standardization and Certification Needs for the Deployment of Automated Vehicles	**SIS09** Mapping Intersections with Traffic Signals for C-ITS Applications	**SIS05** Digital Transformation: From ETC to IoT to Smart City	**SIS11** A Programmatic Approach to Integrating Agency Data into Mobile Map Applications	**SIS12** Shared Mobility: Between Now and What's Possible
15:30 - 17:00	**SIS13** Connectivity: Needs and Challenges for the Deployment of Automated Vehicles	**SIS14** The Use of Big Data Analytics in Transportation	**SIS15** On-Demand Passenger Transport: Innovative Operation Models	**SIS16** The Port of the Future	**SIS17** Towards Improving Quality of Mobility (QoM) from the Smart City's Perspective	

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512 D	511 C	511 F	512 A	512 B	512 C	513 A
TS01 Using MaaS to Enable Smart Cities and Regions	**TS02** Connected Vehicle Communication Issues	**TS03** Managing Major Incidents Using ITS	**TS04** Using ITS to Make Work Zones Smarter and Safer	**TS05** ALEXA - Is Speech Recognition the Next Big Thing in ITS?	**TS06** Using Simulation to Improve CAV - Part 1of 3	
TS07: Smart City Business Models and Scenarios	**TS08** Electronic Tolling Operations: Best Practices	**TS09** Integrating CAV with ADAS	**TS10** Signal Priority - Part 1of 2	**TS11** ITS Planning	**TS12** Using Simulation to Improve CAV - Part 2 of 3	**TS13** The Impacts of Weather and the Provision of Actionable Information
TS14 Using Integrated Corridor Management Techniques for Safety and Decision Support	**TS15** Evaluation of CAV Enabling Technologies	**TS16** Monitoring Driver Behavior	**TS17** Signal Priority - Part 2 of 2	**TS18** Using Cameras and LiDAR for Detection	**TS19** Using Simulation to Improve CAV - Part 3 of 3	**TS20** Learning Systems for Advanced Driving

Track Topics:

- Connectivity and Autonomy
- Infrastructure Challenges and Opportunities
- Integrated Approach: Planning, Operations and Safety
- Canadian Tracks
- Smart(er) Cities
- Data, Security and Privacy
- Innovation, What's Next? The New Ideas
- Disruption and New Business Models

Sessions At-A-Glance

Monday, October 30

TIME	511ABDE	515ABC	513DEF	513ABC	514BC	510A	510C
12:00 - 13:30	**ES01** Breaking Silos to Pave the Way to Automated Vehicles *Sponsored by* ECONOLITE	**SIS19** Connected Vehicle Pilot Deployment Program - Session 1 of 3: Deployment Status and Demonstrating Impacts	**SIS20** Smart Cities - Think Big, Start Small, Act Fast 12:00 - 13:45	**SIS21** Multi-State Collaboration: The SMART Belt Coalition	**SIS22** Sensing, Visualizing and Enhancing the Last Mile of Urban and Metropolitan Freight	**SIS23** Maximizing CV Benefits Through Alternative Communications	**SIS24** Mini - Not Mega - Projects: ITS and Smaller Highways Authorities
13:45 - 15:15	**ES02:** Securing Critical ITS Infrastructure in a Connected World	**SIS26** Connected Vehicle Pilot Deployment Program - Session 2 of 3: Technical Challenges and Proposed Solution		**SIS27** 5G in ITS: Powered by Satellite Communications	**SIS28** Success Stories: Improving Mobility by Applying Advanced Traffic Management Technology	**SIS29** Understanding the Interactions Between Vehicle Sensing Systems and Physical Highway Infrastructure	**SIS30** Truck Platooning: the Next Challenge!
15:30 - 17:00	**ES03** ITS Delivering Livability	**SIS33** Connected Vehicle Pilot Deployment Program - Session 3 of 3: Evaluating Performance and Long-term Sustainment	**SIS34** Automated Vehicles and Sustainable Cities: Planning the Next Disruptive Technology	**SIS35** 5G Automotive Alliance (5GAA): On the Road Towards LTE-V2X	**SIS36** Public Policy Strategies for Advancing Automated and Connected Vehicles	**SIS37** Reflecting Technology-Driven Mobility: Challenges in Modeling	**SIS38** Smart Cities, Open Data and Mobility

510D	512D	511C	511F	512A	512B	512C
SIS25 Rural MaaS	**TS21** Approaches to Automated Parking	**TS22** ITS Data Collection and Using It to Deliver Innovation	**TS23** Deployment of Connected Vehicle Infrastructure - Part 1 of 3	**TS24** Planning for Operations from Architecture to CONOPS and Beyond	**TS25** Preparing for Automated Vehicles - Part 1of 4	**TS26** Vulnerable Road Users - Part 1 of 3
SIS31 Cybersecurity Challenges for CAVs: Fact vs Myth	**SIS32** MaaS: Roadmap to the Future of Mobility	**TS27** Pedestrian Safety in Smart Cities	**TS28** Deployment of Connected Vehicle Infrastructure - Part 2 of 3	**TS29** Strategies to Detect Drowsiness and Driver Distraction	**TS30** Preparing for Automated Vehicles - Part 2 of 4	**TS31** Vulnerable Road Users - Part 2 of 3
SIS39 Transport Management on the Road Network of Megacities	**SIS40** Key Technical and Policy Design Challenges for Security Credential Management Systems	**SIS41** Artificial Intelligence Algorithms for Traffic Video Analysis in Smart(er) Cities	**TS32** Deployment of Connected Vehicle Infrastructure - Part 3 of 3	**TS33** Mobility on Demand	**TS34** Network Technologies for CAV	**TS35:** Vulnerable Road Users - Part 3 of 3

Track Topics:

- Connectivity and Autonomy
- Infrastructure Challenges and Opportunities
- Integrated Approach: Planning, Operations and Safety
- Canadian Tracks
- Smart(er) Cities
- Data, Security and Privacy
- Innovation, What's Next? The New Ideas
- Disruption and New Business Models

Sessions At-A-Glance

Tuesday, October 31

TIME	511 ABDE	515 ABC	513 DEF	513 ABC	514 BC	510 A	510 C
8:00 - 9:30	**ES04** Freight Technology: How Do We Ensure Public Safety	**SIS42** CAV Data: Who Wants It and Why? Addressing Concerns of End Users	**SIS43** Sustainable Smart Cities: Adaptability from Collaboration and Empowerment	**SIS44** The ITS Road to 5G	**SIS45** The Next Mobility Revolution Starts with Technology that Connects Us All	**SIS46** Traffic Sensing by Various Manners	**SIS47** Infrastructure Connectivity for Smart Communities & Corridors
9:45 - 11:15		**SIS50** Transforming Freight Movement though ITS: Freight Transport Efficiency - Part 1 of 4	**SIS51** Macro Impacts of Autonomous Vehicles	**SIS52** Implementation of Weigh-In-Motion Systems for Direct Weight Enforcement	**SIS53** The Importance of Network Communications Infrastructure for ITS Initiatives	**SIS54** Parking Management: Past, Present and Future	**SIS69** New Evaluation Methods for Piloting Automated Road Transport (IBEC)
13:15 - 14:45	**ES05** Practical Aspects of Deploying Connected and Automated Vehicles *Sponsored by* ECONOLITE	**SIS57** Recent International Progress on Truck Platooning - Part 2 of 4	**SIS58** Shared Mobility in a Digital City	**SIS64** Measuring the Benefits of ITS Using Big Data (IBEC)	**SIS60** Technology for Public Transport: New Solutions for Integrated Mobility	**SIS61** The Role of V2X in Automated Vehicles	**SIS62** Disruptive Technology Delivered via Connected Vehicles that Transforms User Experience
15:00 - 16:30	**ES06** Smart Connected Cities Promote Smart Mobility	**SIS65** Transforming Freight Movement though ITS: Infrastructure & Communication - Part 3 of 4	**SIS66** Cooperation and Collaboration in AV Trials Conducted Across Multiple Countries	**SIS67** Integrated Road Infrastructure for Mixed Vehicle Traffic Flows	**SIS68** Traffic Signal Control System for Connected and Automated Vehicles	**SIS55** Benefit of IoT and Big Data for Automated Driving and User Trust Challenge	**TS52** Payment Technology-Incentive Schemes and Modal Choice
16:45 - 18:00		**SIS70** Transforming Freight Movement though ITS: CAV Technology and Freight Vehicle Applications - Part 4 of 4	**TS60** Travel Speed Prediction	**TS61** Applications of Advanced Traffic Management	**TS62** Exploring Traffic Safety and Notification	**TS63** Smart Parking	**TS64** Autonomous and Electric Transit Vehicles

510 D	512 D	511 C	511 F	512 A	512 B	512 C
SIS48 Pan European Platform for Logistics and Security Optimization including Dangerous Goods	**SIS49** Automated Vehicle Test Sites: Compete or Complement?	**TS36** Big Data for Mobility	**TS37** Future Mobility Innovations for Smart Cities and Their Transportation Agencies	**TS38** Public Procurement	**TS39** Recent Developments in Adaptive Signal Control	**TS40** Using ITS to Mitigate the Impacts of Winter Weather
SIS56 Reinventing Public Transport with SmartShuttles	**TS41** Developments in ITS Infrastructure	**TS42** Ensuring Driver Safety Through ADAS and Automated Vehicles	**TS43** ITS for Customer Information	**TS44** Sharing the Ride	**TS45** Simulation Applications	**TS46** Using ITS to Determine Pricing for Parking and Transportation
SIS63 Energy Efficient Mobility Systems: The US DOE's Research on Smart Mobility	**SIS59-1** Data Collection and Data Sharing: Needs and Challenges for Automated Vehicle Pilots - Part 1 of 2	**TS47** Air Quality in Smart Cities	**TS48** Bicycles In Smart Cities	**TS49** Cyber Security - Part 1 of 2	**TS50** Preparing for Automated Vehicles - Part 3 or 4	**TS51** Improvement in Freight Transport Using ITS
TS53 Signal Control - Part 1of 2	**SIS59-2** Data Collection and Data Sharing: Needs and Challenges for Automated Vehicle Pilots - Part 2 of 2	**TS55** Innovative Operations and Management Strategies	**TS56** Open and Shared Data	**TS57** Cyber Security - Part 2 of 2	**TS58** Preparing for Automated Vehicles - Part 4 of 4	**TS59** Truck Platooning
TS65 Signal Control - Part 2 of 2	**TS66** Applications of ITS Technologies for Truck Enforcement Activities	**TS67** Big Data Management	**TS68** Innovative Freeway Operations Using the Shoulder as a Lane	**TS69** ITS in Rail Passenger Management		**TS71** Preventing Wrong Way Crashes: New Approaches to a Serious Challenge

Sessions At-A-Glance

Wednesday, November 1

TIME	511 ABDE	515 ABC	513 DEF	513 ABC	514 BC	510 A	510 C
8:00 - 9:30	**ES07** ITS Deployment Policies	**SIS71** Vehicle-To-Infrastructure Deployment Coalition	**SIS72** Freight Innovations for Integrated Transportation and Trade Corridor Management	**SIS73** Concept of Operations with Connected and Automated Vehicles	**SIS74** An Industry-Based Sustainable Certification Model Program for DSRC-Based Services	**SIS75** Multimodal Travel Information for Smart Cities	**SIS76** Big Data and Its Positive Impacts on Transport Planning and Operations Decision-Making
10:45 - 12:15		**SIS79** Reducing Vehicle to Bicycle Accidents with V2X Technology	**SIS80** The Internet of Things and Transportation: Now and Future	**SIS81** Autonomous Vehicles: Reimagining an Accessible Transportation System for People with Disabilities	**SIS82** Strategy of Practical Implement of V-I Cooperative Systems for Traffic Accident Avoidance	**SIS83** Disruptive Mobility Services Utilizing IoT Big Data For Smart Cities	**SIS84** Connected City Operations: Real-World Examples of Intelligent City Mobility Management
13:15 - 14:45	**ES08** Mobility as a Service	**SIS87** Radiocommunication Technologies for Cooperative ITS & Automated Driving	**SIS88** Real-World Challenges of Deploying V2I Applications	**SIS89** Driverless Future: A Policy Roadmap for City Leaders	**SIS90** Using ITS Infrastructure to Improve Hurricane Response	**SIS91** Is the Roadway Infrastructure Ready For Automation?	**SIS92** Next Traffic Management with Fusion of Public and Private Open Data
15:00 - 16:30	**ES09** Better Traveler Information Technology and Institutional Issues for Automated Driving	**SIS95** Utilizing V2X to Create the Future of Connected Motorcycles	**SIS96** Innovative Procurement Models for ITS Products and Services	**SIS97** PIARC (WRA) Autonomous Vehicles: Road Authorities and Network Managers' Perspective	**SIS98** Digital Transformation for Automated Vehicles: Needs and Challenges	**SIS99** Leveraging Intersection Connectivity to Improve Transit and Traffic Management	**SIS100** Canada's Unique Challenges, Strategies and ITS Solutions
16:45 - 18:00		**SIS103** Roundtable: Motorcycles Talk ITS	**TS92** Innovations in Freight-Truck Parking, Data Management and Port Access	**TS93** ITS Data Quality	**SIS124** Parking Technologies in Transportation: Tomorrow is a New Day	**TS95** Spectrum Sharing	**TS96** Using the Basic Safety Message to Improve CAV Performance

510 D	512 D	511 C	511 F	512 A	512 B	512 C
IBM Info Sessions: Check the mobile app for session titles and times. All sessions will take place in Room 510D.						
SIS77 Incident Management ITS Needs and Benefits	**SIS78** From Smart Cities to Smart States Using Big Data to Advance Transportation Initiatives	**TS72** Traffic Management Case Studies	**TS73** Mapping the Environment	**TS74** Public Transit Routing and Scheduling	**TS75** Recent Advancements in Traffic Sensing Technologies	**TS76** ITS in Transit Operations - Part 1 of 2
SIS85 Using ITS to Protect Motorists Against Wrong Way Drivers	**SIS86** If Autonomous Vehicles are So Great, Why are Public Programs the Same?	**TS77** Advanced Traffic Management from Planning to Managing Change and Implementation	**TS78** Improved Methods of Collecting and Analyzing Probe Data	**TS79** Recent Developments in Traffic Signal Management	**TS80** Ridesharing in Smart Cities 10:45 - 11:45	**TS81** ITS in Transit Operations - Part 2 of 2
SIS93 The Public Transport (R)evolution: Leveraging Data to Redefine/ Expand the Role of Transit	**SIS94** The Key to Spread of Image-Recording Type Driving Event Video Recorder	**TS82** Congestion Analysis in Smart Cities	**TS83** Estimating and Measuring Congestion Conditions	**TS84** Localization Technologies - Part 1 of 2	**TS85** MaaS-The Next Revolution of ITS	**TS86** Sensors for Automated Vehicles - Part 1 of 2
SIS101 Partnership Pioneers for Smart City-States: Collaborative Models for Innovation & Deployment	**SIS102** Advanced Technologies in Operation and Maintenance of ITS Facilities	**TS87** Applications of ITS for Disaster Management	**TS88** Exciting Advancements in Freight Logistics	**TS89** Localization Technologies - Part 2 of 2	**TS90** Measuring Traveler Behavior	**TS91** Sensors for Automated Vehicles - Part 2 of 2
TS97 Utilizing Machine Learning for Transportation Analysis	**TS98** Connected Vehicle Data 16:45 - 17:45	**TS99** ETC Planning Case Studies	**TS100** Traffic Modeling and Monitoring Studies	**TS101** Travelers' Information from the Roadside to Statewide	**TS102** Using ITS to Increase Safety on Urban Roadways	**TS103** Weather Condition Detection Analysis and Simulation

Sessions At-A-Glance

Thursday, November 2

TIME	511 ABDE	515 ABC	513 DEF	513 ABC	514 BC	510 A	510 C
8:15 - 9:45	**ES10** Resilient, Safe and Smart Infrastructure	**SIS104** Advance the Development of CAV Technologies Through Effective Testing	**SIS105** Canada's Partnerships for Innovation	**SIS106** Automation as a Solution: Addressing 21st Century Mobility Challenges Through AV Deployment	**SIS107** Challenges on Data Necessary to Serve Automated Driving	**SIS108** Impact of Automated Vehicles on Traffic Flow and Environment	**SIS109** Evaluation of Connected and Autonomous Vehicle Trials
10:00 - 11:30	**ES11** Communication Options for Connected, Cooperative and Automated Transport	**SIS111** Using Data to Manage Traffic, Reduce Congestion & Prioritize Spending	**SIS112** Canadian Activities in Connected and Automated Vehicles	**SIS113** Integration of ITS Planning and Operations Activities in a New Era	**SIS114** Mobility as a Service: New Business and Service Approaches	**SIS115** International Perspectives on Technology Shifts and Collaboration Between Public and Private Sectors	**SIS116** Automated Flying Cars
11:45 - 13:15	**ES12** New Business Models	**SIS117** Do Automated Vehicles Mean Go Time or Slow Time for Other Innovations in Transportation?	**SIS118** Stop Waiting for Crashes to Occur: Video Analytics for Road Safety Analysis	**SIS119** Allocation of Liability in Car Crashes of the Future	**SIS120** Low Cost ITS and Big Data: A New Approach of Road Network Operation?	**SIS121** Integrated Corridor Management: Project Planning to Operations Lessons Learned	**SIS122** Mobility as a Service for Rural and Small Urban Areas

510 D	512 D	511 C	511 F	512 A	512 B	512 C
SIS110 What Were We Discussing 25 Years Ago at the World Congress?	**TS104** Applying Technology to Assess Travel and Provide Safe Roadways	**TS105** CAV Deployment Issues - Part 1of 3	**TS106** Safety of CAV Systems - Part 1 of 3	**TS107** ITS TSMO and Connectivity and Their Impacts on Transportation Agencies	**TS108** Exploring the MaaS Eco-System from Payments to Shared Mobility	**TS109** Detection Technologies for Asset Management
TS110 Infrastructure-Based Safety Systems and the Applications	**TS111** Developments in Tolling Technologies and Processes	**TS112** CAV Deployment Issues - Part 2 of 2	**TS113** Safety of CAV Systems - Part 2 of 3	**TS114** Smart City Mobility	**TS115** Using Predictive Technologies Across the Spectrum of ITS	**TS116** Transit Service Performance
SIS123 Lessons Learned from International Collaboration in ITS	**TS117** Innovative Applications of Probe Data	**TS118** Travel Time Estimation	**TS119** Safety of CAV Systems - Part 3 of 3	**TS120** Traffic Monitoring	**TS121** Innovative Asset Management Strategies	**TS122** Regional Planning and Project Prioritization Strategies

Track Topics:

- Connectivity and Autonomy
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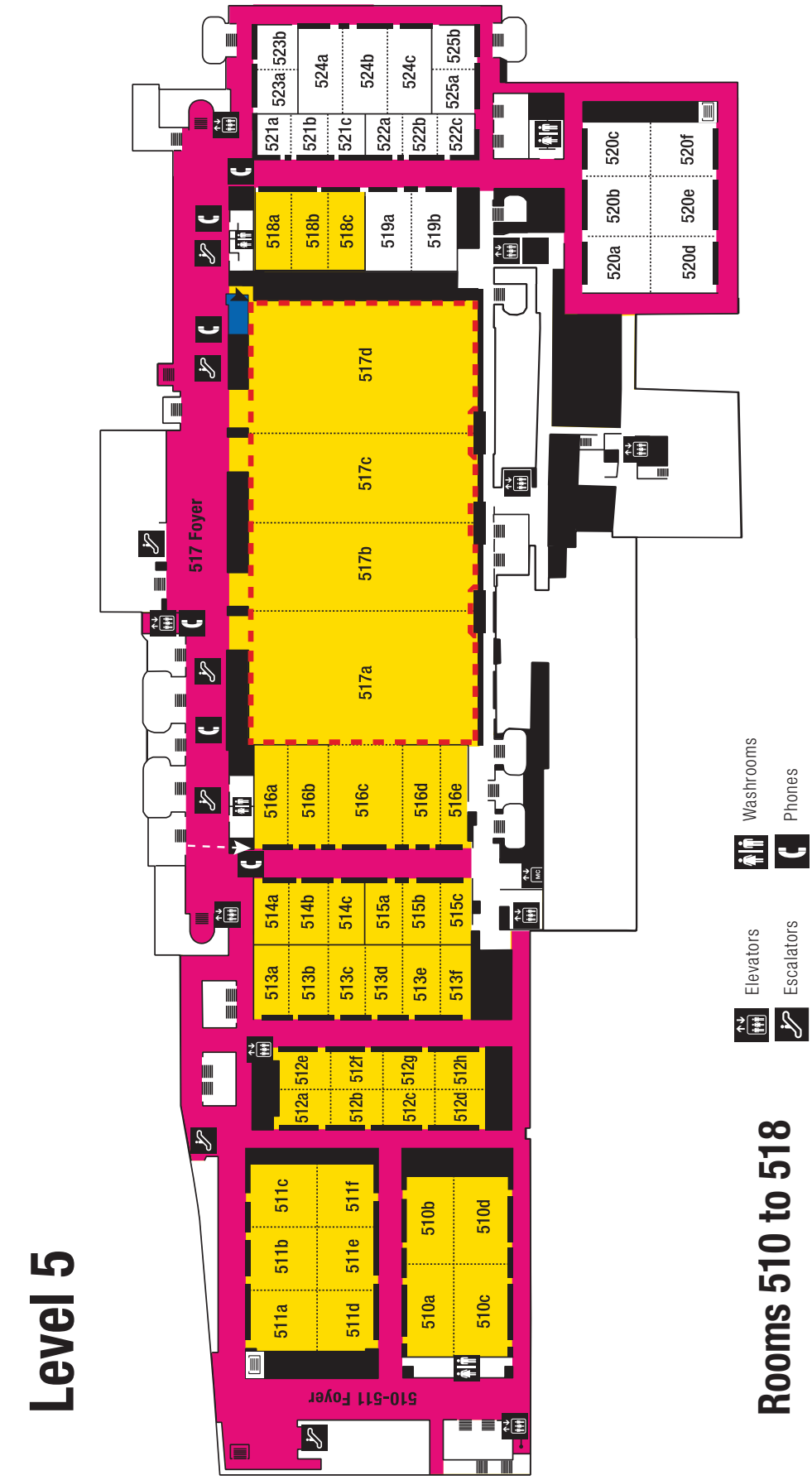
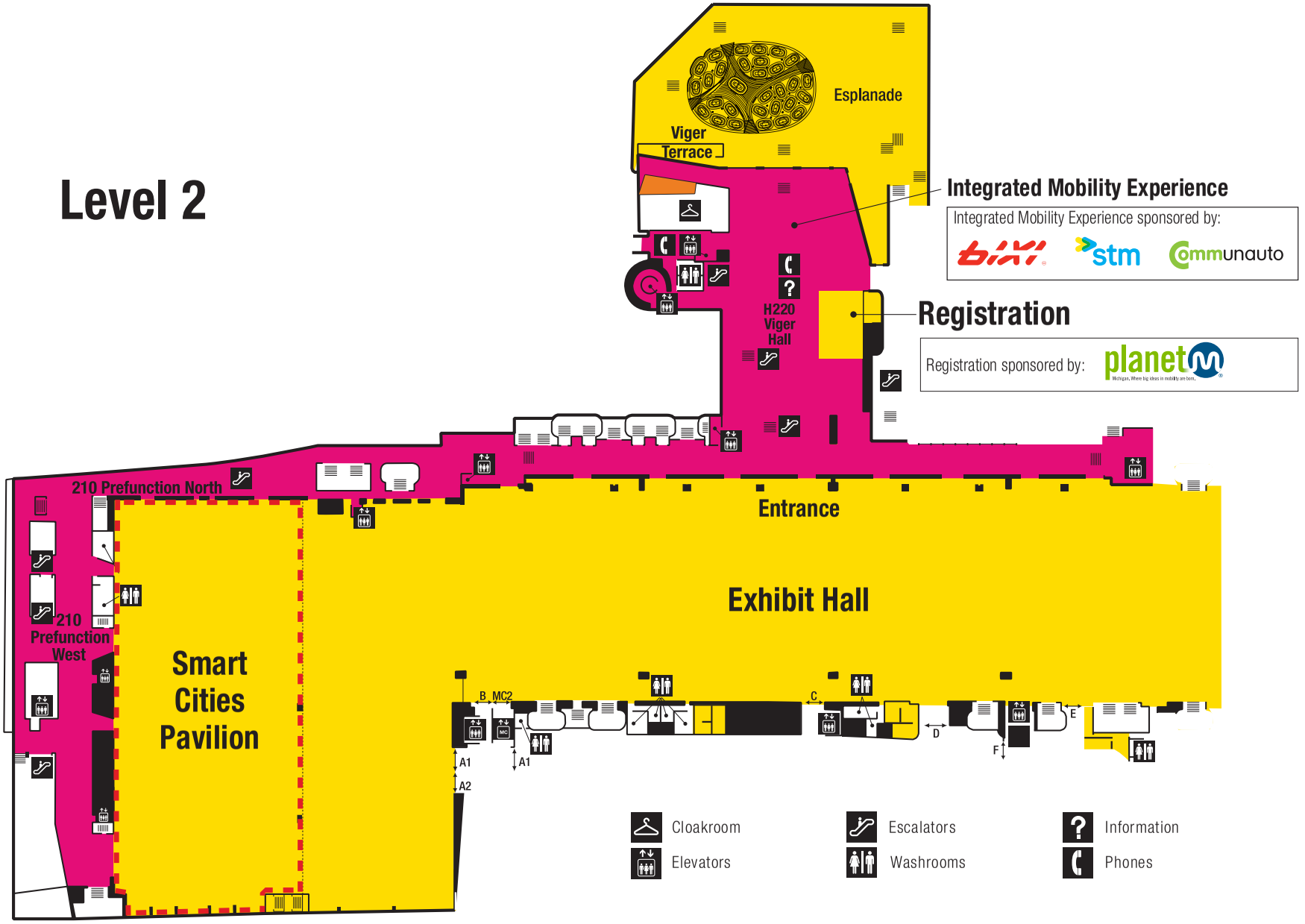
Palais Floor Plan



Level 2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Cloakroom
Escalators
Information
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Executive Sessions

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MONDAY 30 OCTOBER

ES01 - Breaking Silos to Pave the Way to Automated Vehicles sponsored by ECONOLITE

Monday 30 October | 12:00 - 13:30

SessionTrack: Connectivity and Autonomy

An ecosystem of industry and government partners must be established to contribute the necessary enabling components for the autonomous future. Auto and truck OEMs must work with technology partners to provide on-board sensors for cars and trucks as well as self-healing and accurate high-definition maps to support safe and effective autonomous driving. Full V2X connectivity must be implemented in a scalable and sustainable operating model. Finally, governments and industry must work together to regulate the entire process. This session will explore how these stakeholders can move from operating largely independently, as they do today, to cooperating effectively and quickly for a safe autonomous future.

Room 511 ABDE

Moderator: *Mr. Steven Dellenback, Vice President Research & Development, Southwest Research Institute, United States*

Speakers: *Ms. Leslie Richards, Director, Pennsylvania Department of Transportation, United States*

Mr. Naohiko Kakimi, Director, Electric Vehicle, Advanced Technology and ITS Promotion Office, Ministry of Economy, Trade and Industry, Japan

Mr. Paul Champion, CEO, Transport Systems Catapult, United Kingdom

ES02 - Securing Critical ITS Infrastructure in a Connected World

Monday 30 October | 13:45 - 15:15

SessionTrack: Infrastructure Challenges and Opportunities

Critical ITS infrastructure is vulnerable to physical and cyberattacks against computer systems, networks, applications, and mobile devices. With the Internet of Things (IoT) becoming more prevalent, our society is more 'networked' meaning that traditionally isolated control systems connecting business, government, and citizens become more vulnerable. To date, government agencies, business websites, and databases have been compromised, resulting in stolen personal data among other things. Some of these actual incidents include breaches in transportation operations. This session will address the policies needed and best practices that can be used to secure ITS systems, assuring the public they are safe when using connected transportation systems.

Room 511 ABDE

Moderator: *Mr. Michael De Santis, President, MI8 Innovation and ITS Canada, Canada*

Speakers: *Mr. Darran Anderson, Chief Strategy & Innovation Officer, Texas Department of Transportation, United States*

Mr. Woo-Seok Choi, Deputy Director, Convergence of New Industry Division, Ministry of Science, ICT and Future Planning, Korea

Mr. Maurice Geraets, Vice President, Innovation NXP, Netherlands

Mr. Brian Ness, Director, Idaho Transportation Department, United States

ES03 - ITS Delivering Livability

Monday 30 October | 15:30 - 17:00

SessionTrack: Smart(er) Cities

City transport has improved considerably over the last 20 years based on understanding traffic throughput, safety, and environmental impact. But today's city pressures are much wider ranging with many linked to demographic trends such as increasing and aging urban populations. We need to make cities more pleasant places in which to work and live, but adding to city infrastructure is slow, expensive, and usually unwelcome. And in many cities, there also just isn't the space to extend infrastructure. To make cities more livable, we need to deliver transport and other services in new ways. We need to devise new tools for city managers that allow them to understand and address the best ways to balance supply and demand; reduce congestion and improve air quality; integrate all modes of transport and incorporate Mobility as a Service (MaaS); modernize public transport and make all city transport more accessible; upgrade the facilities for pedestrians and cyclists; reduce transport's energy consumption; allow passenger and freight services the best shared use of infrastructure; convert to electromobility; and supply better transport information, ticketing, and payment services. This session will explore whether we can deliver gains in all these areas by finding better ways to use what we have.

Room 511 ABDE

Moderator: *Ms. Delphine Krieger, Innovation and International Business Strategy Manager, Eurometropolis of Strasbourg, France*

Speakers: *Mr. Randell Iwasaki, Executive Director, Contra Costa Transportation Authority, United States*

Mr. Steffen Schaefer, Chief Digital Officer, HMI Technologies–Global, New Zealand

Mr. Morten Kabell, Mayor of Technical and Environmental Affairs, City of Copenhagen, Denmark

Senator Jeff Brandes, The Florida Senate, United States

TUESDAY 31 OCTOBER

ES04 - Freight Technology: How Do We Ensure Public Safety

Tuesday 31 October | 8:00 - 9:30

SessionTrack: Disruption and New Business Models

Freight companies have considerable expectations from new technologies, but the impacts on public safety are not necessarily being considered. Private fleet truck platooning systems are emerging, freight drone deployments are rapidly becoming a reality, and unmanned commercial vehicle inspection systems are being deployed that minimize human intervention, greatly reduce delays to scheduled delivery times, and make supply chains cheaper. Public agencies must engage with the freight industry to ensure safety while not unduly inhibiting efforts to improve freight movements. This session will bring together global shippers, freight movers, regulatory agencies, and technology companies to explore how these groups can work together to improve both freight operations and public safety.

Room 511 ABDE

Moderator: *Mr. Richard Easley, President, E-Squared Engineering, United States*

Speakers: *Mr. Peter Sweatman, Principal, CAVita LLC, United States*

Mr. Paul Retter, Chief Executive Officer & Commissioner, National Transport Commission, Australia

Mr. Bill Panos, Director, Wyoming Department of Transportation, United States

Ms. Catherine Trautmann, Economic Development Vice-President for the Eurometropolis of Strasbourg & President of Strasbourg Autonomous Port, France

ES05 - Practical Aspects of Deploying Connected and Automated Vehicles sponsored by ECONOLITE

Tuesday 31 October | 13:15 - 14:45

SessionTrack: Connectivity and Autonomy

Connected and automated vehicles development continues to accelerate, but routine deployment is still many years away so it is timely to begin planning for a smooth transition. Deployment requires critical technology developments and has been the focus of a lot of innovation and trials within the ITS community. Some key technical and standardization challenges still need to be addressed (e.g. seamless connectivity, robust positioning, driver interaction), but in general the technical issues are better understood than the practical challenges and the impact on other transport stakeholders. Much more testing in real-world conditions – and especially in cities – is required to fully understand whether…and if so how…automated vehicles can run alongside traditional traffic on legacy infrastructure. Will automated vehicles benefit or damage a city's public transport? Questions regarding the financial impact and benefits on society, interoperability across jurisdictions, and robustness against cyber threats have yet to be answered. There may also be a need to manage travel demand in new ways, develop new policies, and encourage the social acceptance of the new mobility to ensure all stakeholders can benefit from it. This session will steer debate away from technology to focus on the practical deployment aspects.

Room 511 ABDE

Moderator: *Dr. Angelos Amditis, Research Director, Head of I-Sense Group, Institute of Communication & Computer Systems, Greece*

Speakers: *Mr. Masato Sahashi, Director, International Affairs Office, Engineering, Policy Division, Road Transport Bureau, Ministry of Land, Infrastructure, Transport and Tourism, Japan*

Mr. Shailen Bhatt, Executive Director, Colorado Department of Transportation, United States

Mr. Andrew McKellar, Secretary General for Automobile Mobility and Tourism, FIA, France

Mr. Andrew Mehaffey, Director - New South Wales, HMI Technologies Pty Ltd., Australia

Mr. Brian Negus, President, ITS Australia & RACV, Australia

Mr. Klaus Schierhackl, CEO, ASFINAG, Austria

ES06 - Smart Connected Cities Promote Smart Mobility

Tuesday 31 October | 15:00 - 16:30

SessionTrack: Smart(er) Cities

Smart Cities involve the application of advanced technologies, including ITS, within an urban environment. Smart Connected Cities enable information, including transport data, to be collected, analyzed and – along with energy grids, buildings, utilities, and communications systems – utilized to enhance urban services. Furthermore, Smart Cities enable better citizen engagement, social networking, and data analysis. Connecting these services and activities will result in information shared among agencies and the public to improve travel experiences and efficiencies. For example, travelers in this connected environment will be able to monitor and manage their own carbon footprint, which can in turn influence travel choices. This session brings together senior government and private sector leaders to discuss how ITS can contribute to Smart Cities and urban mobility.

Room 511 ABDE

Moderator: *Ms. Jane Lappin, Director, Government Affairs and Public Policy, Toyota Research Institute, United States*

Speakers: *Mr. Tan Kok Yam, Deputy Secretary, Smart Nation Program Office, Prime Minister's Office, Singapore*

Mr. Hermann Meyer, Vice President Smart City Solutions, Continental Automotive GmbH/Regensburg, Germany

Mr. T. Russell Shields, CEO, Ygomi, United States

Mr. Klaus Kröll, Executive Vice President of Europe, Middle East & North Africa, Kapsch TrafficCom AG, Austria

WEDNESDAY 1 NOVEMBER

ES07 - ITS Deployment Policies

Wednesday 01 November | 8:00 - 9:30

SessionTrack: Connectivity and Autonomy

The deployment of autonomous vehicles is moving forward at a rapid pace. The private sector is investing in this technology with the expectation that it will become commonplace. However, the rate of deployment is far outpacing public sector investment and preparation. How are transportation planners and government officials thinking about and preparing for autonomous vehicles? How do planners adjust their investment decisions based on the expected deployment of connected and autonomous vehicles (CAV)? While no one knows when this technology will be prevalent or how the mix of vehicles and modes will function, planners must consider the impacts of CAV. In this session, government leaders will discuss roadmaps to ITS deployment – focusing on automated driving systems based on the latest market trend and technology development status – and exchange their thoughts on how to make wise investment choices for the future given the potential impacts their decision-making and investments.

Room 511 ABDE

Moderator: *Mr. Atsushi Yano, Advisor, Sumitomo Electric Industries, Ltd., Japan*

Speakers: *Mr. Koji Hachiyama, Counsellor, National Strategy Office of ICT, Cabinet Secretariat, Japan*

Mr. Kirk Steudle, Director, Michigan Department of Transportation, United States

Mr. Xiaojing Wang, Chair, China ITS Industry Alliance, China

Mr. Kenneth Leonard, Director, Intelligent Transportation Systems Joint Program Office, United States Department of Transportation, United States

Mr. Herald Ruijters, Director, DG MOVE-European Commission

ES08 - Mobility as a Service

Wednesday 01 November | 13:15 - 14:45

SessionTrack: Disruption and New Business Models

Mobility as a Service (MaaS) has the potential to break the traditional link between mobility and vehicle ownership. It offers the promise of 'pure movement' where customers are offered journeys on demand for all modes of transport. But delivering MaaS is difficult, especially in a deregulated environment. Service providers need to supply reliable travel in real time without necessarily controlling the means of transport. Transport providers must offer responsive services that will compete with private cars using collective or shared transport. MaaS will require changing a business model from one where you hope for a near-monopoly to one where you accept that you are a partner in a new type of enterprise with a smaller share…but that share is part of a much larger overall market. Whether start-ups or existing providers take the lead, the prizes on offer are potentially huge. Successful operators will learn about the end-to-end journey patterns of their customers, a potential treasure trove of marketing information. So, while the challenges of delivering MaaS are significant, the benefits are equally substantial. This session will explore how to change suppliers' attitudes and develop new private-private partnerships.

Room 511 ABDE

Moderator: *Mr. Jacob Bangsgaard, CEO, ERTICO-ITS Europe*

Speakers: *Mr. Muhan Wang, Directorial General, Ministry of Transportation and Communications, Chinese-Taipei*

Mr. Dale Andrea, Chief Information Officer, Information Management & Technology, VicRoads, Australia

Mr. Thomas Sedran, Senior Vice President Group Strategy, Volkswagen, Germany

Speaker from Toyota Research Institute invited

ES09 - Better Traveler Information Technology and Institutional Issues for Automated Driving

Wednesday 01 November | 15:00 - 16:30

SessionTrack: Infrastructure Challenges and Opportunities

Travelers now have an increasing number of alternatives to utilize when making their journeys. Many of these mobility options incorporate technology to facilitate operations and customer information. Further, multimodal operations (e.g., Integrated Corridor Management) and V2X cooperative systems are likely to significantly increase in the future, including adoption of Signal Phase & Timing (SPaT) information. Finally, there will be an increase in the number of connected and autonomous vehicles (CAV). Improved 'situational awareness' will be a key part of delivering future transportation services. This session will explore how the industry and government are working together to provide road users with relevant and accurate transportation information and technology to facilitate travel decision making; what are the expected changes in travel behavior as a result of better traveler information and technology; and what is the status of insight for institutional issues between international framework and domestic regulation for automated driving. A discussion will also occur on how to overcome the challenges to implement innovative technologies.

Room 511 ABDE

Moderator: *Mr. Takashi Oguchi, Professor, The University of Tokyo, Japan*

Speakers: *Ms. Yuko Sano, Chief Superintendent, Director for ITS Commissioner General's Secretariat, National Police Agency, Japan*

Ms. Judith Zielke, Deputy Secretary, Federal Department of Infrastructure and Regional Development, Australia

Prof. Phil Blythe, Chief Scientific Advisor, Government Department for Transport, United Kingdom

Ms. Susan Mulvihill, Deputy Commissioner/ Chief Engineer, Minnesota Department of Transportation, United States

THURSDAY 2 NOVEMBER

ES10 - Resilient, Safe and Smart Infrastructure

Thursday 02 November | 8:15 - 9:45

SessionTrack: Integrated Approach: Planning, Operations and Safety

The design, operation, and management of transport infrastructure is already very complex. Traditional physical systems are just a start. Modern infrastructure must provide digital services to support traveler information, the operation of connected and highly automated vehicles, and adaptive area-wide traffic management. Our infrastructure must be able to cope with traffic jam, man-made incidents, and deliberate attacks as well as exceptional weather conditions such as drought, flooding, and extreme temperatures. Transport systems must be robust, sustainable, and resilient if they are to support daily life under all conditions. And they need to be composed of infrastructure that degrades gracefully and safely. There must be seamless integration of services across all modes, and networks need to be reconfigurable so that local incidents can be isolated and traffic re-routed. ITS can contribute to proactive maintenance tools, before and on-trip traveler information, and the optimization of operations in order to ensure continuous everyday mobility. This session will look at different strategic approaches to – and the concept, design, structure, and evaluation of – resilient systems in addition to smart use and smart investment of infrastructure.

Room 511 ABDE

Moderator: *Mr. Sorawit Narupiti, Head of Civil Engineering Department, Chulalongkorn University, Thailand*

Speakers: *Mr. Takashi Nishio, Director, ITS Policy and Program Office, Road Bureau, Ministry of Land, Infrastructure, Transport and Tourism, Japan*

Mr. Sang Heon Lee, Director, ITS and Road Safety Division, Ministry of Land, Infrastructure and Transport, Korea

Mr. Roger Millar, Secretary, Washington State Department of Transportation, United States

Mr. Klaas Rozema, Chief Technology Officer, Dynniq, Netherlands

Mr. Herald Ruijters, Director, DG MOVE, European Commission

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ES11 - Communication Options for Connected, Cooperative and Automated Transport

Thursday 02 November | 10:00 - 11:30

SessionTrack: Connectivity and Autonomy

Recent developments in telecommunication, sensor, and information technologies have enabled substantial progress in the domain of transport automation. Cooperative and automated driving are expected to bring substantial benefits in terms of safety, comfort, and (traffic and fuel) efficiency. As an ambition, fully automated (or autonomous) driving has captured the public's imagination. While technologies at the lower end of the automation spectrum are readily available, substantial development and maturity is required to realize full automation. There are particular challenges in terms of competing communication technologies, reliability, harmonization, and standardization that create an ideal opportunity for governments, ICT infrastructure providers, and transport stakeholder to intervene and support cooperative driving to realize key benefits in the near future. This session will explore the communications challenges and opportunities presented by connected and automated systems.

Room 511 ABDE

Moderator: *Mr. Young-Jun Moon, Research Fellow and Director of ITS R&D, The Korea Transport Institute, Korea*

Speakers: *Mr. Gaku Nakazato, Director, Ministry of Internal Affairs and Communications, Japan*

Ms. Ming-Whei Feng, Director General, Smart Network System Institute, Institute for Information Industry, Chinese-Taipei

Mr. Joaquín Torrecilla, Chief Technology Officer, DEKRA Testing and Certification, Spain

Mr. Brian Tossan, Director, Canadian Technical Centre, General Motors of Canada, Canada

ES12 - New Business Models

Thursday 02 November | 11:45 - 13:15

SessionTrack: Disruption and New Business Models

Traditional models of supply and demand are being disrupted. We are used to travelers driving cars and trucks that they own with an associated tax, using fuel that is taxed, and with fees for using infrastructure provided and paid for by government. Available public transport is – in most countries – planned and managed in terms of what operators want to supply rather than services driven by what users want and are willing to buy and pay. But the old model is crumbling. Some vehicles can now perform driving tasks better than most people and will soon be able to move without needing a driver. What might this mean for bus services…or regular freight deliveries? Electromobility is depressing the revenue from liquid fuel taxes. There is a strong shift to sharing transport rather than owning it. There is a huge availability of transport data and organizations are making money selling it or/and using it. What do all these developments mean for traditional business models? Do we need new forms of public-private partnerships with different risk management? Do policy makers need to re-think regulation to encourage innovative services? How will governments sustain transport expenditures in a sharing economy? This session asks those questions and explores answers to them.

Room 511 ABDE

Moderator: *Ms. Krista Huhtala-Jenks, Senior Officer for Digital Services and Mobility as a Service, Ministry of Transport and Communication Finland, Finland*

Speakers: *Mr. James Barna, Chief Engineer/Assistant Director of Transportation Policy, Ohio Department of Transportation, United States*

Mr. Michael Hurwitz, Director of Transport Innovation, Transport for London, United Kingdom

Mr. Martin Matthews, Director of Global Business Development, HMI Technologies, Former Secretory of Transport, New Zealand

Mr. Patrick McGowan, Vice President of Business Development, Serco Inc., United States

Mr. James Barna, Chief Engineer/Assistant Director of Transportation Policy, Ohio Department of Transportation, United States

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Special Interest Sessions

Some descriptions below may have been edited to fit available print space. For the most up-to-date details, download the ITS World Congress 2017 event app sponsored by ERoad or visit ITSWorldCongress2017.org.

SUNDAY 29 OCTOBER

SIS01 - Innovative C-ITS Services to Overcome Urban Mobility Challenges and Meet Policy Goals

Sunday 29 October | 12:00 - 13:30

SessionTrack: Connectivity and Autonomy

Room 515 ABC

Organizer: *Andre Perpey, Geoloc Systems, France*

Moderator: *Jean-Philippe Mechin, CEREMA, France*

Speakers: *Abdelmename Hedhli, IFSTTAR, France*

Toru Saito, Honda R&D Co., Ltd., Japan

Patrick Son, National Operations Center of Excellence

Andre Perpey , Geoloc Systems, France

SIS02 - Connected and Automated Driving Research Around the World

Sunday 29 October | 12:00 - 13:30

SessionTrack: Connectivity and Autonomy

Room 513 DEF

Organizer/Moderator: *Maxime Flament, ERTICO-ITS Europe, Belgium*

Speakers: *Kevin Dopart, U.S. Department of Transportation, United States*

Shinji Itsubo, National Institute for Land and Infrastructure Management, Ministry of Land, Infrastructure, Transport and Tourism, Japan

Geert Van Der Linden, Policy Officer, European Commission, Belgium

Ken Moshi, Transport Canada, Canada

Donna Weiland, Department of Infrastructure and Regional Development, Australia

Changki Kim, Ministry of Land, Infrastructure and Transport, Korea

SIS03 - Effective C-ITS Deployment: Analysis of Standards Gaps in a C-ITS Environment

Sunday 29 October | 12:00 - 13:30

SessionTrack: Connectivity and Autonomy

Room 513 BC

Organizer: *Wolfgang Hoefs, European Commission–DG CONNECT, Belguim*

Moderator: *Suzanne Sloan, U.S. Department of Transportation, United States*

Speakers: *Tom Lusco, Iteris, United States*

Knut Evensen, Q-Free, Norway

Gianmarco Baldini, European Commission's Joint Research Centre, Digital Security Unit, Italy

SIS04 - Is MaaS Real or a Utopian Dream?

Sunday 29 October | 12:00 - 13:30

SessionTrack: Infrastructure Challenges and Opportunities

Room 514 BC

Organizer: *Ali Savio, INRIX, United States*

Moderator: *Scott Sedlik, INRIX, United States*

Speakers: *Mads Gaml, City of Copenhagen, Denmark*

Andrea Petti, Ericsson, United States

Eduardo Felici, National Data Warehouse for Traffic Information, United States

Bernd Datler, ASFINAG Maut Service GmbH, Austria

SIS05 - Digital Transformation: From ETC to IoT to Smart City

Sunday 29 October | 13:45-15:15

SessionTrack: Smart(er) Cities

Room 514 BC

Organizer: *Peggy Liao, Far Eastern Electronic Toll Collection Co., Ltd., Chinese-Taipei*

Moderator: *Jason Chang, National Taiwan University, Chinese-Taipei*

Speakers: *Y. C. Chang, Far Eastern Electronic Toll Collection Co., Ltd., Chinese-Taipei*

Chin Rong Lin, Taipei Council, Chinese-Taipei

SIS06 - Personal Incentives on Mobile Devices for Sustainable and Efficient Transport Behavior

Sunday 29 October | 12:00 - 13:30

SessionTrack: Disruption and New Business Models

Room 510 D

Organizer: *Dirk van Amelsfort, RISE Viktoria, Sweden*

Moderator: *Susan Grant-Muller, Institute for Transport Studies, University of Leeds, United Kingdom*

Speakers: *Frances Hodgson , Institute for Transport Studies, University of Leeds, UK*

Wendy Tao, Siemens ITS, United States

Anders Hjalmarsson Jordanius, RISE Viktoria, Sweden

Joe Castiglione, San Francisco County Transportation Authority, United States

Pedro Henrique Scherner Romanel, URBS Urbanizacao de Curitiba S/A, Brazil

SIS07 - Implementation of C-ITS in Preparation for Automated Driving and Smart Cities

Sunday 29 October | 13:45 - 15:15

SessionTrack: Connectivity and Autonomy

Room 515 ABC

Organizer: *Kazunari Nakamura, Ministry of Land, Infrastructure, Transport and Tourism, Japan*

Speaker: *Kazunari Nakamura, Ministry of Land, Infrastructure, Transport and Tourism, Japan*

SIS08 - Standardization and Certification Needs for the Deployment of Automated Vehicles

Sunday 29 October | 13:45 - 15:15

SessionTrack: Connectivity and Autonomy

Room 513 DEF

Organizer: *Maxime Flament, ERTICO-ITS Europe, Belgium*

Moderator: *Álvaro Arrúe, Applus+ IDIADA, Spain*

Speakers: *Francois Fischer, ERTICO-ITS Europe, Belgium*

Carl Andersen, FHWA, United States

Gerben Feddes, RDW, Netherlands

Marcos Pillado, IDIADA, Spain

Adrian Zlocki, IKA, German

SIS09 - Mapping Intersections with Traffic Signals for C-ITS Applications

Sunday 29 October | 13:45 - 15:15

SessionTrack: Connectivity and Autonomy

Room 513 BC

Organizer/Moderator: *Fraser Johnson, Roads and Maritime Services, Australia*

Speakers: *Norman Cheung, Roads and Maritime Services, Australia*

Ari Edinburg, Road and Maritime Services, Australia

Steven Shaw, Roads and Maritime Services, Australia

Andrew Mehaffey, Roads and Maritime Services, Australia

SIS11 - A Programmatic Approach to Integrating Agency Data into Mobile Map Applications

Sunday 29 October | 13:45 - 15:15

SessionTrack: Data, Security and Privacy

Room 510 A

Organizer: *Kathleen Swindler, WSP, United States*

Moderator: *Robert Galvin, Port Authority of New York and New Jersey, United States*

Speakers: *Theodore Bobowsky, Port Authority of New York & New Jersey, United States*

Adam Freid, Waze, United States

Chris Lambert, Kentucky Transportation Cabinet, United States

Gregg Loane, City of Toronto, Canada

Zoltan Szilagyi, Google Maps, Switzerland

SIS12 - Shared Mobility: Between Now and What's Possible

Sunday 29 October | 13:45 - 15:15

SessionTrack: Disruption and New Business Models

Room 510 D

Organizer/Moderator: *Krista Huhtala-Jenks, Ministry of Transport and Communication Finland, Finland*

Speakers: *Catherine Kargas, MARCON, Canada*

Sami Sahala, Forum Virium Helsinki, Finland

Jari Kauppila, International Transport Forum OECD, France

Richard Harris, HMI Technologies, United Kingdom

Sharon Feigon, Shared Use Mobility Center, United States

Andrew Salzberg, Uber, United States

Special Interest Sessions

SIS13 - Connectivity: Needs and Challenges for the Deployment of Automated Vehicles

Sunday 29 October | 15:30 - 17:00

SessionTrack: Connectivity and Autonomy

Room 515 ABC

Organizer: *Maxime Flament, ERTICO-ITS Europe, Belgium*

Moderator: *Angelos Amditis, ICCS, Greece*

Speaker(s): *Brian Cronin, FHWA, United States Department of Transporation, United States*

Maxime Flament, ERTICO-ITS Europe, Belgium

Tim Leinmüller, Denso, Germany

Panagiotis Lytrivis, ICCS, Greece

James Misener, Qualcomm, United States

SIS14 - The Use of Big Data Analytics in Transportation

Sunday 29 October | 15:30 - 17:00

SessionTrack: Data, Security and Privacy

Room 513 DEF

Organizer/Moderator: *Robert McQueen, Bob McQueen and Associates, United States*

Speaker(s): *Abbas Ravat, KPIT Technologies Ltd., India*

SIS15 - On-Demand Passenger Transport: Innovative Operation Models

Sunday 29 October | 15:30 - 17:00

SessionTrack: Disruption and New Business Models

Room 513 BC

Organizer/Moderator: *Adriana Simona Mihaita, Data61, Australia*

Speaker(s): *Yuming Oh, DATA61|CSIRO, Australia*

Andreas Mai, Keolis North America, United States

Kevin Orr, Liftango, Australia

Yasuhiko Kumagai, Kochi University of Technology, Japan

Carol Schweiger, Schweiger Consulting LLC, United States

Gorazd Marinic, IRU

SIS16 - The Port of the Future

Sunday 29 October | 15:30 - 17:00

SessionTrack: Smart(er) Cities

Room 514 BC

Organizer: *Lina Konstantinopoulou , ERTICO - ITS Europe, Belgium*

Moderator: *Manuela Flachi, ERTICO-ITS Europe, Belgium*

Speaker(s): *Sascha Westermann, Hamburger Hochbahn AG, Germany*

Daniel Dagenais, Port of Montréal, Canada

Andre Perpey, Geoloc Systems, France

SIS17 - Towards Improving Quality of Mobility (QoM) from the Smart City's Perspective

Sunday 29 October | 15:30 - 17:00

Dedicated Track: Data, Security and Privacy

Room 510 A

Organizer: *Makoto Otsuki, ITS Japan, Japan*

Moderator: *Nobuyuki Ozaki, Toshiba Corp., Japan*

Speaker(s): *René Coutu, Société de transport de Montréal, Canada*

Ram Kandarpa, Booz Allen Hamilton, United States

Satoru Nakajo, The University of Tokyo, Japan

Nobuyuki Ozaki, TOSHIBA Corporation, Japan

MONDAY 30 OCTOBER

SIS19 - Connected Vehicle Pilot Deployment Program (Session 1 of 3): Deployment Status and Demonstrating Impacts

Monday 30 October | 12:00 - 13:30

SessionTrack: Connectivity and Autonomy

Room 515 ABC

Organizer/Moderator: *Kate Hartman, U.S. Department of Transportation, United States*

Speaker(s): *Mohamad Talas, New York City Department of Transporation, United States*

Tony English, Trihydro, United States

Bob Frey, Tampa-Hillsborough County Expressway Authority, United States

SIS20 - Smart Cities: Think Big, Start Small, Act Fast

Monday 30 October | 12:00 - 13:45

Dedicated Track: Smart(er) Cities

Room 513 DEF

Organizer: *Janneke van der Zee, ITS Canada, Canada*

Moderator: *Trevor McIntyre, IBI Group, Canada*

Speaker(s): *Rajeev Roy, Regional Municipality of York, Canada*

Bruno Peters, IBI Group, Canada

Randell Iwasaki, Contra Costa Transportation Authority, United States

Richard Easley, E-Squared Engineering, United States

Nishit Shah, Philips Lighing, Canada

Rick Duffy, WPS Canada Inc., Canada

Joani Gerber, investStratford, Canada

Josipa Petrunic, CUTRIC, Canada

Joseph K. Lam, Joe Lam & Associates, Canada

Barry Pekilis, National Research Council, Canada

SIS21 - Multi-State Collaboration: The SMART Belt Coalition

Monday 30 October | 12:00 - 13:30

Dedicated Track: Infrastructure Challenges and Opportunities

Room 513 ABC

Organizer: *Matthew Smith, Michael Baker International, United States*

Moderator: *Larry Bankert, Michael Baker International, United States*

Speaker(s): *Robert Taylor, Pennsylvania Turnpike Commission, United States*

Randy Cole, Ohio Turnpike and Infrastructure Commission, United States

Mark Kopko, PA Department of Transportation - Bureau of Maintenance and Operations, United States

Craig Hoff, Kettering University, United States

Stan Caldwell, Carnegie Mellon University, United States

Collin Castle, Michigan Department of Transportation, United States

SIS22 - Sensing, Visualizing and Enhancing the Last Mile of Urban and Metropolitan Freight

Monday 30 October | 12:00 - 13:30

Dedicated Track: Smart(er) Cities

Room 514 BC

Organizer/Moderator: *Vivek Sakhrani, CPCS Transcom Inc., United States*

Speaker(s): *Gary Carlin, INRIX, United States*

Lauren Cordova, Panasonic City NOW Smart Mobility and V2X Platform, United States

Kurtis McBride, Miovision, Canada

Chris Pyke, Aclima, United States

SIS23 - Maximizing CV Benefits Through Alternative Communications

Monday 30 October | 12:00 - 13:30

Dedicated Track: Connectivity and Autonomy

Room 510 A

Organizer/Moderator: *Debby Bezzina, University of Michigan, United States*

Speaker(s): *Kevin Gay, U.S. Department of Transportation, United States*

Robert Dockemeyer, Delphi, United States

Richard Michalski, Sirius XM, United States

Special Interest Sessions

SIS24 - Mini - Not Mega - Projects: ITS and Smaller Highways Authorities

Monday 30 October | 12:00 - 13:30

Dedicated Track: Infrastructure Challenges and Opportunities

Room 510 C

Organizer: *Jennie Martin, ITS United Kingdom, United Kingdom*

Moderator: *Darren Capes, City of York Council, United Kingdom*

Speaker(s): *Trond Hovland, ITS Norway, Norway*

Martin Russ, AustriaTech, Austria

Stephanie Leonard, European Commission, Belgium

Jennie Martin, ITS United Kingdom, United Kingdom

Young-Jun Moon, The Korea Transport Institute (KOTI), Korea

Tami Koivuniemi, Finnpark, Finland

SIS25 - Rural MaaS

Monday 30 October | 12:00 - 13:30

Dedicated Track: Disruption and New Business Models

Room 510 D

Organizer/Moderator: *Sami Sahala, Forum Virium Helsinki, Finland*

Speaker(s): *Krista Huhtala-Jenks, Ministry of Transport and Communication, Finland*

Janne Lonsethagen, Sør-Trøndelag County Authority, Norway

Christoph Henseler, TU Berlin, Germany

Valerie Lefler, Liberty Mobility Now Inc., United States

SIS26 - Connected Vehicle Pilot Deployment Program (Session 2 of 3): Technical Challenges and Proposed Solutions

Monday 30 October | 13:45 - 15:15

Dedicated Track: Connectivity and Autonomy

Room 515 ABC

Organizer/Moderator: *Kate Hartman, U.S. Department of Transportation, United States*

Speaker(s): *Robert Rausch, TransCore, United States*

Tony English, Trihydro, United States

Stephen Novosad, HNTB, United States

SIS27 - 5G in ITS: Powered by Satellite Communications

Monday 30 October | 13:45 - 15:15

Dedicated Track: Connectivity and Autonomy

Room 513 ABC

Organizer/Moderator: *Ashweeni Beeharee, Satellite Applications Catapult, United Kingdom*

Speaker(s): *Joel Schroeder, Inmarsat, United Kingdom*

Andrew Faiola, Intelsat, Luxembourg

Tim Last, Iridium, United States

SIS28 - Success Stories: Improving Mobility by Applying Advanced Traffic Management Technology

Monday 30 October | 13:45 - 15:15

Dedicated Track: Infrastructure Challenges and Opportunities

Room 514 BC

Organizer: *Wendy Tao, Siemens ITS, United States*

Moderator: *Marcus Welz, Siemens ITS, United States*

Speaker(s): *Adiam Emery, Seattle Department of Transportation, United States*

Nader Ayoub, Iteris, United States

Richard Dye, Maryland Department of Transportation, United States

Del Nichols, Jr., Siemens ITS, United States

SIS29 - Understanding the Interactions Between Vehicle Sensing Systems and Physical Highway Infrastructure

Monday 30 October | 13:45 - 15:15

Dedicated Track: Infrastructure Challenges and Opportunities

Room 510 A

Organizer/Moderator: *Dr. Kenneth Smith, 3M Co., United States*

Speaker(s): *Paul Carlson, Texas Transportaiton Institute, United States*

Michael McCoy, 3M Co., United States

Bodo Seifert, Magna Electronics, Inc., United States

Kirk Steudle, Michigan Department of Transportation, United States

SIS30 - Truck Platooning: The Next Challenge!

Monday 30 October | 13:45 - 15:15

Dedicated Track: Connectivity and Autonomy

Room 510 C

Organizer/Moderator: *Bastiaan Krosse, TNO, Netherlands*

Speaker(s): *Daan de Cloe, TNO, the Netherlands*

Maxime Flament, ERTICO-ITS Europe, Belgium

Steve Boyd, Peloton Technology, United States

SIS31 - Cybersecurity Challenges for CAVs: Fact versus Myth

Monday 30 October | 13:45 - 15:15

Dedicated Track: Data, Security and Privacy

Room 510 D

Organizer/Moderator: *C. Douglass Couto, Independent Consultant, United States*

Speaker(s): *Glenn Geers, Australian Road Research Board, Australia*

Michael Dinning, Volpe Center, United States

Peter Vermaat, TRL, United Kingdom

Josh Johnson, Southwest Research Institute, United States

Dan Klinedinst, CERT Carnegie Mellon University, United States

Val Mukherjee, Cyber Future Foundation, United States

SIS32 - MaaS: Roadmap to the Future of Mobility

Monday 30 October | 13:45 - 15:15

Dedicated Track: Disruption and New Business Models

Room 512 D

Organizer: *Monica Giannini, IRU Projects, Belgium*

Moderator: *Jacob Bangsgaard , ERTICO - ITS Europe, Belgium*

Speaker(s): *Sylvain Haon, UITP, Belgium*

Andy Taylor, Cubic Transportation Systems, England

Gorazd Marinic , IRU Projects, Belgium

Sascha Westermann , Hamburger Hochbahn AG, Germany

James Datson, Transport Systems Catapult, United Kingdom

SIS33 - Connected Vehicle Pilot Deployment Program (Session 3 of 3): Evaluating Performance and Long-Term Sustainment

Monday 30 October | 15:30 - 17:00

Dedicated Track: Connectivity and Autonomy

515 ABC

Organizer/Moderator: *Kate Hartman, U.S. Department of Transportation, United States*

Speaker(s):

Emily Nodine, U.S. Department of Transportation/Volpe, United States

Mike Lukuc, Texas A&M Transportation Institute, United States

Kate Hartman, U.S. Department of Transportation, United States

Meenakshy Vasudevan, Noblis, United States

SIS34 - Automated Vehicles and Sustainable Cities: Planning the Next Disruptive Technology

Monday 30 October | 15:30 - 17:00

Dedicated Track: Connectivity and Autonomy

Organizer/Moderator: *Julia Markovich, The Conference Board of Canada, Canada*

Speaker(s): *Ryan Falconer, Arup Canada, Canada*

SIS35 - 5G Automotive Alliance (5GAA): On the Road Towards LTE-V2X

Monday 30 October | 15:30 - 17:00

Dedicated Track: Connectivity and Autonomy

Room 513 ABC

Organizer/Moderator: *Olle Isaksson, Ericsson, Netherlands*

Speaker(s): *Stefano Sorrentino, Ericsson, Sweden*

Tim Leinmueller, Denso Automotive Deutschland GmbH, Germany

Jim Misener, Qualcomm Technologies, United States

Jovan Zagajac, Ford Motor Co., United States

Special Interest Sessions

SIS36 - Public Policy Strategies for Advancing Automated and Connected Vehicles

Monday 30 October | 15:30 - 17:00

Dedicated Track: Connectivity and Autonomy

Room 514 BC

Organizer/Moderator: *Ginger Goodin, Texas A&M Transportation Institute, United States*

Speaker(s): *Jack Hall, Contra Costa Transportation Authority, United States*

Blaine Leonard, Utah Department of Transporation, United States

Robert Spillar, City of Austin, Texas, United States

SIS37 - Reflecting Technology-Driven Mobility: Challenges in Modeling

Monday 30 October | 15:30 - 17:00

Dedicated Track: Infrastructure Challenges and Opportunities

Room 510 A

Organizer/Moderator: *Carol Schweiger, Schweiger Consulting LLC, United States*

Speaker(s): *Brendon Hemily, Independent Consultant in Public Transportation, Canada*

Paul Campion, Transport Systems Catapult, United Kingdom

Jason Chang, National Taiwan University, Chinese-Taipei

Marije de Vreeze, Connekt, Netherlands

SIS38 - Smart Cities, Open Data and Mobility

Monday 30 October | 15:30 - 17:00

Dedicated Track: Smart(er) Cities

Room 510 C

Organizer/Moderator: *Terry Bills, Esri, United States*

Speaker(s): *To be announced*

SIS39 - Transport Management on the Road Network of Megacities

Monday 30 October | 15:30 - 17:00

Dedicated Track: Smart(er) Cities

Room 510 D

Organizer/Moderator: *Takashi Oguchi, The University of Tokyo, Japan*

Speaker(s): *Tetsuo Shimizu, Tokyo Metropolitan University, Japan*

Young-Jun Moon, The Korea Transport Institute, Korea

Toshinori Nemoto, Hitotsubashi University, Japan

Ryota Horiguchi, i-Transport Lab. Co., Ltd., Japan

Kian-Keong Chin, Land Transport Authority, Singapore

Paul Hutton, Qvision, United Kingdom

SIS40 - Key Technical and Policy Design Challenges for Security Credential Management Systems

Monday 30 October | 15:30 - 17:00

Dedicated Track: Connectivity and Autonomy

Room 512 D

Organizer: *Jeffrey Bellone, U.S. Department of Transportation, United States*

Moderator: *John Harding, National Highway Traffic Safety Administration, United States*

Speaker(s): *Michael Shulman, Ford Motor Co., United States*

Kevin Gay, U.S. Department of Transportation, United States

Bill Lattin, Green Hills Software INTEGRITY Security Services, United States

SIS41 - Artificial Intelligence Algorithms for Traffic Video Analysis in Smart(er) Cities

Monday 30 October | 15:30 - 17:00

Dedicated Track: Smart(er) Cities

Room 511 C

Organizer: *Jelena Koller, TELEGRA, Croatia*

Moderator: *Branko Glad, TELEGRA, United States*

Speaker(s): *Ryan Williams, WSP, United States*

Marko Glad, Telegra Project, Croatia

Habib Shamskhou, Stantec, United States

TUESDAY 31 OCTOBER

SIS42 - CAV Data: Who Wants It and Why? Addressing Concerns of End Users

Tuesday 31 October | 8:00 - 9:30

Dedicated Track: Data, Security and Privacy

Room 515 ABC

Organizer:

Steven Johnson, HNTB, United States

Moderator: *Kate Hartman, U.S. Department of Transportation, United States*

Speaker(s): *Steven Johnson, HNTB, United States*

Emily Nodine, United StatesDOT/Volpe, United States

Michael Scrudato, Munich Reinsurance America Inc., United States

Cheryl Brown, Ph. D., University of North Carolina at Charlotte, United States

SIS43 - Sustainable Smart Cities: Adaptability from Collaboration and Empowerment

Tuesday 31 October | 8:00 - 9:30

Dedicated Track: Smart(er) Cities

Room 513 DEF

Organizer/Moderator: *Christian Chénard-Lemire, Genetec Inc., Canada*

Speaker(s): *Christian Chénard-Lemire, Genetec Inc., Canada*

Patrick Ricci, Urban Mobility Management Center, Canada

Patrick Lauzière, Orange Traffic Inc., Canada

Pat Elizondo, Conduent, United States

SIS44 - The ITS Road to 5G

Tuesday 31 October | 8:00 - 9:30

Dedicated Track: Connectivity and Autonomy

Room 513 ABC

Organizer/Moderator

Jim Misener, Qualcomm Technologies, Inc., United States

Speaker(s): *Tim Leinmueller, Denso Automotive Deutschland GmbH, Germany*

Jovan Zagajac, Ford Motor Co., United States

Jason Eillis, Qualcomm Technologies, Inc., United States

Dirk Dudenbostel, SWARCO, Germany

SIS45 - The Next Mobility Revolution Starts with Technology that Connects Us All

Tuesday 31 October | 8:00 - 9:30

Dedicated Track: Connectivity and Autonomy

Room 514 BC

Organizer: *Franziska Wagner, Siemens, United States*

Moderator: *Marcus Welz, Siemens ITS, United States*

Speaker(s): *Bob Frey, Tampa-Hillsborough County Expressway Authority, United States*

Dave Miller, Siemens, United States

Stephen Novosad, HNTB, United States

David McNamara, Brandmotion, United States

SIS46 - Traffic Sensing by Various Manners

Tuesday 31 October | 8:00 - 9:30

Dedicated Track: Infrastructure Challenges and Opportunities

Room 510 A

Organizer/Moderator: *Nobuyuki Ozaki, Toshiba Corp., Japan*

Speaker(s): *Chris Philp, CIMA+, Canada*

Adam Lyons, Iteris, Inc., United States

Nobuyuki Ozaki, Toshiba Corp., Japan

Rob Ferguson, University of Calgary, Canada

Daisik Nam, University of California-Irvine, United States

SIS47 - Infrastructure Connectivity for Smart Communities and Corridors

Tuesday 31 October | 8:00 - 9:30

Dedicated Track: Smart(er) Cities

Room 510 C

Organizer/Moderator: *John Corbin, Federal Highway Administration, University of Wisconsin - Madison, United States*

Speaker(s): *Paul Trombino, McClure Engineering Co., United States*

Dean Wise, BSNF Railway, United States

Bill Schrier, First Responder Network Authority (FirstNet), United States

Michelle Maggiore, Cisco Smart and Connected Transportation, United States

Jeff Purdy, Pennoni, United States

Christopher Armstrong, Panasonic, United States

Special Interest Sessions

SIS48 - Pan European Platform for Logistics and Security Optimization including Dangerous Goods

Tuesday 31 October | 8:00 - 9:30

Dedicated Track: Integrated Approach: Planning, Operations and Safety

Room 510 D

Organizer: *Andre Perpey, Geoloc Systems, France*

Moderator: *Jean-Philippe Mechin, Cerema, France*

Speaker(s): *Manuela Flachi, ERTICO-ITS Europe, Belgium*

Andre Perpey, Geoloc Systems, France

Eric Louette, Ministère de l'Environnement, de l'Energie et de la Mer, France

SIS49 - Automated Vehicle Test Sites: Compete or Complement?

Tuesday 31 October | 8:00 - 9:30

Dedicated Track: Connectivity and Autonomy

Room 512 D

Organizer/Moderator: *Risto Kulmala, Finnish Transport Agency, Finland*

Speaker(s): *Tom Alkim, Rijkswaterstaat, Netherlands*

Stuart Ballingall, Austroads, Australia

Masato Minakata, Toyota, Japan

Brian Cronin, FHWA, U.S. Department of Transporation, United States

SIS50 - Transforming Freight Movement Through ITS: Freight Transport Efficiency - Part 1 of 4

Tuesday 31 October | 9:45 - 11:15

Dedicated Track: Disruption and New Business Models

Room 515 ABC

Organizer: *Peter Sweatman, CAVita LLC, United States*

Moderator: *Bernard Jacob, IFSTTAR, France*

Speaker(s): *Tom Voege, International Transport Forum OECD, France*

Ryan Klomp, Transport Canada, Canada

SIS51 - Macro Impacts of Autonomous Vehicles

Tuesday 31 October | 9:45 - 11:15

Dedicated Track: Connectivity and Autonomy

Room 513 DEF

Organizer/Moderator: *Richard Mudge, Compass Transportation and Technology, Inc., United States*

Speaker(s): *Senator Dennis Dawson, Canadian Senate Committee on Transport and Communications, Canada*

Risto Kulmala, Finnish Transport Agency, Finland

Alain Kornhauser, Princeton University, United States

Hiroaki Miyoshi, Doshisha University, Japan

SIS52 - Implementation of Weigh-In-Motion Systems for Direct Weight Enforcement

Tuesday 31 October | 9:45 - 11:15

Dedicated Track: Infrastructure Challenges and Opportunities

Room 513 ABC

Organizer: *Hans van Loo, Corner Stone International SAGL., Switzerland*

Moderator: *Chris Koniditsiotis, Transport Certification Australia, Australia*

Speaker(s): *Randy Hanson, International Road Dynamics, Canada*

Cock Oosterman, NMi Certin b.v., Netherlands

Hans van Loo, Corner Stone International SAGL., Switzerland

Lukáš Valenta, CAMEA, spol s.r.o., Czech Republic

Libor Susil, CROSS, zlin, a.s., Czech Republic

Vince Mantero, Federal Highway Administration, United States

SIS53 - The Importance of Network Communications Infrastructure for ITS Initiatives

Tuesday 31 October | 9:45 - 11:15

Dedicated Track: Infrastructure Challenges and Opportunities

Room 514 BC

Organizer: *Thi Mai Thanh Do, City of Montréal, Canada*

Moderator: *Eric Labrie, IS5, Canada*

Speaker(s): *Thi Mai Thanh Do, City of Montréal, Canada*

Geoff Smith, Rajant, United States

Rock Lacroix, CIMA+, Canada

Dava Baumann, Rajant Corporation, United States

SIS54 - Parking Management: Past, Present and Future

Tuesday 31 October | 9:45 - 11:15

Dedicated Track: Smart(er) Cities

Organizer/Moderator: *Peer Ghent, Los Angeles Department of Transportation, United States*

Speaker(s): *Matthew Darst, Conduent, United States*

Nathan Donnell, INRIX, United States

Jan Schulte, Cleverciti Systems, United States

SIS55 - Benefit of IoT and Big Data for Automated Driving and User Trust Challenge

Tuesday 31 October | 15:00 - 16:30

Dedicated Track: Data, Security and Privacy

Room 510 A

Organizer: *Olivier Lenz, Federation Internationale Automobile, Belgium*

Moderator: *Francois Fischer, ERTICO-ITS Europe, Belgium*

Speaker(s): *Olivier Lenz, Federation Internationale Automobile, Belgium*

Jeff Walker, Canadian Automobile Association, Canada

Ralf Willenbrock, T-Systems, Germany

Hajime Amano, ITS Japan, Japan

Oihana Otaegui Madurga, Vicomtech, Spain

SIS56 - Reinventing Public Transport with SmartShuttles

Tuesday 31 October | 9:45 - 11:15

Dedicated Track: Disruption and New Business Models

Room 510 D

Organizer: *Vincent Galland, MSc, Swiss Business Hub Canada, Consulate General of Switzerland, Canada*

Moderator: *Markus Reubi, Consulate General of Switzerland, Canada*

Speaker(s): *Martina Müggler, PostBus Mobility Solutions Ltd., Switzerland*

Raphael Gindrat, BestMile, Switzerland

Florian Evequoz, HES-SO Valais, Switzerland

SIS57 - Recent International Progress on Truck Platooning - Part 2 of 4

Tuesday 31 October | 13:15 - 14:45

Dedicated Track: Disruption and New Business Models

Room 515 ABC

Organizer: *Peter Sweatman, CAVita LLC, United States*

Moderator: *Steven Shladover, University of California PATH Program, United States*

Speaker(s):

Steven Shladover, University of California PATH Program, United States

Steve Boyd, Peloton Technology, United States

Bastiaan Krosse, TNO, Netherlands

Brian McAuliffe, National Research Council Canada, Canada

Jose Viegas, International Transport Forum, France

SIS58 - Shared Mobility in a Digital City

Tuesday 31 October | 13:15 - 14:45

Dedicated Track: Connectivity and Autonomy

Room 513 DEF

Organizer: *Félix Gravel, Conseil régional de l'environnement de Montréal, Canada*

Moderator: *Catherine Kargas, MARCON, Canada*

Speaker(s): *Jean-Francois Barsoum, IBM Canada, Canada*

Catherine Kargas, MARCON, Canada

Vincent Dussault, Coop carbone, Canada

SIS59-1 - Data Collection and Data Sharing: Needs and Challenges for Automated Vehicle Pilots - Part 1 of 2

Tuesday 31 October | 13:15 - 14:45

Dedicated Track: Data, Security and Privacy

Room 512 D

Organizer: *Maxime Flament, ERTICO-ITS Europe, Belgium*

Moderator: *Yvonne Barnard, University of Leeds, United Kingdom*

Speaker(s): *Helena Gellerman, SAFER Vehicle and Traffic Safety Centre at Chalmers University of Technology, Sweden*

Ariel Gold, U.S. Department of Transportation, United States

Masato Minakata, SIP-adus/Toyota, Japan

Jim Sayer, UMTRI, United States

Special Interest Sessions

SIS59-2 - Data Collection and Data Sharing: Needs and Challenges for Automated Vehicle Pilots - Part 2 of 2

Tuesday 31 October | 15:00 - 16:15

Dedicated Track: Data, Security and Privacy

Room 512 D

Organizer: *Maxime Flament, ERTICO-ITS Europe, Belgium*

Moderator: *Yvonne Barnard, University of Leeds, United Kingdom*

Speaker(s): *Helena Gellerman, CHALMERS, Sweden*

Adrian Zlocki, IKA, Germany

Sami Koskinen, VTT, Finland

SIS60 - Technology for Public Transport: New Solutions for Integrated Mobility

Tuesday 31 October | 13:15 - 14:45

Dedicated Track: Smart(er) Cities

Room 514 BC

Organizer: *Carol Schweiger, Schweiger Consulting LLC, United States*

Moderator: *Randell Iwasaki, Contra Costa Transportation Authority, United States*

Speaker(s): *Alexandre Savard, GIRO Inc., Canada*

Youngkook Kim, The Korea Transport Institute, Korea

Mika Kulmala, City of Tampere, Finland

Lenae Boykin, TransLoc, United States

Stephanie Leonard, European Commission – DG MOVE, Belgium

SIS61 - The Role of V2X in Automated Vehicles

Tuesday 31 October | 13:15 - 14:45

Dedicated Track: Connectivity and Autonomy

Room 510 A

Organizer/Moderator: *Ravi Puvvala, Savari, Inc., United States*

Speaker(s): *Brian Greaves, AT&T Mobility, United States*

Gummada Murthy, American Association of State Highway and Transportation Officials, United States

Stephen Novosad, HNTB, United States

Michael Shulman, Ford Motor Co., United States

Christopher Armstrong, Panasonic, United States

SIS62 - Disruptive Technology Delivered via Connected Vehicles that Transforms User Experience

Tuesday 31 October | 13:15 - 14:45

Dedicated Track: Disruption and New Business Models

Room 510 C

Organizer: *Paul Hutton, Travel for Media, United Kingdom*

Moderator: *Ian Patey , Mouchel, UK*

Speaker(s): *Mahmood Hikmet , HMI Technologies, New Zealand*

Barry Einsig, Cisco Systems, United States

Nick Kiernen, TrafficCast, United States

Paul Hutton, Operations Director, TFM, United Kingdom

SIS63 - Energy Efficient Mobility Systems: The United States DOE's Research on Smart Mobility

Tuesday 31 October | 13:15 - 14:45

Dedicated Track: Innovation, What's Next? The New Ideas

Room 510 D

Organizers: *David Anderson, United States Department of Energy, United States*

Kevin Walkowicz, National Renewable Energy Laboratory, United States

Moderator: *David Anderson, United States Department of Energy, United States*

Speaker(s): *Erik Rask, Argonne National Laboratory, United States*

Stanley Young, National Renewable Energy, United States

Anand Gopal, Lawrence Berkeley National Laboratory, United States

John Smart, Idaho National Laboratory, United States

David Smith, Oak Ridge National Laboratory, United States

SIS64 - Measuring the Benefits of ITS Using Big Data (IBEC)

Tuesday 31 October | 13:15 - 14:45

Dedicated Track: Data, Security and Privacy

Room 513 ABC

Organizer: *Glenn Geers, Australian Road Research Board, Australia*

Moderator: *Peter Damen, Australian Road Research Board, Australia*

Speaker(s): *Glenn Geers, Australian Road Research Board, Australia*

Robert Bertini, University of South Florida, United States

Michael Fontaine, Virginia Department of Transportation, United States

Andy Taylor, Strategy Director, Cubic Transportation Systems, United Kingdom

Monali Shah, HERE, United States

SIS65 - Transforming Freight Movement Through ITS: Infrastructure and Communication - Part 3 of 4

Tuesday 31 October | 15:00 - 16:30

Dedicated Track: Disruption and New Business Models

Room 515 ABC

Organizer

Peter Sweatman, CAVita LLC, United States

Moderator: *Chris Koniditsiotis, Transport Certification Australia, Australia*

Speaker(s): *Chris Koniditsiotis, Transport Certification Australia, Australia*

Bernard Jacob, IFSTTAR, France

SIS66 - Cooperation and Collaboration in AV Trials Conducted Across Multiple Countries

Tuesday 31 October | 15:00 - 16:30

Dedicated Track: Connectivity and Automation

Room 513 DEF

Moderator: *Dean Zabrieszach, HMI Technologies Pty Ltd., Australia*

Speaker(s): *Kian Keong Chin, Land Transport Authority, Singapore*

Dean Economou, Telstra Corporation, Australia

Randell Iwasaki, Contra Costa Transport Authority, United States

Andrew Mehaffey, HMI Technologies Pty Ltd., Australia

Dougal Morrison, HMI Technologies Ltd., New Zealand

SIS67 - Integrated Road Infrastructure for Mixed Vehicle Traffic Flows

Tuesday 31 October | 15:00 - 16:30

Dedicated Track: Connectivity and Autonomy

Room 513 ABC

Organizer/Moderator: *Angelos Amditis, ICCS, Greece*

Speaker(s): *Andreas Kerschbaumer, Virtual Vehicle, Austria*

Julian Schindler, Institute of Transportation Systems at the German Aerospace Center (DLR), Germany

Steven Shladover, University of California PATH Program, United States

Bernard Gyergyay, Rupprecht Consult – Forschung & Beratung GmbH, Germany

Bernd Datler, ASFINAG Maut Service GmbH, Austria

SIS68 - Traffic Signal Control System for Connected and Automated Vehicles

Tuesday 31 October | 15:00 - 16:30

Dedicated Track: Innovation, What's Next? The New Ideas

Room 514 BC

Organizer/Moderator: *Young-Jun Moon, The Korea Transport Institute, Korea*

Speaker(s): *Youngje Jeong, Korea Road Traffic Authority, Korea*

Kitae Jang, KAIST, Korea

Sangsun Lee, Hanyang University, Korea

Jae-Hyong Park, Metabuild Inc., Korea

Jinhwan Jang, Korea Institute of Civil Engineering and Building Technology (KICT), Korea

Ji-Yeon Lee, ITS Korea, Korea

SIS69 - New Evaluation Methods for Piloting Automated Road Transport (IBEC)

Tuesday 31 October | 9:45 - 11:15

Dedicated Track: Connectivity and Autonomy

Room 510 C

Organizer/Moderator: *Yvonne Barnard, University of Leeds, United Kingdom*

Speaker(s): *Helena Gellerman, SAFER Vehicle and Traffic Safety Centre at Chalmers University of Technology, Sweden*

Adrian Zlocki, IKA, Germany

Ding Zhao, University of Michigan Transportation Research Institute, United States

Nobu Uchida, Japan Automobile Research Institute, Japan

Special Interest Sessions

SIS70 - Transforming Freight Movement Through ITS: CAV Technology and Freight Vehicle Applications - Part 4 of 4

Tuesday 31 October | 16:45 - 18:00

Dedicated Track: Disruption and New Business Models

Room 515 ABC

Organizer/Moderator: *Peter Sweatman, CAVita LLC, United States*

Speaker(s): *Wolfgang Hoefs, European Commission–DG CONNECT, Belguim*

John Wall, Road for Safety and Technology, Transport for New South Wales, Australia

Richard Easley, E-Squared Engineering, United States

Maxime Flament, ERTICO-ITS Europe, Belgium

Peter Sweatman, CAVita LLC, United States

John Wall, Transport for NSW, Australia

Richard Bishop, Bishop Consulting, United States

WEDNESDAY 1 NOVEMBER

SIS71 - Vehicle-To-Infrastructure Deployment Coalition

Wednesday 1 November | 8:00 - 9:30

Dedicated Track: Connectivity and Autonomy

Room 515 ABC

Organizer/Moderator: *Matthew Smith, Michael Baker International, United States*

Speaker(s): *Ray Starr, Minnesota Department of Transportation, United States*

Edward Seymour, Texas A&M University, United States

Faisal Saleem, Maricopa County (AZ) Department of Transportation, United States

Greg Larson, Caltrans Division of Research, Innovation and System Information, United States

Collin Castle, Michigan Department of Transportation, United States

SIS72 - Freight Innovations for Integrated Transportation and Trade Corridor Management

Wednesday 1 November | 8:00 - 9:30

Dedicated Track: Integrated Approach: Planning, Operations and Safety

Room 513 DEF

Organizer: *Janneke van der Zee, ITS Canada, Canada*

Moderator: *Richard Easley, E-Squared Engineering, United States*

Speaker(s): *Peter Appel, AlixPartners, United States*

Daniel Dagenais, Montréal Port Authority, Canada

SIS73 - Concept of Operations with Connected and Automated Vehicles

Wednesday 1 November | 8:00 - 9:30

Dedicated Track: Connectivity and Autonomy

Room 513 ABC

Organizer/Moderator: *Dr. Charles Karl, Australian Road Research Board, Australia*

Speaker(s): *Kian-Keong Chin, Land Transport Authority, Singapore*

Stuart Ballingall, Austroads, Australia

Leslie Richards, Pennsylvania Department of Transportation, United States

Serge van Dam, Rijkswaterstaat, Netherlands

SIS74 - An Industry-Based Sustainable Certification Model Program for DSRC-Based Services

Wednesday 1 November | 8:00 - 9:30

Dedicated Track: Connectivity and Autonomy

Room 514 BC

Organizer: *Suzanne Sloan, U.S. Department of Transportation, United States*

Moderator: *Kevin Gay, U.S. Department of Transportation, United States*

Speaker(s): *Dmitri Khijniak, 7layers, United States*

Michael Brown, Southwest Research Institute, United States

Andrew Donaldson, Danlaw, Inc., United States

Jason Conley, OmniAir Consortium, United States

SIS75 - Multimodal Travel Information for Smart Cities

Wednesday 1 November | 8:00 - 9:30

Dedicated Track: Smart(er) Cities

Room 510 A

Organizer: *Joanna Robinson, Queensland Department of Transport and Main Roads, Australia*

Speaker(s): *Joanna Robinson, Queensland Department of Transport and Main Roads, Australia*

Patrick Fitzhenry, Alberta Transportation, Government of Alberta, Canada

Sharon Hunter, Transport for New South Wales, Australia

Chris Bax, Cubic Transportation Systems, United States

SIS76 - Big Data and Its Positive Impacts on Transport Planning and Operations Decision-Making

Wednesday 1 November | 8:00 - 9:30

Dedicated Track: Data, Security and Privacy

Room 510 C

Organizer: *Ali Savio, INRIX, United States*

Moderato: *Rick Schuman, INRIX, United States*

Speaker(s): *Darcy Bullock, Purdue University, United States*

Angelo Martino, TRT Trasporti e Territorio, Italy

Olaf Vroom, National Data Warehouse for Traffic Information, Netherlands

Denise Markow, I-95 Corridor Coalition, United States

SIS77 - Incident Management ITS Needs and Benefits

Wednesday 1 November | 8:00 - 9:30

Dedicated Track: Integrated Approach: Planning, Operations and Safety

Room 510 D

Organizer: *Bob Murphy, AECOM, United States*

Moderator: *Adam Hopps, Toxcel, United States*

SIS78 - From Smart Cities to Smart States Using Big Data to Advance Transportation Initiatives

Wednesday 1 November | 8:00 - 9:30

Dedicated Track: Data, Security and Privacy

Room 512 D

Organizer/Moderator: *Pete Costello, Iteris, United States*

Speaker(s): *Dean Gustafson, Virginia Department of Transportation, United States*

Beth Kigel, Florida Transportation Commission, United States

Jesse Coleman, City of Toronto, Canada

SIS79 - Reducing Vehicle to Bicycle Accidents with V2X Technology

Wednesday 1 November | 10:45 - 12:15

Dedicated Track: Connectivity and Autonomy

Room 515 ABC

Organizer: *Ravi Puvvala, Savari, Inc., United States*

Moderator: *Paul Sakamoto, Savari, Inc., United States*

Speaker(s): *Mohamad Talas, New York City Department of Transportation, United States*

Stephen Novosad, HNTB, United States

Xiaowen Dai, General Motors, China

SIS80 - The Internet of Things and Transportation: Now and Future

Wednesday 1 November | 10:45 - 12:15

Dedicated Track: Smart(er) Cities

Room 513 DEF

Organizer/Moderator: *Murray Marven, Bell Mobility, Canada*

Speaker(s): *Charles Truong, Solutions Transport; Innovation, Canada*

Claude Arpin, Bell Mobility, Canada

James Delamere, Stinson Equipment, Canada

Pascal Lamoureux, Electromega, Canada

Jean Pilon-Bignell, Geotab, Canada

Special Interest Sessions

SIS81 - Autonomous Vehicles: Reimagining an Accessible Transportation System for People with Disabilities

Wednesday 1 November | 10:45 - 12:15

Dedicated Track: Connectivity and Autonomy

Room 513 ABC

Organizer/Moderator: *Jeff Gerlach, Securing America's Future Energy, United States*

Speaker(s): *Teresa Favuzzi, California Foundation for Independent Living Centers, United States*

Parnell Diggs, National Federation of the Blind, United States

Lindsay Eli, Uber, United States

Garry Augustine, Disabled American Veterans, United States

Eric Lipp, Open Doors Organization, United States

Mike Masserman, Lyft, United States

SIS82 - Strategy of Practical Implement of V-I Cooperative Systems for Traffic Accident Avoidance

Wednesday 1 November | 10:45 - 12:15

Dedicated Track: Connectivity and Autonomy

Room 514 BC

Organizers: *Shuetsu Shibuya, National Police Agency, Japan*

Takashi Kimura, UTMS Society of Japan, Japan

Moderator: *Takashi Oguchi, The University of Tokyo, Japan*

Speaker(s): *Shuetsu Shibuya, National Police Agency, Japan*

Ryohei Yasui, UTMS Society of Japan, Japan

Yuichi Takayanagi, UTMS Society of Japan, Japan

Carl Andersen, Federal Highway Administration, United States

Martin Boehm, AustriaTech–Federal Agency for Technological Measures Ltd., Austria

Maxime Flament, ERTICO - ITS Europe

SIS83 - Disruptive Mobility Services Utilizing IoT Big Data for Smart Cities

Wednesday 1 November | 10:45 - 12:15

Dedicated Track: Smart(er) Cities

Room 510 A

Organizer: *Shigeru Yokoyama, Internet ITS Consortium, Japan*

Moderator: *Makoto Maekawa, NEC Corp., Japan*

Speaker(s): *Takuro Yonezawa, Keio University, Japan*

Takayuki Ichikawa, Yazaki Corp., Japan

Stefan Myhrberg, Ericsson, Sweden

Monali Shah, HERE, United States

SIS84 - Connected City Operations: Real-World Examples of Intelligent City Mobility Management

Wednesday 1 November | 10:45 - 12:15

Dedicated Track: Smart(er) Cities

Room 510 C

Organizer: *Ignasi Vilajosana, Worldsensing, Spain*

Moderator: *Scott McDonald, McRock Capital, Canada*

Speaker(s): *Ignasi Vilajosana, Worldsensing, Spain*

Farid Mobasser, Fortran Traffic Systems Ltd., Canada

John Munevar, SKG Tecnologia, Colombia

Dr. Remi Tachet des Combes, Microsoft Maluuba, France

SIS85 - Using ITS to Protect Motorists Against Wrong Way Drivers

Wednesday 1 November | 10:45 - 12:15

Dedicated Track: Integrated Approach: Planning, Operations and Safety

Room 510 D

Organizer/Moderator: *Rojina Baisyet, Beca Ltd., New Zealand*

Speaker(s): *Andrew Stevens, Auckland Motorway Alliance, New Zealand*

Kevin Balke, Texas A&M Transportation Institute, United States

Sarah Simpson, , United Civil Group Corporation, United States

Masayoshi Yokota, East Nippon Expressway Company Limited, Japan

SIS86 - If Autonomous Vehicles are So Great, Why are Public Programs the Same?

Wednesday 1 November | 10:45 - 12:15

Dedicated Track: Disruption and New Business Models

Room 512 D

Organizer/Moderator: *Richard Mudge, Compass Transportation and Technology, Inc., United States*

Speaker(s): *Eric Sampson, United Kingdom*

Shailen Bhatt, Colorado Department of Transportation, United States

Antti Vehviläinen, Finnish Transport Agency, Finland

SIS87 - Radiocommunication Technologies for Cooperative ITS and Automated Driving

Wednesday 1 November | 13:15 - 14:45

Dedicated Track: Connectivity and Autonomy

Room 515 ABC

Organizer: *Kazuhiro Wada, Ministry of Internal Affairs and Communications, Japan*

Moderator: *Satoshi Oyama, Association of Radio Industries and Businesses, Japan*

Speaker(s): *Colin Langtry, International Telecommunication Union, Switzerland*

Kazuhiro Wada, Ministry of Internal Affairs and Communications, Japan

John Kenney, Toyota InfoTechnology Center, United States

Niels Peter Skov Andersen, Car 2 Car-Communication Consortium, Denmark

Toru Saito, Honda R&D Co., Ltd., Japan

SIS88 - Real-World Challenges of Deploying V2I Applications

Wednesday 1 November | 13:15 - 14:45

Dedicated Track: Connectivity and Autonomy

Room 513 DEF

Organizer: *Jeff Lindley, Insitute of Transportation Engineers, United States*

Moderator: *Ram Kandarpa, Booz Allen Hamilton, United States*

Speaker(s): *Blaine Leonard, Utah Department of Transporation, United States*

Edward Bradley, Toyota, United States

Kate Hartman, U.S. Department of Transportation, United States

Dan Mathieson, City of Stratford, Canada

SIS89 - Driverless Future: A Policy Roadmap for City Leaders

Wednesday 1 November | 13:15 - 14:45

Dedicated Track: Connectivity and Autonomy

Room 513 ABC

Organizer: *Michelle Long, Arcadis, United States*

Moderator: *Mark De la Vergne, City of Detroit, United States*

Speaker(s): *Marwan Abboud, Arcadis, United States*

Joe Iacobucci, Sam Schwartz Engineering, United States

Akhil Chauhan, Arcadis, United States

Richard Harris, HMI Technologies, United Kingdom

Glenn Havinoviski, Iteris, Inc., United States

SIS90 - Using ITS Infrastructure to Improve Hurricane Response

Wednesday 1 November | 13:15 - 14:45

Dedicated Track: Infrastructure Challenges and Opportunities

Room 514 BC

Organizer: *Steven Dellenback, Southwest Research Institute, United States*

Moderator: *Josh Johnson, Southwest Research Institute, United States*

Speaker(s): *Cordell Schachter, New York City Department of Transportation, United States*

John Hibbard, Georgia Department of Transportation, United States

Joe Waggoner, Tampa Hillsborough Expressway Authority, United States

Darran Anderson, Texas Department of Transportation, United States

SIS91 - Is the Roadway Infrastructure Ready for Automation?

Wednesday 1 November | 13:15 - 14:45

Dedicated Track: Infrastructure Challenges and Opportunities

Room 510 A

Organizer/Moderator: *Ryan Lamm, Southwest Research Institute, United States*

Speaker(s): *Sue Bai, Honda, United States*

Patrick Brunett, Quanergy, United States

Michael Brown, Southwest Research Institute, United States

Shawn Kimmel, Booz Allen Hamilton, Inc., United States

Thomas Hedblom, 3M, United States

Special Interest Sessions

SIS92 - Next Traffic Management with Fusion of Public and Private Open Data

Wednesday 1 November | 13:15 - 14:45

Dedicated Track: Smart(er) Cities

Room 510 C

Organizer/Moderator: *Masafumi Kobayashi, Sumitomo Electric Industries, Ltd., Japan*

Speaker(s): *Hajime Sakakibara, Sumitomo Electric Industries, Ltd., Japan*

Sorawit Narupiti, Chulalongkorn University, Thailand

Jaya Shankar P, Institute for Infocomm Research, Singapore

Tatsuya Higuchi, Mitsubishi Heavy Industries, Ltd., Japan

SIS93 - The Public Transport (R)evolution: Leveraging Data to Redefine/Expand the Role of Transit

Wednesday 1 November | 13:15 - 14:45

Dedicated Track: Smart(er) Cities

Room 510 D

Organizer: *Alexandre Savard, GIRO Inc., Canada*

Moderator: *Jean-Francois Barsoum, IBM Canada, Canada*

Speaker(s): *Vincent Dionne, Société de transport de Laval, Canada*

Alexandre Savard, GIRO, Canada

Mohsen Nazem, Réseau de transport métropolitain, Canada

SIS94 - The Key to Spread of Image-Recording Type Driving Event Video Recorder

Wednesday 1 November | 13:15 - 14:45

Dedicated Track: Integrated Approach: Planning, Operations and Safety

Room 512 D

Organizer: *Koji Ukena, UK Consultant, Japan*

Moderator: *Sadao Horino, Kanagawa University, Japan*

Speaker(s): *Koji Ukena, UK Consultant, Japan*

Kwang Il Park, PLK Technologies Co. Ltd., Korea

Hiroshi Matsuki, Panasonic Taiwan, Chinese-Taipei

Joe Ye, CEO, ULSee Inc., Chinese-Taipei

Daishi Watabe, Saitama Institute of Technology, Japan

Sadao Horino, Kanagawa University, Japan

SIS95 - Utilizing V2X to Create the Future of Connected Motorcycles

Wednesday 1 November | 15:00 - 16:30

Dedicated Track: Connectivity and Autonomy

Room 515 ABC

Organizer: *Huei-Ru Tseng, Industrial Technology Research Institute/Chinese-Taipei Association of Information and Communication Standards, Chinese-Taipei*

Moderator: *Ching-Yao Chan, Partners for Advanced Transportation Technology, University of California-Berkeley, United States*

Speaker(s): *Muhan Wang, MOTC, Chinese-Taipei*

Niels Peter Skov Andersen, Car 2 Car-Communication Consortium, Denmark

Hennes Fischer, Yamaha Motor Europe N.V., Germany

Arne Purschwitz, BMW Motorrad, Germany

John Lenkeit, Dynamic Research Inc., United States

Michael Van Auken, Dynamic Research, Inc., United States

SIS96 - Innovative Procurement Models for ITS Products and Services

Wednesday 1 November | 15:00 - 16:30

Dedicated Track: Disruption and New Business Models

Room 513 DEF

Organizer: *Anna Bonne, IET, United Kingdom*

Moderator: *Darren Capes, IET, United Kingdom*

Speaker(s): *Kian-Keong Chin, Land Transport Authority, Singapore*

Tim Gammons, Arup, United Kingdom

Stanley Young, National Renewable Energy, United States

Andrew Mehaffey, Roads and Maritime Services, Australia

Martin Leak, Resolve Group Ltd., New Zealand

Vincent Valdes, U.S. Department of Transportation, United States

SIS97 - PIARC (WRA): Autonomous Vehicles: Road Authorities and Network Managers' Perspective

Wednesday 1 November | 15:00 - 16:30

Dedicated Track: Connectivity and Autonomy

Room 513 ABC

Organizer: *Richard Harris, HMI Technologies, United Kingdom*
Patrick Mallejacq, World Road Association, PIARC - AIPCR, France

Moderator: *Patrick Mallejacq, World Road Association, PIARC - AIPCR, France*

Speaker(s): *Takashi Nishio, Ministry of Land, Infrastructure, Transport and Tourism, Japan*
Reija Viinanen, Finnish Transport Agency, Finland
Martin Thibault, Stantec, Canada
Jacques Ehrlich, ISFTTAR, France

SIS98 - Digital Transformation for Automated Vehicles: Needs and Challenges

Wednesday 1 November | 15:00 - 16:30

Dedicated Track: Connectivity and Autonomy

Room 514 BC

Organizer/Moderator: *Maxime Flament, ERTICO-ITS Europe, Belgium*

Speaker(s): *Risto Kulmala, Finnish Transport Agency, Finland*
Carl Andersen, FHWA, United States
Geert Van Der Linden, European Commission, Belgium
Jun Shibata, Japan Digital Road Map Association, Japan
Ahmed Nasr, HERE, Belgium
Mehmet Oymagil, TomTom, United States

SIS99 - Leveraging Intersection Connectivity to Improve Transit and Traffic Management

Wednesday 1 November | 15:00 - 16:30

Dedicated Track: Connectivity and Autonomy

Room 510 A

Organizer: *Victor Darias, Global Traffic Technologies, Canada*

Moderator: *Victor Darias, Global Traffic Technologies, Canada*
Jonathan Foord, City of Winnipeg, Canada

Speaker(s): *Victor Darias, Global Traffic Technologies, Canada*
Chad Mack, Global Traffic Technologies, United States
Jonathan Foord, City of Winnipeg, Canada
Michael Cantor, City of Winnipeg, canada
Mark Yedlin, Greenman-Pedersen, Inc., United States

SIS100 - Canada's Unique Challenges, Strategies and ITS Solutions

Wednesday 1 November | 15:00 - 16:30

Dedicated Track: Infrastructure Challenges and Opportunities

Room 510 C

Organizer/Moderator: *Yeatland Wong, City of Calgary, Canada*

Speaker(s): *Paul Nause, Regional Muncipality of York, Canada*
Cory Edgar, PBX Engineering, Canada
Geoff Knapp, MMM Group, Canada
Chris Philp, CIMA+, Canada
Hoi Wong, Ontario Ministry of Transportation, Canada
Mark Conrad, Parsons, Canada

SIS101 - Partnership Pioneers for Smart City-States: Collaborative Models for Innovation & Deployment

Wednesday 1 November | 15:00 - 16:30

Dedicated Track: Smart(er) Cities

Room 510 D

Organizer: *Dr. C. Michael Walton, The University of Texas at Austin, United States*

Moderator: *Jason JonMichael, HNTB Corp., United States*

Speaker(s): *Darran Anderson, Texas Department of Transportation, United States*
Richard Harris, Intelligent Transport Society, United Kingdom
Damian McHale, Smart Cities Ticketing & Digital Connectivity, United Kingdom
Mohit Kochar, KPIT Technologies Ltd., India
Dr. Majid Sarvi, University of Melbourne, Australia

Special Interest Sessions

SIS102 - Advanced Technologies in Operation and Maintenance of ITS Facilities

Wednesday 1 November | 15:00 - 16:30

Dedicated Track: Integrated Approach: Planning, Operations and Safety

Room 512 D

Organizer: *Takahiro Azuma, West Nippon Expressway Facilities Co. Ltd., Japan*

Moderator: *Masao Kuwahara, Tohoku University, Japan*

Speaker(s): *Kenji Obatake, West Nippon Expressway Engineering Shikoku Co., Ltd., Japan*

Shinsuke Suzuyama, West Nippon Expressway Co. Ltd., Japan

Takahiro Azuma, West Nippon Expressway Facilities Co. Ltd., Japan

Takeshi Takayama, West Nippon Express Facilites Co. Ltd., Japan

Yasuhiko Kumagai, Kochi University of Technology, Japan

Yotaro Nagai, West Nippon Expressway Co. Ltd., Japan

Michel Lavigne, Illinois Tollway GEC/Ardmore Roderick, United States

SIS103 - Roundtable: Motorcycles Talk ITS

Wednesday 1 November | 16:45 - 18:00

Dedicated Track: Connectivity and Autonomy

Room 515 ABC

Organizer: *Veneta Vassileva, Association of European Motorcycle Industry, Belgium*

Moderator: *Antonio Perlot, Association des Constructeurs Européens de Motocycles, Belgium*

Speaker(s): *Hennes Fischer, Yamaha Motor Europe N.V., Germany*

Arne Purschwitz, BMW Motorrad, Germany

Matthias Mörbe, Robert Bosch GmbH, German

John Lenkeit, Dynamic Research Inc., United States

Huei-Ru Tseng, Industrial Technology Research Institute/ Chinese-Taipei Association of Information and Communication Standards, Chinese-Taipei

John Harding, National Highway Traffic Safety Administration, United States

Claire Depre, European Commission, Belgium

SIS124 - Parking Technologies in Transportation: Tomorrow is a New Day

Wednesday 1 November | 16:45 - 18:00

Dedicated Track: Connectivity and Autonomy

Room 514 BC

Organizer/Moderator: *Richard Easley, E-Squared Engineering, United States*

Speaker(s): *Alan Allegretto, WSP Parking Systems, United States*

Mara Bullock, WPS, Canada

Richard Simpson, ParkPlus System, Canada

THURSDAY 2 NOVEMBER

SIS104 - Advance the Development of CAV Technologies Through Effective Testing

Thursday 2 November | 8:15 - 9:45

Dedicated Track: Connectivity and Autonomy

Room 515 ABC

Organizer/Moderator: *Mark Chaput, American Center for Mobility, United States*

Speaker(s): *Andrew Smart, American Center for Mobility, United States*

Chris Reeves, HORIBA - MIRA, United Kingdom

Jack Pokrzywa, Society of Automotive Engineers, United States

Manaswini Rath, KPIT Technologies, India

SIS105 - Canada's Partnerships for Innovation

Thursday 2 November | 8:15 - 9:45

Dedicated Track: Innovation, What's Next? The New Ideas

Room 513 DEF

Organizer/Moderator: *Judy Yu, Associated Engineering, Canada*

Speaker(s): *Yeatland Wong, City of Calgary, Canada*

Varouj Artokun, General Electric, Canada

Richard Chylinski, Parsons Canada, Canada

Jonathan Foord, City of Winnipeg, Canada

Mike Flanigan, City of Mississauga, Canada

Garreth Rempel, TRAINFO, Canada

Robert Bruce, TPA North America Inc., Canada

David Tsui, Ministry of Transportation Ontario, Canada

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Special Interest Sessions

SIS106 - Automation as a Solution: Addressing 21st Century Mobility Challenges Through AV Deployment

Thursday 2 November | 8:15 - 9:45

Dedicated Track: Connectivity and Autonomy

Room 513 ABC

Organizer: *Ali Savio, INRIX, United States*

Moderator: *Avery Ash, INRIX, United States*

Speaker(s): *Stacey Gillet, Aspen Insitute/Bloomberg Philanthropies, United States*

Robert Spillar, City of Austin, United States

Laura Schewel, Streetlight Data, United States

SIS107 - Challenges on Data Necessary to Serve Automated Driving

Thursday 2 November | 8:15 - 9:45

Dedicated Track: Connectivity and Autonomy

Room 514 BC

Organizer/Moderator: *Jean-Charles Pandazis, ERTICO-ITS Europe, Belgium*

Speaker(s): *Andras Csepinkszky , NNG, Hungary*

Prokop Jehlicka, HERE, Germany

Volker Sasse, NavInfo Co. Ltd., China

SIS108 - Impact of Automated Vehicles on Traffic Flow and Environment

Thursday 2 November | 8:15 - 9:45

Dedicated Track: Connectivity and Autonomy

Room 510 A

Organizer: *Takashi Oguchi, The University of Tokyo, Japan*

Moderator: *Masao Kuwahara, Tohoku University, Japan*

Speaker(s): *Daisuke Oshima, Pacific Consultants Co., Ltd., Japan*

Nour-Eddin El Faouzi, IFSTTAR, France

Peng Hao, University of California-Riverside, United States

Andy Graham, White Willow Consulting, United Kingdom

SIS109 - Evaluation of Connected and Autonomous Vehicle Trials

Thursday 2 November | 8:15 - 9:45

Dedicated Track: Connectivity and Autonomy

Room 510 C

Organizer: *Adriana Simona Mihaita, Data61, Australia*

Moderator: *Chen Cai, DATA61|CSIRO, Australia*

Speaker(s): *Dr. Angelos Amditis, Institute of Communication and Computer Systems, Greece*

Adriana Simona Mihaita, Data61, Australia

Louis Berghold, Roads and Maritime Services/Transport for NSW/JYW Consulting, Australia

Alexandre Torday, TSS-Transport Simulation Systems, Australia

Dean Economou, Telstra, Australia

Scott Belcher, SFB Consulting, LLC, United States

SIS110 - What Were We Discussing 25 Years Ago at the World Congress

Thursday 2 November | 8:15 - 9:45

Dedicated Track: Innovation, What's Next? The New Ideas

Room 510 D

Organizer/Moderator: *Steven Dellenback, Southwest Research Institute, United States*

Speaker(s): *Patrick McGowan, Serco Inc., United States*

Eric Sampson, United Kingdom

Jason Chang, National Taiwan University, Chinese-Taipei

Young-Jun Moon, The Korea Transport Institute, Korea

Richard Harris, HMI Technologies, United Kingdom

SIS111 - Using Data to Manage Traffic, Reduce Congestion & Prioritize Spending

Thursday 2 November | 10:00 - 11:30

Dedicated Track: Infrastructure Challenges and Opportunities

Room 515 ABC

Organizer/Moderator: *Ted Trepanier, INRIX, United States*

Speaker(s): *Charlotte Naumanen Holstrøm, Vejdirektoratet (Danish Road Directorate), Denmark*

Bill Eisele, Texas A&M Transportation Institute, United States

Bob Pishue, INRIX, United States

Joachim Wahle, TraffGo Road GmbH, Germany

Special Interest Sessions

SIS112 - Canadian Activities in Connected and Automated Vehicles

Thursday 2 November | 10:00 - 11:30

Dedicated Track: Integrated Approach: Planning, Operations and Safety

Room 513 DEF

Organizer: *Janneke van der Zee, ITS Canada, Canada*

Moderator: *Pino Porciello, TrustPoint Innovation Technologies Ltd., Canada*

Speaker(s): *Grant Courville, QNX Software Systems (Blackberry), Canada*

Warren Ali, Automotive Parts Manufacturers' Association, Canada

Ross McKenzie, University of Waterloo, Canada

Tony Qiu, University of Alberta, Canada

David Michelson, University of British Columbia, Canada

SIS113 - Integration of ITS Planning and Operations Activities in a New Era

Thursday 2 November | 10:00 - 11:30

Dedicated Track: Integrated Approach: Planning, Operations and Safety

Room 513 ABC

Organizer/Moderator: *Glenn Havinoviski, Iteris, Inc., United States*

Speaker(s): *Mark Jensen, Cambridge Systematics, United States*

John Corbin, Federal Highway Administration, United States

Scott Perley, Iteris, Inc., United States

SIS114 - Mobility as a Service: New Business and Service Approaches

Thursday 2 November| 10:00 - 11:30

Dedicated Track: Disruption and New Business Models

Room 514 BC

Organizer: *Richard Harris, HMI Technologies, United Kingdom*

Moderator: *Andrew Mehaffey, HMI Technologies, Australia*

Speaker(s): *Sampo Hietenan, MaaS Global, Finland*

Susan Zielinski, University of Michigan, United States

Zeljko Jeftic, IRU, Switzerland

George Hazel, George Hazel Consulting, Scotland

Roman Pickl, Fluidtime Data Services, Austria

Richard Harris , HMI Technologies, UK

SIS115 - International Perspectives on Technology Shifts and Collaboration Between Public and Private Sectors

Thursday 2 November | 10:00 - 11:30

Dedicated Track: Disruption and New Business Models

Room 510 A

Organizer/Moderator: *Jennie Martin, ITS United Kingdom, United Kingdom*

Speaker(s): *Ian Patey, Mouchel, United Kingdom*

Daniel Haufschild, WSP|MMM, Canada

Carol Kuester, Metropolitan Transportation Commission, United States

Mike Masserman, Lyft, United States

Ella Taylor, Centre for Connected and Autonomous Vehicles, United Kingdom

Michael Hurtwitz, Transport for London, United Kingdom

SIS116 - Automated Flying Cars

Thursday 2 November | 10:00 - 11:30

Dedicated Track: Innovation, What's Next? The New Ideas

Room 510 C

Organizer/Moderator: *Barrie Kirk, Canadian Automated Vehicles Centre of Excellence, Canada*

Speaker(s): *Zach Lovering, A^3 by Airbus Group, United States*

Sasha Rao, Maynard Cooper and Gale, United States

Barrie Kirk, Canadian Automated Vehicles Centre of Excellence, Canada

SIS117 - Do Automated Vehicles Mean Go Time or Slow Time for Other Innovations in Transportation?

Thursday 2 November | 11:45 - 13:15 Local Room 515 ABC

Dedicated Track: Connectivity and Autonomy

Organizer: *Rachel Hiatt, San Francisco County Transportation Authority, United States*

Moderator: *Adrian Moore, Reason Foundation, United States*

Speaker(s): *Jeff Brandes, State of Florida Legislature, United States*

Ken Buckeye, Minnesota Department of Transportation, United States

Kris Carter, City of Boston, United States

Annie Nam, Southern California Association of Governments, United States

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Special Interest Sessions

SIS118 - Stop Waiting for Crashes to Occur: Video Analytics for Road Safety Analysis

Thursday 2 November | 11:45 - 13:15

Dedicated Track: Integrated Approach: Planning, Operations and Safety

Room 513 DEF

Organizer/Moderator: *Annie Chang, SAE International, United States*

Speaker(s): *Luis Miranda-Moreno, McGill University, Canada*

Charles Chung, Brisk Synergies Tech Corp, Canada

Nicolas Saunier, Polytechnique Montréal, Canada

Ganesh Ananthanarayanan, Microsoft Research, United States

SIS119 - Allocation of Liability in Car Crashes of the Future

Thursday 2 November 2017 | 11:45 - 13:15

Dedicated Track: Connectivity and Autonomy

Room 513 ABC

Organizer/Moderator: *Tom Mangenello, Warner Norcross & Judd LLP, United States*

Speaker(s): *Patrick Seyferth, Bush Seyferth & Paige PLLC, United States*

Emily Frascaroli, Ford Motor Co., United States

James Derian, Delphi Automotive Systems, LLC, United States

SIS120 - Low Cost ITS and Big Data : A New Approach of Road Network Operation?

Thursday 2 November | 11:45 - 13:15

Dedicated Track: Infrastructure Challenges and Opportunities

Room 514 BC

Organizer/Moderator: *Jacques Ehrlich, ISFTTAR, France*

Speaker(s): *Jacques Ehrlich, ISFTTAR, France*

Sylvain Belloche, Cerema, France

Martin Boehm, AustriaTech–Federal Agency for Technological Measures Ltd., Austria

Dieter Hintenaus, ASFINAG, Austria

Keechoo Choi, Ajou University, Korea

SIS121 - Integrated Corridor Management: Project Planning to Operations Lessons Learned

Thursday 2 November | 11:45 - 13:15

Dedicated Track: Integrated Approach: Planning, Operations and Safety

Room 510 A

Organizer/Moderator: *Brad Hartwig, Ove Arup & Partners Ltd, United States*

Speaker(s): *Susan Catlett, Transportation Systems Management, New Jersey Department of Transportation, United States*

Tim Gammons, Arup, United Kingdom

Athena Hutchins, Niagara International Transportation Technology Coalition, United States

Joel Ticatch, Kapsch TrafficCom North America, United States

Andrew Weeks, New York City Department of Transportation, United States

SIS122 - Mobility as a Service for Rural and Small Urban Areas

Thursday 2 November | 11:45 - 13:15

Dedicated Track: Disruption and New Business Models

Room 510 C

Organizer/Moderator: *Carol Schweiger, Schweiger Consulting LLC, United States*

Speaker(s): *Dwight Mengel, Tompkins County (NY) Department of Social Services, United States*

Noora Salonen, Sito Oy, Finland

Susan Zielinski, University of Michigan, United States

Hany Eldaly, MaaS Australia, Australia

SIS123 - Lessons Learned from International Collaboration in ITS

Thursday 2 November | 11:45 - 13:15

Dedicated Track: Innovation, What's Next? The New Ideas

Room 510 D

Organizer: *Steven Dellenback, Southwest Research Institute, United States*

Moderator: *Richard Harris, HMI Technologies, United Kingdom*

Speaker(s): *Jane Lappin, Toyota Research Institute, United States*

Wolfgang Hoefs, European Commission–DG CONNECT, Belgium

Johanna Tzanidaki, ERTICO-ITS Europe, Belgium

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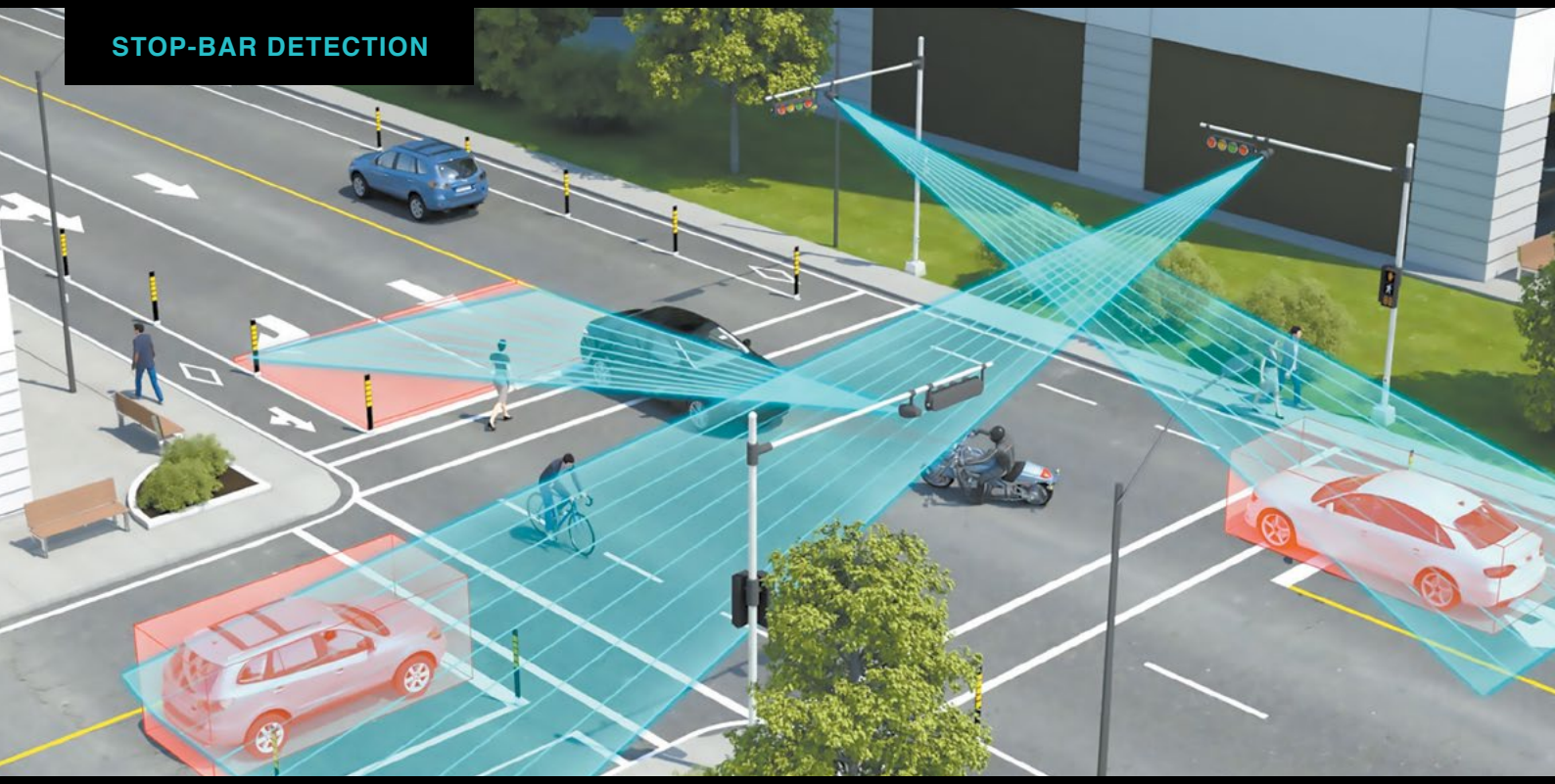

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Technical/Scientific Sessions

Some descriptions below may have been edited to fit available print space. For the most up-to-date details, download the ITS World Congress 2017 event app sponsored by ERoad or visit ITSWorldCongress2017.org.

SUNDAY 29 OCTOBER

TS01 - Using MaaS to Enable Smart Cities and Regions

Sunday 29 October | 12:00 - 13:30

Room 512 D

SessionTrack: Smart(er) Cities

Moderator: *Steven Dellenback, Southwest Research Institute, United States*

AM-SP0949 **Reduce Bay Area Commuting by 25% via "Fair Value Commuting"**
Steve Raney, Joint Venture Silicon Valley, United States

EU-SP1013 **The Topology of Mobility as a Service: A Tool for Understanding Effects on Business and Society, User Behavior and Technical Requirements**
Jana Sochor, Chalmers University of Technology, Sweden

EU-TP0984 **MaaS Service Combinations for Different Geographical Areas**
Aki Aapaoja, VTT Technical Research Centre of Finland Ltd., Finland

EU-TP1076 **Mobility as a Service: The Role of City and Regional Governments**
Mahmood Hikmet, HMI Tech, New Zealand

AM-TP1307 **Optimizing Mobility Through the Integration of Data in Safe and IT Systems: The Montréal Real-Time Collaborative Solution**
Francois Thibodeau, Ville de Montréal, Direction de l'exploitation du réseau artériel, Canada

TS02 - Connected Vehicle Communication Issues

Sunday 29 October | 12:00 - 13:30

Room 511 C

SessionTrack: Connectivity and Autonomy

Moderator: *Olle Isaksson, Ericsson, Netherlands*

EU-TP0875 **Secure Hybrid ITS Communication with Data Protection**
Horst Wieker, Hochschule für Technik und Wirtschaft des Saarlandes, Germany

EU-TP1144 **Adaptation Layer Based Architecture for Vehicular Hybrid Communication**
Prachi Mittal, Denso Automotive Deutschland GmbH, Germany

AP-SP1202 **Performance Evaluation of LTE V2X Communications for Crash Warning Application**
Ryoya Kawasaki, Nagoya University, Japan

EU-TP1256 **UAV Safety and Control Features Implementation within ITS Architecture**
Yaroslav Domaratsky, Sreda Software Solutions, Russia

AM-SP1290 **Combating Ground Reflections for Wireless Sensors**
Ashutosh Tadkase, Carnegie Mellon University, United States

TS03 - Managing Major Incidents Using ITS

Sunday 29 October | 12:00 - 13:30

Room 511 F

SessionTrack: Connectivity and Autonomy

Moderator: *Dan Lukasik, PARSONS - Envision More, United States*

AM-TP0753 **Integrating Transportation Operations for Metro Detroit**
Richard Beaubien, Beaubien Engineering, United States

EU-TP0776 **Implementation and Development of the "GLONASS+112" System in the Republic of Tatarstan**
Geller Anatoly, Ministry of Informatization and Communication of the Republic of Tatarstan, Russia

AP-TP0816 **Answering Alarm Intelligent Positioning Practice for Emergency Incidents in Expressway**
Yingjie Ma, China Academy of Transportation Sciences, China

AP-TP1050 **ITS Solutions for Keeping a Rural Highway Open and Operating for Our Customers Journeys**
Sean Lewis, Green Signal Ltd., New Zealand

TS04 - Using ITS to Make Work Zones Smarter and Safer

Sunday 29 October | 12:00 - 13:30

Room 511 F

SessionTrack: Connectivity and Autonomy

Moderator: *Martha Morecock Eddy, KCI Technologies, Inc., United States*

EU-TP0862 **Distribution of Spatially Referenced Road Closure and Incident Information for Rendering in Mobile Devices Using TPEG Over DAB+**
Olaf Czogalla, Institute of Automation and Communication Magdeburg, Germany

AP-TP1198 **Data Collection and Guidance Control System at Work Zone**
Yachen Xu, Beijing University of Technology, China

AM-TP1230 **Ministry of Transportation of Ontario's Guidelines for the Use of Temporary Queue Warning Systems for Planned and Unplanned Events**
Mike Barnet, CIMA+, Canada

AM-TP1276 **Enhanced Speed Compliance for Work Zones (ESC4WZ) System Demonstration and Testing**
Daryl Taavola, AECOM, United States

AP-TP1287 **MyRo Smart Work Zones Operational Experience and Benefits in Melbourne**
Scott Benjamin, WSP | Parsons Brinckherhoff, Australia

TS05 - ALEXA - Is Speech Recognition the Next Big Thing in ITS?

Sunday 29 October | 12:00 - 13:30

Room 512 B

SessionTrack: Integrated Approach: Planning, Operations and Safety

Moderator: *Sam Shen, Ministry of Economic Affairs, Chinese-Taipei*

AP-TP0982 **Research on Attracting Attention by the Abnormal Phenomenon Transmission Method Using Auditory Information**
Hiroyuki Kameoka, Central Nippon Expressway Co. Ltd., Japan

AP-TP1039 **Robust Isolated Phrase Recognition System Using Running Spectrum Analysis**
Mayuka Gomi, Graduate School of Information Science and Technology, Hokkaido University, Japan

AP-TP1199 **Talking Humanoid Robot Verification in Tokyo Station**
Manabu Sugasawa, East Japan Railway Co., Japan

TS06 - Using Simulation to Improve CAV: Part 1 of 3

Sunday 29 October | 12:00 - 13:30

Room 512 C

SessionTrack: Connectivity and Autonomy

Moderator: *Jesus Martinez, Southwest Research Institute, United States*

EU-SP0792 **Impact of Automated Vehicles on Capacity of the German Freeway Network**
Martin Hartmann, Karlsruhe Institue of Technology, Germany

AM-SP0904 **Online Trajectory Planning with a Modified Potential Field Method on Distributed Architectures for Autonomous Vehicles**
Farid Bounini, UdeS, Canada

AM-SP1337 **Synthetic Time Series Technique for Predicting Network-wide Road Traffic**
Kartik Kaushik, University of Maryland, United States

TS07 - Smart City Business Models and Scenarios

Sunday 29 October | 13:45 - 15:15

Room 512 D

SessionTrack: Smart(er) Cities

Moderator: *Steven Green, WSP, United Kingdom*

EU-SP0918 **Impact Evaluation of Value Networks for ITS Services**
Trond Foss, SINTEF Transport Research, Norway

EU-TP1234 **Smart Cities: A Case Study and Delphi Approach in Understanding the Role of Social Enterprise Business Models Toward Integrated Public Transportation**
Liam Fassam, Institute of Logistics, Infrastructure, Supply & Transformation Travel, University of Northampton, United Kingdom

AM-SP1277 **Tactile Matrix for Real-Time Computation and 3D Projection Mapping of Smart City Scenario**
Talmai Oliveira, Philips Lighting Research North America, United States

AM-SP1286 **Crowdsourced Smart Cities**
Bob Iannucci, Carnegie Mellon University, United States

AM-SP1339 **Exploring an Energy-Mobility Nexus: A Framework for Curating and Comparing Data and Models Using Case Studies of Four 'Smart City' Finalists**
Joshua Sperling, National Renewable Energy Laboratory, United States

TS08 - Electronic Tolling Operations - Best Practices

Sunday 29 October | 13:45 - 15:15

Room 511 C

SessionTrack: Connectivity and Autonomy

Moderator: *Brian McNiff, Kapsch TrafficCom North America, United States*

AM-TP0957 **Connected Vehicle Applications for Tolling**
Robert Edelstein, AECOM, United States

AP-TP1224 **Heavy Vehicle Toll Management Aimed at Reducing Life Cycle Cost with ITS Technology**
Takao Goto, Faculty of Business Administration Kindai University, Japan

EU-TP1280 **SICE's Tolling Commercial Back Office System: "BIS"**
Pablo Ruiz, SICE, Australia

AM-TP1282 **ITS 2017 Dynamic Pricing 1.0**
Luis Carrera, SICE Canada Inc., Canada

TS09 - Integrating CAV with ADAS

Sunday 29 October | 13:45 - 15:15

Room 511 F

SessionTrack: Connectivity and Autonomy

Moderator: *Sue Bai, Honda, United States*

AM-SP0796 **Connected Automated Vehicle (CAV) Implementation**
Robert James, HNTB, United States

EU-TP0998 **Vehicle Perception Augmented by Cooperation V2X - PAC V2X Project**
Oyunchimeg Shagdar, Institute VEDECOM, France

AM-TP1111 **Multiple Object Detection and Tracking for ADAS and Autonomous Car**
Sotaro Tsukizawa, Panasonic Corporation, United States

AP-SP1124 **Design of an Adaptive Cruise Control and Collision Avoidance with Lane Keeping System Support for Vehicle Autonomous Driving**
Hsiang-Chieh Hsu, Automotive Research and Testing Center, Chinese-Taipei

AP-SP1206 **Economic Effects of Combining Technologies in Advanced Driving Assistance Systems**
Hiroaki Miyoshi, Doshisha University, Japan

TS10 - Signal Priority: Part 1 of 2

Sunday 29 October | 13:45 - 15:15

Room 512 A

SessionTrack: Smart(er) Cities

Moderator: *Robert Rausch, TransCore, United States*

AM-SP0863 **Bus Queue Jump Lanes Utilization: A Case Study in Calgary, AB Canada**
Muhammad Asim, City of Calgary, Canada

AM-TP1201 **Impacts of Bus Preferential Measures on Service Planning at Laval Transit**
Sylvain Boudreau, Société de transport de Laval, Canada

AP-TP1349 **A Proposal of Advanced PTPS Control Scheme by Applying Bus Convoy Operation**
Shinji Tanaka, Yokohama National University, Japan

TS11 - ITS Planning

Sunday 29 October | 13:45 - 15:15

Room 512 B

SessionTrack: Connectivity and Autonomy

Moderator: *Louis Neudorff, CH2M HILL, United States*

AM-SP0845 **Toward a Seamlessly Integrated Cyber-Physical Intelligent Transportation System of Systems**
Mohamed Elshenawy, University of Toronto, Canada

AM-TP1135 **Results-Based Alignment: Bringing Service Focus to ITS Programs**
Jack Stickel, Alaska Department of Transportation and Public Facilities (retired), United States

AM-TP1274 **Applying Systems Engineering for Intelligent Transportation Systems Implementation: Process and Enhancements**
Daryl Taavola, Vice President, AECOM, United States

AM-TP1318 **United States National ITS Architecture Version 8.0: Integrating ITS and Connected Vehicle**
Clifford Heise, Iteris, Inc., United States

AP-TP1328 **Development of VicRoads Application Architecture Using TOGAF**
Wayne Harvey, VicRoads, Australia

TS12 - Using Simulation to Improve CAV: Part 2 of 3

Sunday 29 October | 13:45 - 15:15

SessionTrack: Connectivity and Autonomy

Room 512 C

Moderator: *Richard Bishop, Bishop Consulting, United States*

EU-SP0762 **Implications of Automated Vehicles on Freeway Safety and Operations**
Nassim Motamedidehkordi, Technical University of Munich, Germany

AP-TP1048 **Study of Energy-Saving Control Method for Hybrid Electric Vehicle**
Yuji Igarashi, Mitsubishi Electric Corporation Advanced Technology R&D Center, Japan

AM-TP1102 **Improving Throughput of an Isolated Signalized Intersection in a Connected Vehicle Environment**
Tony Qiu, University of Alberta, Canada

AM-SP1329 **Development and Evaluation of Real-Time Online Simulation Framework**
Joyoung Lee, New Jersey Institute of Technology, United States

TS13 - The Impacts of Weather and the Provision of Actionable Information

Sunday 29 October | 13:45 - 15:15

SessionTrack: Infrastructure Challenges and Opportunities

Room 513 A

Moderator: *Andrew Gurr, Fusion Networks, New Zealand*

AM-TP0887 **Advancements in Road Weather Information Systems in Canada**
Ted Reeler, Amec Foster Wheeler, Canada

AP-TP1001 **Effect of Rainfall Impact on Traffic: Evidence from Shenzhen**
Dai Jianjun, Shenzhen Urban Transport Planning Center Co. Ltd., China

AP-TP1362 **Efforts to provide travel time information immediately after the M-7.3 Kumamoto Earthquake**
Toshihiro Yoko, West Nippon Expressway Company Ltd., Japan

TS14 - Using Integrated Corridor Management Techniques for Safety and Decision Support

Sunday 29 October | 15:30 - 17:00

SessionTrack: Integrated Approach: Planning, Operations and Safety

Room 512 D

Moderator: *Stephen Novosad, HNTB, Unites States*

AP-TP0806 **Integrated Transport Management – Integration Alongside Personalization**
Chris Bax, Cubic Transportation Systems (based in United States, representing ERTICO-ITS Europe)

AM-TP0884 **Big Data and Decision Support for an Integrated Corridor Management System**
Kevin Miller, Kapsch TrafficCom Transportation, Unites States

AM-TP0944 **Lower Hudson Transit Link/I-287 Integrated Corridor Management Overview**
Brad Hartwig, Ove Arup & Partners Ltd., United States

AP-TP1228 **Operational Study of Impact of ITS on Urban Corridor Safety**
Sourabh Jain, Indian Institute of Technology Roorkee, India

AM-TP1304 **I-80 SMART Corridor**
Derek Pines, Parsons, United States

TS15 - Evaluation of CAV Enabling Technologies

Sunday 29 October | 15:30 - 17:00

Room 511 C

SessionTrack: Connectivity and Autonomy

Moderator: *Rakesh Sharma, HNTB, Unites States*

AM-SP0756 **Dynamics of Driving Regimes Extracted from Basic Safety Messages Transmitted Between Connected Vehicles**
Behram Wali, University of Tennessee, United States

EU-SP1092 **Analysis of Scenario Classification Frameworks for Assessment of Automated Driving by Using Real-World Driving Data**
Adrian Zlocki, IKA, Germany

AP-TP1207 **Sydney Enables Heavy Vehicle Priority via Vehicle to Infrastructure (V2I)**
Norman Cheung, Roads and Maritime Services, Australia

AP-SP1265 **Field Measurements of IPv6 Routing Over DSRC Network with and without RSU Handover**
Roy Lao Sahagun, Nanyang Tec, Singapore

AM-TP1324 **Dedicated Short Range Communications (DSRC) Radios Field Testing - A Case Study**
Vijay Varadarajan, AECOM, United States

TS16 - Monitoring Driver Behavior

Sunday 29 October | 15:30 - 17:00

Room 511 F

SessionTrack: Smart(er) Cities

Moderator: *Sadahiro Kawahara, JTEKT Corporation, Japan*

AP-SP0768 **Fuel Consumption Estimation System and Method with Lower Cost**
Hsin-Han Shie, Telecommunication Laboratories, Chunghwa Telecom Co. Ltd., Chinese-Taipei

AP-SP0891 **Modeling Resting Behavior on Inter-Urban Expressways Considering Long-Sustained Rest with ETC Data**
Ryota Horiguchi, i-Transport Lab. Co. Ltd., Japan

AP-TP0991 **Road Environment Anomaly Detection Based on Symbolization Approach**
Hideaki Misawa, Denso Corporation, Japan

AP-SP0994 **Detection of Driving Behavior Based on the Segmentation and Reorganization of Sub-Behavior**
Xin Lin, Department of Electronic Engineering, Tsinghua University, China

AM-SP1271 **Microscopic Road Safety Comparison Between Canadian and Swedish Roundabout Driver Behavior**
Nicolas Saunier, Polytechnique Montréal, Canada

TS17 - Signal Priority: Part 2 of 2

Sunday 29 October | 15:30 - 17:00

Room 512 A

SessionTrack: Smart(er) Cities

Moderator: *Athena Hutchins, Niagara International Transportation Technology Coalition (NITTEC), United States*

AM-TP0927 **NYC's Central Transit Signal Priority Operation Tools: Current and Future**
Lihua Zhang, TransCore, United States

AM-TP1134 **Why a Specific Vehicle Centralized Preemption/Priority System Makes Sense for Montréal**
Eric Bertrand, CIMA+, Canada

AM-TP1278 **ITS 2017 Public Transport Priority System 1.0**
Tiago Kaniak, SICE Canada Inc., Canada

TS18 - Using Cameras and LiDAR for Detection

Sunday 29 October | 15:30 - 17:00

Room 512 B

SessionTrack: Smart(er) Cities

Moderator: *Masami Mizutani, Fujitsu Laboratories of America, United States*

AM-TP0824 **Traffic Sign Content Benefitting from Artificial Intelligence**
Kamron Clifford, TomTom, United States

AP-TP0852 **Recognizing Driving Situation by the Sensor Fusion Using Monocular and Stereo Camera**
Yuki Kurihara, Shibaura Institute of Technology, Japan

AP-TP0853 **3D Reconstruction by Perspective Transformation Using Rear-View Camera**
Naoyuki Konosu, Shibaura Institute of Technology, Japan

AP-SP1117 **Vehicle Logo Detection Using Edge Features and Prior Knowledge**
Feng Wang, Henan University of Technology, China

AM-TP1239 **Solid-State LiDAR: Enabling High-Volume Optical Sensor Deployments in ITS Applications**
Frederic Gagnon, LeddarTech, Canada

TS19 - Using Simulation to Improve CAV: Part 3 of 3

Sunday 29 October | 15:30 - 17:00

Room 512 C

SessionTrack: Connectivity and Autonomy

AP-TP1126 **Development of Car-Following Model for Automated Vehicle in Microscopic Traffic Simulation Using Measured Data**
Hangeom Ko, Korea Automobile Testing & Research Institute, Korea

AP-TP1292 **Development of Personal Mobility Overturning Avoidance System Utilizing Physics Simulation**
Wataru Takayanagi, Aisin Seiki Co. Ltd., Japan

AM-SP1346 **Role of Vehicle's Intention on the Optimization of Collision Avoidance Strategies for Cooperative Driving**
Giancarlo Colmenares, Université du Québec en Outaouais, Canada

TS20 - Learning Systems for Advanced Driving

Sunday 29 October | 15:30 - 17:00

Room 513 A

SessionTrack: Connectivity and Autonomy

Moderator: *Tim Leinmueller, Denso Automotive Deutschland GmbH, Germany*

AP-SP0858 **Prediction of Potential Human Intention Using Supervised Competitive Learning**
Masayoshi Ishikawa, Hitachi, Ltd., Japan

AM-SP0955 **Artificial Intelligence in ITS and Issues Challenging the Widespread Use of Autonomous Vehicles**
Denis Gingras, Université de Sherbrooke, Canada

AP-SP1012 **Effect of Attentional Instruction on Driver Behavior in Transition from Automated Driving to Manual Driving**
Tomoki Endo, Keio University, Japan

TS21 - Approaches to Automated Parking

Monday 30 October | 12:00 - 13:30

Room 512 D

SessionTrack: Connectivity and Autonomy

Moderator: *Graham Hanson, Department for Transport, United Kingdom*

AP-TP0780 **Parking Space Detection with Motion Stereo Camera Applying Viterbi Algorithm**
Tokihiko Akita, Aisin Seiki Co. Ltd., Japan

EU-TP1241 **A Winning Strategy to Park**
Noémie Meunier, Aisin AW - AWTC Europe, Belgium

EU-SP1252 **Fully Automated Valet Parking in Underground Garages Through External Positioning Information Over DSRC**
Oliver Sawade, Fraunhofer FOKUS, Germany

AM-SP1313 **Doing More with Less - LEAN Asset Deployment for Parking Occupancy Detection**
Soumya Dey, District (Washington, D.C.) Department of Transportation, Unites States

TS22 - ITS Data Collection and Using It to Deliver Innovation

Monday 30 October | 12:00 - 13:30

Room 511 C

SessionTrack: Innovation, What's Next? The New Ideas

Moderator: *Bruce Eisenhart, ConSysTec, United States*

AP-TP0960 **Utilising Fibre Optic Cable as an Incident Detection System on Road Corridors**
Jeff Sharp, Downer EDI Ltd., Australia

AM-SP0993 **On Designing an Underground Induction Antenna for Vehicle Identification**
Mikhail Molchanov, Matsur & Co, Inc., United States

AP-SP1069 **Vehicle (Lagrangian)-Space Freeway Traffic State Estimation for Non-Pipeline Corridor**
Han Yang, Tongji University, China

AP-TP1073 **Innovation Delivery Framework: How to Enable and Accelerate the Delivery of ITS Innovations**
Henry Wu, JYW Consulting, Australia

AM-TP1200 **Data Collection System for Transportation Infrastructure**
Oliver Palumbo, Rowan University, United States

TS23 - Deployment of Connected Vehicle Infrastructure: Part 1 of 3

Monday 30 October | 12:00 - 13:30

Room 511 F

SessionTrack: Connectivity and Autonomy

Moderator: *Steve Sprouffske, Kapsch TrafficCom, United States*

AM-TP0840 **NYC Connected Vehicle Pilot Deployment**

AM-TP0962 **Summary of Phase I Efforts from the Wyoming Connected Vehicle Pilot for Performance Measurement, Safety and Human Use Approval**
Rhonda Young, Gonzaga University, United States

AM-TP1022 **Urban Connected Vehicle Applications – Real and Available Now**
Joerg Rosenbohm, Kapsch TrafficCom, United States

AM-TP1104 **V2I Deployment: The Utah MMITSS Project**
Blaine Leonard, Utah Department of Transportation, United States

AM-TP1319 **Vehicle to Infrastructure Program Outreach in the United States**
Clifford Heise, Iteris, Inc., United States

TS24 - Planning for Operations from Architecture to CONOPS and Beyond

Monday 30 October | 12:00 - 13:30

Room 512 A

SessionTrack: Integrated Approach: Planning, Operations and Safety

Moderator: *Kevin Miller, Kapsch TrafficCom Transportation, United States*

AM-TP0865 **Cutting Edge ITS Planning at MR MPO**
Nathan Masek, Mid Region Council of Governments, United States

AM-TP1019 **Maintaining and Updating Regional ITS Architectures in California: Opportunities and Challenges**
Glenn Havinoviski, Iteris, Inc., United States

AM-TP1107 **Potential Implications of Connected and Automated Vehicles for Transportation Infrastructure and Local Planning Decisions**
Adela Spulber, Center for Automotive Research, United States

AP-TP1216 **Western Ring Route Concept of Operation**
Blair Monk, Aurecon, New Zealand

TS25 - Preparing for Automated Vehicles: Part 1 of 4

Monday 30 October | 12:00 - 13:30

Room 512 B

SessionTrack: Connectivity and Autonomy

Moderator: *Phil Blythe, Newcastle University, United Kingdom*

EU-TP0769 **A Sophisticated Intelligent Urban Road-Transport Network and Cooperative Systems Infrastructure for Highly Automated Vehicles**
Meng Lu, Dynniq, Netherlands

AP-SP0850 **EV Demand Prediction Using Nonnegative Matrix Factorization**
Mikio Sasaki, Music Scene Research, Japan

AM-SP1097 **Adapting Highway Geometric Design to a Fully Autonomous Vehicle Environment**
Anthony Kwok, Carleton University, Canada

AP-TP1212 **Study on the Behaviors of Autonomous Vehicles Based on Driving Comfortability on the Road with Autonomous and Manually Driven Vehicles**
Akira Suwa, Sumitomo Electric Industries, Ltd., Japan

TS26 - Vulnerable Road Users: Part 1 of 3

Monday 30 October | 12:00 - 13:30

Room 512 C

SessionTrack: Connectivity and Autonomy

Moderator: *Koji Oguri, Aichi Prefectural University, Japan*

AP-TP0771 **Mobile Detection in Blind Spot Using Edge Computing and Mobile Network**
Masatoshi Ito, Denso Corporation, Japan

AP-TP0888 **A Study on UWB Positioning System at the Crossing**
Naoto Shimada, Tokyo University of Science, Japan

AM-TP0956 **Vehicle to Pedestrian Safety Communication System**
Sue Bai, Honda, United States

AP-TP1225 **Evaluation Verification of Sensor Specification to Detect Pedestrian and Vehicle Separately**
Masaki Hiro, Central Nippon Expressway Co. Ltd., Japan

TS27 - Pedestrian Safety in Smart Cities

Monday 30 October | 13:45 - 15:15 **Room 512 C**

SessionTrack: Infrastructure Challenges and Opportunities

AP-TP0818 **A Study on the Implementation of Safe Route Guidance Services Using Public Data**
Kyung-Hoon Kang, Erom CNS, Korea

AM-TP0909 **Impact of Curb Radius Reduction on Pedestrian Safety: A Before-After Surrogate Safety Study in Toronto**
Charles Chung, Brisk Synergies Tech Corp, Canada

AP-TP0912 **Development and Verification of a Mobility Support System**
Yukiko Hatazaki, Nippon Signal Co. Ltd., Japan

AM-TP1009 **Smart Cities and Visually Impaired Pedestrians - Montréal's Vision Leading the Pack!**
Roger Bibaud, City of Montréal, Canada

TS28 - Deployment of Connected Vehicle Infrastructure: Part 2 of 3

Monday 30 October | 13:45 - 15:15 **Room 511 F**

SessionTrack: Connectivity and Autonomy

Moderator: *Loren Bartlett, HNTB, United States*

AP-TP0807 **The National Connected Multi-Modal Transport Test Bed – Progress to Date, Melbourne, Australia**
Dirk Van de Meerssche, Cubic Transportation Systems, Australia

AP-TP1006 **Dissemination of Traffic Light Signal Status to Support Singapore Autonomous Vehicle Initiative**
Yee Ling Charlene Kwan, Land Transport Authority, Singapore

EU-TP1020 **Catalonia Living Lab: A Comprehensive Framework for the Testing of Connected and Automated Vehicles**
Álvaro Arrúe, Applus+ IDIADA, Spain

EU-TP1219 **Proving Grounds 3.0: Methodology for Designing Test Facilities for Connected and Automated Vehicles**
Stefan de Vries, Applus+ IDIADA, Spain

AP-TP1244 **The Development of Infrastructure-to-Vehicle (I2V) in Chinese-Taipei**
Jaching Chou, Institute of Transportation, Ministry of Transportation and Communications, Chinese-Taipei

TS29 - Strategies to Detect Drowsiness and Driver Distraction

Monday 30 October | 13:45 - 15:15 **Room 512 A**

SessionTrack: Integrated Approach: Planning, Operations and Safety

Moderator: *Robert Heller, Southwest Research Institute, United States*

AP-TP0785 **Comparison of the Effectiveness of Occlusion and EGDS Testing of In-Vehicle Task Acceptance**
Hiroshi Uno, Japan Automobile Research Institute, Japan

AP-TP1061 **Early Driver Drowsiness Detection Using Gaze Features in Combination with Driving Features**
Fumiharu Tomiyasu, Fujitsu Laboratories, Japan

AP-TP1114 **A Basic Study of a Driver's Gaze Area Detection System**
Shunsuke Kogure, Aisin Seiki Co. Ltd., Japan

TS30 - Preparing for Automated Vehicles: Part 2 of 4

Monday 30 October | 13:45 - 15:15

SessionTrack: Connectivity and Autonomy

Room 512 B

Moderator: *Phil Blythe, Newcastle University, United Kingdom*

EU-TP0855 **Infrastructure-Based Cooperative, Connected and Automated Driving in a Transition Phase**
Meng Lu, Dynniq, Netherlands

EU-TP0871 **Adaptation of Automated Vehicle Systems in Adverse Weather Conditions**
Matti Kutila, VTT Technical Research Centre of Finland Ltd., Finland

AM-TP1090 **Security Considerations for Connected Autonomous Vehicles**
Harold Garza, Southwest Research Institute, United States

AM-TP1268 **Who is Managing the Network in the Era of Autonomous Vehicles?**
Mara Bullock, WSP|MMM, Canada

TS31 - Vulnerable Road Users: Part 2 of 3

Monday 30 October | 13:45 - 15:15

SessionTrack: Connectivity and Autonomy

Room 512 C

Moderator: *Julie Castermans, ERTICO-ITS Europe, Belgium*

AM-SP0954 **Pedestrian Conflicts Time Proximity Measures vs. Evasive Action Measures Across Different Traffic Environments**
Tarek Sayed, University of British Columbia, Canada

AP-TP1085 **Design of a Multipurpose People Counter Based on Infrared Thermal Imaging**
Wu Manjin, Supcon Information Technology Co. Ltd., China

EU-SP1160 **Concept of an Enhanced Cost-Function-Based Pedestrian Prediction Model for Active Safety Systems**
Jens Kotte, fka - Forschungsgesellschaft Kraftfahrwesen mbH Aachen, Germany

EU-TP1259 **Autonomous Emergency Braking Systems to Increase the Safety of Vulnerable Road Users: The PROSPECT Project**
Laura Sanz, Applus+ IDIADA, Spain

TS32 - Deployment of Connected Vehicle Infrastructure: Part 3 of 3

Monday 30 October | 15:30 - 17:00

SessionTrack: Connectivity and Autonomy

Room 511 F

Moderator: *Angelos Amditis, ICCS, Greece*

AP-TP0869 **Consideration of Feasibility to Utilize ETC2.0 Probe Data**
Yasufumi Iino, Denso Corporation, Japan

AP-TP0910 **A Study of Infrastructure Radar Technologies Using 79GHz Band on V2I Application for Merging Support at Highway Junction**
Toshiteru Hayashi, Panasonic Corporation, Japan

AP-TP0971 **A Study of the Abilities of the ETC2.0 Probe Data for Logistics Management**
Tatsuyuki Negishi, ITS Division, National Institute for Land and Infrastructure Management, Ministry of Land, Infrastructure, Transport and Tourism, Japan

EU-SP1237 **Impact Assessment of Connected and Automated Transport Services: Moving from the Method-Driven Tradition to a Theory-Based Evaluation Approach**
Lone-Eirin Lervåg, SINTEF Technology and Society, Norway

TS33 - Mobility on Demand

Monday 30 October | 15:30 - 17:00

SessionTrack: Connectivity and Autonomy

Room 512 A

Moderator: *Josef Czako, Moving Forward Consulting, Germany*

EU-SP0839 **A Case Study for the Assessment of a Dynamic Passenger Ride Sharing Mobility Service**
Mari Paz Linares, Universitat Politècnica de Catalunya, Spain

EU-TP1053 **Multi-Modal Activity-Based Models to Support Flexible Demand Mobility Services**
Ecaterina McCormick, Transport Systems Catapult, United Kingdom

AP-TP1222 **On-Demand Shared Mobility Trials in NSW, Australia: Focusing on a Great Customer Experience**
Kevin Orr, Liftango, Australia

EU-SP1295 **Short-Term Spatio-Temporal Demand Forecasting in Digital Ride-Hailing Service**
Melvin Wong, Polytechnique Montréal, Canada

AM-SP1301 **Initial Assessment and Modeling Framework Development for Automated Mobility Districts**
Stanley Young, National Renewable Energy Laboratory, United States

TS34 - Network Technologies for CAV

Monday 30 October | 15:30 - 17:00

SessionTrack: Connectivity and Autonomy

Room 512 B

Moderator: *Nixon Ng, ST Electronics (Infocomm Systems) Pte Ltd., Singapore*

AP-TP0826 **Evaluation of the Communication System of Vehicle Location Information for Cooperative ITS via Mobile Network**
Makoto Fujinami, NEC Corporation, Japan

AP-TP0913 **V2V Channels for DSRC Communication in the Presence of Big Vehicles**
Hieu Nguyen, Nanyang Technological University, Singapore

AM-TP1036 **Design and Deployment of a Broadband Wireless Network with Integrated Dedicated Short-Range Communications (DSRC) Radios and Other ITS Devices**
Vahid Sathi, CIMA+, Canada

AP-TP1243 **A Feasibility Study of a Vehicle Approach Warning System Using V2V Communication via a Cellular Network**
Tomotaka Nagaosa, Kanto Gakuin University, Japan

AM-SP1347 **A Variant of the AnthocNet Routing Protocol: Empirical Study with Application to Communications Between Emergency Vehicles**
Ilham Benyahia, Université du Québec en Outaouais, Canada

TS35 - Vulnerable Road Users: Part 3 of 3

Monday 30 October | 15:30 - 17:00

SessionTrack: Connectivity and Autonomy

Room 512 C

Moderator: *Sue Bai, Honda R&D Co., Ltd., United States*

AM-TP0811 **Cooperative Vehicle-Infrastructure Situational Awareness to Improve Vulnerable Road User Safety**
Eric Thorn, Southwest Research Institute, United States

AP-SP0860 **Crossing Pedestrian Detection Using Deep Learning by On-Board Camera**
Toshio Ito, Shibaura Institute of Technology, Japan

AM-SP0951 **Large-Scale Pedestrian Movement Analysis Using a Network of Wi-Fi Sensors**
Alexandra Beaulieu, École Polytechnique de Montréal, Canada

TUESDAY 31 OCTOBER

TS36 - Big Data for Mobility

Tuesday 31 October | 8:00 - 9:30

SessionTrack: Smart(er) Cities

Room 511 C

Moderator: *Jeff Adler, Kapsch TrafficCom North America, United States*

EU-TP0919 **Urban Mobility - Driven by Data**
Mahmood Hikmet, HMI Tech, New Zealand

AP-TP0985 **Applications in Public Transportation of Big-Data-Based Analysis Results**
Wang Qiang, Jinan Public Transport Company, China

EU-TP0997 **Big Data Platform and Big Data Analytics for ITS Applications - Pilot Project Proposal**
Yaroslav Domaratsky, Sreda Software Solutions, Russia

AM-TP1026 **Stepping Away from the RDBMS: Scalability for Big Data**
John Miller, Kapsch TrafficCom, United States

AM-TP1331 **Building a Modern Transportation Data Analytics Team in Toronto**
Jesse Coleman, City of Toronto, Canada

TS37 - Future Mobility Innovations for Smart Cities and Their Transportation Agencies

Tuesday 31 October | 8:00 - 9:30

SessionTrack: Disruption and New Business Models

Room 511 F

Moderator: *Richard Harris, HMI Technologies, United Kingdom*

AM-TP0820 **TX Innovation Alliance: A Public-Private Partnership Model for Smart Cities**
Kristie Chin, University of Texas at Austin, United States

AM-TP0843 **Managing Innovation in the Department of Transportation**
Lekshmy Sankar, Colorado Department of Transportation, United States

AP-TP0958 **Future Technology and Ideal Mobility**
Ranjan Pant, New Zealand Transport Agency, New Zealand

EU-TP1167 **Breaking New Ground: Upstream – Next-Level Mobility GmbH**
Reinhard Birke, Upstream Mobility, Austria

EU-SP1264 **Travel Persona Composition for Future Mobility: Segmentation of Travel Characteristics in Relation to Future Modes of Transport for Regions in Europe and the United States**
Aykut Mehmet Oymagil, TomTom, United States

TS38 - Public Procurement

Tuesday 31 October | 8:00 - 9:30

Room 512 A

SessionTrack: Infrastructure Challenges and Opportunities

Moderator: *Anthony Ferguson, Department for Transport, United Kingdom*

AP-SP0882 **Australian National ITS Product Type Approval Process**
Charles Karl, Australian Road Research Board, Australia

EU-TP1187 **Roadside ITS Station Specification**
Trond Foss, SINTEF Transport Research, Norway

EU-TP1296 **Innovative Procurement Method and Piloting of Real-Time Traffic Information Snapshot**
Mika Kulmala, City of Tampere, Finland

EU-TP1358 **Raising Awareness of Using Public Procurement as an Instrument for Implementation of ITS**
Mikkel Balskilde Hansen, City of Copenhagen, Denmark

TS39 - Recent Developments in Adaptive Signal Control

Tuesday 31 October | 8:00 - 9:30

Room 512 B

SessionTrack: Smart(er) Cities

Moderator: *John Hibbard, Georgia Department of Transportation, United States*

AP-SP1183 **On Alleviating Off-Ramp Spillback Congestions: An Adaptive Signal Control Involving Coordinated Critical Paths**
Chien-Pang Liu, MOTC, Chinese-Taipei

EU-TP1251 **Model-Based Adaptive Signal Control in Developing Countries**
Luca Paone, PTV Group, Italy

AM-TP1317 **Wireless Turn Bay Queue Overflow & Adaptive Response**
Yeatland Wong, City of Calgary, Canada

TS40 - Using ITS to Mitigate the Impacts of Winter Weather

Tuesday 31 October | 8:00 - 9:30

Room 512 C

SessionTrack: Infrastructure Challenges and Opportunities

Moderator: *Dougal Morrison, HMI Technologies Ltd., New Zealand*

AM-TP0778 **Mobile Road Weather Information System Pilot Report, Alberta Transportation, Winter 2015-2016**
Beata Bielkiewicz, Alberta Transportation, Office of Traffic Safety, Canada

AM-SP1106 **Evaluating the Traffic Impacts of the Federal Government Decisions-Related to Winter Weather in Washington, D.C.**
Mark Franz, Center for Advanced Transportation Technology Laboratory, United States

AM-TP1108 **Weather-Responsive Incident Prediction for Metro Detroit Region: A Data-Driven Solution**
Oladayo Akinyemi, Michigan Department of Transportation, United States

AM-TP1189 **York Region's Winter Maintenance AVL/GPS System Innovations Result in Improved Road Safety**
Kerry Brazel, Regional Municipality of York, Canada

TS41 - Developments in ITS Infrastructure

Tuesday 31 October | 9:45 - 11:15

Room 512 D

SessionTrack: Smart(er) Cities

Moderator: *Kazunori Inoue, Panasonic Corp., Japan*

AP-TP0775 **Automation of Control Processes and Acceptance on Construction, Repair and the Maintenance Works of Highways and Road Constructions in the Republic of Tatarstan**
Sadykov Airat, Ministry of Transport and Road Economy, Republic of Tatarstan, Russia

AP-TP1031 **Detection of Sudden Braking of a Motor Vehicle by Using Accelerometer Measurements with Eliminating Bouncing Events Arising When Driving Over Uneven Road Surfaces**
Kentaro Kondo, Fujitsu, Ltd., Japan

AP-TP1130 **A Lightweight and Robust Network Analysis Platform**
Russell Pinchen, New Zealand Transport Agency, New Zealand

AP-TP1158 **Virtual Variable Message Sign – Using Smartphone and Cellular Network**
Manish Gupta, Roads and Maritime Services NSW, Australia

AM-TP1330 **Sensorless Traffic Adaptive Roadway Lighting**
Talmai Oliveira, Philips Lighting Research North America, United States

TS42 - Ensuring Driver Safety Through ADAS and Automated Vehicles

Tuesday 31 October | 9:45 - 11:15

Room 511 C

SessionTrack: Connectivity and Autonomy

Moderator: *Tien-Pen Hsu, Institute of Civil Engineering, National Taiwan University, Chinese-Taipei*

AP-SP0916 **The Study of the Effects and Social Perception of ADAS in Japan - Focusing on Advanced Emergency Braking System**
Yasuhide Nishihori, Toyota Transportation Research Institute, Japan

AM-TP1018 **Driver Safety Notifications**
Enrique Cramer, Drivewyze, Canada

AP-TP1029 **Are They Safe? Australia's Progress Towards a Safety Assurance System for Automated Vehicles**
James Williams, National Transport Commission, Australia

AP-SP1041 **Estimation of Driver Injury Severity Associated with Automotive Crash**
Hyungmok Yoo, The Korea Transport Institute, Korea

AP-TP1051 **Direct Yaw Moment Control That Can Turn a Vehicle Even on an Icy Road**
Tatsuya Hiromura, Advics Co. Ltd., Japan

TS43 - ITS for Customer Information

Tuesday 31 October | 9:45 - 11:15

Room 511 F

SessionTrack: Integrated Approach: Planning, Operations and Safety

Moderator: *Jessica Lin, THI Consultants Inc., Chinese-Taipei*

AP-TP0788 **Investigating How Colors and Color Tones Make Waiting Times Feel Shorter**
Hiroko Mori, Aichi Shukutoku University, Japan

AP-SP1145 **Development of Content Variable Integrated Signage System for Railway Guidance**
Yosuke Hidaka, East Japan Railway Co., Japan

AM-TP1298 **A Customer-Focused Methodology for Determining Prediction Accuracy Using Automatically Collected Data**
Farah Machlab, IBI Group, United States

TS44 - Sharing the Ride

Tuesday 31 October | 9:45 - 11:15

Room 512 A

SessionTrack: Data, Security and Privacy

Moderator: *Yasuhiko Nakano, Fujitsu Ten (Europe) GmbH, Germany*

AP-SP0782 **On Generic Properties of Extended Environment Values**
Mikio Sasaki, Music Scene Research, Japan

AM-TP0838 **Modeling Demand and Supply Interaction in Multiple Stations Shared Vehicle Systems**
Ata Khan, Carleton University, Canada

AP-SP0968 **Investigating the Macroscopic and Microscopic Feature of Electric Carsharing System in Shanghai**
Tao Fu, Tongji University, China

AP-SP1007 **Free-Floating Public Bicycle Sharing System in Shanghai: The Spatial-Temporal Patterns from GPS-Data**
Fuwen Deng, Tongji University, China

EU-SP1235 **Public Financing for Shared Mobility**
Tom Voege, International Transport Forum OECD, France

TS45 - Simulation Applications

Tuesday 31 October | 9:45 - 11:15

Room 512 B

SessionTrack: Infrastructure Challenges and Opportunities

Moderator: *Amy Guo Haggart, Newcastle University, United Kingdom*

AP-TP1059 **Framework Design Method of Customized Macroscopic Traffic Model System**
He Liu, Shenzhen Urban Transport Planning Center Co. Ltd., China

AP-SP1214 **A Pipeline Multiagent Architecture for Road Traffic Simulation**
Masayuki Hayashi, Nagoya Institute of Technology, Japan

EU-TP1255 **Microsimulation Model Application to Assess Ambulances Advanced Priority Strategies**
Ecaterina McCormick, Transport Systems Catapult, United Kingdom

AP-TP1302 **Analysis of Relationship between Internet Search Data and Traffic Conditions**
Jin-Soo Her, The Korea Transportation Institute, Korea

AM-TP0748 **An Evaluation of Current Simulation Analysis Capabilities and Near-Term Needs for Modeling Connected Vehicle Applications**
Vassili Alexiadis, Cambridge Systematics, United States

TS46 - Using ITS to Determine Pricing for Parking and Transportation

Tuesday 31 October | 9:45 - 11:15

Room 512 C

SessionTrack: Integrated Approach: Planning, Operations and Safety

Moderator: *Monsak Socharoentum, National Electronics and Computer Technology Center, Thailand*

AM-SP0789 **Rank Eight Congestion Reduction Pricing Policies via the Delphi Method**
Steve Raney, Joint Venture Silicon Valley, United States

AP-SP0861 **Estimating and Pricing Transport Emissions on Urban Road Networks**
Kai Zhang, Shenzhen Urban Transport Planning Center, China

AP-SP0883 **Estimating Parking Price Elasticity Using Automatic Parking Transaction Data: A Case Study of Shanghai Hongqiao International Airport**
Chenglong Liu, Tongji University, China

AP-TP1293 **Dynamic Pricing for Public Transport**
Archana Ramakrishnan, Conduent Labs India, India

TS47 - Air Quality in Smart Cities

Tuesday 31 October | 13:15 - 14:45

Room 511 C

SessionTrack: Smart(er) Cities

Moderator: *Susan Grant-Muller, University of Leeds, United Kingdom*

AP-SP0781 **Reducing Air Pollution Exposure in a Road Trip**
Chunyang Ma, IBM Research, China

EU-TP0933 **The Real $$$ Cost of Pollution: Environment Fines and What Can Be Done**
Eneko Aritza Aldama, Kapsch TrafficCom, Spain

EU-TP1014 **Autonomous and Connected Vehicles for Cleaner Air (ACCRA)**
Simon Bottomley-Sanchez, Transport Systems Catapult, United Kingdom

TS48 - Bicycles in Smart Cities

Tuesday 31 October | 13:15 - 14:45

Room 511 C

SessionTrack: Smart(er) Cities

Moderator: *Mads Gaml, City of Copenhagen, Denmark*

EU-SP0814 **Effective Parameters on Trip Length of Bike Sharing Systems**
Kiarash Ghasemlou, İstanbul Technical University, Turkey

AP-TP1002 **Bicycle Anti-Roll-Down System Using Gyro Effect**
Atsushi Kutsuwa, Shibaura Institute of Technology, Japan

EU-TP1082 **FLOW: Using Transport Models to Evaluate the Congestion Reduction Potential of Walking and Cycling Measures**
Nora Szabo, PTV Group, Germany

TS49 - Cyber Security: Part 1 of 2

Tuesday 31 October | 13:15 - 14:45

SessionTrack: Data, Security and Privacy

Room 512 A

Moderator: *Joerg Rosenbohm, Kapsch TrafficCom, United States*

AP-TP0854 **Auto SIEM: Security Information and Event Management for Connected Vehicles**
Takeshi Kishikawa, Panasonic Corporation, Japan

AM-TP0864 **Cybersecurity Vulnerabilities in Autonomous Vehicle Development**
Adam Mistick, Carnegie Mellon University, United States

AM-TP1291 **Cybersecurity: System Assurance at the Intersection and V2X**
Eric Raamot, Econolite New New Group, Inc., United States

TS50 - Preparing for Automated Vehicles: Part 3 of 4

Tuesday 31 October | 13:15 - 14:45

SessionTrack: Connectivity and Autonomy

Room 512 B

Moderator: *C. Douglass Couto, Independent Consultant, United States*

AP-TP0975 **Scalable and Real-Time Distribution of Layered Dynamic Information for Autonomous Vehicle**
Takahiro Yoneda, Panasonic Corporation, Japan

AP-SP0986 **Velocity Profile Adjustment Approach to Improve Automated Vehicle Comfort-Based on V2I Communication**
Chenglong Liu, Tongji University, China

EU-TP0992 **Testing Automated Driving in the Context of ITS**
Alain Vouffo, Spirent Communications, United Kingdom

EU-TP1021 **A New Method for Ground Vehicle Access Control and Situation Awareness: Experiences from a Real-Life Implementation at an Airport**
Jonas Didoff, RISE Viktoria, Sweden

AM-TP1025 **Managing Massive Shared Fleets of Automated Vehicles**
Bern Grush, Grush Niles Strategic, Canada

TS51 - Improvement in Freight Transport Using ITS

Tuesday 31 October | 13:15 - 14:45

SessionTrack: Integrated Approach: Planning, Operations and Safety

Room 512 C

Moderator: *Eric Louette, Ministère de l'Environnement, de l'Energie et de la Mer, France*

EU-TP0821 **Exploring the Market Acceptability of Cooperative Freight Transport Services**
Manuela Flachi, ERTICO-ITS Europe, Belgium

EU-TP0889 **FORMICA - Multipurpose Rail Freight Innovative Concept**
Miroslav Haltuf, H-Comp Consulting, Czech Republic

EU-TP1284 **A Model for Improving the Planning of Truck Transport Journeys**
Gideon Mbiydzenyuy, NetPort Science Park/University of Borås, Sweden

TS52 - Payment Technology-Incentive Schemes and Modal Choice

Tuesday 31 October | 15:00 - 16:30

Room 510 C

SessionTrack: Infrastructure Challenges and Opportunities

Moderator: *Damian McHale, Northcliffe Limited, United Kingdom*

AM-TP0911 **A Cooperative Environment to Incorporate Comfort and Safety on Modal Choices and Trip Assignment**
Alireza Mohammadi, Concordia University, Canada

AP-TP1060 **Urban Mobility Powered by New Digital Payment System**
Syahrunizam Samsudin, Touch 'n Go, Malaysia

EU-SP1147 **Rewarding Sustainable Transportation Choices**
Anders Hjalmarsson Jordanius, RISE Viktoria, Sweden

EU-SP1258 **The Potential for Embedding Retail Loyalty Models to Encourage Modal Shift to Public Transport**
Frances Hodgson, Institute for Transport Studies, University of Leeds, United Kingdom

TS53 - Signal Control: Part 1 of 2

Tuesday 31 October | 15:00 - 16:30

Room 510 D

SessionTrack: Smart(er) Cities

Moderator: *Hartmut Beintken, HMI Tech, New Zealand*

EU-TP0760 **Mapping Split Cycle Offset Technique to Signal Frames-Based Control**
Thomas Riedel, Adaptive Traffic Control AG and Verkehrs-Systeme AG, Switzerland

AP-TP0974 **Definition and Utilization of Indicator for Traffic Conditions**
Teppei Kuroda, Sumitomo Electric System Solutions Co. Ltd., Japan

AP-TP1057 **Field Experiments for Cooperative Signal Control Systems**
Masafumi Kobayashi, UTMS Society of Japan, Japan

TS55 - Innovative Operations and Management Strategies

Tuesday 31 October | 15:00 - 16:30

Room 511 C

SessionTrack: Smart(er) Cities

Moderator: *David Markt, Q-Free ASA, United States*

AM-TP0823 **New Agency Business Models for Advancing Innovative Operations and Management Illustrated by the Port Authority of New York and New Jersey's Agency Operations Center (AOC) Program**
Theodore Bobowsky, Port Authority of New York & New Jersey, United States

AM-TP1120 **Cooperation and Collaboration at COMTEC: A State-of-the-Art Operations Center**
Joshua Fink, Macomb County Department of Roads (AECOM), United States

AM-TP1184 **Procuring, Managing and Evaluating the Performance of Contracted Transportation Operations Centre (TOC) Services for the City of Toronto**
Rajnath Bissessar, City of Toronto, Canada

AM-TP1260 **The Nation's First Coast, the Nation's First Smart Region**
Terry Shaw, HNTB, United States

AM-TP1270 **PennDOT Regional Traffic Management Center Relocation - Enhancing Regional Coordination and Interagency Operations**
Jambala Ruit, Jacobs Engineering, United States

TS56 - Open and Shared Data

Tuesday 31 October | 15:00 - 16:30

SessionTrack: Data, Security and Privacy

Room 511 F

Moderator: *Josh Johnson, Southwest Research Institute, United States*

EU-TP0794 **Sharing and Cataloging Field Operational Test Datasets**
Sami Koskinen, VTT Technical Research Centre of Finland Ltd., Finland

EU-TP0996 **Open Transport Data: A New Hope to Reality Strikes Back**
Trevor Brennan, Hertfordshire County Council, United

EU-TP1015 **Smarter Mobility: Not Just for the Smart Cities**
Tim Gammons, Arup, United Kingdom

EU-TP1223 **Assessing the Benefits of Data Sharing in the Smart Mobility Context**
Khalid Nur, Ove Arup & Partners Ltd., United Kingdom

AM-TP1246 **Public Authorities' Role in Data Economy in Road Transport Sector**
Tom Voege, International Transport Forum OECD, France

TS57 - Cyber Security: Part 2 of 2

Tuesday 31 October | 15:00 - 16:30

SessionTrack: Data, Security and Privacy

Room 512 A

Moderator: *Steven Johnson, HNTB, United States*

EU-SP0803 **An Automotive Public Key Infrastructure Design for Limited Embedded Hardware Resources**
Reiner Kriesten, University of Applied Sciences Karlsruhe, Germany

AM-TP1094 **An Enrollment and Registration Service for Secure V2X in ITS Systems**
Brian Romansky, TrustPoint Innovation Technologies Ltd., Canada

AM-TP1153 **Securing ITS Field Networks and Understanding V2X Implications**
Marisa Ramon, Southwest Research Institute, United States

EU-SP1281 **On Reliability Assessment Approaches in Vehicular Communications**
George Dimitrakopoulos, Harokopio University of Athens (HUA), Greece

TS58 - Preparing for Automated Vehicles: Part 4 of 4

Tuesday 31 October | 15:00 - 16:30

SessionTrack: Connectivity and Autonomy

Room 512 B

Moderator: *Jean-Charles Pandazis, ERTICO-ITS Europe, Belgium*

AM-TP0842 **HIGH System [High-Speed Interstate Ground Highway]**
Steve Dickerson, Georgia Institute of Technology, United States

EU-TP0990 **How to Get a Driving License for an Automated Vehicle**
Gerben Feddes, RDW, Netherlands

AM-SP1166 **Autonomous Vehicle Hardware Standards**
Richard McLay, Private Sector, United States

EU-TP1272 **Aurora Snowbox - The Intelligent Test Ecosystem for Snowtonomous Driving in Finland**
Reija Viinanen, Finnish Transport Agency, Finland

TS59 - Truck Platooning

Tuesday 31 October | 15:00 - 16:30

Room 512 C

SessionTrack: Connectivity and Autonomy

Moderator: *Chris Mentzer, Southwest Research Institute, United States*

AP-SP0751 **Research on the Time Interval of Platoon Dispersion Model**
Liang Rui, Beijing University of Technology, China

AM-TP0914 **An Assessment of Emerging Truck Platooning V2V Technologies**
Mark Jensen, Cambridge Systematics, Inc., United States

EU-TP1017 **Developing a Platooning System for a Real-World, Long-Term Road Trial**
Eric Chan, Ricardo, United Kingdom

EU-TP1236 **ITS/Connectivity as Key Enabler for Truck Automated Driving**
Luetzner Joerg, Continental, Germany

AP-SP1249 **Study on HMI Design of Truck Platoon System in Lane Change**
Toshiyuki Sugimachi, University of Tokyo, Japan

TS60 - Travel Speed Prediction

Tuesday 31 October | 16:45 - 18:00

Room 513 DEF

SessionTrack: Data, Security and Privacy

Moderator: *Mahmood Hikmet, HMI Tech, New Zealand*

AP-TP0817 **Real-Time Advisory and Alternative Road Analysis System Using eTag**
Kuen-Rong Lo, Chunghwa Telecom Co. Ltd., Chinese-Taipei

AP-TP0819 **Traffic State Estimation Using Traffic Measurement from the Opposite Lane: An Application of Variational Theory**
Katsuya Kawai, Mitsubishi Electric Corporation, Japan

AP-TP1058 **A Neural Network-Based Approach for Road Speed Estimation Under Incomplete Measurement Data**
Yong Yao Yang, Supcon Information Technology, China

AM-SP1110 **Travel Speed Prediction Using Machine Learning Techniques**
Maha Gmira, École Polytechnique de Montréal, Canada

TS61 - Applications of Advanced Traffic Management

Tuesday 31 October | 16:45 - 18:00

Room 513 ABC

SessionTrack: Infrastructure Challenges and Opportunities

Moderator: *Roberto Perez, Parsons Corporation, United States*

AM-TP1083 **Michigan DOT US-23 Flex Route Project**
Collin Castle, Michigan Department of Transportation, United States

AM-TP1116 **Modeling and Simulation of Prediction-in-the-Loop Active Traffic Management**
Raj Kishore Kamalanathsharma, Booz Allen Hamilton, United States

AM-TP1210 **Tracking Managed Lanes Procedures and Activations**
Lynne Randolph, Southwest Research Institute, United States

AP-TP1121 **Aeronautical Information Processing for Volcanic Ash Response System**
Doohee Nam, Hansung University, Korea

TS62 - Exploring Traffic Safety and Notification

Tuesday 31 October | 16:45 - 18:00

Room 514 BC

SessionTrack: Integrated Approach: Planning, Operations and Safety

Moderator: *Murphy Sun, ITS Taiwan, Chinese-Taipei*

AP-TP1024 **Validation Study on Evaluation of Traffic Safety Using fNIRS Final Edition**
Toshiyuki Sugimachi, University of Tokyo, Japan

AP-TP1063 **Features of the Korean Emergency Call (e-Call) System**
Sodam Jeong, The Korea Transport Institute, Korea

AM-TP1191 **Integrating Human Factors into Design and Evaluation of an Intelligent Rural Intersection Conflict Warning System**
Ray Starr, Minnesota Department of Transportation, United States

AP-TP1213 **The Study of ITS Application for Enhancing Tour Buses Safety**
Sally Shu-Fang Lai, Department of Distribution Management, Takming University of Science and Technology, China

TS63 - Smart Parking

Tuesday 31 October | 16:45 - 18:00

Room 510 A

SessionTrack: Smart(er) Cities

Moderator: *Kurt Bucheler, Streetline, Inc., United States*

AP-SP1011 **A Modified Gravity Model of Parking Distribution Among Shared Parking Lots**
Weina Fan, Tongji University, China

AP-SP1034 **Parking Management Under Spatial Mismatch Between Supply and Demand**
Chenwei Wang, Tongji University, China

AM-TP1123 **Montréal's New Dynamic Parking Guidance System**
Olivier Audet, Ville de Montréal, Canada

AM-TP1316 **The Hunt for Perfect Parking Occupancy Detection: An Evaluation of On-Street Parking Occupancy Detection Technology and Their Ability to Address Urban Challenges**
Soumya Dey, District (Washington, D.C.) Department of Transportation, United States

EU-TP1348 **Take Smart Parking a Step Beyond**
Thomas Hohenacker, Cleverciti Systems GmbH, Germany

TS64 - Autonomous and Electric Transit Vehicles

Tuesday 31 October | 16:45 - 18:00

Room 510 C

SessionTrack: Connectivity and Autonomy

Moderator: *Josef Czako, Moving Forward Consulting, GermanyTS*

EU-SP0784 **Modeling and Planning Charging Infrastructure for Electrically Driven Buses**
Hubert Buechter, Fraunhofer-Institute for Material Flow and Logistics, Germany

AM-TP1096 **Advancements in Connected Vehicle Technology in Transit**
Jeffrey Arch, Battelle, United States

AM-TP1101 **Minnesota Autonomous Bus Pilot**
Jay Hietpas, Minnesota Department of Transportation, United States

TS65 - Signal Control: Part 2 of 2

Tuesday 31 October | 16:45 - 18:00

Room 510 D

SessionTrack: Infrastructure Challenges and Opportunities

Moderator: *Graham Hanson, Department for Transport, United Kingdom*

AM-TP0755 **Data Analytics with the DA-300 and iCITE**
Matt Zinn, Reno A&E, United States

AP-SP1192 **A Vehicle Priority Control Based on Automated Driving Technology and Traffic Signal Controls**
Jaehyun So, The Korea Transport Institute, Korea

AP-TP1335 **The Development and Implementation of a Traffic Controlled Network Domain Model**
Ari Edinburg, Road and Maritime Services, Australia

TS66 - Applications of ITS Technologies for Truck Enforcement Activities

Tuesday 31 October | 16:45 - 18:00

Room 512 D

SessionTrack: Infrastructure Challenges and Opportunities

Moderator: *Eric Louette, Ministère de l'Environnement, de l'Energie et de la Mer, France*

EU-TP0761 **Implementation of Weigh-In-Motion Systems for Direct Enforcement of Overloading**
Hans van Loo, Corner Stone International SAGL, Switzerland

AP-TP0774 **High-Speed Weigh-in-Motion on Expressway is Now Starting to Make Road Safety in Japan**
Yokota Masatoshi, East Nippon Expressway Co. Ltd., Japan

AP-TP1078 **A New System for Vehicle Weight Enforcement**
Yotaro Nagai, West Nippon Expressway Co. Ltd., Japan

EU-TP1091 **Innovative Use of Bridge Weigh-in-Motion System on Roads with Asymmetrical Traffic Load**
Bajko Kulauzovic, Cestel d.o.o., Slovenia

AM-TP1275 **Automation Technologies for Commercial Vehicle Safety Screening**
Rish Malhotra, IRD (International Road Dynamics), Canada

TS67 - Big Data Management

Tuesday 31 October | 16:45 - 18:00

Room 511 C

SessionTrack: Data, Security and Privacy

Moderator: *Vera Jin, SopraSteria Asia, Singapore*

AM-TP1299 **AZTech Regional Archived Data System (RADS): ITS Data Hub Deployment in Maricopa County**
Faisal Saleem, Maricopa County Department of Transportation, Arizona

AM-TP1303 **Southern California Regional Big Data Solution**
Daniel Lukasik, Parsons, United States

AP-TP1357 **Building Data Center as a Service as Centralized and Integrated Urban Traffic Data Management**
Akob Zohari, Ministry of Works Malaysia, Malaysia

TS68 - Innovative Freeway Operations Using the Shoulder as a Lane

Tuesday 31 October | 16:45 - 17:45

Room 511 F

SessionTrack: Integrated Approach: Planning, Operations and Safety

Moderator: *Ian Patey, Mouchel, United Kingdom*

AP-TP0835 **Developing an Effective Freeway Shoulder Operation by Using a Smartphone Application**
Wen Jing Huang, CECI Engineering Consultants, Inc., Chinese-Taipei

EU-TP1149 **Lessons Learnt from a Benchmark of Innovative Traffic Management Measure in Europe**
Sylvain Belloche, Cerema, France

TS69 - ITS in Rail Passenger Management

Tuesday 31 October | 16:45 - 18:00

Room 512 A

SessionTrack: Smart(er) Cities

Moderator: *Dharshika Fonseka, HMI Technologies Ltd., New Zealand*

AP-TP0790 **Framework Design of Real-time Passenger Flow Status Evaluation for Urban Rail Transit**
Bo Wang, Beijing Transportation Information Center, China

AP-TP1030 **Estimation Methodology for Number of Passengers on Shinkansen Trains**
Kazutaka Ito, East Japan Railway Co., Japan

AP-TP1064 **Development and Verification of Station Congestion Visualization Tool**
Toru Sahara, East Japan Railway Co., Japan

TS71 - Preventing Wrong Way Crashes-New Approaches to a Serious Challenge

Tuesday 31 October | 16:45 - 18:00

Room 512 C

SessionTrack: Integrated Approach: Planning, Operations and Safety

Moderator: *Patrick Lauzière, Orange Traffic Inc., Canada*

AP-TP0827 **Basic Study of Cognitive Function of MCI for Prevention of Wrong-Way Driving**
Yuki Koshizuka, Nexco-East Engineering Co. Ltd., Japan

AM-TP0885 **Countermeasures for Wrong-Way Driving on Freeways and Expressways**
Douglas Tomlinson, Pennsylvania Department of Transportation, United States

AP-TP1038 **Using ITS to Protect Motorists Against Wrong-Way Drivers**
Andrew Stevens, Auckland Motorway Alliance, New Zealand

WEDNESDAY 1 NOVEMBER

TS72 - Traffic Management Case Studies

Wednesday 1 November | 8:00 - 9:30

Room 511 C

SessionTrack: Smart(er) Cities

Moderator: *Jim Montgomery, Kapsch TrafficCom North America, United States*

AM-TP1027 **Leveraging Public-Private Partnerships to Transform Traffic Management into a Regional Smart City Intelligent Transport System**
Brenda Connor, Ericsson North America, United States

EU-TP1080 **Principles for Public-Private Cooperation in Interactive Traffic Management**
Tiffany Vlemmings, National Datawarehouse for Traffic Information, Netherlands

AM-TP1113 **Smart Solution for a Traffic Management Center in Montréal**
Patrick Ricci, Urban Mobility Management Center, Canada

AP-TP0787 **Development of Infrastructure-based Autonomous Driving Support System Using Dynamic Maps**
Keisuke Hirose, Mitsubishi Electric Corp., Japan

AP-TP1141 **Innovative, Agile Stepping Stones for Our Multi-Modal, Technology-Enabled Transport Management Center Transformation**
Dr. Bradley Rolfe, Transport for NSW, Australia

AP-TP1253 **Saturation Flow of Shared Lanes with Mixed Traffic Flow**
Chien-Pang Liu, MOTC, Chinese-Taipei

TS73 - Mapping the Environment

Wednesday 1 November | 8:00 - 9:30

Room 511 F

SessionTrack: Connectivity and Autonomy

Moderator: *Jean-Charles Pandazis, ERTICO-ITS Europe, Belgium*

AM-SP0886 **Asset Extraction Using Street-Level LiDAR Data for Connected Vehicle Applications**
Rakesh Nune, District (Washington, D.C.) Department of Transportation, United States

EU-TP1220 **The Road to Automation – Road Operators' Challenges in the Introduction of Automated Driving**
Bernd Datler, ASFINAG Maut Service GmbH, Austria

AP-TP1354 **Three-Dimensional Positioning on Sloping Roads Using 79GHz Band Radar Module**
Takashi Matsuoka, Panasonic Corp., Japan

TS74 - Public Transit Routing and Scheduling

Wednesday 1 November | 8:00 - 9:30

Room 512 A

SessionTrack: Connectivity and Autonomy

Moderator: *Andreas Rau, TUM Create, Singapore*

AP-SP1004 **Investigating the Performance of Large Scale Bus Network Operation Status Using GPS Data**
Wu Zhongyi, China Academy of Transportation Sciences, China

AP-SP1067 **Study on Reliability of Urban Rail Transit Network in Beijing**
Pengfei Lin, Key Laboratory of Transportation Engineering, Beijing University of Technology, China

AP-TP1165 **Classification of Bus Stopping Precision Using Deep Artificial Neural Network on GNSS-Based Bus Tracking Data**
Satidchoke Phosaard, Suranaree University of Technology, Thailand

AM-TP1309 **Intelligent Taxi Hailing System for Smart Cities with Connected Vehicles**
Phil Pheiffer, East Tennessee State University, United States

EU-TP1342 **The Stochastic Vehicle Routing Problem**
Elenna Dugundji, CWI, Netherlands

TS75 - Recent Advancements in Traffic Sensing Technologies

Wednesday 1 November | 8:00 - 9:30

Room 512 B

SessionTrack: Infrastructure Challenges and Opportunities

Moderator: *Sang Hyup Lee, KICT, Korea*

AM-SP0946 **Traffic Density Estimation Using Radar Sensor Data from Probe Vehicles**
Daisik Nam, University of California-Irvine, United States

AP-TP0966 **Development of a Freeway Network Automatic Incident Detection System**
Robin Marston, VicRoads, Australia

EU-SP1137 **Road User Behavior Analyses Based on Video Detections: Status and Best Practice Examples from the RUBA Software**
Niels Agerholm, Aalborg University, Denmark

AM-TP1170 **Detection Systems at the Melocheville Tunnel**
René Marcouiller, CIMA+, Canada

TS76 - ITS in Transit Operations: Part 1 of 2

Wednesday 1 November | 8:00 - 9:30

Room 512 C

SessionTrack: Smart(er) Cities

Moderator: *Liam Fassam, University of Northampton, United Kingdom*

AP-TP0870 **New Transport Arrangements Using ICT**
Sei Sakairi, East Japan Railway Co., Japan

AM-TP1209 **Bus Toll Lanes and CV – Sustainable Option Building on Today's Transportation**
Bob Frey, Tampa-Hillsborough County Expressway Authority, United States

EU-TP1242 **Simulating the Benefits of an ATS Over an Existing Saturated Line: A Stochastic Approach**
Christophe Jehannin, Setec ITS, France

AP-SP1314 **Operation and Monitoring of Bus Lanes in Congestion Areas: A Case in Macao**
Ku Weng Keong, University of Macau, Macao

TS77 - Advanced Traffic Management from Planning to Managing Change and Implementation

Wednesday 1 November | 10:45 - 12:15

Room 511 C

SessionTrack: Smart(er) Cities

Moderator: *Sylvain Belloche, Cerema, France*

EU-TP0917 **From Four Legacy ATMS Systems into One Single Cockpit Ready for the Future**
Eneko Aritza Aldama, Kapsch TrafficCom, Spain

AM-TP1180 **Implementation of CapTOP ATMS in the District of Columbia**
Jason Tao, District (Washington, D.C.) Department of Transportation, United States

AM-TP1185 **LaGuardia Airport Redevelopment Program - Early Action ITS Deployment and Transportation Management Plan Implementation**
Rizwan Baig, The Port Authority of New York & New Jersey, United States

AP-TP1312 **Effective Change Management for ITS Systems**
Stephen Griffith, Resolve Group, New Zealand

TS78 - Improved Methods of Collecting and Analyzing Probe Data

Wednesday 1 November | 10:45 - 12:15

Room 511 F

SessionTrack: Data, Security and Privacy

Moderator: *Masafumi Kobayashi, Sumitomo Electric Industries, Ltd., Japan*

AP-SP0754 **Applying Travel Time Estimation Techniques for Probe-Based Systems**
Jinhwan Jang, Korea Institute of Civil Engineering and Building Technology, Korea

AP-TP0900 **A Study of Various Aggregating Methods of Vehicle Probe Data**
Kazunori Inoue, Panasonic Corp., Japan

AP-TP1042 **Generating Traffic Information for Automated Vehicles Based on Probe Data**
Kentaro Takaki, Sumitomo Electric Industries, Ltd., Japan

AM-SP1300 **Estimating Highway Volumes Using Vehicle Probe Data – Proof of Concept**
Stanley Young, National Renewable Energy Laboratory, United States

TS79 - Recent Developments in Traffic Signal Management

Wednesday 1 November | 10:45 - 12:15

Room 512 A

SessionTrack: Connectivity and Autonomy

Moderator: *Ian Patey, Mouchel, United Kingdom*

AP-SP0879 **Eco Approaching at an Isolated Signalized Intersection Under Partially Connected and Automated Vehicles Environment**
Huifu Jiang, Harbin Institute of Technology, China

AM-TP0925 **Signal Optimization Tool for an Integrated Corridor Management System**
Matthew Juckes, Kapsch TrafficCom Transportation, United States

AP-TP0930 **Deployment and Operation of Traffic Signal Prediction Systems**
Yasuaki Ito, Tokyo Metropolitan Police Department, Japan

AP-TP0931 **Traffic Signal Control Advancement Efforts Toward Tokyo 2020 Games**
Tsuyoshi Kobayashi, Tokyo Metropolitan Police Department, Japan

EU-TP1233 **Scandinavian Experience with Traffic Light Assistance**
Ørjan Tveit, Norwegian Public Roads Administration, Norway

TS80 - Ridesharing in Smart Cities

Wednesday 1 November | 10:45 - 11:45

Room 512 B

SessionTrack: Smart(er) Cities

Moderator: *Dirk van Amelsfort, RISE Viktoria, Sweden*

EU-TP0836 **Evaluation of the SAKHAR Sensor: Vehicle Occupancy Sensor Promotes Carpooling**
Jérémie Bossu, Cerema, France

AM-TP0873 **A User-Centered Approach for Analyzing Data Collected as Part of a Rideshare-Integrated First and Last Mile Service Offering**
Leonid Antsfeld, Xerox, France

TS81 - ITS in Transit Operations: Part 2 of 2

Wednesday 1 November | 10:45 - 12:15

Room 512 C

SessionTrack: Data, Security and Privacy

Moderator: *Chris Bax, Cubic Transportation Systems, United States*

AP-SP0977 **A Data Analytic Approach to Monitor Citywide Bus Journey Speed Using Smartcard and GPS Location Data: A Case Study in Singapore**
Li Qian, Land Transport Authority, Singapore

EU-SP0987 **Using Automated Location Vehicle Data for the Diagnosis of Irregularity Sources**
Benedetto Barabino, CTM SpA, Italy

AP-TP1032 **Smart Bus Operation Management System**
Jessica Lin, THI Consultants Inc., Chinese-Taipei

TS82 - Congestion Analysis in Smart Cities

Wednesday 1 November | 13:15 - 14:45

Room 511 C

SessionTrack: Smart(er) Cities

Moderator: *Young-Kyun Lee, Intelligent Transport Society of Korea, Korea*

AM-SP0752 **Density-Based Road Traffic Analysis and Control**
Ting Han, University of Arkansas at Little Rock, United States

AP-TP0905 **Study of New Probe Data-Based Congestion Control/Traffic Safety Control Measures**
Kenta Tabuchi, Traffic Regulation(Control) Division Traffic Department, Japan

AP-SP1000 **Analysis and Prevention Control of Gridlock Phenomenon on a Signalized Single Grid Network**
Koichiro Iwaoka, Panasonic System Networks Co. Ltd., Japan

AP-TP1052 **Development of a Real-time Traffic Congestion Index System for Keqiao District Using On-Road Surveillance Camera Network**
Yong Yao Yang, Supcon Information Technology, China

AP-TP1133 **Macroscopic Analysis of Traffic Congestion and Its Sign in Large Tourist City Based on Fixed Observation Data**
Sachi Fukumoto, Japan Road Traffic Information Center, Japan

TS83 - Estimating and Measuring Congestion Conditions

Wednesday 1 November | 13:15 - 14:45

Room 511 F

SessionTrack: Data, Security and Privacy

Moderator: *Brian Negus, RACV, Australia*

AP-TP0972 **Estimating Cost of Congestion for Perth: A Methodology Review**
Ian Espada, Australian Road Research Board, Australia

AP-TP0973 **Comparison of Probe Data and Congestion Data**
Toshiya Yoshioka, Sumitomo Electric System Solutions Corporation, Japan

AP-TP1044 **Sizing an Urban Freeway Facility Using 20th Hour of Delay**
Zhongren Wang, California Department of Transportation, United States

EU-TP1056 **Introducing Extra Ordinary Queuing Alert**
Åke Egemalm, Danish Road Directorate, Denmark

AP-SP1154 **Measuring Excessive Congestion Cost by Using Alternative Data Sources**
Clarissa Han, Australian Road Research Board, Australia

TS84 - Localization Technologies: Part 1 of 2

Wednesday 1 November | 13:15 - 14:45

Room 512 A

SessionTrack: Connectivity and Autonomy

Moderator: *Ashweeni Beeharee, Satellite Applications Catapult, United Kingdom*

AM-TP0779 **Accurate and Resilient Positioning Solutions for Connected/Automated Vehicles**
Hirofumi Onishi, Alpine Electronics Research of America, United States

AP-TP1070 **A Proposal for Lane Level Location Referencing**
Satoru Nakajo, University of Tokyo, Japan

AP-TP1140 **Auxiliary Positioning System for V2X Based on UWB Technology**
Hao Zhou, Beijing Wanji Technology Co. Ltd., China

EU-TP1238 **Autonomous Vehicles: Get Necessary Redundancy in Positioning with Enhanced GNSS and Maps**
David Betaille, IFSTTAR, France

TS85 - MaaS-The Next Revolution of ITS

Wednesday 1 November | 13:15 - 14:15

Room 512 B

SessionTrack: Disruption and New Business Models

Moderator: *Gorazd Marinic, IRU Project, Belgium*

EU-TP0876 **Integrating E-mobility in ITS – Recommendations and Architecture**
Wolfgang Schulz, Zeppelin University, Germany

EU-TP1087 **Electric Mobility: A Cornerstone of the Third Industrial Revolution**
Florent Zanoto, Setec ITS, France

TS86 - Sensors for Automated Vehicles: Part 1 of 2

Wednesday 1 November | 13:15 - 14:45

Room 512 C

SessionTrack: Connectivity and Autonomy

Moderator: *Dean Zabrieszach, HMI Technologies Pty Ltd., Australia*

AP-TP1005 **Estimating the Visual Evaluation Rank of Lane Markings Deterioration from Event Data Recorder's Image**
Yumi Ishino, Graduate School of Information Science and Technology, Aichi Prefectural University, Japan

AM-SP1023 **An Efficient, High-Resolution System to Detect Traffic Lights**
Matt Ginsberg, Connected Signals, Inc., United States

AP-TP1320 **Implementation for Multi-target Detection in Night-time Traffic Scenes**
Mitsuru Ochi, Vehicle Information and Communication System Center, Japan

TS87 - Applications of ITS for Disaster Management

Wednesday 1 November | 15:00 - 16:30

Room 511 C

SessionTrack: Infrastructure Challenges and Opportunities

Moderator: *Kim Siah Ang, ST Electronics (Infocomm Systems) Pte Ltd., Singapore*

AM-SP0892 **Incorporating Speed Data to Analyze Evacuation Route Resiliency**
Thomas Brennan, The College of New Jersey, United States

EU-SP1033 **Use of Intelligent Transport System Technologies by Under-Developed, Flood-Affected Communities**
Izza Anwer, Institute for Transport Studies, University of Leeds, United Kingdom

AM-TP1103 **Enhancing Situational Awareness in Highway Emergency Response: A Conceptual Design**
Shen-Chang Lin, Disaster Science and Management Program, University of Delaware, United States

AP-TP1157 **Tunnel Disaster Prevention on the Metropolitan Expressway**
Shoji Ohchika, Oriental Consultants Co., Ltd., Japan

AP-SP1338 **Emergency Evacuation Modeling of Auckland**
Prakash Ranjitkar, University of Auckland, New Zealand

TS88 - Exciting Advancements in Freight Logistics

Wednesday 1 November | 15:00 - 16:30

Room 511 F

SessionTrack: Smart(er) Cities

Moderator: *Manuela Flachi, ERTICO-ITS Europe, Belgium*

EU-TP0896 **What Do Data Tell Us? The Story of the European Logistics and Road Freight Transportation Sector**
Manuela Flachi, ERTICO-ITS Europe, Belgium

EU-TP0902 **Managing Loading Zones in City Centers: Using ITS for Space Optimization**
Eneko Aritza Aldama, Kapsch TrafficCom, Spain

EU-TP1146 **Disrupting Automotive Logistics Through a Combined Intelligent and Autonomous Transport Solution**
Anders Hjalmarsson Jordanius, RISE Viktoria, Sweden

EU-TP1221 **Logistics Information Exchange Platforms: Insights of the AEOLIX Project**
Manuela Flachi, ERTICO-ITS Europe, Belgium

EU-SP1266 **Is Logistics Ready for 4.0? - Key Findings of an Extensive Market Research**
Alexia Fenollar Solvay, IMA, RWTH Aachen University, Germany

TS89 - Localization Technologies: Part 2 of 2

Wednesday 1 November | 15:00 - 16:30

Room 512 A

SessionTrack: Connectivity and Autonomy

Moderator: *Makoto Itami, Tokyo University of Science, Japan*

AP-TP0812 **Study on Interpolation Methods for GNSS Positioning in Expressway Toll Collection**
Tsuyoshi Ikeda, Nippon Expressway Research Institute Co. Ltd., Japan

AP-SP0940 **A Vehicle Navigation System with Multi-Hypothesis Map Matching and Robust Feedback**
Shaojun Liu, Tsinghua-Berkeley Shenzhen Institute, China

EU-TP1229 **Data Fusion Architectural Concept for Geolocation Referencing Sub-Systems**
Paulus Spaanderman, PaulsConsultancy BV, Netherlands

TS90 - Measuring Traveler Behavior

Wednesday 1 November | 15:00 - 16:30

Room 512 B

SessionTrack: Infrastructure Challenges and Opportunities

Moderator: *Jean-Michel Henchoz, DENSO, Belgium*

AP-TP0859 **Travel Behavior Changes and Responses to Travel Information with the Progress of Disaster Recovery: A Case Study of Tohoku Heavy Rainfall Disaster**
Jun Sakamoto, Kochi University, Japan

EU-TP0950 **Changing the Behavior of Travelers in Urban Areas Using a Smart Route Analytics Platform**
Ward Koopmans, CGI Netherlands, Netherlands

AM-SP1340 **A Convergence of Public-Private Benefits in Denver, USA: Surveys and Analyses to Inform Urban Mobility-, Energy- and Infrastructure Services-Related Innovation**
Joshua Sperling, National Renewable Energy Laboratory, United States

TS91 - Sensors for Automated Vehicles: Part 2 of 2

Wednesday 1 November | 15:00 - 16:30

Room 512 C

SessionTrack: Connectivity and Autonomy

Moderator: *Toru Saito, Honda R&D Co. Ltd., Japan*

AP-SP0964 **Remote Sensing of Winter Road Conditions Using Near Infrared Spectroscopy**
Naoto Takahashi, Civil Engineering Research Institute for Cold Region, Japan

AP-TP1003 **Reconstruct 3D Model Using 2D LiDAR and Monocular Camera**
Panit-a-nong Kulprom, Shibaura Institute of Technology, Japan

AP-SP1016 **Improving Function Detecting General Object for On-Board Computer Vision by Artificial Neural Network**
Jittima Varagul, Shibaura Institute of Technology, Japan

EU-TP1129 **State of the Art Analysis for Connected and Automated Driving within the SCOUT Project**
Devid Will, Institute for Automotive Engineering - RWTH Aachen University, Germany

TS92 - Innovations in Freight-Truck Parking, Data Management and Port Access

Wednesday 1 November | 16:45 - 18:00

SessionTrack: Infrastructure Challenges and Opportunities

Room 513 DEF

Moderator: *C. Douglass Couto, Independent Consultant, United States*

EU-TP0809 **Obtaining Real-Time Data for Intelligent Truck Parking by Means of Vehicle On-Board Tolling Devices**
Andy Apfelstädt, University of Applied Sciences Erfurt, Deutschland

AM-TP0872 **Changing Commercial Truck Driver Parking Behaviors to Produce Safer Highways**
Davonna Moore, Kansas Department of Transportation, United States

AM-TP0947 **Deltaport Vehicular Access Control System**
Ian Steele, PBX Engineering, Canada

AM-TP0961 **Innovations in Central Data Management for Truck Compliance and Mobility - Vehicle Information in Motion**
Michael Wieck, International Road Dynamics, United States

EU-TP1273 **Intelligent Truck Parking in Network Perspective**
Raza Muhammed, Danish Road Directorate, Denmark

TS93 - ITS Data Quality

Wednesday 1 November | 16:45 - 18:00

SessionTrack: Data, Security and Privacy

Room 513 ABC

Moderator: *Yvonne Barnard, University of Leeds, United Kingdom*

EU-TP0759 **Calculating Time Loss by Impulse Detector Data for Transport Quality Measurement**
Thomas Riedel, Adaptive Traffic Control AG and Verkehrs-Systeme AG, Switzerland

AP-TP0846 **Learnings Arising from the Fusion of Traffic Data from Multiple Sources**
David Johnston, Intelligent Transport Services, Australia

AP-TP1240 **Data Quality Evaluation of Traffic Information Initiated by Private and Public Partnership**
Keechoo Choi, Ajou University, Korea

TS95 - Spectrum Sharing

Wednesday 1 November | 16:45 - 18:00

SessionTrack: Connectivity and Autonomy

Room 510 A

Moderator: *Justin McNew, JMC ROTA Inc., United States*

AM-TP0763 **Composition of Wireless Technologies for Connected Vehicles**
Hirofumi Onishi, Alpine Electronics Research of America, United States

AP-TP0935 **60 GHz Multi-Gigabit Wireless Technology for Connected Vehicles**
Masataka Irie, Panasonic Corp. Automotive & Industrial Systems Co., Japan

AM-TP1308 **Technical Challenges of Sharing DSRC Band at 5.9GHz in US**
John Kenney, Toyota InfoTechnology Center, United States

TS96 - Using the Basic Safety Message to Improve CAV Performance

Wednesday 1 November | 16:45 - 18:00

Room 510 C

SessionTrack: Connectivity and Autonomy

Moderator: *Jaching Chou, Ministry of Transportation and Communications, Chinese-Taipei*

AM-SP0831 **Tracking RSSI in Vehicle-to-Vehicle Networks for Collision Avoidance**
Billy Kihei, Georgia Tech, United States

AM-SP1086 **Impact of Distances Estimation Errors on the Communication Reliability in DSRC-Based Vehicular Networks**
Jean Marchal, Université de Sherbrooke, Canada

AP-SP1119 **Positioning and Collision Alert Investigation for DSRC-Equipped Light Vehicles Through a Case Study in CITI**
Adriana Simona Mihaita, Data61, Australia

AM-TP1311 **Identifying Factors That Impair the Lane-Keeping Efficiency of Drivers**
Phil Pfeiffer, East Tennessee State University, United States

TS97 - Utilizing Machine Learning for Transportation Analysis

Wednesday 1 November | 16:45 - 18:00

Room 510 D

SessionTrack: Data, Security and Privacy

Moderator: *Henry Meng, Institute for Information Industry, Chinese-Taipei*

AP-TP0929 **Transportation Mode Detection Using Machine Learning Classifier**
Hiroyuki Kumazawa, Osaka Sangyo University, Japan

AP-SP1010 **Person Trip Survey System Combining Transportation Estimation Method by Accelerometer and Web Diary System**
Koichi Miyashita, Mitsubishi Research Institute, Inc., Japan

AP-TP1045 **Study on Association Between Heart Rate and Thermal Sensation by Cabin Temperature Change**
Aki Yokoyama, Shibaura Institute of Technology, Japan

TS98 - Connected Vehicle Data

Wednesday 1 November | 16:45 - 17:45

Room 512 D

SessionTrack: Data, Security and Privacy

Moderator: *Susan Spencer, Susan Spencer & Associates, Canada*

AM-TP0945 **Outcome Assessment Using Connected Vehicle Data to Justify Signal Investments to Decision Makers**
Jijo Mathew, Purdue University, United States

AM-TP1254 **The Flood is Coming, Build an Ark: Automated and Connected Vehicle Data**
Stephen Novosad, HNTB, United States

TS99 - ETC Planning Case Studies

Wednesday 1 November | 16:45 - 18:00

Room 511 C

SessionTrack: Infrastructure Challenges and Opportunities

Moderator: *Joe Waggoner, Tampa Hillsborough Expressway Authority, United States*

AP-TP0915 **Transition to Toll According to Travel Distance Using Free Flow Tolling with ETC**
Toru Shimizu, East Nippon Expressway Co. Ltd., Japan

EU-TP0934 **The Future of Toll in the Czech Republic - Starting Interoperability and Technological Platform**
Karel Feix, Kapsch Telematic Services, Czech Republic

AM-TP0952 **Pre-Entry DMS Operational Needs and Lessons Learned**
Amber Reimnitz, PMP, Pennsylvania Turnpike Commission, United States

TS100 - Traffic Modeling and Monitoring Studies

Wednesday 1 November | 16:45 - 18:00

Room 511 F

SessionTrack: Infrastructure Challenges and Opportunities

Moderator: *Wen Jing Huang, CECI Engineering Consultants, Inc., Chinese-Taipei*

AM-SP1095 **Development of a Trip Energy Estimation Model Using Real-World Global Positioning System Driving Data**
Jacob Holden, National Renewable Energy Laboratory, United States

AP-TP1232 **Monitoring the Flow of People with Wi-Fi Packet Sensors: Changes in the Flow of People Made by People-Attracting Events**
Yuichi Kinuta, The Institute of Behavioral Sciences, Japan

AP-TP1333 **Performance Measures to Evaluate Volatility of Motorway Network Congestion Patterns Following the Opening of the Waterview Tunnel, Auckland, New Zealand**
Andy Hooper, Auckland Motorway Alliance, New Zealand

TS101 - Travelers Information from the Roadside to Statewide

Wednesday 1 November | 16:45 - 18:00

Room 512 A

SessionTrack: Integrated Approach: Planning, Operations and Safety

Moderator: *Javier Cobo, Independent, Canada*

AM-TP0797 **511PAConnect - The Next Evolution of Traveler Information**
Robert Taylor, Pennsylvania Turnpike Commission, United States

AM-TP0890 **Systems Engineering for Real-Time Integration of Arrow Board Messages into Traveler Information Dissemination Systems**
Elise Feldpausch, Michigan Department of Transportation, United States

AP-SP0988 **The Impact of Road Sign Symbols on Visibility and Readability of Proximity VMS Display at Expressway Junction**
Masaki Kasai, Central Nippon Highway Engineering Tokyo Co. Ltd., Japan

TS102 - Using ITS to Increase Safety on Urban Roadways

Wednesday 1 November | 16:45 - 18:00 | **Room 512 B**

SessionTrack: Integrated Approach: Planning, Operations and Safety

Moderator: *Moe Zarean, Iteris, Inc., United States*

AP-SP0798 **Development of Traffic Safety Risk Index for Local Governments Using In-Vehicle Digital Tachograph (DTG) Data**
Cheol Oh, Hanyang University, Korea

AP-TP0932 **Implementation of 30km/h Zones: The Public Awareness Campaign and the Future Tasks**
Kazuo Namikawa, Tokyo Metropolitan Police Department, Japan

AM-SP1195 **Developing a Two-Dimensional Key Performance Indicator of Safety and Mobility for Intersections: A Case Study of Hefei, China**
Shan Jiang, Rutgers University, United States

AM-TP1310 **Applying Big Data Analytics to Automated Traffic Enforcement to Achieve Vision Zero Goals: A Case Study from Washington, D.C.**
Soumya Dey, District (Washington, D.C.) Department of Transportation, United States

TS103 - Weather Condition Detection Analysis and Simulation

Wednesday 1 November | 16:45 - 18:00 | **Room 512 C**

SessionTrack: Integrated Approach: Planning, Operations and Safety

Moderator: *Dave Verma, HMI Tech, New Zealand*

AM-SP1098 **Automatic Roadway Condition Detection with an Artificial Neuron Network**
Richard Drouin, Ministère des Transports, de la Mobilité durable et de l'Électrification des transports, Canada

AM-SP1136 **Analysis of Present Weather Detector Precipitation Rate Estimates**
Jack Stickel, Alaska Department of Transportation and Public Facilities (retired), United States

AP-TP1204 **Driving Simulator + VISSIM Simulation-Based Traffic Flow State Evaluation Platform for Adverse Weather**
Chen Chen, Beijing University of Technology, China

TS104 - Applying Technology to Assess Travel and Provide Safe Roadways

Thursday 2 November | 8:15 - 9:45

Room 512 D

SessionTrack: Data, Security and Privacy

Moderator: *Makoto Miwa, ANswer Corporation, Japan*

AM-TP0948 **Wildlife Detection System**
Ian Steele, PBX Engineering, Canada

AP-SP1079 **Analysis of Vehicle Users' Travel Patterns by ALPR Data: A Case Study in Shanghai**
Yujiao Chang, Tongji University, China

AP-TP1118 **An Expressway Network Video Surveillance and Control System Integration Study**
Zhongren Wang, California Department of Transportation, United States

AP-TP1194 **Auckland Over Height Detection System - Learnings from When ITS Isn't Enough**
Dean Parker, Auckland Motorway Alliance, New Zealand

AP-TP1356 **Development of a Wireless Telemetry-Based Traffic Sensor Technology to Overcome the Lead Cable Breakage in AVC**
Sang Hyup Lee, KICT, Korea

TS105 - CAV Deployment Issues: Part 1 of 2

Thursday 2 November | 8:15 - 9:45

Room 511 C

SessionTrack: and Privacy

Moderator: *Jim Misener, Qualcomm Technologies, Inc., United States*

EU-TP0979 **Legalization for Automation: A Governmental Roadmap**
Gerben Feddes, RDW, Netherlands

EU-TP1109 **Semi-Autonomous Vehicles in a Changing Transport Risk and Liability Environment**
Cian Ryan, University of Limerick, Ireland

AM-SP1197 **Principles of Driverless Vehicles and Intelligent Infrastructure Prefix Machine Decision: To Solve Trolley Problem By Approach of Multi-Step Strategy**
Aiken Nijiantong, AEIO Laboratory, United States

EU-TP1261 **V2X - Beyond The Horizon**
Oliver Brandl, Kapsch TrafficCom AG, Austria

AM-SP1267 **Assessment of Link Level Variation of Connected Vehicle Market Penetration**
Mohammed Hadi, Florida International University, United States

TS106 - Safety of CAV Systems: Part 1 of 3

Thursday 2 November | 8:15 - 9:45

Room 511 F

SessionTrack: Connectivity and Autonomy

Moderator: *Cheol Oh, Hanyang University, Korea*

AP-SP0893 **Influence of AR Visual Marker Type on Depth Perception When Using an Automotive 3D Head-Up Display**
Ryo Noguchi, Keio University, Graduate School of Science and Technology, Japan

AM-SP0928 **The Disengagement Dilemma of Automated Vehicles**
Christopher Flores, Sensys Networks, Inc., United States

AP-TP1161 **Effect of Haptic Guidance Control on Driving Maneuver After Transmission of Automated to Manual Driving**
Kimihiko Nakano, University of Tokyo, Japan

AP-TP1175 **Influence of Subtask in Driver Characteristics When Take-Over from Automated Driving**
Kenta Takeda, Shibaura Institute of Technology, Japan

EU-TP1257 **Safety Homologation Process for Connected Automated Vehicles**
Tom Jansen, Ricardo Netherlands BV, Netherlands

TS107 - ITS TSMO and Connectivity and Their Impacts on Transportation Agencies

Thursday 2 November | 8:15 - 9:45

Room 512 A

SessionTrack: Integrated Approach: Planning, Operations and Safety

Moderator: *Ken Philmus, Conduent Transportation, United States*

AM-TP0878 **A Connected Region: Moving Technological Innovations Forward in the NITTEC Region**
Athena Hutchins, Niagara International Transportation Technology Coalition, United States

AM-TP1105 **Pennsylvania's TSMO Program**
Jeffrey Kupko, Michael Baker International, United States

AP-TP1217 **How ITS Will Transform Chinese-Taipeiese Transport Services**
Chien-Pang Liu, MOTC, Chinese-Taipei

AM-TP1262 **Delaware's History of Integrated Transportation Management Allows for Easy Transition to Emerging Transportation Technologies**
Jennifer Duval, Jacobs, United States

AM-TP1285 **Integrating New Intelligent Transportation Systems Technology into Agency Business Practices**
Matthew Smith, Michael Baker International, United States

TS108 - Exploring the MaaS Eco-System from Payments to Shared Mobility

Thursday 2 November | 8:15 - 9:45

Room 512 B

SessionTrack: Disruption and New Business Models

Moderator: *Liam Fassam, University of Northampton, United Kingdom*

AAM-TP0849 **Bringing Mobility as a Service to the United States: Accessibility Opportunities and Challenges**
Carol Schweiger, Schweiger Consulting LLC, United States

AP-TP0936 **An Integrated Shared Mobility Service in Shanghai and Its Mobile App Design**
Lei Wang, Tongji University, China

EU-SP0980 **Procuring Mobility as a Service: Exploring Dialogues with Potential Bidders in West Sweden**
Göran Smith, Chalmers University of Technology, Sweden

AP-TP1112 **Mobility Marketplace**
Martin McMullan, NZ Transport Agency, New Zealand

AP-TP1226 **Purchasing Power Reflecting Movement Data**
Tomohito Kanzaki, East Japan Railway Co., Japan

TS109 - Detection Technologies for Asset Management

Thursday 2 November | 8:15 - 9:45

Room 512 C

SessionTrack: Infrastructure Challenges and Opportunities

Moderator: *Andrew Heath, Georgia Department of Transportation, United States*

AP-TP0874 **The Virtual Reality Inspection Training for Power Reception and Distribution Facilities at Expressway**
Junichi Itou, Central Nippon Highway Engineering Nagoya Co. Ltd., Japan

AP-SP0995 **Improvement of the Crack-Growth Detection Model Eliminate Interference Zones and Classify by Logarithmic Functions**
Xiaoming Zhang, Tongji University, China

AP-TP1046 **Application of Highway Network Performance Monitoring and Efficiency Technology-Based on the Internet of Things**
Di Xiaofeng, China Academy of Transportation Science, China

AP-TP1196 **Investigation of On-Board Sensing Technology for Use in Road Management Task**
Kazunori Ooshima, National Institute for Land and Infrastructure Management, Japan

AM-SP1326 **All About the Road: Detecting Road Type, Road Damage and Road Conditions**
Christoph Mertz, Robotics Institute at Carnegie Mellon, United States

TS110 - Infrastructure-Based Safety Systems and the Applications

Thursday 2 November | 10:00 - 11:30

Room 510 D

SessionTrack: Infrastructure Challenges and Opportunities

Moderator: *René Marcouiller, CIMA, United States*

AP-TP0813 **A Study on Assistance for Safe Driving at a Crossing with No Traffic Lights**
Shintaro Uno, Aichi University of Technology, Japan

AP-TP1125 **Preliminary Experiments on Analysis for Evaluation of Standing-type Personal Vehicle**
Naohisa Hashimoto, AIST, Japan

AM-TP1128 **Using Technology to Improve Safety at Rural Stop Controlled Intersections: Rural Intersection Conflict Warning Systems in Minnesota**
Brian Scott, SRF Consulting Group, Inc., United States

AP-SP1205 **Economics of Lane-Departure Prevention Technologies: Benefits Resulting from Reduced Traffic-Accident Losses and Effects of Mandatory Installation Policies**
Hiroaki Miyoshi, Doshisha University, Japan

AM-SP1248 **Evaluation of Freeway Merging Assistance System Using Driving Simulator**
Joyoung Lee, New Jersey Institute of Technology, United States

AM-TP1321 **Bridge Slippery Conditions Advisory and Deicing Systems – An Extensive Pilot and Comparative Study**
Frederic Champagne, Ministère des Transports du Québec, Canada

TS111 - Developments in Tolling Technologies and Processes

Thursday 2 November | 10:00 - 11:30

Room 512 D

SessionTrack: Connectivity and Autonomy

Moderator: *Masahiko Takenaka, Mitsubishi Heavy Industries Mechatronics Systems, Ltd., Japan*

AP-TP0941 **Application of Radio Frequency Identification Technology to Toll Collection System**
Kazuyoshi Kitajima, Mitsubishi Heavy Industries Ltd., Japan

AP-TP1049 **Evaluation of DSRC Antenna for Multi-Lane Free Flow on Toll Road**
Hirokazu Misu, Nippon Expressway Research Institute Co. Ltd., Japan

AP-TP1174 **Improvement of Automatic Toll Collection Machine**
Kaito Hattori, Mitsubishi Heavy Industries, Ltd., Japan

AM-TP1245 **Mobile Tolling Services**
Thomas Siegl, Kapsch TrafficCom, Austria

TS112 - CAV Deployment Issues: Part 2 of 2

Thursday 2 November | 10:00 - 11:30

Room 511 C

SessionTrack: Connectivity and Autonomy

Moderator: *Amy Guo Haggart, Newcastle University, United Kingdom*

EU-TP0868 **V2X Communication Enabling New Service Concepts**
Mikko Tarkiainen, VTT Technical Research Centre of Finland Ltd., Finland

AP-TP1035 **Public-Private Joint Research on System Development for the Realization of Next-Generation C-ITS in Japan**
Satoshi Sawai, National Institute for Land and Infrastructure Management, Japan

EU-TP1150 **How Would the Introduction of Connected and Autonomous Vehicles Impact on Highway Infrastructure and Its Operation?**
Gareth Ledsham-James, Arup, United Kingdom

AP-TP1159 **Study on Possibility of Detecting Look-ahead Information for Automated Driving**
Shin Sakaki, National Institute for Land and Infrastructure Management, Japan

AM-TP1164 **The Case for Alternative Business Models for Funding V2I Deployments**
Matthew Smith, Michael Baker International, United States

TS113 - Safety of CAV Systems: Part 2 of 3

Thursday 2 November | 10:00 - 11:30

Room 511 F

SessionTrack: Connectivity and Autonomy

Moderator: *Olivier Lenz, FIA, Belgium*

AP-TP0825 **Definition of Exchange Data and Procedure Between ITS-S for Automated Driving Services Using LDM**
Ji-Yeon Lee, ITS Korea, Korea

AP-TP0939 **Trend Analysis at Potential Incidents by Fleet Vehicle with Probe Data**
Yukio Shikatani, Automotive Business Development Center, Automotive & Industrial Systems Co., Panasonic Corporation, Japan

EU-TP0953 **Safety Requirements for Automated Driving Testing on Spanish Public Roads**
Álvaro Arrúe, Applus+ IDIADA, Spain

AP-TP1008 **Multivariate Analysis of Drivers Biological Effects of Differences in Driving Simulator Characteristics**
Kota Torii, Aichi Prefectural University, Japan

EU-TP1132 **New Safety & Security Methodologies Required for Connected Automated Vehicle Development**
Eric Barbier, Ricardo UK Ltd., United Kingdom

TS114 - Smart City Mobility

Thursday 2 November | 10:00 - 11:30

Room 512 A

SessionTrack: Smart(er) Cities

Moderator: *Risto Murto, Ministry of Transport and Communications, Finland*

EU-SP0800 **ITS Service Life Cycle Seen from an Impact Evaluation Point of View**
Trond Foss, SINTEF Transport Research, Norway

AM-TP0895 **Car Free Earth Day for New York City 2016 - Modal Choice and Retail Impact Assessment**
Andy Taylor, Cubic Transportation Systems, England

EU-TP0897 **Enabling Traveler Choices Through Integrated Multi-Modal Real-Time Information and Journey Planning**
Ken Karnes, Cubic Transportation Systems, United States

AM-TP1127 **Interoperability! Myth or Reality?**
Isabelle Lessard, City of Montréal, Canada

EU-TP1186 **Intelligent Traffic Solutions for Sustainable Urban Mobility in Copenhagen**
Mads Gaml, City of Copenhagen, Denmark

TS115 - Using Predictive Technologies Across the Spectrum of ITS

Thursday 2 November | 10:00 - 11:30

Room 512 B

SessionTrack: Integrated Approach: Planning, Operations and Safety

Moderator: *Mohammed Hikmet, HMI Technologies Ltd., New Zealand*

AP-SP0793 **Short-Term Traffic Flow Prediction Using Deep Learning Algorithms**
Xuxin Chu, Beijing University of Technology, China

AP-TP0799 **Advanced Predictive Technology, Analyze Stop/Deceleration Positions for Predictive Efficient Drive**
Toru Sakamoto, Aisin AW Co. Ltd., Japan

AP-TP0851 **Development of a Real-Time Traffic Congestion Prediction System Based on Vehicle Data**
Tatsuo Yamamoto, Yazaki Energy System Corporation, Japan

AP-TP0920 **Research and Application of Traffic Law Enforcement Supervision and Early Warning Based on Large Data Analysis Model**
Wanhua Luo, China Academy of Transportation Sciences, China

AM-SP1088 **WIMAP-P: A Work Zone Impact Prediction Tool Using Big Data Analytics**
Steven Chien, New Jersey Institute of Technology, United States

AP-SP1227 **Bus Arrival Time Prediction: A Deep Learning Approach**
Monsak Socharoentum, National Electronics and Computer Technology Center, Thailand

TS116 - Transit Service Performance

Thursday 2 November | 10:00 - 11:30

Room 512 C

SessionTrack: Smart(er) Cities

Moderator: *Robert McQueen, Bob McQueen and Associates, United States*

AM-SP0764 **Exploring the Feasibility of Bluetooth and Wi-Fi Technologies for Measuring Transit Passengers Wait-Times and Origin-Destination Travel Times**
Brian Park, University of Virginia, United States

EU-TP1055 **Free Rail Tickets: Using Bluetooth and WiFi Sensor Network Tracking Data to Estimate Impact on Passenger Flows**
Kristian Hegner Reinau, Department of Civil Engineering, Aalborg University, Denmark

AM-TP1283 **Using Open GTFS and GTFS Real-Time Data to Measure Transit Agency Performance**
Ritesh Warade, IBI Group, United States

TS117 - Innovative Applications of Probe Data

Thursday 2 November | 11:45 - 13:15

Room 512 D

SessionTrack: Infrastructure Challenges and Opportunities

Moderator: *Mariko Okude, Hitachi, Ltd., Japan*

AP-TP0830 **Efforts to Enhance Service Quality on Expressways by Using Big Data**
Kazuyuki Murakami, Nexco-East Innovation & Communications Co. Ltd., Japan

AP-TP0942 **Congestion Control Study Using ETC 2.0 Probe Data, Operation of Temporary 2-Lanes at Ebina JCT**
Takashi Yamamoto, Central Nippon Expressway Co. Ltd., Japan

AP-SP1081 **Analysis of Vehicle Speeds on Two-Way, Two-Lane Motorways Using Probe Data**
Yoshiyasu Murashige, Japan Expressway Technical Research Institute, Inc., Japan

TS118 - Travel Time Estimation

Thursday 2 November | 11:45 - 13:15

Room 511 C

SessionTrack: Smart(er) Cities

Moderator: *Masahiko Ikawa, Mitsubishi Electric Corporation, Japan*

AM-TP0777 **Travel Time Reliability Study in Calgary Using the Crowdsourcing Technique**
Shahram Tahmasseby, City of Calgary, Canada

AP-SP0963 **Application of Pattern Matching to Short-Term Prediction of Speed with Combination of Probe Cars and Traffic Detectors**
Makoto Kasai, Nippon Expressway Research Institute Co. Ltd., Japan

AM-TP1037 **Monitoring Arterial Mobility Performance via Bluetooth/Wi-Fi**
Ken Yang, AECOM, United States

AP-TP1062 **Estimation of Road Travel Time Based on the Surveillance Vehicle Data**
Yong Yao Yang, Supcon Information Technology, China

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TS119 - Safety of CAV Systems: Part 3 of 3

Thursday 2 November | 11:45 - 13:15

SessionTrack: Connectivity and Autonomy

Room 511 F

Moderator: *Huei-Ru Tseng, Industrial Technology Research Institute/Taiwan Association of Information and Communication Standards, Chinese-Taipei*

AP-TP0832 **Accident Analysis and Proposed Prevention Strategies with Connected Motorcycle**
Wei-Lun Hsiao, National Chinese-Taipei University, Chinese-Taipei

AP-TP0989 **Implementation of In-Vehicle Traffic Light with a Real Car Based on Vehicle-to-Infrastructure Communication**
Bo Yang, University of Tokyo, Japan

AP-TP1054 **Proposal on Cooperative ITS for Safe and Sustainable Transportation in Japan**
Koichi Sakai, Institute of Industrial Science, University of Tokyo, Japan

AM-TP1177 **Sharing Real Time Signal Data for Connected Vehicles Applications in Washington D.C.**
Jose Colon, District (Washington, D.C.) Department of Transportation, United States

TS120 - Traffic Monitoring

Thursday 2 November | 11:45 - 13:15

SessionTrack: Smart(er) Cities

Room 512 A

Moderator: *Mike Barnet, CIMA, Canada*

AP-SP0970 **Road Use Pattern Mining Based on Traffic Detection Data**
Zhiyong Liu, Tsinghua University, China

AM-TP1100 **Data Mining for Traffic Monitoring: Using Signal Logs to Analyze Operations**
Joshua Fink, Macomb County Department of Roads (AECOM), United States

AM-TP1247 **Real-Time Performance Measure Monitoring System for Long-Term Freeway Work Zone**
Jeevanjot Singh, New Jersey Department of Transportation, United States

AM-SP1343 **Analysis of LoRaWAN Technology for Traffic Sensing Applications**
Samarth Mathur, Carnegie Mellon University, United States

TS121 - Innovative Asset Management Strategies

Thursday 2 November | 11:45 - 13:15

SessionTrack: Infrastructure Challenges and Opportunities

Room 512 B

Moderator: *Brent Becker, Southwest Research Institute, United States*

AM-SP0808 **Evaluating the Possibility of Using Markov Analysis Method for Predicting Highway Bridge Condition Rating**
Alireza Jamalipour, Western New England University, United States

AM-TP0810 **Conceptual Approach to Proactive Appraising and Forecasting Cost of Major Bridge Rehabilitation**
Alireza Jamalipour, Western New England University, United States

AM-TP0926 **Generating Cost Savings Through Effective Management of Infrastructure in the Public Right-of-Way**
Nicholas Vanderzwan, Collins Engineers, Inc., United States

AP-TP1074 **Infrastructure Challenges and Opportunities – Asset Management**
Henry Wu, JYW Consulting, Australia

TS122 - Regional Planning and Project Prioritization Strategies

Thursday 2 November | 11:45 - 13:15

SessionTrack: Infrastructure Challenges and Opportunities

Room 512 C

Moderator: *Jennie Martin, ITS United Kingdom, United kingdom*

AP-SP0757 **Issues and Challenges for Implementing PPP in China 13-5 Urban Transport**
Edmond Chang, EDCPC, Inc., United States

EU-SP0959 **Aligning Transport Authorities Needs with Real Solutions**
Akbar Rahman, InterDigital Europe, Canada

AM-TP1327 **Toward an Intelligent Forestry Transportation System Architecture for Canada**
David Michelson, University of British Columbia, Canada

#THISisITS Technical Tours

As part of ITS World Congress 2017, a number of Technical Tours featuring local transportation facilities and/or projects are available to registered event attendees. Prices vary and space is first-come, first-served. Tours can be chosen during the online registration process or on site. For Tours chosen during online registration, tickets will be provided during event check-in. For all Tours, please meet at the Demonstrations and Technical Tours Desk 15 minutes prior to departure time with your ticket. Walking Tours will depart from this location. For Tours requiring transportation, attendees will be escorted to official event vehicles.

IMPORTANT: Technical Tours are subject to change at any time. Some descriptions below have been edited to fit available print space. For the most up-to-date information and schedule, download the ITS World Congress 2017 event app sponsored by ERoad, visit ITSWorldCongress2017.org, and/or visit the on-site Demonstrations and Technical Tours Desk. To cancel a reservation, please visit the Demonstrations and Technical Tours Desk. All times are offered in 24-hour format.

Tour #1 - Transports Québec Greater Montréal Traffic Management Center (CIGC-M)

This tour will allow participants to observe all traffic monitoring and control activities at the CIGC-M as well as visit the ITS and tunnel control room, various underground tunnels, and various tunnel mechanical and electrical control rooms.

Tuesday	**31 October**	**9:30 – 11:30, 13:30 – 15:30**
Wednesday	**1 November**	**9:30 – 11:30, 13:30 – 15:30**

Tour #2 - City of Montréal's Urban Mobility Management Center (UMMC)

This tour will allow participants to observe a major boulevard in Montréal equipped with this centralized system of traffic signal prioritization for buses, including a detailed explanation of the interaction between the equipment aboard buses and at the UMMC as well as visit the UMMC that monitors mobility and provides road network incident management.

Tuesday	**31 October**	**9:30 – 12:30, 13:00 – 16:00**
Wednesday	**1 November**	**9:30 – 12:30, 13:00 – 16:00**

Tour #3 - Société de transport de Montréal's (STM) iBus Operations Center

This tour will allow participants to examine the Center's organizational structure, including roles and areas of expertise of teams; explore the equipment, including the vehicle scheduling and passenger information system as well as the new radio infrastructure for the entire fleet of vehicles; and view STM's state-of-the-art tools for regulating bus service.

Tuesday	**31 October**	**9:30 – 11:30**
Wednesday	**1 November**	**9:30 – 11:30**

Tour #4 - Société de transport de Montréal's (STM) Metro Control Center and Operating Systems

This tour will allow participants to experience a first-hand look at the Center's modern, efficient, and upgradeable facilities; observe the synergy between specialists who oversee the smooth flow of operations 24 hours a day; observe images captured for analysis by 2,000 surveillance cameras deployed throughout the system; and follow train movements on an impressive optical display unit.

Wednesday	**1 November**	**9:30 – 11:30**

Tour #5 - Commuter Rail Operations Control Center (COS)

This tour will allow participants to view the commuter rail COS and be briefed on how the Center operates as well as the various systems implemented in the Center.

Tuesday	**31 October**	**9:30 – 11:00**
Wednesday	**1 November**	**9:30 – 11:00**
Thursday	**2 November**	**9:30 – 11:00**

Tour #6 - Laval Transit Corporation Bus Preferential Measures

This tour will allow participants to receive a presentation of the onboard equipment, including GPS tracking, on-board computers, driver-side console, digital displays, passenger counting systems, etc.; visit the Operations Center, where buses are monitored in real time to track schedule adherence and passenger load; experience a four-part presentation consisting of the 2013-14 Transit Signal Priority Pilot Project, a project aimed at equipping 311 buses with systems allowing them to communicate with 227 traffic signals configured for assignment of priority to buses that have a tendency to be late; an explanation of measures, equipment, and software deployed to ensure monitoring of system performance and equipment operation; and details of the service planning integrated data warehouse.

Thursday	**2 November**	**9:00 – 13:45**

Tour #7 - PMG's Motor Vehicle Test and Research Center (MVTC)

PMG Technologies has been operating Transport Canada's MVTC for the past 20 years. This tour will allow participants to receive a briefing on the Center and tour the entire facility, including the crash test facilities and test tracks.

Thursday	**2 November**	**9:00 – 12:30**

Tour #8 - New Champlain Bridge Construction Project

This tour will allow participants to observe the intelligent transportation system used during the infrastructure's construction, understand those that will be put in place permanently, and receive an overview of the vast worksite.

Thursday	**2 November**	**8:30 – 12:00**

Tour #9 - Turcot Interchange Reconstruction Project

This tour will allow participants to understand the ITS used during this reconstruction project—such as solar-powered Bluetooth detection technology and software that monitors traffic—as well as those that will be put in place permanently and receive an overview of the vast worksite in addition to viewing one of the Bluetooth detection stations.

Thursday	**2 November**	**9:30 - 12:30**

Tour #10 - Port of Montréal: Harbor Trucking Management Initiatives

This tour will allow participants to focus on ITS applications in the field of harbor trucking and explore a majority of the Port's facilities, with a focus on demonstrating access control points, truck transaction processes, and data capture.

Tuesday, 31 October 9:30 – 12:00

Thursday, 2 November 9:30 – 12:00

Tour #11 - Port of Montréal: Electronic Navigation Initiatives

This tour will allow participants to visit the Port's Operations Control Center for an introduction to a wide variety of tools provided by different factions working collaboratively to support ship officers and their crews in planning their voyage, allowing for a safe and effective transit, and to understand the involvement and focus of the Canadian Coast Guard Marine Portal (CCMP), Automated Identification System (AIS), Dynamic Under Keel Clearance (DUKC), and St. Lawrence Global Observatory (SLGO).

Wednesday 1 November 9:30 – 12:00

Tour #12 - BIXI Montréal: Welcome to the Epicentre of Bike Sharing

This tour will allow participants to visit to the BIXI Montréal offices, observing how departments are organized along operational lines (i.e., repair, customer service, distribution, etc.) and get a firsthand look at the workings of the system in the field Participants may be invited to take a test ride.

Thursday 2 November 9:30 – 12:30

Tour #13 - A25 Electronic Toll Collection (ETC) System

This tour will allow participants to understand the life cycle of a trip on the bridge—from detection and identification of the vehicle—up to the transaction and collection process and to visit the facility's back-office and image review area along with road monitoring and road maintenance facilities.

Thursday 2 November 9:30 – 11:15, 10:45 – 12:30

OPTIMIZE TRAFFIC FLOWS FOR MOTORISTS, PEDESTRIANS AND BICYCLISTS

FLIR TrafiRadar

FLIR ThermiCam

FLIR TrafiOne

FLIR TrafiCam

FLIR video detection technology is a highly reliable and above ground detection technology for vehicle, bicycle and pedestrian detection at intersections and urban environments.FLIR detectors help manage traffic signal control at intersections, making traffic safer and more fluent

FLIR's pedestrian and bicycle detectors are assisting to give the appropriate green time and visibility, so mobility and safety of both motorists and vulnerable road users is guaranteed.

FLIR produces a wide range of cameras, sensors and boards that are a cost-effective solution to gather traffic data, monitor traffic flow and emulate or simulate loops on highways and inter-urban roads.

SOME APPLICATIONS

- Presence detection of vehicles at stop bar, and in advance, counting/classification of vehicles, speed detection, dilemma zone monitoring,...
- Presence detection of bicycles, counting, creating a safe passage for the bicycles
- Presence detection of pedestrians waiting, crossing, counting at the intersection, or further away from the intersection (eg at a bus stop).
- Wi-Fi detection for travel time calculation and delay time at intersections

FLIR INTELLIGENT TRAFFIC SYSTEMS

More information at www.flir.com/traffic

FLIR® | The World's Sixth Sense®

#THISisITS Demonstrations

As part of ITS World Congress 2017, a number of exhibitors are offering Demonstrations of ITS technology to registered event attendees. Reservations (when necessary) for the Demonstrations are free but may be limited in number. Please visit the Demonstrations and Technical Tours Desk or the booth associated with the Demonstration, as noted below, for more information.

IMPORTANT: Demonstrations are subject to change at any time. Some descriptions below have been edited to fit available print space. For the most up-to-date information and schedule, download the ITS World Congress 2017 event app sponsored by ERoad, visit ITSWorldCongress2017.org, and/or visit the Demonstrations and Technical Tours Desk located onsite in the event Registration area. To cancel a reservation, please visit the booth associated with the Demonstration as noted below.

ACTIVE-AURORA: The First Connected Vehicle Test Bed Network in Canada

The roadway environment is constantly changing due to a number of factors, including pedestrians, collisions, weather conditions, and more. This demonstration enables participants to experience the potential of connected vehicle technology by increasing awareness of changes in the roadway environment, promoting increased safety and efficiency for all road users. With a V2X- and DSRC-based hybrid solution, a fully connected transportation system—in which vehicles 'talk' with one another and with roadside infrastructure—can be achieved. For example, drivers could be notified of approaching pedestrians, safe speeds for sharp curves in the road, high-collision risk areas, changes in speed limit, advisory driving speeds based on the road conditions, and signal phase and timing information to make traffic flow smoother. In this demonstration, monitors and smartphones will be used to show participants some different sample messages and voice alerts that could be communicated to the driver while travelling in a connected vehicle environment. The applications of connected vehicle technology in this demonstration have been developed as part of ACTIVE-AURORA, the first connected vehicle test bed network in Canada.

Demonstration Site:
Local Streets

Demonstration Reservation:
Booth 627

Aisin Group: Automated Valet Parking

Aisin Group will demonstrate automated valet parking that can be achieved with existing sensors and connected modules. By automating valet parking, accidents in the parking lot as well as the waiting time of the user are reduced. When exiting from the vehicle at the drop-off point and instructing the vehicle to start automated valet parking via smartphone, the parking lot map and the route information are transmitted to the vehicle via the connected module and movement to the designated parking space is started. The vehicle travels on the designated route while confirming the safety of its surroundings using cameras and sonar sensors, parking in the space specified by the parking assist technology. For pick up, the vehicle starts moving based on the user's instruction and stops at the intended passenger thereby reducing wait time. Participants will observe the demonstration vehicle park itself and return to pick up passengers.

Demonstration Site:
Palais Parking Level 2

Demonstration Reservation:
Booth 608

Alcatel-Lucent Enterprise: Communications Infrastructure for Internet of Things (IoT)-Enabled ITS

For this demonstration, participants will see real-time multimedia communications, automated provisioning of rugged field Ethernet devices, automated provisioning of a traffic camera demonstrating IoT containment, and remote visibility of network and application analytics.

The exhibit booth will act as the Operations Center with three screens. Screen 1 will show what appears to be a network management platform, Screen 2 will show no video signal, and Screen 3 will show what appears to be a chat window. Specifically, participants will see:

A live communication channel from the installer using a multimedia collaboration application called Rainbow. This will include output from the installer's smartphone, making participants virtual installers through a live video stream from the road as the installer went about the work of installing the equipment.

A management application for the network infrastructure called OmniVista 2500. This application will show the live status of both the existing and newly installed network switches in a network map and will be used to tweak configurations of the network switches remotely.

When the installer finishes the job, participants will ultimately see output from the roadside video camera that is mounted on a pole to give a 'bird's eye' view of the scene.

Demonstration Site:
Local Streets and Exhibit Hall

Demonstration Reservation:
Booth 206

AUG Signals: Real-Time Roadside Environment Monitoring for Smart Cities

This demonstration gives participants an opportunity to observe real-time animal detection and vehicle classification using AUG Signals' radar-based LADS™ monitoring system. During the demonstration, a warning beacon will be activated instantaneously whenever LADS™ detects a large animal (or people for demonstration purposes) within the user-configured detection zone. In addition, participants will be informed of ambient air quality (pollutant levels and air quality indices) within the detection zone. Participants will also have access to the live GIS data feed showing animal tracks, incursion/detection events, and vehicle tracks and types as well as other analytics such as traffic volume and average speeds.

Demonstration Site:
Local Streets

Demonstration Reservation:
Booth 409

Commsignia: Safer on the Road with Connected and Collaborating Vehicles

Commsignia, Inc. will demonstrate how V2X communication between connected vehicles and roadside infrastructure augments the awareness of traffic situations to drivers. This collaborative awareness improves road safety while reducing congestion and emissions to deliver real savings and benefits to all road users. Participants will ride in a connected vehicle where they will see the information communicated between the vehicles and the infrastructure, experiencing real-life applications such as Time to Green (T2G), Time to Red, Red Light Violation Warning (RLV), Green Light Optimal Speed Advice (GLOSA), and pedestrian detection involving traffic lights and pedestrians at intersections.

Demonstration Site:
Local Streets

Demonstration Reservation:
Booth 2327

#THISisITS Demonstrations

Connected Signals: Connected/Autonomous Vehicles and Traffic Lights

With connected vehicles a reality and autonomous vehicles on the horizon, the need for vehicles to understand what traffic lights are doing is becoming ever more pressing. There are two approaches that can be taken: a data-based approach, where the lights communicate directly with the vehicles, and a vision-based approach, where the vehicle uses one or more camera systems to determine what the lights are doing. Connected Signals will demonstrate both approaches via a vehicle-interaction system powered by real-time traffic light data provided by the City of Montréal and an integrated system that combines these data-based capabilities with a camera-based system to provide a unified solution suitable for deployment in autonomous vehicles.

Demonstration Site:
Local Streets

Demonstration Reservation:
Booth 2028

EasyMile and Transdev: Autonomous Shuttle

EasyMile and Transdev will showcase EZ10, an autonomous shuttle without steering wheel or pedal and 100% electrical. Participants will also be able to experience a live connection between the vehicle and the supervision center through a client relationship manager using Real Time Video connection and Real Time Fleet Monitoring.

Demonstration Site:
Local Streets

Demonstration Reservation:
Booth TBD

Eberle Design: DA-300 Data Aggregator

This demonstration of iCITE® and the DA-300 Data Aggregator™ will show the value of connecting with remote intersections commonly too far to be connected. The DA-300 Data Aggregator, along with G2® cloud based software, can remotely monitor and retrieve data from any intersection whether it is connected to a system or not. Data such as power conditions of the cabinet to an open door is simple to retrieve. The DA-300 Data Aggregator™ also has the ability to provide a sync pulse to keep the controller time current if Time-based Coordination is a need. Providing travel time, delays on reds, arrivals on greens as well as the Purdue data set used by UDOT's SPM software adds extensive value in one compact single component that can fit into any style cabinet. For this demonstration, the DA-300 Data Aggregator™ will be installed in one or more local traffic controllers to show—in real time—what data can be provided to the G2® software for basic information to the most advanced performance measurements. Visitors to the booth will see real-time data arriving and be able to manipulate it.

Demonstration Site:
Booth 1701

Demonstration Reservation:
Booth 1701

Global Traffic: Priority Control Ride-Along with Opticom

This demonstration will allow participants to experience Opticom priority control. Passengers will take two loops—first without preemption and then with preemption—to see the difference Opticom can make in time savings. These minutes saved can, for example, help a city's first responders get to the scene of an emergency more quickly, save money on gas and maintenance by prioritizing snow plow routes, or help transit riders get to their destination faster.

Demonstration Site:
Local Streets

Demonstration Reservation:
Booth 608

Ibeo: Real-Time Localization in GPS Denied Area

This demonstration will present real-time localization of a vehicle in challenging urban scenarios where standard GPS localization is not possible. The technology will be mainly based on LiDAR-based perception, which works in combination with digital maps collected a-priori. Participants will ride in a specially equipped vehicle while online data is being collected in addition to the localization results to show the capabilities of the state-of-the-art perception system. Reference data for the drive will also be generated during an offline processing stage for evaluation and assessment purposes.

Demonstration Site:
Local Streets

Demonstration Reservation:
Booth 2203

Iteris: Observing Live Bicycle and Pedestrian Detection

There has been an increasing need for additional detection technology of bicycles and pedestrians at signalized intersections. This on-street demonstration of Iteris' video detection technology will highlight the detection and differentiation of both bicycles and pedestrians. Iteris will install one of its video detectors at an intersection adjacent to the Palais. Participants will have a live-view of moving traffic through the intersection and will see first-hand how video detection sensors detect objects and provide necessary outputs for safety applications. Iteris will also provide information on data collection of all modes—vehicle, bicycle, and pedestrians—and discuss the need for more data to help feed popular safety-oriented programs such as Vision Zero and Complete Streets.

Demonstration Site:
Local Streets and Exhibit Hall

Demonstration Reservation:
Booth 1909

ITS Canada: Virtual Traffic Management Centre (VTMC)

ITS Canada is showcasing TMCs across Canada by hosting a VTMC that demonstrates in real-time, showing what is happening at TMCs across the country. Live data and video feeds from several Canadian cities/agencies will be displayed with narrative from the TMC operators.

Demonstration Site:
Exhibit Hall

Demonstration Reservation:
Booth 409

Keolis: Ride on Keolis' Autonomous Navya Shuttle

This demonstration by Keolis and its partner Navya will enable participants to experience the future of transportation first hand. The 100% autonomous and electric Navya Arma will show how to deliver safe first- and last-mile transportation on Montréal's road.

Demonstration Site:
Local Streets

Demonstration Reservation:
Booth 301

Lindsay: Moveable Barrier Demonstration

The Road Zipper System from Lindsay Transportation Solutions is a real-time solution for reconfiguring the roadway to add more lanes in the peak travel direction to mitigate traffic congestion while still providing positive barrier protection at all times between opposing traffic lanes. For construction work zones, the Road Zipper expands the work zone during off-peak travel times to increase efficiency, which shortens project duration and saves time and money for agencies and road users. The demonstration has two parts. Part 1 will focus on automated lane closures featuring the SwiftGate system from Canadian manufacturer Versilis.. Part 2 will feature a real-time lane reconfiguration with positive barrier separation.

Demonstration Site:
Local Streets

Demonstration Reservation:
Booth 722

Marben Products & FLIR ITS: Connected Vehicle Demonstration Using V2X communication

Marben Products and FLIR ITS will offer a Connected Vehicle demonstration using V2X communication between the vehicles and roadside infrastructure. The vehicles and roadside unit will be equipped with a Complete MARBEN V2X software solution to enable V2X safety applications. FLIR's thermal imaging sensor with embedded V2X platform will detect pedestrian, bicyclists, and other objects to broadcast messages to surrounding intersection and alert drivers of pedestrians. The demonstration will highlight Pedestrian Crash Avoidance; Forward Collision Warning; Emergency Electronic Brake Lights; Intersection Movement Assist; Blind Spot Warning; Left Turn Assist; and Lane Change Warning.

Demonstration Site:
Local Streets

Demonstration Reservation:
Booth #2026 (Marben) and #924 (FLIR)

NXP and Partners: Demonstration of Safe and Secure Mobility

NXP, global technology leader in Vehicle-to-X (V2X) technology, together with its partners Siemens, Cohda Wireless, Chemtronics is demonstrating the latest technology for a variety of V2X use cases. Drivers are alerted in real time on current road situations, such as road works ahead, accidents, traffic jams or emergency vehicle approaching. Attendees will also experience how a car without GPS signal, will receive accurate positioning information through DSRC, Radar and LTE technology.

Demonstration Site:
Local Streets

Demonstration Reservation:
Booth 1901

Oakland County CV Task Force: DSRC and Controlled Spectrum Sharing

The Task Force, in partnership with Lear and supported by the City of Montréal, will demonstrate Controlled Spectrum Sharing of a deployed DSRC network that is fully compliant with FCC Rules and IEEE/SAE specifications for WAVE. Controlled Spectrum Sharing allows infrastructure authorities and associated network operators the ability to dynamically control access to service channels for the delivery of mobile, internet-based services subject to prioritization of safety and mobility applications - all in a secure manner. Participants will observe live messaging of V2V, I2V, V2P, P2V, SPaT, and other HMI-delivered messages, including RSU service announcements instructing an OBU to select a specific service channel(s) for delivery of mobile internet services and the use of DSRC spectrum for revenue modeling. The demonstration presents an open architecture solution for Controlled Spectrum Sharing using RSUs, pedestrian wearable OBUs and a demonstration vehicle equipped with OBU and HMI interface. Participants will be encouraged to ride along to observe real-time DSRC functionality and how sharing excess service spectrum creates Wi-Fi connectivity through OBU/RSU tethering.

Demonstration Site:
Local Streets

Demonstration Reservation:
Booth 625

Optech: Mobile Mapping System

Weighing less than 9 kg, the Optech Maverick integrates LiDAR, a 360° camera, and an INS into an extremely small form that is easy to install while maintaining the data quality that users expect from a Teledyne Optech system. It is so light it can be mounted on a variety of platforms, including a backpack or a Segway. The Maverick comes packaged with real-time data display and feedback, along with Distillery software to provide imaging, LiDAR, and GPS post-processing. Teledyne Optech will offer participants the opportunity to ride along and observe a live mobile data collection demonstration using Maverick.

Demonstration Site:
Local Streets

Demonstration Reservation:
Booth 514

Orange Traffic and Trustpoint (Escrypt): DSRC-Enabled LED Sign

Orange Traffic and Trustpoint (Escrypt) will demonstrate the use of connected LED signs to improve safety on roads by sharing with connected cars the state of an LED sign. Participants will ride in a vehicle equipped with DSRC and an on-board display, arriving at an intersection where a LED sign will broadcast its status and message to the vehicle. Passengers will be able to see when the sign is on or off based on the condition of the sign and experience a notification with information on possible movement at the time of the arrival in the sign's range. In the Exhibit Hall, there will also be a demonstration of the digital signature processv, including validation of valid and invalid security certificates, that runs behind the scenes to make secure DSRC communications possible.

Demonstration Site:
Local Streets & Exhibit Hall

Demonstration Reservation:
Booth 1715

Papier Parking Transit (PTP): Build Your Smart City by Smart Parking

PTP will be demonstrating its Internet of Things space detection system. The system uses high-tech parking and gauging detectors designed to sense, count, and size up any vehicle parking on the street, off street in an outdoor lot, or even entering a parkade. The information is sent through wireless communication to a cloud-based platform and can be integrated into an umbrella of services as part of an intelligent transportation hub. Participants will take a short ride in a PTP vehicle to experience—in real time—space detection technology as soon as the vehicle arrives at a parking spot.

Demonstration Site:
Local Streets

Demonstration Reservation:
Booth 1923

Southwest Research Institute (SwRI): Utilizing Infrastructure Information to Enable Highly Automated Vehicles

SwRI will demonstrate various localization and perception technologies in a highly automated vehicle. This demonstration will utilize infrastructure information transmitted over DSRC to enable the vehicle to operate at level 4 throughout an area that would normally require driver intervention. Participants will ride in a highly automated vehicle receiving information from a DSRC roadside unit that allows the vehicle to successfully navigate a highly dynamic and complex situation such as a work zone.

Demonstration Site:
Local Streets

Demonstration Reservation:
Booth 2115

Streetline: Parking Detection System

From its 51 installations, Streetline has recorded more than 580 million parking events, detecting the presence of automobiles through a variety of sensing technologies that include pavement sensors, cameras, a SDK for mobile apps, and APIs from open-data cities and other sources. Streetline's ability to incorporate a variety of data, combined with its proprietary machine learning software, allow it to produce analytics for informed decisions on things like parking policy, demand-based pricing, and parking enforcement strategy. With Streetline's light-infrastructure Hybrid Deployment, more accurate analytics are received, as proven in direct comparison studies, than approaches that rely on meter payments and historical data. Moreover, they provide drivers with real-time parking availability and guidance through Streetline's "Parker" mobile app. Visitors to the booth will see live (or historical) traffic data from sensors on screen. An optional outside vantage point will also be available to see the data being gathered from the parking sensors.

Demonstration Site:
Booth 1501

Demonstration Reservation:
Booth 1501

Transport System Catapult: Introducing Driverless Cars to the UK Roads

In just a few short years, autonomous vehicles have gone from long-range concepts to reality. Transport Catapult, in cooperation with RDM and Westfields, will demonstrate real-world autonomous vehicles. Participants will have an opportunity to ride in a driverless vehicle to understand how such vehicles work and how far this technology has come.

Demonstration Site:
Local Streets

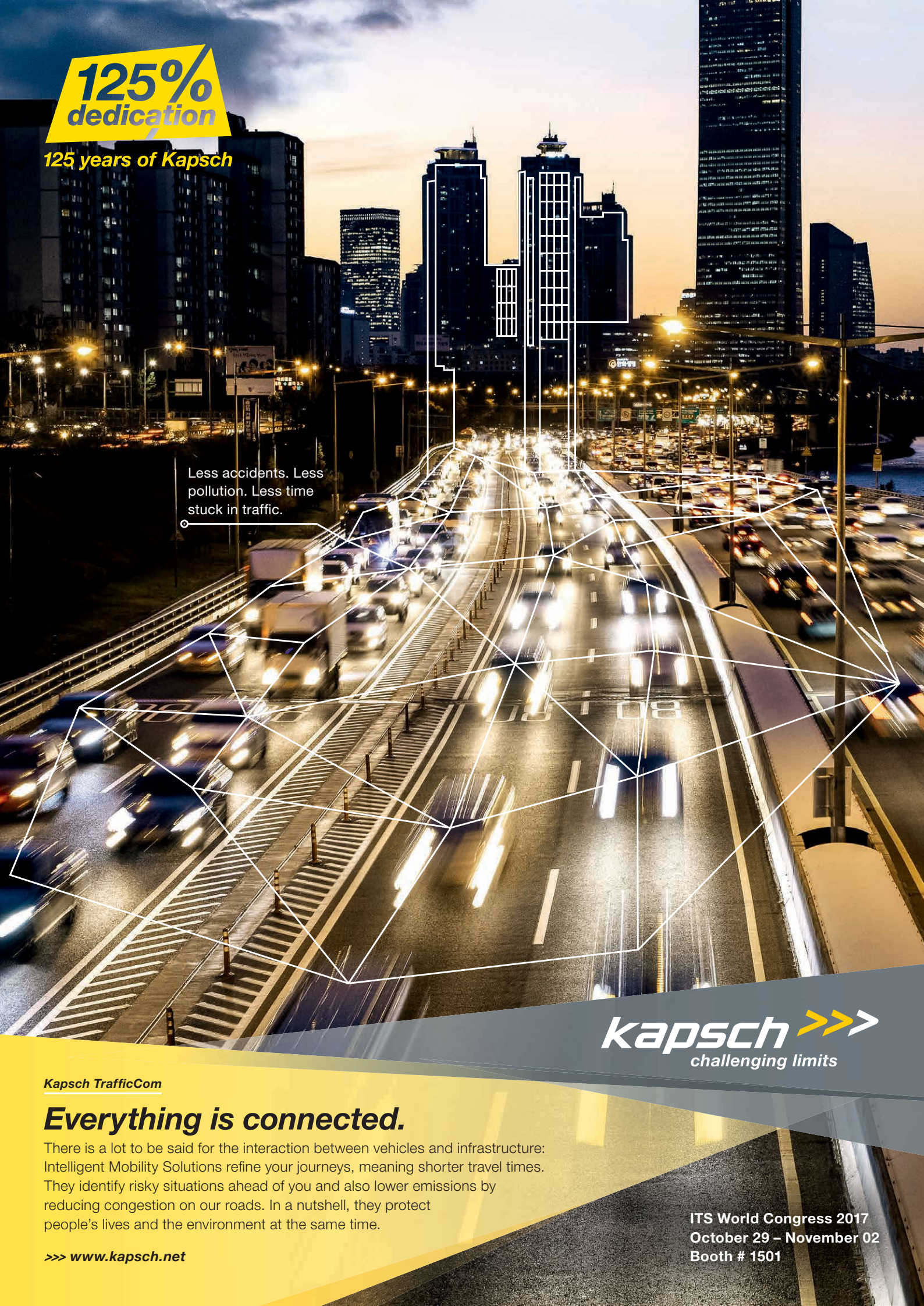
Demonstration Reservation:
Booth 709

Valeo: Xtravue

Xtravue is Valeo's vision of how video can improve driver safety and complex situational awareness, combining vehicle-to-vehicle (V2V) communication technologies with public 4G cellular networks. The solution extends the line of sight vision of drivers by displaying the video of cameras mounted on other connected vehicles and on roadside infrastructure. For drivers, it is like being able to see right through the obstacles in front of them, enabling safer, more informed decisions, especially when overtaking. Participants will see a demonstration of the system, which includes a telematics control unit, a laser scanner, and a computer-vision camera.

Demonstration Site:
Palais Parking Level 2

Demonstration Reservation:
Booth 217



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