Preliminary Program

Registration Open

21ST WORLD CONGRESS

# DETROIT 2014

INTELLIGENT TRANSPORT SYSTEMS

# Reinventing Transportation in our Connected World

September 7-11, 2014 | Cobo Center | Detroit, Michigan, USA

Hosted by:

ITS AMERICA

Co-hosts:

ASIA-PACIFIC ITS

ERTICO ITS EUROPE

www.itsworldcongress.org | #ITSWC14


GENERAL MOTORS

21ST WORLD CONGRESS
DETROIT 2014
INTELLIGENT TRANSPORT SYSTEMS

# Contents

# Welcome

On behalf of the 2014 ITS World Congress Organizing Committee, I invite you to Detroit on September 7-11, 2014. Our theme is “Reinventing Transportation in our Connected World.” We have a great story to tell — a story of reinvention of our vehicles and infrastructure, but also of our iconic city — the Motor City — and its core industry.

We will tell our story in a very compelling way — through a dynamic, interactive program, exciting exhibits, and the largest set of technology demonstrations in the 21 year history of the World Congress. Our goal is to immerse attendees in the future of transportation technology at the newly renovated Cobo Center, on the streets of Detroit, and on beautiful Belle Isle.

Our technical program includes more than 250 sessions, with an all-star line-up of keynote speakers, a Chief Technology Officer Summit, and a High-Level Policy Roundtable. Cobo Center will feature more than 300,000 square feet of exhibits, including our Youth Connections Pavilion and indoor track for youth challenges, the Entrepreneurial Village, and a next-generation Transportation Operations Center. Of course, no World Congress would be complete without social events and activities, and we offer plenty of opportunities to network with your colleagues, make new business acquaintances, and have some fun.

While Detroit is most often associated with cars and the auto industry, it is also a city with a unique history of culture, music, and sports. We offer world-class museums, performing arts, and some of the best professional sports teams on the globe. The region is home to hundreds of beautiful golf courses, wonderful parks, and, of course, the Great Lakes. If sailing, fishing, boating, or golf are your passion, then Detroit is your place.

Detroit is in a unique position to be hosting the World Congress at such an important time in the transportation industry, but also in the City’s rebirth. We are on the cusp of a transformation, where technology offers realistic solutions to our global mobility, safety, and environmental challenges. Detroit is at the heart of this transformation. The Motor City is made of both grit and silicon, where industry and technology are coming together to forge the next generation of transportation systems.

I invite you to participate in the “reinvention” and look forward to seeing you in Detroit in September!

James Barbaresso
2014 Organizing Committee Chair
Vice President, Intelligent Transportation Systems
HNTB Corporation

ITS America is looking forward to hosting the 2014 ITS World Congress in America's original Motor City from September 7-11, 2014. As release details in the months leading up to this event, we hope you will explore and enjoy the dynamic and educational preliminary program that we create.

The annual ITS World Congress is a valuable learning experience for any transportation professional and an exciting opportunity to join industry leaders from around the world. Registration for the World Congress formally opened April 1, 2014. Early registration rates are available through June 15, so make sure to register online today.

We are excited to showcase the most recent innovations in intelligent transportation and share the developing story of our industry. Automakers are eager to highlight their city as well as the latest technological developments in the transportation industry. CEOs from the auto world and high-tech corporations will provide keynotes, and the event will display more demonstrations than ever before. With our special interest sessions, all-star keynotes, technology showcases, live demonstrations, and extensive exhibition hall we are sure to impress and inspire at every turn.

ITS America's Annual Meeting & Exposition will take place in conjunction with the World Congress. While focusing on topics of the theme "Reinventing Transportation in our Connected World," ITS America's Annual Meeting will provide a distinct series of events for the Society's members that focus on exploring solutions for easing traffic congestion, financing and improving the nation's transportation system, advancing life-saving vehicle technologies, and much more through exhibits, panel discussions, technology demonstrations, technical tours, training sessions, and networking events.

This year the Annual Meeting will feature an ITS America Plenary Session, Leadership Circle meeting, a host of committee forum meetings and the Best of ITS Awards, State Chapter Awards, and Student Essay Competition winners.

More than any intelligent transportation meeting we've ever held, the World Congress in Detroit will connect our past with our future. More than 10,000 attendees are expected to join us in Detroit this year at the newly renovated Cobo Center, and we hope you will be one of them. We'll see you in Detroit.

Scott Belcher
President and CEO, ITS America

# Congress Format

## Opening and Closing Ceremonies

Keynoted by General Motors, the Opening Ceremony, to be held Sunday at the Cobo Center Ballroom, will be attended by business leaders and high-level government officials from around the globe, and will take an in-depth look at the future. It will feature special entertainment TBA and several awards.

The Closing Ceremony, to be held Thursday afternoon at the Cobo Center, will provide a summary of the Congress and future perspectives. There will be several awards and the "Passing of the Globe" ceremony.

## Featured Events

### High Level Policy Roundtable

This roundtable will bring together international ministerial level officials and transportation secretaries from around the U.S. to discuss 21st century transportation challenges facing their agencies, including what they are doing to prepare for connected and autonomous vehicles and how technology is helping to serve their constituents. See page 30

### CTO Summit

Organized into three sections, the CTO Summit will begin with two panels of CTOs representing automakers, key suppliers, and the computer and communications industries from around the world. Discussion will then be opened into a moderated Question & Answer period. See page 34

## Sessions

The following sessions are to be held at the Cobo Center:

### Plenary Sessions

Top level transport officials and leading industry representatives from numerous countries will present insightful speeches on ITS policies, initiatives, and international development trends. See page 32

### CTO Summit

This year, the World Congress introduces a series of sessions that will host Chief Technology Officers from around the world. Speakers will focus on visions of ITS in the future, connectivity and automation, new mobility, and institutional issues. See page 34

### Executive Sessions

High-level industry executives, public officials, and academics from around the world will share their expert global and strategic views on ITS achievements, issues, and challenges. See page 38

### Town Hall Sessions

These sessions will function as an open forum, providing a panel of experts and attendees with a highly interactive meeting that will host higher profile topics affecting the transportation industry. See page 31

### Special Interest Sessions

Coordinated at the request of organizations or individuals involved in developing and deploying ITS, these sessions are designed as open fora and workshop for experts from government, industry, and academia to hold discussions and debates on specific topics. See page 44

### Technical/Scientific Sessions

These sessions will be composed of presentations by international experts on various ITS-related topics encompassing all technical, economic, organized, and societal aspects of ITS. See page 98

### Interactive Sessions

Authors will present their technical papers on the World Congress Exhibit floor through dynamic presentations. These sessions will provide a space for interactive discussion between authors and their audience. See page 158

### International Benefits, Evaluation, and Costs (IBEC) Sessions

IBEC sessions, led by the IBEC Working Group created to provide an international forum for information exchange on ITS best practices, will feature presenters from all over the world discussing road pricing, freight transportation, climate change, and more. See page 162

### Middle East and Africa ITS Initiatives Sessions

Pan-American ITS was created in 2004 with the objective of promoting research, educational, and commercial cooperation among the ITS organizations of North, Central, and South America. Middle East ITS Initiative sessions will present the latest on what has become a fast growing, ITS friendly region. See page 165

### Annual Meeting Sessions

ITS America will host its Annual Meeting at the ITS World Congress. The program will include Executive Sessions, sessions organized by the U.S. Department of Transportation Joint Program Office, and a variety of Special Interest Sessions focused on ITS in North America. See page 166

## Exhibition

The Exhibition, to be held at Cobo Center, will create an international meeting point for industries and agencies involved in ITS. This will be a wonderful opportunity to promote your organization's technologies to the world amongst our 300,000 sq. ft. of exhibit space. See page 189

## Technology Showcase Demonstrations

The Technology Showcase demonstrations will take place at Cobo Center, the outdoor exhibit area on Belle Isle, and on the streets of Detroit launching from the Atwater parking lot. Shuttle service will be provided. Participants will experience firsthand the cutting-edge ITS technologies and solutions of the future. See page 174

## Technical Tours

Various field trips and tours will be conducted to explore the greater Detroit area and its grand position as the birthplace of the automotive industry and the leading center of future transportation research and deployment. See page 183

## Guest Tours

Attractive guest tours in and around Detroit are planned specifically for delegates and accompanying persons. See page 182

## Social Events

A series of social events have been organized to provide attendees unforgettable networking opportunities. See page 178

# Special Features

## Youth Connection Showcase

ITS America is partnering with Square One Education Network, the Michigan Department of Transportation (MDOT), MTAM, HNTB, and many others to coordinate interactive experiences for students at the upcoming ITS World Congress. This collaboration will spotlight the next generation of ITS talent developing in Michigan and the career opportunities in the intelligent transportation arena.

The Youth Connection Showcase will expose more than 1,000 high school and college students to the ITS industry by arranging guided tours of the exhibit halls, and by hosting a variety of competitions, breakout sessions, and demonstrations to highlight the young talent in the state.

### Competitions

Square One will challenge teams of high school students in exciting on-site electric vehicle build competitions, and MDOT TRAC will conduct a model bridge building competition. Additionally, there will be student demonstrations throughout the event. Square One's high school students will showcase their projects with Wireless Hands-on Applied Mechatronics (WHAM), a community outreach project utilizing radio controlled vehicles. College teams from around the area will demonstrate a variety of Intelligent Ground Vehicle autonomous robots.

### The Connected Transportation Collegiate Challenge

The Connected Transportation Collegiate Challenge will task college students from around Michigan in developing applications that integrate mobile technology and transportation systems, and will showcase the innovative ideas and technical skills of the students. The event itself will culminate in a live competition from the show floor. The Connected Transportation Collegiate Challenge will focus on the application of advanced technology in the interface between mobile communications and the intelligent transportation space.

Learn more: **http://itsworldcongress.org/youth-connection**

## YD01 – Youth Day Special Session: Education and Training Needs for Emerging ITS Technologies

**Wednesday, September 10, 10:30 a.m. – 12:00 p.m.**

In an increasingly complex age of connectivity and automation, worker skills in technical fields, as well as policy, legal, and business arenas must quickly evolve. This session will address the education needs in our connected world, starting with youth programs at an elementary level and extending into advanced education requirements at the collegiate level. The session will focus on technical training in science, technology, engineering, and math (STEM), but will also provide insights regarding evolving legal, business, and institutional knowledge needs. Educational policy evolution and use of technology in the classroom will also be elements of this session.

**Organizer & Moderator**
Karl Klimek, Square One Education Network

## YD02 – Youth Day Special Session: Taking it to the Streets: Education and Outreach in the UTC Model

**Wednesday, September 10, 1:30 – 3:00 p.m.**

It is a challenge to produce levels of outreach and education on newly advancing and complicated topics in Connected/ Autonomous Vehicles research. So what is an administrator to do? This presentation will focus on best practices for education and outreach for bringing high technology concepts to K-12 and beyond. We want to encourage not just "buying-in" but "passion for innovation." This special session will show institutions how to create educational and outreach programming that allows audiences to gain insight and inspiration to participate in new transportation technologies and encourage students and consumers to become experts and ambassadors for your work and research.

**Organizer & Moderator**
Gabrielle Laskey, VTTI, Project Associate, USA

**Speakers**
Karl Kilmek, Square One Networks, Executive Orchestrator, USA

Ben Weihe, Science Festival Alliance, Manager, USA

Kristi DeCourcy, Fralin Life Science Institute, Laboratory Manager, USA

Michelle Hall, Teen Science Café, Director, USA

## Emergency Responder Day

This year's ITS World Congress will provide a unique look at what emergency responders do on the scene of an accident and how the developments in transportation technology help make things run smoother, faster, and safer. On Tuesday, September 9 attendees will be able to watch a mock version of a traffic incident involving an overturned tanker truck. Attendees will watch as first responders arrive, assess, respond, and clear the scene, utilizing the latest ITS technologies. Representatives from various first responder communities will be available for questions and to provide real-time narration of the events as they unfold.

Responders will also be treated with a special tour of the exhibit floor and technical sessions focused on the latest technologies in their field. Emergency responders who attend Tuesday's events in uniform will receive free admission to the mock incident and exhibit floor.

Learn more: **http://itsworldcongress.org/er-day**

Special Features continues on next page >

## ER01 – Emergency Response Day Special Session: Traffic Incident Management — Putting Practice Into Play

**Tuesday, September 9, 10:30 a.m. – 12:00 p.m.**

The U.S. Department of Transportation FHWA is responsible for aggressively implementing the National Traffic Incident Responder Training Program that was initiated through the second Strategic Highway Research Program (SHRP2) L12 and L32 projects. To date, approximately 30,000+ responders have received this training throughout the U.S. While this is a good start, there are literally hundreds of thousands of responders that still need to be trained in this critical transportation operations and safety activity. As being emphasized in each of the FHWA TIM training programs and initiatives, there needs to be stronger engagement of the first responder community (including law enforcement, fire, EMS, towing & recovery, etc.) in the ongoing transportation operations dialogue. The 2014 ITS World Congress in Detroit offers an exceptional opportunity to do this, building nicely on the TIM activities and Emergency Response Day held at the last U.S. World Congress in Orlando. The special interest session will be structured to engage an international audience with discussion of how important and relevant TIM is to global transportation safety and mobility.

## ER02 – Emergency Response Day Special Session: Resilient ITS to Support Emergencies and Major Events

**Tuesday, September 9, 1:00 – 2:30 p.m.**

This session will highlight international perspectives on the importance and/or use of robust and resilient Intelligent Transportation Systems during significant weather events and other emergency situations. This is a continuing topic carried over from the 20th World Congress in Tokyo. Major weather events and other emergencies in the United States, Asia, and Europe have stressed our ITS, communications, power, and transportation infrastructure. This session will compare and contrast the experiences in North America, Europe, and Asia to plan for and fund more robust and resilient systems in the aftermath of catastrophic events, as well as how they are exercised by authorities and utilized by the public in emergency situations.

**Organizer & Moderator**
Steven Cyra, HNTB Corporation, Fellow, Assoc. Vice President, USA

## Transportation for Tomorrow: Inventors and Investors

Premiering in Detroit this September, Transportation for Tomorrow is a revolutionary two-part program comprised of our inaugural Entrepreneurial Village and the second annual ITS America Investor Matching Event.

For the first time ever, the World Congress exhibit floor will feature an Entrepreneurial Village where emerging companies will have a dedicated space for promoting their most innovative ideas and technologies that are fundamentally changing the way we move.

Additionally, ITS America will be hosting an Investor Matching Event as a part of its Annual Meeting. Partnering with premier financial investment firms Fontinalis Partners and Econolite Group, ITS America will provide competitive young innovators and entrepreneurs with the best cutting-edge ideas, technologies, and business plans with the opportunity to pitch their ideas for funding.

Learn more: **www.itsworldcongress.org/investormatching**

# The 2014 ITS World Congress Mobile App

## Coming to an App Store near you Summer 2014!

The 2014 ITS World Congress mobile app will assist attendees in planning and managing their World Congress experience. Available on Apple's iPhone and Android operating mobile phones, this year's mobile app will provide access to all programmatic session information, the Technology Showcase demonstrations, events, and tours. Attendees will be able to research the exhibitors and build their own itinerary. Stay tuned!


Sponsorship opportunities for the app are still available.
Contact Francesca Lendrum at **flendrum@itsa.org** for more information.

# Registration

## Registration Period

Early registration opens April 1, 2014 at Noon ET and will close Thursday, September 11, 2014. Early registration rates are only available through June 15, 2014.

You can register online at **www.itsworldcongress.org/register**, or on-site beginning September 7, 2014.

## Registration Packages

All official ITS World Congress speakers and moderators must register for a full package or one day package to participate on the program.

Lunch coupons (Monday – Thursday) are provided in the Delegate, Speaker/Moderator, and Exhibitor Booth Personnel packets. Technical tours, guest tours, social events, and workshops are not included in any registration package. Tickets for these items may be purchased a la carte on the online registration form. The Wednesday Detroit Gala ticket is included in the Full Registration Packets. If you do not purchase the full registration packet and want to attend this event, you must purchase a single ticket.

If you would like to make changes to your online registration, please log back into your record using your e-mail address and confirmation ID number. If you registered via fax or by mail, you will need to contact Experient directly at +1 (866) 299-2386 (toll free) or +1 (301) 694-5243 (international), or itsa@experient-inc.com.

### Full Registration (Sunday – Thursday)

This package includes admission to Sunday's opening ceremony, all sessions, the exhibit hall, access to the Technology Showcase demonstrations on Belle Isle and the Atwater Parking Lot, Monday's exhibit hall reception, the Detroit Gala on Wednesday evening, and all ITS World Congress materials, including ITS World Congress proceedings online.

### One Day Registration (Monday, Tuesday, Wednesday, or Thursday)

This package includes admission to all sessions, the exhibit hall and access to the Technology Showcase demonstrations for one day. One-day delegates will also receive a lunch voucher for that day and access to the ITS World Congress proceedings online.

Registration continues on next page >

## REGISTRATION RATES

### Nonmembers

| | |
|---|---|
| Full Early Registration | $1260 |
| Full Registration | $1700 |
| Full Speaker Early Registration | $1050 |
| Full Speaker Registration | $1170 |
| Full U.S. Public Sector (Federal, State, & Local) | $1000 |

### Members

| | |
|---|---|
| Full Early Registration | $1145 |
| Full Registration | $1540 |
| Full Speaker Early Registration | $950 |
| Full Speaker Registration | $1065 |
| Full U.S. Public Sector (Federal, State, & Local) | $965 |
| Full Non-OECD Country Registration | $1090 |
| 1 Day Registration | $880 |
| 1 Day Public Sector Registration | $640 |
| 1 Day Speaker Registration | $560 |
| Full Student Registration | $160 |
| One Day Student Registration | $110 |

### Full-Time Student

A special rate has been set for full-time students to experience the 21st ITS World Congress. Students may not be employed full-time. A letter from your university documenting your enrollment as a full-time student must accompany your registration form and payment.

The Full-Time Student registration package includes admission to Sunday's opening ceremony, all sessions, the exhibit hall, access to the Technology Showcase demonstrations, Monday's exhibit hall reception, and all ITS World Congress materials, including access to the ITS World Congress proceedings online. It also includes lunch in the exhibit hall each day.

### One Day Student

The One Day Student registration package includes the World Congress attendee bag, access to all sessions on that particular day, the exhibit hall, Technology Showcase demonstrations, lunch and access to the ITS World Congress proceeding online.

### Accompanying Person (Gratis)

Spouses and companions of delegates to the ITS World Congress may register and receive access to the opening and closing sessions ceremonies, exhibit hall, all Technology Showcase demonstrations, and Monday's exhibit hall reception. They may also register separately for Guest Tours and Social Events. The Accompanying Person registration is intended for spouses, companions, and other non-participating persons. **Colleagues and peers are not considered accompanying persons and must purchase a different registration package**.

### Press (Gratis)

Qualified members of the press are admitted to the ITS World Congress at no charge. Proper credentials are required. You will be able to attend all sessions, the exhibit hall, have full access to the Technology Showcase demonstrations, and all receptions occurring in the exhibit hall.

### Confirmations

All registrants will receive confirmations via e-mail within two weeks of receiving your completed form and payment.

### Badges

All badges must be picked up on site. Please bring your confirmation letter with you to Cobo Center. It will have a bar code printed on it. All registration fees must be paid before badges can be picked up. Contact Experient Customer Services at +1 (866) 299-2386 (toll free) +1 (301) 694-5243 (international), or **itsa@experient-inc.com** if you have any questions.

## Cancellation Policy

Cancellation requests must be submitted in writing to **itsa@experient-inc.com**. Please note that all refunds will be issued in the same format as payment was received. All cancellations will be processed and refunds distributed within 30 days of the close of the 21st ITS World Congress. The cancellation schedule is as follows:

- **Request received by July 14, 2014:** Full refund, less a $300 processing fee, one day registrations full refund less a $150 processing fee.
- **Request received between July 15 and August 15, 2014:** 50% of your total registration fee will be refunded.
- **Request received after August 15, 2014:** No refund for cancellation.

Cancellation requests received by July 14, 2014 for technical tours, guest tours, workshops and special events will receive a full refund. Requests made after July 14, 2014 will not receive a refund.

## Substitutions

Substitutions within the same organization for the same registration category are permissible. The substitution will need to be made at the ITS World Congress registration desk at Cobo Center.

Registration 2014

# 21st ITS World Congress Registration Form

September 7-11, 2014 | Cobo Center | Detroit, Michigan, USA

www.itsworldcongress.org

To attend the 2014 ITS World Congress, please complete parts 1 - 6 of this registration form and return it with full payment. Full payment must accompany all registrations or cannot be processed. Registration opens April 1, 2014 at Noon ET and will close Thursday, September 11, 2014. Early registration rates are only available from April 1, 2014 through June 15, 2014. Each delegate must fill out a separate form. This form may be duplicated for additional registrants. Do not mail this form if you are registering online or by fax. Please type or print clearly. Online registration is now open at **www.itsworldcongress.org/register.**

**Please note:** In order to participate in the ITS World Congress, all official speakers and moderators must register for a full package or a one day package. All registrants will receive confirmations via e-mail within two weeks of receiving your completed form and payment.

### Obtaining Registration Credentials

All registrants will need to check in at the ITS World Congress registration desk at the Cobo Center to receive your badge and additional Congress materials. Please bring your confirmation letter with you to the Cobo Center. All registration fees must be paid before badges can be picked up.

### International Registrants

All International travelers planning to attend the 21st World Congress on Intelligent Transport Systems will likely require a nonimmigrant visa for temporary stay in the U.S. International registrants should apply for their visa at least three months before they plan to begin their trip to the U.S. If you need a visa letter, please contact Patty Fusaro at +1 (202) 484-4847 or **pfusaro@itsa.org** for assistance.

### How to Register:

**Online:**
**www.its.worldcongress.org/register**

**By mail:** ITS Registration
5202 Presidents Court, Suite G100
Frederick, MD 21703

**By fax:** +1 (301) 694-5124

**Questions:** Contact Experient Customer Service at +1 (866) 229-2386 (toll free), +1 (301) 694-5243 (international) or **ITSA@experient-inc.com.**

### Cancellation Policy

Cancellation requests must be submitted in writing to **itsa@experient-inc.com**. Please note that all refunds will be issued in the same format as payment was received. All cancellations will be processed and refunds distributed within 30 days of the close of the 21st ITS World Congress.

Requests received by July 14, 2014 are subject to a full refund, less a $300 processing fee, one day registrations full refund less a $150 processing fee. Requests received between July 15 and August 15, 2014 are subject to a 50% refund of your total registration fee. No refunds will be honored after August 15, 2014. Cancellation requests received by July 14, 2014 for technical tours, guest tours, workshops and special events will receive a full refund. Requests made after July 14, 2014 will not receive a refund.

## PART I: Contact Information (please print)

☐ Mr. ☐ Ms. ☐ Dr. First Name _____

Last Name _____

Preferred name for Badge _____ Job Title _____

Organization Name _____

Organization Mailing Address _____

City _____ State/Province _____

ZIP Code _____ Country _____

Telephone _____ Fax _____ E-Mail _____

Full Name of accompanying person/guest (if attending) ☐ Mr. ☐ Ms. ☐ Dr.

Is this your first time attending an ITS World Congress? ☐ Yes ☐ No
In compliance with the Americans with Disabilities Act, I require specific aids or service at the event location. ☐ Audio ☐ Visual ☐ Mobile
Please indicate type of need(s). If yes, please attach a separate written description.

Do you have special dietary needs? ☐ Yes ☐ No If yes: _____

## Part I: Contact Information (continued)

### Demographic Information

**Gender**

- ☐ Male
- ☐ Female

**Purchasing Role (check one only)**

- ☐ Final Decision
- ☐ Influence
- ☐ Significant Recommendation
- ☐ None

**Organization Type (check one only)**

- ☐ Academic Institution
- ☐ Consulting
- ☐ Education
- ☐ Engineering Firm
- ☐ Financial Services
- ☐ First Responder
- Government Agency
  - ☐ Federal ☐ State ☐ Local
- ☐ Nonprofit
- ☐ OEM / Supplier
- ☐ Service Provider
- ☐ Startup
- ☐ Telematics / Telecommunications
- ☐ Trade Association
- ☐ Other (Please specify): _____

**Position: (check one only)**

- ☐ Suite (CEO/COO/CFO/CMO/CTO)
- ☐ Head of Department
- ☐ Manager
- ☐ Sales/Marketing
- ☐ Technical
- ☐ Government Affairs
- ☐ Consultant
- ☐ Public Relations
- ☐ Assistant/Administrative
- ☐ Other (Please specify): _____

## Part II: Registration Packages

| Registration Type | Until June 15 | Beginning June 16 | |
|---|---|---|---|
| Attendee - Full Registration (Member) | ☐ $1,145.00 | ☐ $1,540.00 | |
| Attendee - Full Registration (Non Member) | ☐ $1,260.00 | ☐ $1,700.00 | |
| Speaker/Moderator - Full Registration (Member) | ☐ $950.00 | ☐ $1,065.00 | |
| Speaker/Moderator - Full Registration (Non Member) | ☐ $1,050.00 | ☐ $1,170.00 | |
| U.S. Public Sector (Federal, State, or Local Member) | ☐ $965.00 | ☐ $965.00 | |
| U.S. Public Sector (Federal, State, or Local Non Member) | ☐ $1,000.00 | ☐ $1,000.00 | |
| Non-OECD Countries - Full Registration (Non Member) | ☐ $1,090.00 | ☐ $1,090.00 | |
| Student - Full Registration (Member and Non Member) | ☐ $160.00 | ☐ $160.00 | |
| Elected Official | ☐ Gratis | ☐ Gratis | |
| Legislators and Staff | ☐ Gratis | ☐ Gratis | |
| 1 Day Attendee | ☐ $880.00 | ☐ $880.00 | ☐ Monday ☐ Tuesday ☐ Wednesday ☐ Thursday |
| 1 Day Speaker/Moderator | ☐ $560.00 | ☐ $560.00 | ☐ Monday ☐ Tuesday ☐ Wednesday ☐ Thursday |
| 1 Day U.S. Public Sector (Federal, State, Local) | ☐ $640.00 | ☐ $640.00 | ☐ Monday ☐ Tuesday ☐ Wednesday ☐ Thursday |
| 1 Day Student | ☐ $110.00 | ☐ $110.00 | ☐ Monday ☐ Tuesday ☐ Wednesday ☐ Thursday |
| Accompany Person | ☐ Gratis | ☐ Gratis | |
| Press (credentials will be verified) | ☐ Gratis | ☐ Gratis | |

## Part III: Technical Tours

| Tour Name | Time | Number of Tickets |
|---|---|---|
| ☐ Monroe PrePass | Tuesday, September 9, 10:00 a.m. – 2:00 p.m. and<br>11:00 a.m. – 3:00 p.m. | _____ @ $65.00<br>_____ @ $65.00 |
| ☐ Communications & Technology Center (COMTEC) | Tuesday, September 9, 1:00 – 2:30 p.m. | _____ @ $50.00 |
| ☐ Safety Pilot Model Deployment (SPMD) | Wednesday, September 10, 8:00 a.m. – 12:00 p.m. | _____ @ $50.00 |
| ☐ Southeast Michigan Transportation Operations Center (SEMTOC) Tour | Wednesday, September 10, 9:00 – 11:30 a.m. | _____ @ $50.00 |
| ☐ City of Windsor Traffic Management Center | Wednesday, September 10, 9:00 a.m. – 12:00 p.m. | _____ @ $50.00 |
| ☐ Macomb County Communications and Technology Center | Wednesday, September 10, 11:30 a.m. – 2:00 p.m. | _____ @ $65.00 |
| ☐ OnStar Command Center | Monday, September 8, 10:00 – 11:30 a.m. and<br>2:30 – 4:00 p.m.<br>Tuesday, September 9, 10:00 – 11:30 a.m.<br>Wednesday, September 10, 9:30 – 11:00 a.m. and<br>2:30 – 4:00 p.m.<br>Thursday, September 11, 9:30 – 11:00 a.m. | _____ @ $20.00<br>_____ @ $20.00<br>_____ @ $20.00<br>_____ @ $20.00<br>_____ @ $20.00<br>_____ @ $20.00 |

## Part IV: Social Events

| Social Event Name | Time | Number of Tickets |
|---|---|---|
| ☐ Opening Reception | Sunday, September 7, 4:00 – 5:00 p.m. | Gratis |
| ☐ Macomb County Dinner Cruise | Monday, September 8, Board Time: 6:30 p.m. | _____ @ $125.00 |
| ☐ Shopping at Somerset | Tuesday, September 9, 10:00 a.m. – 4:00 p.m. | _____ @ $25.00 |
| ☐ "Michigan Festival," "Flavor of Michigan" presented by ITS Michigan | Tuesday, September 9, 6:00 p.m. | Gratis |
| ☐ Detroit Gala | Wednesday, September 10, 6:00 p.m. | _____ @ $100.00* |
| ☐ Women in Transportation | Wednesday, September 10, 12:00 – 1:30 p.m. | _____ @ $40.00 |

*Price included in some registration packets.

## Part V: Ancillary Events & Workshops

| Ancillary Events & Workshops Name | Time | Number of Tickets |
|---|---|---|
| ☐ IBEC Workshop | Sunday, September 7, 9:30 a.m. – 1:00 p.m. | _____ @ $50.00 |
| ☐ Connected Vehicle Program | Sunday, September 7, 10:00 a.m. – 1:00 p.m. | _____ @ $40.00 |
| ☐ State Chapters Strengthening Workshop | Monday, September 8, 9:30 a.m. – 1:30 p.m. | _____ @ $25.00 |

## Part VI: Technology Showcase

The Technology Showcase demonstrations will take place at Cobo Center, the outdoor exhibit area on Belle Isle, and on the streets of Detroit. Shuttle service will be provided. Attendees interested in participating in a technology showcase demonstration must sign up through the online registration system or on site during the ITS World Congress. All demonstrations will operate daily, Monday – Thursday, and have select hours.

## Part VII: Payment

**Registration cannot be processed without full payment.** All fees are payable in U.S. dollars only by check, bank transfer or credit card. If payment is made from outside the U.S., the registrant must bear all bank chargers. Registration forms received without payment will be returned.

| | |
|---|---|
| Part II: Registration Package | $ _____ |
| Part III: Technical Tours | $ _____ |
| Part IV: Social Events | $ _____ |
| Part V: Ancillary Events & Workshops | $ _____ |
| **TOTAL FEES** | $ _____ |

### Method of Payment

☐ Check (payable to "ITS America") ☐ Bank Transfer ☐ VISA ☐ American Express ☐ MasterCard

Card Number _____ Exp. Date _____

Name as it appears on the card _____

City _____ State/Province _____ Zip/Postal Code _____ Country _____

Signature (required for processing) _____ Date _____

☐ I understand that my credit card will be charged as soon as this registration form is processed. This is to certify that I hereby accept your registration policies.

### Bank Transfer Instructions Please remit payment to:

**Bank:** Capital One Bank
**Bank Address:** 1100 New Jersey Avenue, Washington, D.C. 20003
**Account Name:** Intelligent Transportation Society of America
**Account Number:** 1360001322
**Routing Number:** 255071981
**SWIFT:** HIBKUS44

21ST WORLD CONGRESS DETROIT 2014 INTELLIGENT TRANSPORT SYSTEMS

**Information Disclosure:** ITS America and the other ITS World Congress organizers may use the information that you provide on this registration form to inform you about future ITS World Congress events that we feel may be of interest to you. Information provided on this form may be used to contact you again via email, regular mail or telephone. You may choose to opt out of information collection by checking the following box.

☐ No, I do not wish to receive information about future ITS World Congress events.

**Online registration is now open at www.itsworldcongress.org/register**

# Travel & Transportation Information

## Getting to the 2014 ITS World Congress

Attendees coming to the 21st World Congress on Intelligent Transport Systems featuring ITS America's Annual Meeting and Exposition will find getting to Detroit and throughout the southeast Michigan area is convenient for travelers from around the world. Transportation options include air, transit, taxi service, as well as an efficient highway network and ample vehicle parking options.

All of the following information is also available on our site at **http://itsworldcongress.org/travel/public-transportation/**.

## Travel by Air

### Detroit Metropolitan Airport (DTW)

1 Detroit Metropolitan Airport Tram, Detroit, MI 48242
Phone Number: (734) 247-7678

The Detroit Metropolitan Airport's official IATA Airport Identifier is DTW. It contains 145 gates throughout its two passenger terminals, McNamara Terminal 121 and North Terminal 26.

DTW Airport offers flights on 13 scheduled passenger airlines, including:

- Air Canada
- AIRFRANCE
- AirTran
- America Airlines
- DELTA
- FRONTIER
- jetBlue
- Lufthansa
- Royal Jordanian
- Southwest Airlines
- Spirit Airlines
- UNITED
- U.S. Airways

Visit the airport's official Web page on its passenger airlines for contact information for each airline regarding reservations, baggage requirements, and restrictions as each airline will have its own policies. Attendees will be able to print return boarding passes on site Wednesday and Thursday at Cobo in the registration area during registration hours.

## Travel by Transit

### Metro Detroit Area Transit (SMART)

Suburban Mobility Authority for Regional Transportation (SMART) provides public bus service to and from DTW Airport to points throughout Southeast Michigan. SMART currently serves the North Terminal with Routes 125 and 280, and the McNamara Terminal with Route 125.

Public bus service connects DTW Airport with the surrounding southeast Michigan region from stops located at each airport terminal:

- North Terminal: Ground Transportation Center
- McNamara Terminal: International arrivals level curb (lowest level) just outside and to the right of the terminal building exit

For more information regarding **SMART Bus service**, visit **www.smartbus.org**.

## Travel by Taxi

Detroit Metropolitan Airport's official luxury sedan and taxi cab providers, MetroCars and MetroCabs, offer convenient, on-demand transportation from the airport to points throughout the region. Cost of cab fare into the city may vary from $45.00 - $70.00 USD.

Luxury sedans and taxis are available 24 hours a day, seven days a week, from each terminal's Ground Transportation Center. No advanced reservation is required. If arriving in the North Terminal, both luxury sedan and taxi services are dispatched from the upper level of the Ground Transportation Center. Upon arrival in Detroit, and once all checked luggage has been claimed, follow signs to Ground Transportation on Level 4.

If arriving in McNamara Terminal, both luxury sedan and taxi services are dispatched from the center of the Ground Transportation center, located on level 4 of the McNamara Garage. Upon arrival in Detroit, and once all checked luggage has been claimed, follow signs to Ground Transportation.

Contact **MetroCars** at +1 (800) 456-1701 and **MetroCabs** at +1 (734) 997-6500 for more information.


# Travel by Rail

## The Detroit People Mover

The Detroit People Mover is an automated people mover system serving the city of Detroit. There is a station inside the Cobo Center. For more information, visit **www.thepeoplemover.com**.

The People Mover hours of operation are as follows:

- Monday through Thursday, 6:30 a.m. to midnight
- Friday, 6:30 a.m. to 2:00 a.m.
- Saturday, 9:00 a.m. to 2:00 a.m.
- Sunday, noon to midnight

The fare is $0.75 per ride and can be paid in cash or by tokens available in or near stations. Monthly, Annual and Convention/Special Event passes are available online or by calling +1 (313) 224-2160.

## Amtrak

Amtrak is a national high-speed rail operator that connects travelers to more than 500 destinations throughout the U.S. including the city of Detroit. The station is located in the New Center area of the city at 11 West Baltimore Avenue, Detroit, MI 48202. The station provides an enclosed waiting area and ticket office, and is handicap accessible. For Amtrak ticket purchases, schedules and service updates, visit their website at **www.amtrak.com**.

# Accommodation Information

## Booking Accommodations

Attendees requiring overnight accommodations in Detroit can make local arrangements through the ITS World Congress online registration portal beginning April 1, 2014. Rooms are reserved on a first come, first served basis. There are a limited number of rooms available at the per diem rate. We recommend booking your accommodations early in order to secure the negotiated rates at any of the four area host hotels.

Detroit Marriott at the Renaissance Center is the official headquarters hotel for the 2014 World Congress on Intelligent Transport Systems. Soaring 73 floors above the Detroit River, the Detroit Marriott at the Renaissance Center is the premier hotel of the Motor City and is situated on the RiverWalk just steps from the Cobo Center, and boasts stunning waterfront views of Windsor, Ontario, Canada.

## Hotel Options and Information

The following Detroit hotels are offering attendees of the World Congress special rates on single and double rooms.

### 1 Detroit Marriott at the Renaissance Center

Renaissance Center
400 Renaissance Drive
Detroit, Michigan 48243 USA

Single Room Rate: $189.00
Double Room Rate: $189.00

### 2 Westin Book Cadillac Detroit

1114 Washington Blvd.
Detroit, Michigan 48226 USA

Single Room Rate: $169.00
Double Room Rate: $169.00

### 3 Courtyard Detroit Downtown

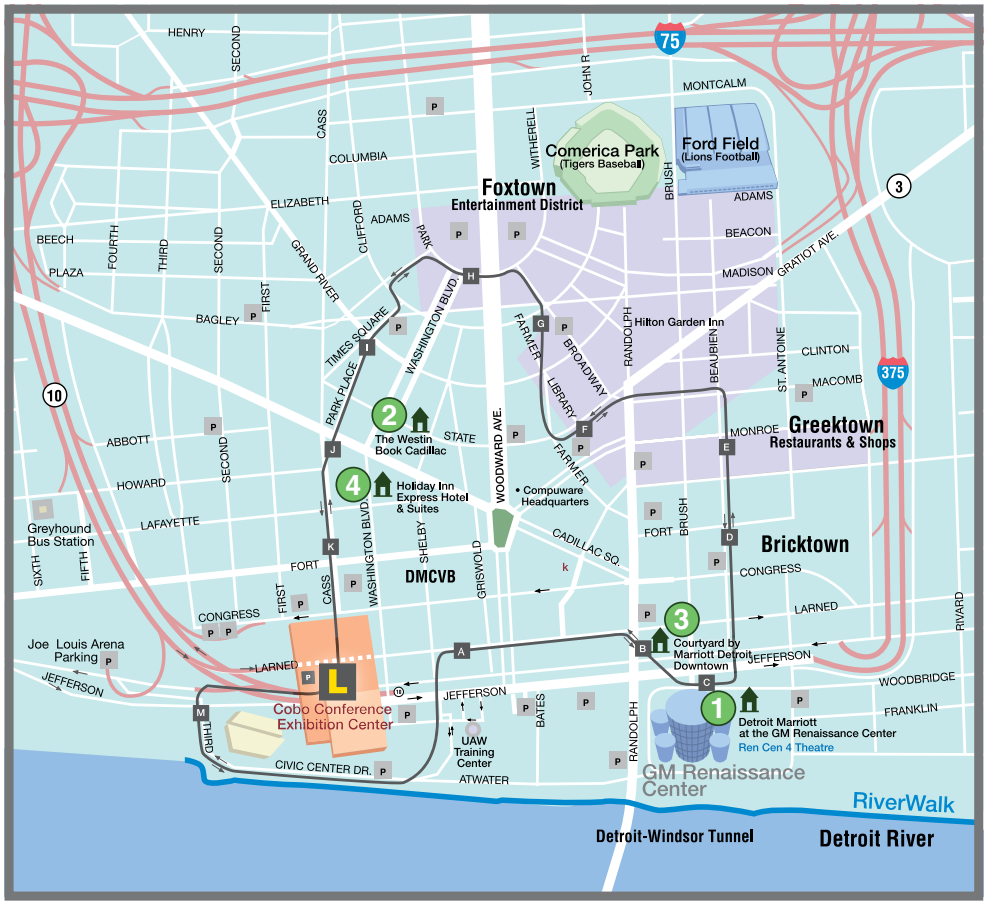
333 East Jefferson Ave
Detroit, Michigan 48226 USA

Single Room Rate: $179.00
Double Room Rate: $179.00

### 4 Holiday Inn Express Hotel & Suites Detroit Downtown

1020 Washington Boulevard
Detroit, Michigan 48226 USA

Single Room Rate: $157.00
Double Room Rate: $157.00




### People Mover Stations

- A Financial District
- B Millender Center
- C Renaissance Center
- D Bricktown
- E Greektown
- F Cadillac Center
- G Broadway
- H Grand Circus Park
- I Times Square
- J Michigan Avenue
- K Fort/Cass
- L Cobo Center
- M Joe Louis Arena

The People Mover's 13 stations include direct access to Cobo Center, Joe Louis Arena and Greektown Casino. Trains arrive every four minutes.

Accommodations

P Parking

Experient is the Official Housing Provider for the ITS World Congress. The ITS World Congress has worked diligently with the hotels in Detroit to establish room blocks for attendees and exhibitors. Improper solicitation of hotel reservations from any company or housing provider other than Experient is not approved by the ITS World Congress. Reservations made by unaffiliated organizations may appear to be for lower rates, however they may be illegitimate, have unreasonable cancellation or change penalties, or be completely non-refundable. Please be aware of, and report any unauthorized solicitation to the ITS World Congress.

# General Information

### Time

Detroit, Michigan is in the Eastern Time zone, five hours behind GMT (Greenwich Mean Time).

### Currency

The U.S. Dollar is the currency of the United States. Units are dollars and cents (100 per dollar). Current exchange rates can be obtained from your bank or online.

Most credit cards are accepted in the United States, 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

In Detroit, as in the rest of the United States, service personnel rely on tips for a substantial part of their income. For waiters, bartenders, taxi drivers, or similar, a 15-20% tip is standard.

Baggage handlers at hotels and airports should be given $1.00 - $2.00 per bag. A hotel housekeeper should be left $2.00 - $5.00 per night at the end of your stay.

Tipping is not expected in fast food restaurants, theaters, or cinemas.

### Electricity

The electrical supply in the United States is 110V 60HZ in frequency. While hotels may provide their guests with plug adapters upon request, supplies are limited.

### Internet Access

Most U.S. 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. The Cobo Center offers facility-wide, free, ultra high speed WiFi coverage.

### Language

The official language of the ITS World Congress is English.

### Insurance

The Americas Organizing Committee of ITS World Congress Detroit 2014 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.

### Climate

Southeast Michigan in September welcomes the end of summer. The average high is 76° F (24° C), and the average low is 59° F (15° C). Please plan accordingly.

### Smoking

There is no smoking indoors in the United States. 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.

## Professional Development Hours

Attendance at ITS America's 2014 Annual Meeting and the ITS World Congress entitles you to earn up to 23 professional development hours (PDH). Many engineering and related licensure and certification agencies around the world require the demonstration of continuing professional competency that is met by the range of technical, scientific, executive, special, and plenary sessions you can attend at this Congress. With over 23 possible units for you to acquire, your World Congress attendance easily provides you the opportunity to complete most, if not all, of your annual PDH requirement.

# ITS America Leadership Circle

The ITS America Leadership Circle brings together transportation and technology visionaries from the public, private, and academic sectors as thought leaders on behalf of ITS America and the broader transportation community. Together, the Leadership Circle develops strategic approaches to improve the nation's transportation systems through innovative ITS solutions. More details of the Leadership Circle's role at the ITS World Congress are to come.

## 2014 ITS America Leadership Circle Members

To learn more about the ITS America Leadership Circle visit **itsa.org/leadershipcircle** or contact Sabrina Sussman, ITS America's Vice President for Membership and Development, at **ssussman@itsa.org**.

# Session Tracks

## Automated Transportation

- **ES01**: Roadmap to Automated Transportation
- **SIS13**: State-of-the-Art in Automated Vehicles
- **SIS20**: Is There Vehicle Automation without Accurate Maps?
- **SIS26**: Technical Challenges for Adoption of Automated Vehicles
- **SIS35**: Human Factors Challenges of Vehicle Road Automation
- **SIS42**: Impacts and Opportunities for Automated Vehicles
- **SIS50**: Towards Automation: Research and Deployment Challenges
- **SIS59**: Paving the Way for Self-Driving Cars: Legislative and Legal Issues on the Horizon for Autonomous Vehicles
- **SIS74**: Evaluation and Requirements for Automated Vehicles Road Testing towards Deployment
- **AM12**: Future of Fleet Automation
- **AM14**: Autonomous Vehicles: Savior of the Western World or an Over-Hyped Version of new Cars?
- **TS105**: New Trends In Detection
- **TS111**: Future Directions In Automated Driving
- **TS119**: Autonomous Driving Systems
- **TS98**: Implications and Assessment of Automated Driving

## Big Data and Open Data

- **ES06**: Big Data and Open Data — The Big Issues
- **SIS08**: Data Driven Traffic Modelling and Analysis
- **SIS09**: Big Data And The Connected Vehicle — When We Build It, The Data Will Come
- **SIS17**: Japan-U.S.-European Joint Research on the Use of Probe Data
- **SIS32**: ITS Infrastructure Initiative by Circulating Traffic Big Data — From Autonomous Driving to Elderly Driving Support
- **SIS36**: Revolutionizing Performance Assessment of the Roadway Network Through Data and Analytics
- **SIS64**: Data, Directives and Regulations: How Crowd Sourced Data is Helping Agencies Meet New Rules
- **SIS71**: Application of Big Data to Transportation Operations & Planning
- **SIS87**: From Vertical to Horizontal to Connected Clouds
- **AM11**: Private Consumer Applications and the Growing Request to Interface to Public Traffic Systems
- **TS11**: Recent Developments in Data Collection
- **TS112**: Challenges in Big Data Management
- **TS13**: Big Data Management and Analysis
- **TS25**: Data Sharing and Open Source Data
- **TS31**: Innovative Traffic Data Collection and Analysis Strategies
- **TS82**: Innovations in Traffic Data Collection and Analysis
- **TS93**: Data Management Strategies

Session Tracks continues on next page >

## Connected Vehicles & Cooperative Systems

- **ES03**: Worldwide Deployment of Cooperative Systems
- **SIS06**: Cooperative ITS for Now and the Next (Round 3)
- **SIS31**: Liability Issues for The Connected And Autonomous Vehicle
- **SIS45**: Cooperative ITS Vehicle Architecture and Applications
- **SIS52**: National Road Authorities and Strategies Concerning Co-operative Systems Alone or as to Support Automation
- **SIS53**: Evaluation of Costs and Benefits of Cooperative Systems and Automation Applications
- **SIS62**: Strategy of Practical Implementation of V-I Cooperative Systems for Traffic Accidents Avoidance
- **SIS67**: Updates of Connected Vehicle in China
- **SIS68**: Cooperative Driving Technology and Standardization
- **SIS76**: The Impacts of Connected Vehicle Technology on Transportation Agency Operations
- **SIS77**: Modeling Connected Vehicle Applications and Dynamic Management Strategies: Issues and Challenges
- **SIS83**: Adaptive Signal Control Technologies in the World of Connected and Automated Vehicles
- **SIS88**: The Connected Car Becomes the Ultimate Mobile Device
- **IBEC1**: Will There be an Attractive/Convincing Cost Benefit Case Introducing C2X and Automated Vehicle Driving in Road Transportation?
- **IBEC3**: Evaluation of Connected Vehicles
- **IBEC5**: Evaluating Benefits and Business Cases for Cooperative ITS (connected vehicles)
- **TS03**: Connected Vehicle Deployment and Field Tests
- **TS04**: V2X Technology Evaluations
- **TS104**: Collision Warning Systems
- **TS34**: Cooperative Systems Research and Development
- **TS44**: Connected Vehicle Applications
- **TS47**: Cooperative Vehicle Field Test Programs
- **TS54**: Vehicle Detection and Location by Video, Sensors, and Probes
- **TS62**: Cooperative Systems
- **TS64**: Developments in Connected and Autonomous Vehicle Systems
- **TS68**: New Uses for Roadside Equipment
- **TS77**: Sensing the Vehicle Environment
- **TS79**: Multi Object Collision Avoidance
- **TS88**: Collision Avoidance Systems

## Driver Behavior and Support

- **SIS18**: Driving Behavior by Aged People and its Countermeasure using KUSANONE ITS
- **TS109**: User Behavior
- **TS12**: Implications of Driver Behaviour on ITS System Performance
- **TS22**: Driver Support Systems on Personal Devices
- **TS23**: Driver Assist Systems
- **TS40**: Human-Machine Interface Evaluation
- **TS65**: Driver Assistance Systems
- **TS72**: Driver Simulation
- **TS96**: Driver Behaviour and Cognition of Signage And Markings

## Economic Growth

- **ES11**: ITS and Economic Growth
- **SIS11**: The Economics and Partnerships Driving Connected Cars
- **SIS22**: Establishment of a Results Driven Investment Program for Intelligent Transportation Systems
- **TS110**: ITS Developments in Evolving Markets
- **TS20**: Road User Charging 1
- **TS24**: Road User Charging 2
- **TS42**: Road User Charging 3
- **TS56**: Road User Charging 4
- **TS89**: Developing an ITS Workforce

## Freight

- **AM03**: Commercial Vehicle and Freight Movement Technologies for Safety, Efficiency, Mobility, and Enforcement
- **ES09**: Driving Freight Efficiency with ITS
- **SIS12**: ITS Applications in Truck Parking Availability
- **SIS37**: State of the Art and Benefits of Real Time Information for Commercial Vehicles
- **SIS66**: How Can We Design A More Efficient and Reliable Freight Transport System Through the Use of ITS Solutions?
- **TS38**: Commercial Vehicle Enforcement Strategies
- **TS60**: Commercial Vehicle Operators

## International Cooperation to Expand ITS

- **ES02**: International Cooperation to Spread and Expand ITS
- **SIS07**: Deployment of Cooperative ITS Services: A Global Affair
- **SIS23**: Accelerating Service Deployment — Strategy View from the Traffic and Transport Industry
- **SIS41**: ITS for Global Mega Events
- **SIS63**: Government Initiatives in Vehicle Automation
- **TS06**: Policy Changes To Connected and Autonomous Vehicles
- **TS115**: Development of Cooperative ITS Architecture
- **TS33**: National Efforts to Plan and Deploy ITS Systems
- **TS36**: Policy and Strategy Benefits and Lessons Learned in ITS
- **TS70**: Strategic Issues in ITS Development
- **TS92**: Regional and Statewide Integrated ITS Deployments

## ITS Rules and Standards

- **ES12**: Global Harmonization of ITS Rules and Standards
- **SIS05**: International Standard Issues for Green ITS (G-ITS)
- **SIS21**: International Harmonization of Cooperative ITS Security Policy
- **SIS34**: Minimum Quality Requirements for Driving Event Video Recorder to Secure Safe Driving Management
- **SIS46**: Applying Intelligent Transportation Systems to Cross Border Issues
- **SIS54**: International Harmonization of the Interoperability Assessment Processes
- **TS05**: Cooperative ITS System Standards
- **TS116**: Standardization

## New Mobility

- **ES05**: ITS and the New Mobility
- **SIS02**: Apps, Innovation, and Regulation: Protecting the Public Interest in the Midst of Disruptive Competition
- **SIS28**: Meet The New Mobility Industry Vanguard: A View From the Trenches
- **SIS47**: National ITS Associations — Driving Mobility Deployment
- **SIS65**: Can we Take Traveler Information to the Next Level to Improve Mobility?
- **SIS73**: Future Mobility Beyond 202X
- **AM16**: The Sharing Economy and Shared Mobility
- **AM20**: New Urban Mobility: Is This the Death of Public Transit as we Know it?
- **TS39**: Management of Shared and Electric Vehicles
- **TS49**: Multimodal Signal Priority Management
- **TS67**: Application of SmartPhone Technology to Improve Mobility

Session Tracks continues on next page >

## Public Transit

- **SIS16**: Open Data in Public Transport: Challenges and Opportunities
- **SIS27**: Visualizing an Integrated Transport System — A Multi-modal Approach Enhanced by Automated Transit Networks
- **SIS33**: Big Data in Transit: Are Our Heads in the Clouds?
- **SIS51**: Public Transport in Mega Cities
- **TS113**: Tools to Improve Transit Services
- **TS15**: Innovations in Bus Vehicle Systems
- **TS30**: Public Transportation Modeling
- **TS37**: Aspects of Multimodal Public Transportation
- **TS71**: Transit Signal Priority
- **TS81**: Academic Issues on Public Transportation

## Smart Cities

- **ES08**: Innovation for Mobility in Smart Cities
- **SIS15**: Lean Demand Management for Smart Parking
- **SIS25**: Mega City ITS Programs, New York City's Approach
- **SIS40**: Leveraging ITS and the Internet of Things to Enable Complete Streets
- **SIS44**: Seamless Mobility — ITS in Smart Cities, an Asia Pacific perspective
- **SIS48**: Smart Parking: The Foundation and Accelerator for the Smart City and Connected Car

## Sustainability

- **ES07**: ITS: Essential for Sustainability
- **SIS04**: EU-US Task force — Collaborative Efforts in Sustainability Applications
- **SIS19**: Wireless Power: Transforming Transportation
- **SIS30**: Evaluation Methodology of the Effects of ITS on $CO_2$ Emissions and its Application
- **SIS49**: Global Perspectives: Cooperative Energy Efficient Applications
- **AM01**: Sustainable Transportation Performance Measures: Best Practices
- **TS17**: ITS, Sustainability and Business Cases
- **TS45**: Energy and Emission Impacts of ITS
- **TS51**: Eco-Drive Management Systems

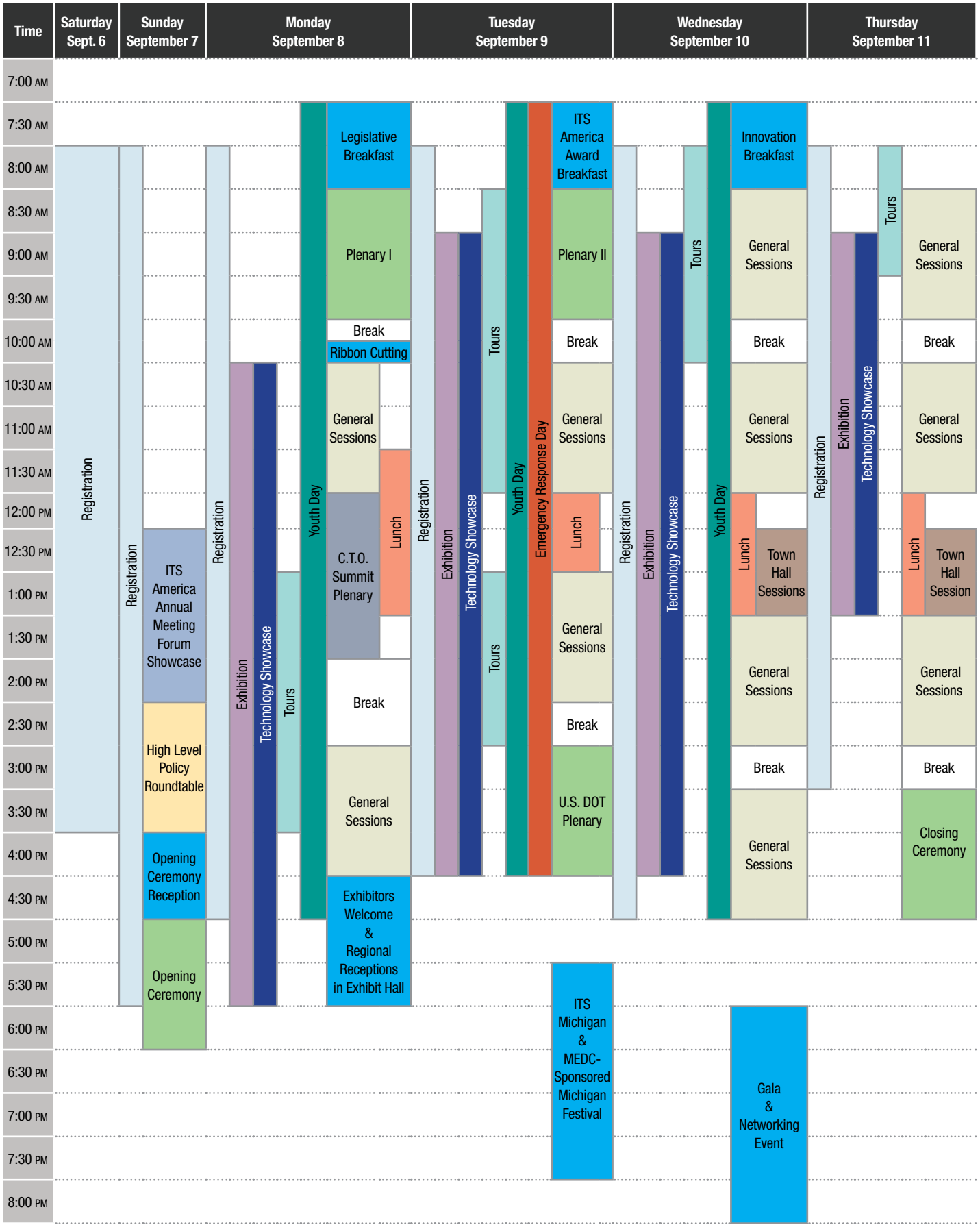
## Traffic Management

- **ES10**: Ways to Achieve Smoother Traffic
- **SIS03**: Sharing of Road and Traffic Information
- **SIS14**: Integrated Corridor Management — The Next Step
- **SIS29**: A Day in the Life of an Intelligent Traffic Signal
- **SIS38**: TPEG Traffic Services Worldwide
- **SIS43**: What is the Most Important Point in ITS Deployment in Mega-Cities of Asia-Pacific?
- **SIS75**: Traffic Sensing by Various Manners
- **SIS79**: SMART Tolling for Achieving Future Green Road
- **AM05**: Transportation Management Centers — Past, Present, and Future

## Traffic Safety

- **ES04**: Traffic Safety through ITS
- **SIS01**: Enhancing Intermodal Routing with Advanced Pedestrian Connection Technology
- **SIS10**: Connected/Automated Vehicles — The Safety Case
- **SIS39**: Saving Lives with Photo Enforcement
- **AM17**: ITS Improvements that Lead to Safety: The State Perspective
- **AM18**: Human Factors Leading to Safe and Connected Automation
- **TS10**: Safety Based Sensor Systems
- **TS106**: Developments in ITS Based Safety Systems
- **TS21**: Traffic Safety Applications
- **TS26**: Driving Safety
- **TS53**: Safety System Sensors
- **TS58**: Improving Intersection Safety with ITS
- **TS97**: New Techniques To Analyze, Predict, and Mitigate Traffic Safety

# Schedule at a Glance



# Keynote Speakers

Our program would not be complete without our impressive and knowledgeable speakers from across the industry.

## Bill Ford, **Ford Motor Company Executive Chairman**

### Reinventing Policy to Support the New ITS (Plenary Session)

**Monday, September 8, 8:30 – 10:00 a.m.**

Bill Ford is leading the company that put the world on wheels into the 21st century. He joined Ford Motor Company in 1979 as a product planning analyst and went on to hold a variety of assignments in manufacturing, marketing, product development and finance, and was CEO from 2001 to 2006. A board member since 1988, he became chairman in 1999. He also serves on the board's Finance and Sustainability Committees. A lifelong environmentalist, Mr. Ford is committed to increasing shareholder value by developing products that please customers and benefit society.

## Lowell C. McAdam, **Verizon Communications Chairman and CEO**

### Reinventing Business Models for the New ITS (Plenary Session)

**Tuesday, September 9, 8:30 – 10:00 a.m.**

Lowell C. McAdam succeeded Ivan Seidenberg as CEO on Aug. 1, 2011 and as chairman on Jan. 1, 2012. From October 2010 until he assumed his current position, McAdam served as president and COO and had responsibility for the operations of the company's network-based businesses — Verizon Wireless and Verizon Telecom and Business — as well as Verizon Services Operations. He was also responsible for the technology management and CIO functions. Before that, McAdam held key executive positions at Verizon Wireless since its inception in 2000 and built the company into the industry's leading wireless provider, with the nation's largest, most reliable wireless voice and 3G broadband data network. He was president and CEO of Verizon Wireless from 2007 until being named COO of Verizon, and before that served as Verizon Wireless' executive vice president and chief operating officer.

## Robert Slimp, **CEO of HNTB Infrastructure**

### High Level Policy Roundtable

**Sunday, September 7 , 2:30 – 4:00 p.m.**

Under Slimp's leadership, HNTB is committed to helping states design and build programs successfully within a challenging economic and legislative climate. With some of the firm's largest and longest-standing clients, and significant opportunities in the toll and rail markets, Slimp also is championing the firm's future growth strategy and commemoration of its centennial this year. Leading a multi-discipline staff in more than 60 U.S. offices and field offices, he directs the firm's delivery of the nation's most complex transportation infrastructure projects and programs. Slimp has held a variety of leadership roles since joining HNTB in 2005, including service as president of the Northeast and Southeast divisions of HNTB, as well as district leader for HNTB's Texas, Louisiana, and Mississippi practices. He has two decades of experience in the planning, preliminary, and final design of large-scale infrastructure projects.

## Rodney O'Neal, **Delphi CEO & President**

CTO Plenary – Visions of ITS in 2025: Panel 1

**Monday, September 8, 12:00 – 1:00 p.m.**

Rodney O'Neal is chief executive officer and president of Delphi. As the head of Delphi, he leads more the 160,000 people and oversees 126 manufacturing sites and 15 technical centers in 32 countries. Mr. O'Neal's automotive industry experience began as a student in 1971 at General Motors Institute (now Kettering University). He later worked for GM, holding a number of engineering, production and manufacturing supervisory positions over the years in locations throughout the United States, Portugal, and Canada.

## Kirk T. Steudle, **ITS America Chair, Michigan Department of Transportation State Transportation Director**

Kirk T. Steudle oversees MDOT's more than three billion dollar budget and is responsible for the construction, maintenance and operation of nearly 10,000 miles of state highways and more than 4,000 state highway bridges. He also oversees administration of a wide range of multi-modal transportation programs statewide. Steudle began his career with the Michigan Department of Transportation (MDOT) in 1987 as an engineer trainee. A registered professional engineer, he rose through the ranks of the department to his current position. He also served as State Transportation Director from 2006 to 2010.

# High Level Policy Roundtable

**Sunday, September 7, 2:30 – 4:00 p.m.**

The High Level Policy Roundtable brings together policy leaders from around the world to discuss global transportation issues. At the Roundtable, policy leaders will discuss their thoughts, ideas and plans for making use of ITS-enabled solutions with regard to current technologies and economic conditions with other transportation ministers. Now a regular feature of the ITS World Congress, the Roundtable offers policymakers an important opportunity to advance the deployment of Intelligent Transportation Systems worldwide through international coordination and knowledge transfer among transportation leaders. Viewing of the Roundtable discussion is open to World Congress attendees.

**Keynote**
Robert Slimp, CEO of HNTB Infrastructure



# Town Hall Sessions

Recently introduced at the Tokyo ITS World Congress, the Town Hall Meetings have become paramount to the World Congress program. The meetings address vital topics in the Intelligent Transport System industry and provide an open forum for audience members to engage with high level speakers. This year's World Congress will highlight Big Data and Connected Vehicles as its Town Hall Topics at the Wednesday and Thursday events respectively.

The World Congress International Program Committee is hard at work preparing and scheduling these sessions. Details will be posted as they become available. Please see the live, interactive program on our website for the most up-to-date information.

**www.itsworldcongress.org/program**

# Plenary Sessions

## PL1 – Reinventing Policy to Support the New ITS

**Monday, September 8, 8:30 – 10:00 a.m.**

Senior leaders and policymakers from the Americas, Asia-Pacific, and Europe will present their visions of policy initiatives that can accelerate the deployment of intelligent transportation systems to promote economic growth and improve the performance of existing transport infrastructure. They will also explore ways to deal with the coming urbanization, to make better use of private sector investment and innovation in order to improve road safety, reduce traffic congestion, lower costs, and meet the transport needs of future generations.

**Sponsored by**

Ford
Go Further

**Keynote**
Mr. Bill Ford. Executive Chairman, Ford Motor Company, USA

**Moderator**
To be announced

**Speakers**
Mr. Joao Aguiar Machado, Director General, DG MOVE, European Commission

Dr. Klaus Schierhackl, Board of Directors, ASFINAG, Austria

Speakers from USA

## PL2 – Reinventing Business Models for the New ITS

**Tuesday, September 9, 8:30 – 10:00 a.m.**

Senior leaders from around the world will discuss strategies for implementing ITS policies. They will consider new technologies and business practices that could revolutionize transport while spurring job creation and global economic growth. Government initiatives to encourage private sector innovators to invest in the research, development and deployment of intelligent transportation solutions to solve local, national and global transportation challenges will also be discussed.

**Sponsored by**

verizon

**Keynote**
Mr. Lowell C. McAdam, CEO, Verizon Communications, USA

**Moderator**
To be announced

**Speakers**
Speakers from Asia-Pacific

Mr. Cees de Wijs, Chief Executive Officer, Swarco AG, Austria

Representative from French Organization

Speakers from USA

## PL3 – U.S. Department of Transportation Plenary: Building the Foundation for our Connected Society

**Tuesday, September 9, 3:00 – 4:30 p.m.**

To be determined by the U.S. Department of Transportation

**Moderator**
To be announced

**Speakers**
To be announced

# CTO Summit Sessions

## CTO Plenary – Visions of ITS in 2025: Panel 1

**Monday, September 8, 12:00 – 1:00 p.m.**

This session looks to the future of ITS in the modern world and will include discussion points such as:

- What will the ITS world look like in 2025?
- How could ITS affect future urban mobility?
- Will ITS transform the business model for automakers or suppliers?
- What will be governments' roles in the future of ITS?
- Will standards and regulations lead or follow market implementation?
- What would be your "big wish" for ITS in 2025?

**Sponsor**

DELPHI

Delphi Automotive

**Moderator**

Jeffrey Owens, CTO, Delphi Automotive

**Keynote Speaker**

Rodney O'Neal, CEO, Delphi Automotive

**Speakers**

Paul Mascarenas, CTO, Ford Motor Company

Kristen Tabar, VP, Toyota Technical Center, TEMA

Speaker from Siemens AG, Germany (Invited)

Speaker from Asia-Pacific (Invited)

## CTO Plenary – Visions of ITS in 2025: Panel 2

**Monday, September 8, 12:00 – 2:00 p.m.**

This session looks to the future of ITS in the modern world and will include discussion points such as:

- What will the ITS world look like in 2025?
- How could ITS affect future urban mobility?
- Will ITS transform the business model for automakers or suppliers?
- What will be governments' roles in the future of ITS?
- Will standards and regulations lead or follow market implementation?
- What would be your "big wish" for ITS in 2025?

**Sponsor**

DELPHI

Delphi Automotive

**Moderator**

Jeffrey Owens, CTO, Delphi Automotive

**Speakers**

Jon Lauchner, CTO, General Motors Co. (Invited)

Speaker from BMW (Invited)

Speaker from U.S. Comm Company (Invited)

Ralf Lenninger, Senior Vice President, Interior Electronic Solutions, Continental Automotive, Germany (Invited)

## CTO2 – Connectivity and Automation

**Monday, September 8, 3:00 – 4:30 p.m.**

Discussion will focus on the relationship between connected and autonomous vehicles, and how to best role out the technologies.

Key points to be covered include:

- How does connectivity advance the deployment of automation?
- Managing risk in the deployment of driverless vehicles
- What technological challenges remain?
- How does the technology create compelling value for the consumer/user?
- What kind of cross-sectoral partnerships will be needed?
- What role needs to be played by state and federal governments?
- If not the driver, who is in the "driver's seat?" Who leads? The business case? The supporting infrastructure?
- What will it take to move from a generally-agreed tipping point to a massively-deployed new mobility system?

**Sponsor**
University of Michigan Mobility Transformation Center

**Moderator**
Dr. Peter Sweatman, Director, UMTRI

**Speakers**
Jean-Francois Tarabbia, Senior VP R&D, Valeo, France

Tim Yerdon, Global Director of Innovation and Design, Visteon Corporation

Dr. H. Watanabe, Government of Japan (Invited)

Takao Asami, SVP, Planning and Advanced Engineering Development Div., Nissan Motor Company, Japan

Doug Patton, Senior Vice President, Engineering, DENSO Corporation

## CTO3 – Future Mobility

**Tuesday, September 9, 1:00 – 2:30 p.m.**

As transportation develops and modernizes, leaders of the industry must consider the following questions:

- What choices will consumers have regarding their personal mobility? Will they be able to afford these choices? Will new mobility strategies, e.g., Zip Cars, thrive?
- Are there Future Mobility differences among light, medium, and heavy-duty vehicles? How will the movement of goods and services change? How will intermodal transportation develop in Future Mobility scenarios? How quickly?
- What are the key drivers and success determinants? What factors need to be addressed for the consumer to embrace Future Mobility?
- What advantages and disadvantages does the "Internet of Things" create?

**Moderator**
Dr. Andrew Brown, VP and Chief Technologist, Delphi Automotive

**Speakers**
Kelly Gravelle, EVP and CTP, TransCore

Tanvir Arfi, Robt Bosch LLC

Speaker from U.S. IT Company (Invited)

Rob Csongor, VP and General Manager, Automotive, NVIDIA (Invited)

Dr. Chris Boroni-Bird, VP, Strategic Development, Qualcomm (Invited)

# CTO4 – Government and Policy

## Wednesday, September 10, 1:30 – 3:00 p.m.

The policy surrounding new transportation technologies will be critical to their success. Decision makers must address:

- What policies, guidelines, and mandates need to be put in place for this sector to be successful?
- The issues related to liability and driver responsibility are formidable. What is needed to address them? Who should take the lead?
- Is harmonization across the regions, OEMs and suppliers really needed? If so, how can it best be achieved?
- How is cybersecurity best addressed in order to protect safety critical systems?

**Moderator (Tentative)**
Dr. Andrew Brown, VP and Chief Technologist, Delphi Automotive

**Speakers**
Jeff Hemphill, VP of Automotive, SAE

Richard McKinney, CIO, U.S. Department of Transportation

XiaoJing Wang, Ministry of Transport, PRC

Andreas Mai, Director, Smart Connective Vehicles, Cisco (Invited)

TBD, Panelist

# Executive Sessions

## ES01 – The Roadmap to Automated Transportation

**Monday, September 8, 10:30 a.m. – 12:00 p.m.**

Automated Transportation has been drawing a lot of attention recently as a key discussion topic. While the private sector has engaged in fierce competition in R&D, it is quite important to work with a certain consensus across the sectors and regions towards an efficient and promising deployment of these technologies.

This session will address the major issues such as social impacts, liability, standards, technology integration, and deployment scenarios in order to envision a roadmap to automated transport.

**Moderator**
To be announced

**Speakers**
Angelos Amditis, Institute of Communication and Computer Systems, Research Director, Project Manager, Greece

Tagui Ichikawa, Cabinet Secretariat, Counselor, Japan

Malcolm Dougherty, Director, California Department of Transportation, USA

Speaker from USA

**Session Track**
■ Automated Transportation

## ES02 – International Cooperation to Spread and Expand ITS

**Monday, September 8, 3:00 – 4:30 p.m.**

In recent years, numerous initiatives to develop cooperative systems have been undertaken by many countries, and international cooperation is growing in importance as a way to achieve the future spread and expansion of ITS. Trilateral cooperation between Europe, the U.S., and Japan has, in the past, consisted of mutually linked activities intended to deal with the challenges of R&D, standardization, etc. of ITS.

At this session, speakers will introduce the newest initiatives and policy trends concerning ITS in each country, at the same time as they discuss the present state of such initiatives, and necessary responses to accelerate future research and development as well as actual deployment of ITS under public-private collaboration.

**Moderator**
To be announced

**Speakers**
Greg Winfree, Assistant Secretary for Research and Technology, U.S. Department of Transportation, USA

Speaker from EU DG-CONNECT

Takumi Yamamoto, Road Bureau, Ministry of Land, Infrastructure, Transport and Tourism, Japan

Speaker from USA

**Session Track**
■ International Cooperation to Expand ITS

## ES03 – Worldwide Deployment of Cooperative Systems

**Tuesday, September 9, 10:30 a.m. – 12:00 p.m.**

How can global deployment of cooperative mobility be achieved on a massive scale? Over the last decade, government funded research — carried out in conjunction with automakers, suppliers, and the traffic industry — has successfully knit together technological, policy, economic and consumer considerations. Panelists in this session will discuss how to achieve practical wide-spread deployment using harmonized standards and a coordinated regulatory environment. This harmonization would help realize cooperative technology's potential to completely recast vehicles, drivers and infrastructure into an integrated system capable of achieving important outcomes — safety, traffic efficiency, emissions, and energy consumption.

**Moderator**
Jim Keller, Principal Engineer/ Manager, Honda R&D Americas, Inc., USA

**Speakers**
Fotis Karamitsos, European Commission, DG MOVE, Director, Belgium

Françoise Colpron, Group President, North America, Valeo

Klaas Rozema, Chief Technology Officer, Imtech, The Netherlands

Hyeon-shik Baik, Ministry of Land, Infrastructure and Transport, Division Chief, Korea

**Session Track**
■ Connected Vehicles & Cooperative Systems

## ES04 – Improving Traffic Safety through ITS

**Tuesday, September 9, 1:00 – 2:30 p.m.**

With improved vehicle safety and road design, the number of casualties has fallen for vehicle occupants, but the reduction has been smaller for pedestrians, cyclists, and other vulnerable users.

Contributions of ITS technologies, such as automated vehicles and advanced driver assistance systems, as well as cooperative driving systems, are still very important for working towards the goal of zero fatalities.

Speakers will discuss how ITS safety technologies could be deployed, developing the institutional systems and promoting user acceptance, software security, and system reliability. How to transfer these technologies to emerging countries and areas will also be considered.

**Moderator**
To be announced

**Speakers**
Christian Schumacher, Continental, Head of ADAS, expert in ADAS and Automated Driving, Germany

Hidenobu Kubota, Director, Road Transport Bureau, Ministry of Land, Infrastructure, Transport and Tourism, Japan

Gerry Conover, Managing Director, PRC Associates, USA

Drue Freeman, Sr. Vice-President Marketing & Sales Automotive, NXP, Belgium

**Session Track**
■ Traffic Safety

## ES05 – ITS and the New Mobility

**Wednesday, September 10, 8:30 – 10:00 a.m.**

Technology is fundamentally changing the way people experience and use transportation. New transport elements such as cooperative driving, vehicle automation, car sharing, tailored vehicle designs, individual transporters, heavy vehicle platoons, and information technology could change the definition of transportation. Connected users accessing connected vehicles enable the transition from an automotive economy to an economy of mobility services. Panelists consider how this shift impacts land use, city planning, and the auto industry, and how it may create a new transportation economy.

**Moderator**
John Kopser, Co-Founder, CEO, RideScout

**Speakers**
Kian Keong Chin, Land Transport Authority, Director, Singapore

Speaker from USA

Speaker from Asia-Pacific

Speaker from Europe

**Session Track**
■ New Mobility

## ES06 – Big Data and Open Data — the Big Issues

**Wednesday, September 10, 10:30 a.m. – 12:00 p.m.**

ITS applications based around Big Data can help the movement of people and goods through real-time awareness of flows, transport service timetables, and the performance of traffic systems. They may also eliminate vehicle breakdowns by delivering preventive maintenance warnings, and could also reduce unnecessary journeys by delivering up-to-the-minute logistics information. Successfully harnessing Big Data will maximize the availability of transport assets, enhance services to increase revenue and manage capacity, and improve the end-to-end customer experience. But to turn promise into successful delivery, key issues such as personal privacy, data ownership, access to data, and revenue sharing must be considered by policymakers and implemented by suppliers.

**Moderator**
To be announced

**Speakers**
Kenichiro Yoshida, Ministry of Economy, Trade and Industries, Director, Electric Vehicle and Advanced Technology Office, Japan

Matt Cole, Executive Vice President and Deputy for Strategy, Business Development & Diversification, Cubic Transportation Systems

Speaker from USA

Speaker from Europe

**Session Track**
■ Big Data and Open Data

## ES07 – ITS: Essential for Sustainability

**Wednesday, September 10, 10:30 a.m. – 12:00 p.m.**

The potential consequences of climate change for natural, social, health, and economic environments are key issues in setting policies to sustain future growth. Integrated Transport Systems have proven successes as part of a move toward a more sustainable lifestyle, but the transport system is currently a significant contributor to greenhouse gases, noise, and air pollution. Panelists in this session will address issues such as reducing the environmental impact of transport, climate change resilience, defining the ITS value proposition, and changing consumer/end user behavior.

**Moderator**
Richard Harris, Solution Director, Xerox, UK

**Speakers**
Susan Shaheen, Research Director, Innovative Mobility University of California, Berkeley

Speakers from Asia-Pacific

Speaker from Europe

**Session Track**
■ Sustainability

## ES08 – Innovation for Mobility in Smart Cities

**Wednesday, September 10, 1:30 – 3:00 p.m.**

The sustainable development of cities to match the global trend of urbanization requires seamless connectivity built on the integration of policies for water, energy, transport, waste management, and Information and Communication technologies. This session will address the concept of smart cities with views from the three regions on how to create and support large-scale rollout of innovative transport solutions and new mobility services. The session will look at passenger mobility; supply chains and flows of goods; coordination of passenger, freight and traffic flows; urban planning, policy and technology development; and financial, legal, and institutional issues.

**Moderator**
Hermann Meyer, ERTICO-ITS Europe, Chief Executive Officer

**Speakers**
Dirk John, Siemens, CEO Business Unit “Road and City Mobility”, Germany

Eric-Mark Huitema, Smarter Transportation Leader Europe, IBM Corporation, Netherlands

Speakers from Asia-Pacific

**Session Track**
■ Smart Cities

## ES09 – Driving Freight Efficiency with ITS

**Wednesday, September 10, 3:30 – 5:00 p.m.**

The movement of goods matters greatly to economies, and ITS can make a substantial difference in freight and logistics. Freight vehicles could be the early adopters of cooperative driving technology that spurs the connection of all transport nodes. This session examines high-level business and policy considerations of intermodal transport, IT innovations that could benefit logistics, the impact of vehicle automation on freight movement, measures of effectiveness, and how ITS can transform the "last mile" of freight movement to increase overall productivity.

**Moderator**
Jon Morrison, President & General Manager, Meritor WABCO

**Speakers**
Jan Hellaker, Volvo Group Trucks Technology, Vice President, Transport Solutions & Services, Sweden

Per-Henrik (PELLE) Nielsen, Ericsson, Vice President & Global Head of Sales & Commercial Management Industry & Society, Denmark

Der-Horng Lee, National University of Singapore, Professor, Singapore

C. Randal Mullett, Vice President, Government Relations and Public Affairs, Con-way, USA

**Session Track**
■ Freight

## ES10 – Ways to Achieve Smoother Traffic

**Thursday, September 11, 8:30 – 10:00 a.m.**

Traffic management in urban areas and the information services supporting mobility of persons and goods is being reinvented with the Information Society, expanding public and private information networks, growing demands for personalized services, and greater connectivity among people, vehicles, and infrastructures.

This session will address not only possible innovations in traffic management but also the necessity for cooperation among political leaders and the transport industry to achieve smoother traffic and more optimized use of infrastructure.

**Moderator**
Takashi Oguchi, Institute of Industrial Sciences, the University of Tokyo, Professor, Japan

**Speakers**
Nick Cohn, TomTom, Head of Business Development, Netherlands

Kazuki Yamamoto, National Police Agency, Director for ITS, Japan

David St. Amant, President/COO, Econolite

Speaker from Europe

**Session Track**
■ Traffic Management

## ES11 – ITS and Economic Growth

**Thursday, September 11, 10:30 a.m. – 12:00 p.m.**

ITS deployment is vital for improved transport efficiency, safety, sustainability, mobility, accessibility, and environmental performance. With resources continuing to be limited, a central issue is linking investment with performance. Understanding the contribution that ITS makes to society and to economic recovery and growth is key to obtaining continued investment. Attracting investment means developing new strategies and funding regimes. We also need to train and develop people to give them the skills needed to secure the benefits of ITS. Panelists will consider current funding and the contribution of ITS to economic growth, and review the criteria for further ITS investment.

**Moderator**
To be announced

**Speakers**
John Casesa, Senior Managing Director, Investment, Guggenheim Securities, LLC, USA

Speaker from Asia-Pacific

Speaker from Europe

Speaker from USA

**Session Track**
■ Economic Growth

## ES12 – Global Harmonization of ITS Rules and Standards

**Thursday, September 11, 1:30 – 3:00 p.m.**

Countries across the globe are developing cooperative ITS systems. With global industries and linked economies, international cooperation is of growing importance for ITS expansion. Harmonization of ITS standards already benefits from trilateral cooperation among Europe, the United States, and Japan. Harmonization of vehicle and communications regulations is a logical next step. In this session, panelists discuss policy trends, accelerate future R&D, deployment of ITS, and share the present state of international partnerships.

**Moderator**
Dick Schnacke, Vice President, Industry Relations, TransCore

**Speakers**
Shin Morishita, Ministry of Internal Affairs and Communications, Director

Kenneth Leonard, Director, ITS Joint Program Office, United States Department of Transportation, USA

Björn Bunte, Director of Business Development, CETECOM, Germany

Speaker from Asia-Pacific

**Session Track**
■ ITS Rules and Standards

# Special Interest Sessions

## SIS01 – Enhancing Intermodal Routing Through Pedestrian Connection Technology

**Monday, September 8, 10:30 a.m. – 12:00 p.m.**

Robust local, regional, national, or international route planners require high resolution pedestrian route functionality to seamlessly connect people to their origin or destination, and between travel modes or different transportation service providers. Unfortunately, advanced pedestrian connectivity is difficult to capture and often last considered in intermodal technology applications. This session will look to present use cases, enablers, and pitfalls related to building complex route planning, guidance, and navigation functions and, more specifically, what pedestrian specific functions are required to make them truly holistic. Potential enablers are those highlighting entry and exit points for moving between outdoor environments to indoor routing and floor plan data models. Other topics include accounting for Stairways, Sidewalks, Crosswalks, Bridges, Tunnels, Elevators, Escalators, and other pedestrian-specific features in the mapped environments.

ITS Technology Applications Considered:
- Vehicle Navigation — why the accepted model needs to be different for pedestrian perspectives
- Sensors and positioning — indoor vs. outdoor
- Geographic Context — Urban versus Suburban and Rural use cases

**Organizer**
To be announced

**Moderator**
Skip Parker, HERE, Sales Manager, Enterprise, USA

**Speaker**
Terry C. Bills, ESRI, Global Transportation Industry Manager, USA

**Session Track**
■ Traffic Safety

## SIS02 – Apps, Innovation, and Regulation: Protecting the Public Interest in the Midst of Disruptive Competition

**Monday, September 8, 10:30 a.m. – 12:00 p.m.**

Smartphone-enabled applications have catalyzed significant change in the transportation ecosystems in more than 100 cities around the world. How these apps should or should not be regulated is one of the most pressing questions of the day. Competition in the for-hire transportation space has historically been anemic, and policymakers the world over have struggled with how to improve delivery of services to consumers and encourage economic opportunity for drivers, all while protecting the riding public. With the advent of apps like Uber, should policymakers lower barriers to entry, set regulatory floors to protect consumers, protect existing operators from disruptive competition, or some combination? This panel draws on decades of experience from leading policymakers from around the world, as well as leading app companies.

**Organizer**
Corey Owens, Uber Technologies, USA

**Moderator**
To be announced

**Speakers**
Alan Fells, Victoria (AUS) Taxi Inquiry, former Chairman, Australia

Phil Evans, UK Competition and Markets Authority, Deputy Chairman, United Kingdom

Chris Newport, Office of the Mayor of Houston, TX, Chief of Staff, USA

Corey Owens, Uber Technologies, USA

**Session Track**
■ New Mobility

## SIS03 – Sharing of Road and Traffic Information

**Monday, September 8, 10:30 a.m. – 12:00 p.m.**

The road information used by ITS is aimed at various information, including the phenomenon which occurs in relation to the detailed form and attribute of the road, and the road in addition to the traffic information.

An environment-friendly safe and safe move support service can be provided by effectively using the road traffic pertinent information which named these generically.

In the autonomous car which will be expected to use, disaster support, and multi-modal support as new service, such road traffic related information becomes increasingly important.

Generally, many road traffic informations are collected by each road administrators and traffic administrators, or private companies.

More advanced and more suitable services become possible by making such road pertinent information open and enabling secondary use of them.

We would like to accelerate utilization of new service by performing the session about the framework towards these information-sharing.

**Organizer**
Makoto Otsuki, ITS Japan, Senior Vice President, Japan

**Moderator**
Satoru Nakajo, Mitsubishi Research Institute,Inc, Principal Consultant, ITS Business Group, Japan

**Speakers**
To be announced

**Session Track**
■ Traffic Management

# SIS04 – EU-US Task force — Collaborative Efforts in Sustainability Applications

## Monday, September 8, 10:30 a.m. – 12:00 p.m.

Around the globe many programs acknowledge the potential of cooperative technology to cut down fuel consumption and emission. The EU-US task force on ITS cooperation has a working group for sustainability applications, which focuses on energy efficient traffic signal operations. The aim of the working group is to research the operational scenarios within this scope and assess commonalities and differences in message sets, data transmission techniques, and system algorithms. This research will include simulation and field study experiments, eventually leading to a joint demonstration at the ITS World Congress in Bordeaux in 2015. The session is arranged according to the white papers that have been published by working group. Each presenter will highlight the main findings from one of these white papers.

**Organizer**
Jaap Vreeswijk, Imtech Traffic & Infra, Senior Researcher, Netherlands

**Moderator**
Marcia Pincus, ITS Joint Program Office, Research and Innovative Technology Administration, United States Department of Transportation, Program Manager, USA

**Speakers**
Matthew Barth, University of California - Riverside, Professor of Electrical Engineering, Director of CE-CERT, USA

Jean-Charles Pandazis, ERTICO-ITS Europe, Head of Sector EcoMobility, Belgium

Thomas Benz, PTV, Director, Germany

Jim Misener, Independent Consultant, USA

Balaji Yelchuru, Booz Allen Hamilton, USA

Jaap Vreeswijk, Imtech Traffic & Infra, Senior Researcher, Netherlands

**Session Track**
■ Sustainability

## SIS05 – International Standard Issues for Green ITS (G-ITS)

**Monday, September 8, 10:30 a.m. – 12:00 p.m.**

This session will present the international standards and/or harmonization issues for development and deployment of Green ITS (G-ITS) utilizing sustainable transport modes, infrastructure, transport facilities, and users. In developing G-ITS technologies for the future worldwide, emphasis should be placed on the requirements which include $CO_2$ emissions-free green transport systems ensuring efficient multi-modal connectivity. A concept to build a green transport system which is called G-ITS has been under discussion in Korea utilizing ITS technology for operation and management of the system and also in ISO/TC204 discussing what issues to be harmonized in order to being international standards. This special interest session will be continued with the same title as it was organized in the 20th ITS World Congress in Tokyo, 2013.

**Organizer**
Young-Jun Moon, The Korea Transport Institute, Director, Korea

**Moderator**
Tyler Messa, ITS America, TC204 Secretariat, USA

**Speakers**
Young-Jun Moon, Director, The Korea Transport Institute, Korea

Hans-Joachim Schade, CEN TC 278, Germany

Steven Shaw, Roads and Maritime Services, Australia

Koorosh Olyai, Senior Principal, Stantec

**Session Track**
■ ITS Rules and Standards

## SIS06 – Cooperative ITS for Now and the Next (Round 3)

**Monday, September 8, 10:30 a.m. – 12:00 p.m.**

This session is organized as a round 3 session after Vienna 2012, SIS 83, Tokyo 2013 HIS18. As in the session in 2013, speakers will discuss the experiences of Cooperative ITS systems from real world and field operational testing, and how these ITS systems contribute to society from traffic safety or the other point of view. The other discussion point is performance studies like real performances of cooperative ITS systems vs. expected performance. Progress in each region after the World Congress in Tokyo and potentials and advantages for automated vehicle deployment. As the summary of the session, the attendees will discuss the subjects to be resolved for further Cooperative ITS system Deployment and Connected Automated Vehicles development.

**Organizer**
Takahiko Uchimura, ITS Japan, Japan

**Moderator**
To be announced

**Speakers**
To be announced

**Session Track**
■ Connected Vehicles & Cooperative Systems

# SIS07 – Deployment of Cooperative ITS Services: A Global Affair

## Monday, September 8, 10:30 a.m. – 12:00 p.m.

The deployment of Cooperative ITS services is still at its infancy and limited by barriers such as high prices, user acceptance and uncertain business models.

Despite the current availability of products in the market and the clear demand of services by the users (especially fleet operators), the penetration of C-ITS is not sufficient and not yet fully interoperable across different regions.

These challenges cannot be effectively undertaken at a regional level, but require a coordinated approach across the globe. Cooperation agreements are already in place at political level and major players are targeting global markets. However numerous issues remain pending and necessitate a resolute approach.

This session, in the format of a panel with active involvement of the audience, will look into current implementation initiatives and mass-deployment perspective across the globe, with high level representatives from USA, Japan, and Europe.

Expert speakers will present concrete examples from current deployment programme and debate on most viable solutions to overcome barriers such as involvement of users, financial viability and interoperability.

**Organizer & Moderator**
Pierpaolo Tona, ERTICO-ITS Europe, Project Manager, Belgium

**Speakers**
Brian Cronin, ITS Joint Program Office, U.S. Department of Transportation, Team Leader, ITS Research and Demonstration

Evangelos Mitsakis, CERTH, Greece

Koichi Sakai, National Institute for Land and Infrastructure Management, Senior Researcher, ITS Division, Japan

James Sayer, University of Michigan Transportation Research Institute, Program Manager, Safety Pilot Test Conductor & Associate Research Scientist

André Perpey, Geoloc systems, Manager, France

**Session Track**
- International Cooperation to Expand ITS

# SIS08 – Data Driven Traffic Modeling and Analysis

## Monday, September 8, 10:30 a.m. – 12:00 p.m.

Traffic networks are complicated and dynamic systems. Every day traffic delay affects the lives of millions of people all over the world. Not only do these issues impact individuals they also have a detrimental effect on the economy; amounting to somewhere between 1% and 2% of GDP in developed countries. Clearly something needs to be done.

In many jurisdictions surface streets and motorways are heavily instrumented in order to provide data for automated traffic management systems. However, these systems tend to act tactically and respond to sensor inputs that occur 'now'. They rarely look ahead to try and predict how traffic patterns will evolve into the future.

In this session we will examine traffic models that are built directly from observed traffic data. Such Data Driven models naturally tend to focus on 'interesting' events but not necessarily those to which a human observer may be drawn. They also provide straightforward methods for predicting future traffic states. Ultimately, these predictions may be used to inform tactical traffic management systems of potential issues before they become visible to the road user or traffic manager and thus help to keep traffic flowing in an ever more crowded world.

**Organizer & Moderator**
Glenn Geers, NICTA ATP Research Laboratory, Technology Director, Australia

**Speakers**
Andrew Mehaffey, NSW Roads and Maritime Services, Australia

Caitlin Cottril, University of Aberdeen, Scotland

Ouri Wolfson, University of Illinois

Piyushimita (Vonu) Thakuriah, Associate Professor, University of Illinois at Chicago, Chicago, IL

Steve Liang, Associate Professor, University of Calgary, Canada

Vinayak Dixit, The University of NSW, Australia

Wei Liu, Researcher, National ICT Australia, Eveleigh NSW, Australia

**Session Track**
■ Big Data and Open Data

# SIS09 – Big Data And The Connected Vehicle — When We Build It, The Data Will Come

**Monday, September 8, 3:00 – 4:30 p.m.**

The advances of adaptive driver assistance systems, autonomous vehicle systems alone may be enough to propel the ITS community into the ever-changing and fast-paced world of big data. When we build it, the data will come…are we ready?!

Recent forecasts by industry leading analysts suggests that there will be more than 150 million actively connected vehicles on roads (globally) by 2020, generating over 11 petabytes of data on an annual basis, or about 30 terabytes a day!

The IT industry has coined the "V's" of big data in an effort to classify the challenges that managing and consuming big data represent — Volume, Velocity, Variety, Veracity, Validity, Volatility, and most importantly Value.

Depending on how you "fit" in the connected vehicle construct, you may value & prioritize the "V's" differently than others. Which ones are most important to you?

This session will bring together some of the world's most prominent big data owners, managers, solutions providers, and consumers to discuss openly and constructively the challenges that big data in the connected vehicle space may present.

**Organizer & Moderator**
Jason JonMichael, HNTB Corporation, National Technology Leader, USA

**Speakers**
Robert Carter, Federal Express

C. Douglass Couto, Consultant, USA

Randy Mott, General Motors

Nigel Beighton, Rackspace

**Session Track**
■ Big Data and Open Data

# SIS10 – Connected/Automated Vehicles — The Safety Case

## Monday, September 8, 3:00 – 4:30 p.m.

Today the number of fatalities in transportation count to around 800,000 every year growing to possibly 1.2 million by 2025 globally. In 2013, IRF launched a decade of action to countermeasure this unacceptable trend in road transportation.

The upcoming implementation of V2X communication together with the developments of advanced ADAS in next generation vehicles finally will enable automatic driving to have the potential to avoid almost 100% of fatalities as well as any other crashes between vehicles, vehicles and vulnerable persons or with fixed infrastructure installations. This will save hundreds of billions USD (maybe up to 2 Trillions USD) annually! At this very moment, all technological developments are being pushed by the vehicle industry as a matter of customer relationship strategy and competition between automotive industry. Isn't safety not also the core responsibility of governments of all states? Why do they not push the mandatory safety functionality as a matter of certification of vehicles? The session shall discuss the role of vehicle manufacturer versus mandatory safety functions defined by public bodies to ensure zero fatalities as soon as possible in a co-ordinated way.

**Organizer & Moderator**
Reinhard Pflliegl, A3PS, CEO, Austria

**Speakers**
Edward Griffor, Chrysler Group LLC, Chrysler Technical Fellow Council, USA

Alois Schedl, Asfinag, Board of Director, Austria

Glenn Geers, NICTA ATP Research Laboratory, Technology Director, Australia

Joseph Peters, FHWA, Director, USA

Markos Papageorgiou, University Crete, Greece

Reinhard Pflliegl, A3PS, CEO, Austria

**Session Track**
■ Traffic Safety

# SIS11 – The Economics and Partnerships Driving Connected Cars

## Monday, September 8, 3:00 – 4:30 p.m.

The Internet of Everything will expand markets and will spawn businesses valued at U.S. $14 trillion. One of the key areas of innovation will be in the automotive industry. Studies show that each connected vehicle can create $1,400 in benefits each year. Key stakeholders like automotive manufacturers and suppliers, mobile, telematics and infotainment service providers, and insurance companies and governments recognize the benefits of connecting vehicles, and are designing new business and technology architectures to get a piece of the big connected vehicle pie. This panel will discuss potential win-win business and technology architectures that could help accelerate the broad deployment of vehicle connectivity through cross-industry partnerships.

**Organizer**
To be announced

**Moderator**
Andreas Mai, Cisco, Director, Connected Industries, USA

**Speakers**
James Buczkowski, Ford Motor Company, Henry Ford Technical Fellow & Director Electrical & Electronics Systems Research & Advanced Engineering, USA

Tim Yerdon, Visteon, Global Director Innovations, USA

Dan Kraft, Allstate Insurance, Connected Car Innovation Lead

Kevin Link, Verizon, Senior Vice President Telematics, USA

Gary Wallace, Sirius/Agero, Vice President Corporate Relations, USA

Joel Hoffman, Cisco, Strategic Market Development Manager, USA

**Session Track**
■ Economic Growth

## SIS12 – ITS Applications in Truck Parking Availability

**Monday, September 8, 3:00 – 4:30 p.m.**

Truck parking availability has been a major concern of the goods movement industry for many years. Truck drivers face chronic problems finding suitable parking, which are vastly exacerbated by the lack of information on where parking is available. Safe, secure, and legal parking is needed for truckers to be sufficiently rested for their demanding job over our nation's highways and to meet the federally mandated hours-of-service requirements. The broadcast of truck parking availability information to the public, as well as the provision of parking reservations, have been advanced as potential solutions addressing concerns related to finding legal truck parking. Truck drivers have traditionally had little advance information on where parking might be available, and limited means with which to secure parking ahead of arrival. To address these issues, the FHWA and FMCSA have sponsored a series of research and deployment projects across the country to advance the development of sensing and information delivery systems needed to provide truck drivers with dynamic information on parking availability. Several of these systems have come to fruition. This session presents the latest results of research, application, and deployment from several high profile projects that have been under active development. The session will include a collection of presenters from the public, private, and academic sectors. They will be selected among key projects and applications such as those completed or underway in Michigan, Minnesota, Tennessee, Wisconsin, California, the East Coast, and other regions that have advanced ITS applications in truck parking availability.

**Organizer**
Elliot Martin, Ph.D., Transportation Sustainability Research Center, University of California, Berkeley, Assistant Research Engineer, USA

**Moderator**
To be announced

**Speakers**
To be announced

**Session Track**
■ Freight

## SIS13 – State-of-the-Art in Automated Vehicles

**Monday, September 8, 3:00 – 4:30 p.m.**

Presentations on the current state-of-the-art vehicles that are under test at various venues. Speakers will talk about their own test vehicles and, focusing on the technology, will answer the question "We would all be operating automated vehicles today in mixed traffic on highways and in cities except for…?"

**Organizers**
Steven Dellenback, Southwest Research Institute, Director, USA

Jane Lappin, John A. Volpe National Transportation Systems Center, Research and Innovative Technology Administration, United States Department of Transportation, Program Manager, USA

**Moderator**
To be announced

**Speakers**
To be announced

**Session Track**
■ Automated Transportation

## SIS14 – Integrated Corridor Management — The Next Step

**Monday, September 8, 3:00 – 4:30 p.m.**

As demands on our existing transportation system increase, Owners/Operators are looking for new tools to improve mobility of people and goods. One such tool is Integrated Corridor Management Systems. Transportation corridors often contain unused capacity in the form of parallel routes, non-peak direction on freeways and arterials, single-occupant vehicles, and transit. Unfortunately, today many of these systems are operated independently from one another. For instance, it is common practice to operate a freeway system independently from an arterial system. Integrated Corridor Management brings all of the partners and assets together to manage them as a system instead of as individual assets. This approach will improve travel time reliability, help manage congestion, and improve information dissemination to motorists. ICM programs will be presented, and the future of ICM will be discussed, as connected vehicle technology changes how our transportation systems are managed.

**Organizer**
James Barbaresso, HNTB Corporation, Vice President, Intelligent Transportation Systems, USA

**Moderator**
Patrick Johnson, HNTB Corporation

**Speakers**
J. Alex Estrella, San Diego Association of Governments, Regional Planner, USA

Koorosh Olyai, Stantec, Director, USA

**Session Track**
■ Traffic Management

## SIS15 – Lean Demand Management for Smart Parking

**Monday, September 8, 3:00 – 4:30 p.m.**

"Smart Parking" technologies and systems are proving capable of significantly reducing traffic congestion, improving driving safety, and reducing the carbon footprint associated with motor vehicles. Parking guidance and dynamic pricing are keys to achieving these important public policy objectives. And yet, deploying a sensor in every parking space can be expensive. This session will explore how lean demand management techniques are used to leverage smart parking systems in order to achieve policy objectives at a reduced cost. The panelists will identify an actual application being deployed in Berkeley, California and a next phase of LA Express Park in Los Angeles California as well as examples in Europe and Asia/Pacific using a combination of data analytics, new technologies, and more advanced sensors.

The session will be of interest to both public and private entities operating on or off-street parking facilities and to higher level transportation policy-makers and senior executives of intelligent transportation systems businesses. Further, the session will provide important continuity of discussing critical smart parking developments at the ITS World Congress, the premier forum for promoting safety, sustainability, and mobility in transportation.

**Organizer & Moderator**
John Peracchio, Peracchio & Company, Managing Director, USA

**Speakers**
Omno Zoeter, Xerox Research Center Europe, Senior Research Scientist, France

Peer Ghent, Los Angeles Department of Transportation, Senior Management Analyst, USA

Eugene Tsyrklevich, Parkopedia, CEO, England

## SIS16 – Open Data in Public Transport: Challenges and Opportunities

**Monday, September 8, 3:00 – 4:30 p.m.**

Within the past five years, more and more transit agencies are making schedule and real-time operational data available to the public. This "open data" provides opportunities for agencies to inform the public in a variety of ways about a transit agency's services. For example, there is significant value to having web-based and mobile applications that are developed by people outside the transit agency — these applications allow riders to more easily navigate public transit systems. In this example, the agency does not bear the costs associated with the application development and encourages innovation in terms of how to present transit information to the public. Open data are being used to create enterprise-facing decision-support tools that can help to optimize operations in real time, improve maintenance and inform capital programs/planning. This session explores the opportunities and challenges associated with using open data to improve transit agency operations and other business functions, and customer information.

**Organizer & Moderator**
Carol Schweiger, TranSystems Corporation, Vice President, USA

**Speakers**
Kari Watkins, Georgia Institute of Technology, Civil Engineering, USA

Ryuzo Mizuta, Tokyo Metropolitan Government, Japan

Marije de Vreeze, ITS Netherlands, Netherlands

**Session Track**
■ Public Transit

## SIS17 – Japan-US-European Collaborative Research on the Use of Probe Data

**Tuesday, September 9, 10:30 a.m. – 12:00 p.m.**

Probe data, which is one type of big data collected in the transportation field, has, against the background of the improvement of ICT, attracted growing attention in recent years as a tool to achieve smoother, safer, and more secure road traffic. And as part of this process, Europe, the U.S., and Japan have conducted joint research on probe data.

At this session, information about each country's most advanced initiatives using probe data will be provided at the same time as the contents, state of progress, and future research plans related to the collaborative research conducted cooperatively by Europe, the U.S., and Japan will be introduced. Speakers will discuss appropriate future directions and international cooperation in the use of probe data.

**Organizer**
Keiji Hattori, Ministry of Land, Infrastructure, Transport and Tourism, Road Bureau, Japan

**Moderator**
To be announced

**Speakers**
Speaker from the U.S. Department of Transportation

Speaker from MLIT

Speaker from MLIT

Speaker from Japan

Speaker from Europe

**Session Track**
■ Big Data and Open Data

## SIS18 – Driving Behavior by Aged People and its Countermeasure using KUSANONE ITS

**Tuesday, September 9, 10:30 a.m. – 12:00 p.m.**

Needless to say, traffic accidents relating to aged drivers or pedestrians are not only big problems in Japan that need to be urgently solved, but are also common concerns around the world. We have discussed the significant association between MRI data and traffic accidents before. Meanwhile, we also proposed countermeasures to prevent accidents through KUSANONE ITS (Regional ITS). We will expect an interesting discussion exploited by the combination of aged driver's performances and KUSANONE ITS.

**Organizer**
Yasuhiko Kumagai, Kochi University of Technology, Professor, Japan

**Moderator**
To be announced

**Speakers**
To be announced

**Session Track**
■ Driver Behavior and Support

## SIS19 – Wireless Power: Transforming Transportation

**Tuesday, September 9, 10:30 a.m. – 12:00 p.m.**

Wireless power will transfer the transportation industry towards a sustainable electrified system providing cost, convenience, and safety benefits. Transportation accounts for 28% of U.S. energy usage, 71% of petroleum usage, 2.1 billion tons of $CO_2$ emissions annually, and is a dominant polluter in most cities. Electrified transportation vehicles offer operational, maintenance and environmental advantages over fossil fuel powered vehicles. The main impediment to widespread adoption of electric buses, trucks, and cars is not the cost of the vehicles but battery limitations. Wireless power provides the opportunity to overcome battery limitations through en route charging, enabling the widespread adoption of electric vehicles.

This Special Interest Session will explore the current wireless charging options available for the transportation industry around the world. Panelists will include wireless charging solutions providers from the Americas, Europe and Asia, along with a representative from the utility industry and a government official working on technology development and deployment. The panel will focus on how wireless en route charging facilitates fleet electrification, current projects in operation, and plans for growth.

**Organizer**
Zach Kahn, WAVE, Director of Business Development, USA

**Moderator**
Kevin Heaslip, Utah State University, Assistant Professor, USA

**Speakers**
Wesley Smith, WAVE, CEO

**Session Track**
■ Sustainability

# SIS20 – Is There Vehicle Automation without Accurate Maps?

## Tuesday, September 9, 10:30 a.m. – 12:00 p.m.

Non-withstanding the investment needed on the roads, a shift towards a digital "road infrastructure" is needed including strong cooperation between the vehicles and the infrastructure to collect, update and correct changes to the physical reality.

Some countries have already shifted to a completely digital infrastructure for some road attributes like Sweden, where speed limits are not legal if not in the road database. This implies that the digital infrastructure must be reliable and accurate. Even more for automated driving, any future changes in the infrastructure can have a disastrous impact and will need to be carefully planned by the Authorities and make its way to the digital databases in time for the vehicles to see it.

The update mechanism will most likely strongly rely on input from the vehicle sensors. Data acquired by the vehicles will need to be communicated to the data aggregators in a harmonized way.

The panelists will share their thoughts about the relevance of the "Digital Infrastructure" for the future of vehicle automation.

**Organizer & Moderator**
Maxime Flament, ERTICO-ITS Europe, Head of Sector SafeMobility

**Speakers**
Jun Shibata, Senior Researcher, Senior Researcher, Digital Road Map Association, Japan

Carl Andersen, Research Engineer, Federal Highway Administration

Kirk Steudle, Director, Michigan Department of Transportation, United States

Vladimir Zhukov, Director of Engineering, Reality Map Solutions, HERE, United States

Maxime Flament, Head of Sector SafeMobility, ERTICO-ITS Europe, Belgium

**Session Track**
■ Automated Transportation

# SIS21 – International Harmonization of Cooperative ITS Security Policy

## Tuesday, September 9, 10:30 a.m. – 12:00 p.m.

The purpose of this special session will be to provide stakeholders with the current status of Cooperative ITS security policy harmonization efforts and solicit feedback on the results-to-date. The session will highlight the process, the progress, and the task group's roadmap for deliverables and presentation to policy makers and C-ITS implementers/operators. Presentations will also highlight the benefits of C-ITS security policy harmonization for a range of audiences.

The session will include government and industry experts from a diverse set of fields: communications security, policy, cryptography, vehicle and infrastructure device experts, and operating agencies. The session will be conducted in the form of brief presentations followed by an interactive discussion between invited experts and the audience.

**Organizer**
Suzanne Sloan, U.S. Department of Transportation, Volpe National Transportation Systems Center, Transportation Industry Analyst, USA

**Moderator**
Knut Evensen, Q-Free ASA, Chief Technologist, Norway

**Speakers**
Suzanne Sloan, U.S. Department of Transportation, Volpe National Transportation Systems Center, Transportation Industry Analyst, USA

Vincent Mahieu, European Commission, DG-Joint Research Centre, JRC's Institute for the Protection and Security of the Citizen IPSC, Digital Citizen Security Unit

Peter Girgis, Transport Certification Australia

Tom Lusco, Iteris, Senior Systems Engineer, USA

Catherine McGhee, VDOT/VCTIR, Associate Director, USA

**Session Track**
■ ITS Rules and Standards

# SIS22 – Establishment of a Results Driven Investment Program for Intelligent Transportation Systems

## Tuesday, September 9, 10:30 a.m. – 12:00 p.m.

Considerable progress has been made towards the documentation of the costs and benefits of ITS The ITS Joint Program Office, the European Union, and other aligned entities (e.g., the Transportation Research Board), have amassed significant amounts of data concerning the impact of different types of ITS deployments. To build on this progress we need further data and the development of tools to enable us to develop results-driven approaches for ITS investment programs. A promising approach would be to develop a clear understanding of the effects of ITS applications and then develop a plan for the evolution of ITS services over a region, over time, location and increasing level of service. This session provides an opportunity to discuss the process for identification and definition of the data, analytic tools, process and decision-making structures needed to support the development and application of a results-driven investment program for ITS within a region. The topics to be addressed will include the evaluation of ITS effects, linking regional ITS Architectures to investment plans, data needs and characteristics of the specialized tools required to support results driven investment for ITS.

**Organizer & Moderator**
Bob McQueen, The 0Cash Company, CEO, USA

**Speakers**
James Pol, U.S. Department of Transportation ITS Joint Program Office, Team Lead, USA

Ann Flemer, Metropolitan Planning Organization, Deputy Executive Director, Policy, USA

Nicola Liquori, Florida's Turnpike Enterprise, Deputy Executive Director & CFO, USA

Armand Ciccarelli, Appian Strategic Advisors, Principal, USA

**Session Track**
■ Economic Growth

## SIS23 – Accelerating Service Deployment — Strategy View from the Traffic and Transport Industry

**Tuesday, September 9, 10:30 a.m. – 12:00 p.m.**

This session considers how best to accelerate ITS deployment. The eminent panel of speakers will share their perspectives and insight into future mobility. In particular it will address how recent developments and new thinking can help to overcome barriers to deployment. It also considers the importance and the role of political leadership and how industry can best cooperate with the authorities to ensure sustained operational acceleration. Topics covered will include open data, transport revenue, integrated systems and services and unlocking the potential of the always-connected society.

It includes high-level representatives from Government and key industry members of the ERTICO Traffic and Transport Industry sector platform. The ERTICO Sector Platforms have been established to initiate new activities, develop priorities, technical positions, road maps and project ideas. The Traffic and Transport Industry sector platform comprises fifteen leading organizations that influence the development and deployment of ITS enabled services. The views of these industry experts and Government representatives will provide a stimulating, informative view of the current situation and challenge us all to make a difference in the near future.

**Organizer**
Richard Harris, Xerox Services, Solution Director, International Transportation and Government, United Kingdom

**Moderator**
Rasmus Lindholm, ERTICO-ITS Europe, Director, Partnership Services & Communications, Belgium

**Speakers**
Grace Ong, Land Transport Authority, Director, Transportation Technology, Singapore

Joseph Averkamp, Xerox, Senior Director, Technology, Policy, and Technical, USA

John Chipperfield, SWARCO, CTO, United Kingdom

Josef Czako, Kapsch TrafficCom, Group Director International Business Development, Austria

**Session Track**
- International Cooperation to Expand ITS

## SIS24 – Predictive Map-Based Applications Reaching the Market and Perspectives Towards Automated Driving

**Tuesday, September 9, 10:30 a.m. – 12:00 p.m.**

New generation driver assistance systems use more and more predictive data based on vehicle position and map data. This session will report on new developments by the automotive industry on the implementation of the ADAS Interface Specifications, and plans for further market introduction of ADASIS compliant applications.

This enabling technology linking map, position and ADAS was developed by the ADASIS Forum, created in 2002, in the form of ADAS Interface Specifications released in April 2010, which are used in today's new Driver Assistance systems. This session will present the possible future development of this de facto industry standard as an enabling technology for Automated Driving.

**Organizer & Moderator**
Jean-Charles Pandazis, ERTICO-ITS Europe, Head of Sector EcoMobility, Belgium

**Speakers**
Stephane Dreher, Navteq, Business Development Manager, Belgium

Alexander Bracht, Daimler, ADASIS Chairman, Germany

Susan Chen, GARMIN

Detlef Kuck, FORD

## SIS25 – Mega City ITS Programs, New York City's Approach

**Tuesday, September 9, 1:00 – 2:30 p.m.**

Mega Cities such as New York with its 12,600 intersections, 5 million daily commuters, a complex — large scale transportation network of highway, local roads, bridges and tunnels, with central business BD short block spacing, and varied street network presents unique challenges to the implementation of ITS technologies. New York City was one of the first cities to deploy a central computer control system for its electromechanical controllers in the late 1960's, and this original system survived for over 25 years. Starting in 2002, the city began a program to deploy ITS technologies and has had to overcome significant challenges because of the overall size of the systems, budget limitations, and the reliability needed for systems of its size. Today, the city has become a leader in the deployment of advanced ITS technology with its unique form of adaptive control, advanced traffic controllers, transit signal priority, wireless network, video monitoring and distribution, and regional operation. Today the upgraded ITS programs undertake the challenge of Urban Congestion solutions in a multimodal and cost effective approach that is very unique and has become both a national and international model. This session will provide an opportunity to share the lessons learned and successes the New York City systems have achieved.

**Organizer**
Mohamad Talas, New York City Department of Transportation, Deputy Director, USA

**Moderator**
Robert Rausch, TransCore, Vice President, USA

**Speakers**
Mohamad Talas, New York City Department of Transportation, Deputy Director, USA

Satya Muthuswamy, KLD Engineering, P.C., President, USA

John Tipaldo, New York City Department of Transportation, Director of Systems Engineering, USA

**Session Track**
■ Smart Cities

## SIS26 – Technical Challenges for Adoption of Automated Vehicles

**Tuesday, September 9, 1:00 p.m. – 2:30 p.m.**

A discussion among technologists about the technical challenges and limitations of creating vehicle platforms that will be able to operate on highways alongside traditionally driven vehicles.

**Organizer**
Steven Dellenback, Southwest Research Institute, Director, USA

Jane Lappin, John A. Volpe National Transportation Systems Center, Research and Innovative Technology Administration, U.S. Department of Transportation, Program Manager, USA

**Moderator**
To be announced

**Speakers**
To be announced

**Session Track**
■ Automated Transportation

## SIS27 – Visualizing an Integrated Transport System — A Multi-modal Approach Enhanced by Automated Transit Networks

**Tuesday, September 9, 1:00 – 2:30 p.m.**

A well-integrated transportation system which incorporates appropriate technology, planning, and policy for travelers with all abilities will redefine the urban landscape, shape the dynamics between people and places, affect land use patterns, and could ultimately result in more desirable social, economic, environmental, and cultural impacts on a community. The topics in this special session will include discussions on Automated Transit Networks (ATNs) that are integrated seamlessly into the overall transportation systems across different modes. The session will highlight recent research and development and provide a U.S. Department of Transportation vision for an integrated transport system based on ITS technologies and automation. The speakers will also navigate through several planning and deployment projects around the world by both public and private sectors related to ATNs, discuss their impacts and lesson learned, and identify areas for future research and international collaboration.

**Organizer**
Gwo-Wei Torng, Noblis Inc., Principal, USA

**Moderator**
Robert Sheehan, United States Department of Transportation, ITS Joint Program Office, USA

**Session Track**
■ Public Transit

## SIS28 – Meet The New Mobility Industry Vanguard: A View From the Trenches

**Tuesday, September 9, 1:00 – 2:30 p.m.**

New Mobility is an "Industry of industries" already representing a multi-billion dollar global market and growing fast. Setting it apart from its transportation forebears, New Mobility is striking because of its breadth and interconnectedness, enabled by Intelligent Transportation Systems (ITS) and inclusive of sectors as wide ranging as: consumer electronics, telematics, logistics & supply chain, public transit, energy, real estate, finance, and more. This interconnectedness between sectors is enabling new product design and manufacturing opportunities, richly knit together via software, service, and shared use models.

Even more compelling is New Mobility's direct and sophisticated response to (and capitalization on) recent demographic, environmental, economic, and cultural shifts and accelerating urbanization, globalization, and connectivity. The combination of which speak to both pressing needs and new preferences for flexibility and choice.

This session invites trail blazers in the trenches of the fast evolving New Mobility space to share their experiences of leveraging ITS to plan and deploy New Mobility solutions and related enterprises. Recognizing New Mobility as a system of systems, this is an opportunity to hear from successful game changers about what works, what's not yet working, and how to scale up New Mobility solutions.

**Organizer**
Susan Zielinski, University of Michigan, Managing Director, SMART and MMPEI, Fellow, Transportation Research Institute (UMTRI) & Taubman College of Architecture & Urban Planning, USA

**Moderator**
To be announced

**Speakers**
To be announced

**Session Track**
■ New Mobility

## SIS29 – A Day in the Life of an Intelligent Traffic Intersection

**Tuesday, September 9, 1:00 – 2:30 p.m.**

The session will describe a futuristic scenario which Connected Cars and Autonomous Cars may bring to our lives within the next decade, if not the next five years, as driverless cars from various manufacturers start driving on the roads. The intelligent intersections may automatically 'Like' a vehicle passing the intersection at desirable speeds. Will the traffic signals that we have been seeing for the last several decades undergo such change dynamics? Will we start seeing such Smart Intelligent Traffic Signals, even connecting to the Internet of Things, as Smart Cars start coming into our lives! The panel will discuss technology and engineering issues along with market drivers for such scenarios.

**Organizer & Moderator**
Harsh Verma, R Systems, Vice-President, USA

**Speakers**
Harsh Verma, R Systems, Vice-President, USA

Gaurav Bansal, TOYOTA Info Technology Center, USA, Research Engineer, USA

John Kenney, TOYOTA Info Technology Center, USA, Principal Researcher, USA

Reggie Chandra, Rhythm Engineering, CEO, USA

Barry Einsig, Cisco, Director, USA

**Session Track**
■ Traffic Management

## SIS30 – Evaluation Methodology of the Effects of ITS on $CO_2$ Emissions and its Application

**Tuesday, September 9, 1:00 – 2:30 p.m.**

Some Intelligent Transport Systems (ITS) are expected to effectively reduce energy consumption and $CO_2$ emissions from vehicular highway traffic. To enhance the introduction of ITS applications, it is important to evaluate the energy saving effects quantitatively and to open the results. It will help people who make an introduction plan of ITS applications to select appropriate ITS applications and to realize proper operation of the ITS applications and will make the effects more understandable to citizens. A methodology to evaluate the $CO_2$ reduction effect by ITS applications was established and an international joint report named "Guidelines for Assessing the Effects of ITS on $CO_2$ Emissions" was published in March 2013 by collaborative project between Europe, U.S. and Japan.

To disseminate the methodology, one of the most effective ways would be to demonstrate impact assessments of ITS on $CO_2$ emissions by the methodology in various cities. An idea of "The Best Practice Showcase" is proposed for this purpose and rules to compare the assessment results for the showcase were created by the project member.

This session introduces the methodology to evaluate the effects of ITS on $CO_2$ emissions and the activity to enhance its application to various cities around the world.

**Organizer**
Hajime Amano, ITS Japan, President and CEO, Japan

**Moderator**
Takashi Oguchi, Institute of Industrial Sciences, the University of Tokyo, Professor, Japan

**Speakers**
To be announced

**Session Track**
■ Sustainability

## SIS31 – Liability Issues For The Connected And Autonomous Vehicle

**Tuesday, September 9, 1:00 – 2:30 p.m.**

Product and infrastructure-related liability has been cited among the major concerns for deployment of both connected and autonomous vehicles. This session will address these concerns for both the private and public sector from the perspective of automotive-related liability precedents as well as potentially analogous examples from other transportation sectors. The discussion will include analysis of how current and potential government regulation may affect liability concerns for the connected and autonomous vehicle and supporting infrastructure so that both regulatory and product liability factors may be viewed in an integrated risk assessment context.

**Organizer**
Paul Laurenza, Dykema Gossett PLLC, Member, USA

**Moderator**
Scott McCormick, Connected Vehicle Trade Association, President

**Speakers**
Thomas Bamonte, North Texas Tollway Authority (NTTA), General Counsel, USA

Maxime Flament, Head of Sector SafeMobility, ERTICO-ITS Europe, Belgium

**Session Track**
■ Connected Vehicles & Cooperative Systems

## SIS32 – ITS Infrastructure Initiative by Circulating Traffic Big Data — from Autonomous Driving to Elderly Driving Support

**Tuesday, September 9, 1:00 – 2:30 p.m.**

With advocating the new businesses like “Mobility Data Bank” and the new ITS infrastructure concepts of “automobile cloud,” IIC is also working for the various activities for creating a new society with ITS with the target of Tokyo 2020 Summer Olympic Games. The new society will realize the networked mobility including automobiles, and create “ITS complex” with the huge traffic-related information from the integrated data.

In this session, IIC will propose a new model for ITS infrastructure for distributing the traffic Big Data, which will also extend the discussion to the current security issues about the risk of being the target of cyber-terrorism.

**Organizer**
Naoki Tokitsu, Internet ITS Consortium, President, Japan

**Moderator**
Makoto Maekawa, ITS Business Development Center, NEC Corporation, Executive Expert, Japan

**Speakers**
To be announced

**Session Track**
■ Big Data and Open Data

# SIS33 – Big Data in Transit: Are Our Heads in the Clouds?

## Wednesday, September 10, 8:30 – 10:00 a.m.

As discussed during the 2013 ITS World Congress in Tokyo, there are several examples of using big data in public transport. However, given the trends in big data, can public transport make the most of it given significant resource constraints, the availability of cloud-based services and the expectations of senior management? This session will explore the use of analytics, the availability of cloud-based tools, and the impact on operations. For example, Melbourne, Australia's Yarra Trams used big data, the cloud, mobile, and analytics to transform its services. Further, in dealing with the flood of 2013, Calgary used big data to get transit back in operation. Also, this session will explore lessons learned in the use of analytical tools in public transport — particularly those tools that no longer require special skills to use.

**Organizer**
Carol Schweiger, TranSystems Corporation, Vice President, USA

**Moderator**
C. Douglass Couto, Consultant, USA

**Speakers**
Yeatland Wong, City of Calgary, USA

Richard Harris, Xerox Services, Solution Director, International Transportation and Government, United Kingdom

Deepak Advani, IBM Cloud and Smarter Infrastructure, General Manager

**Session Track**
■ Public Transit

# SIS34 – Minimum Quality Requirements for Driving Event Video Recorder to Secure Safe Driving Management

## Wednesday, September 10, 8:30 – 10:00 a.m.

In the last four World Congresses, this SIS has proved international context as to how effectively and greatly "driving event videorecorder" (DR) technologies contributed to the reduction of traffic accidents, combined with well-considered software application.

DR users, either professional or non-professional drivers, are apparently confused nowadays and expect to choose appropriate the DR device to achieve their initial purpose, since diversified types of DR with wide range of price/quality are introduced on the market and subsequently the effective/efficient use of them became very ambiguous.

It is a good timing to discuss essential minimum requirements for DR technologies to achieve our initial objectives, namely accident analysis and safety improvement in road traffic. Although some new technical trends have observed that smart phone and/or EDR will unify DR technology eventually, we wish to discuss what specifications should be necessary for true DR technology with high quality including high usability.

The active experts from Asia, America, and Europe in this SIS are invited to discuss the minimum quality requirements of DR in terms of specification of hardware/software aspects to ensure proper analysis of accidents and significant prevention of accident recurrence.

Each speaker will talk on minimum requirements to meet the goal as well as additional requirements for qualified safety management. Thus, this SIS aims to indicate eventually some common minimum international requirements for sound utility of DR for true and practical traffic safety management.

**Organizer**
Koji Ukena, UK-Consultant on ITS, CEO, Japan

**Moderator**
Sadao Horino, Kanagawa University, Associate Professor, Japan

**Speakers**
Joseph N. Kanianthra, Former Associate Administrator for Vehicle Safety Research, NHTSA (Retired), President, Active Safety Engineering LLC, USA

Koji Ukena, UK-Consultant on ITS, CEO, Japan

Engstrom Johan, Volvo, Senior Specialist, Sweden

Masaaki Kawahara, Panasonic Automotive & Industrial Systems Co. Limited, Team Leader, Marketing Group, Japan

Takashi Shimada, Fujitsu Co., Ltd., Director, New Business Development Division, Department of Management Strategy, Japan

**Session Track**
■ ITS Rules and Standards

## SIS35 – Human Factor Challenges of Vehicle Automation

**Wednesday, September 10, 8:30 – 10:00 a.m.**

This session is proposed jointly on behalf of the European iMobility group on Vehicle Automation and the Vehicle Road Automation (VRA) project. VRA is a support action for networking and international cooperation on Vehicle and Road Automation, whilst the iMobility working group has been working on the development of a road map for automation during the past two years, which includes work on the human factors research needs of selected automation scenarios of the future. Both activities are strongly supported by ERTICO, the network of Intelligent Transport Systems and Services stakeholders in Europe.

The session will report on the achievements of the above initiatives, with particular emphasis on the discussions around the human factor challenges of automated vehicles. It will also report on the latest status of a document being prepared for the Tri Lateral Working Group on Automation in Road Transportation, which aims to "Identify, research, quantify, and evaluate applications that would improve the operation of Connected Road Vehicle Automation." The aim of the Tri Lateral group is also to Co-ordinate research between U.S., EU and Japan on "the development of Connected Road Vehicle Automation technologies and concepts that facilitate deployment and market uptake.

The session will also disseminate results from a number of recently completed projects in EU, U.S. and Japan, on human factors of automated driving, as outlined below.

**Organizer**
Natasha Merat, University of Leeds

**Moderator**
Alan Stevens, Transport Research Laboratory, Chief Research Scientist, United Kingdom

**Speakers**
Natasha Merat, University of Leeds

James Foley, Toyota Collaborative Safety Research Centre

Erwin Boer, Steering Entropy Ltd

Janet Creaser, University of Minnesota

Tobias Hess, DLR German Aerosapce

Johan kELSCH, DLR German Aerosapce

**Session Track**
■ Automated Transportation

## SIS36 – Revolutionizing Performance Assessment of the Roadway Network Through Data and Analytics

**Wednesday, September 10, 8:30 – 10:00 a.m.**

MAP-21 has put an emphasis on performance measures and operations strategies rely on a true assessment of how the transportation system is functioning. Identifying mobility issues in a state or metropolitan area leads to an "if we can measure it, we can manage it" ethos. Find out how agencies with limited resources are using data about how traffic is behaving in real-time and historically, plus analytics tools to assess congestion, prioritize projects and inform capital programs.

**Organizer**
Pete Costello, INRIX, Director Business Development, Public Sector, USA

**Moderator**
To be announced

**Speakers**
To be announced

**Session Track**
■ Big Data and Open Data

## SIS37 – State of the Art and Benefits of Real Time Information for Commercial Vehicles

**Wednesday, September 10, 8:30 – 10:00 a.m.**

Freight movement is critical to the economies of all nations. The number of commercial vehicles is expected to grow by more than 10 percent over the next few years. The growing interest in moving goods was reflected in MAP-21 and will certainly carry forward in future transportation policy directives. With this growing interest and an expected agency decision in 2014 regarding connected vehicle safety for heavy vehicles, we are at a tipping point regarding the integration of ITS technology into our freight management systems. ITS technologies and systems can deliver improved mobility and efficiencies to all partners in the industry: the trucking companies, the drivers, and the road managers (government agencies). Technologies and services could address fuel efficiency, commercial vehicle routing, improved parking availability, cargo security, safety, and alternate fuels.

**Organizer**
Fredrick Warner IV, ParkingCarma Inc., CEO, USA

**Moderator**
Harry Voccola, NAVTEQ, Senior Vice President, Government & Industry Affairs, USA

**Speakers**
John Woodrooffe, University of Michigan Transportation Research Institute, Director, Transportation Safety Analysis, USA

Collin Castle, Michigan Department of Transportation, Connected Vehicle Technical Manager, USA

Eric Morris, HNTB Corporation, Associate Vice President, USA

**Session Track**
■ Freight

## SIS38 – TPEG Traffic Services Worldwide

**Wednesday, September 10, 8:30 – 10:00 a.m.**

TPEG is a versatile, content-rich protocol suite for the distribution of traffic and traveller information services. This special session will introduce TPEG services that are currently operated worldwide, as well as ongoing development work. For participants that consider the implementation and rollout of TPEG services and products, this session will provide an excellent overview of TPEG applications already standardized, as well as detailed information of how to engage in currently ongoing development and standardization work within the Traveller Information Services Association (TISA).

**Organizer**
Stéphanie Chaufton, TISA, Belgium

**Moderator**
Matthias Unbehaun, TISA, Executive Director, Belgium

**Speakers**
Matthias Unbehaun, TISA, Executive Director, Belgium

Derek Rohloff, Clearchannel, Vice President, Automotive Strategic Partnerships, USA

Ralf-Peter Schäfer, TomTom, Vice President Traffic, Germany

Saurav Bhattacharyya, Quantum Inventions, CEO, Singapore

Jim O'Neill, GEWI, CEO North America, USA

**Session Track**
■ Traffic Management

# SIS39 – Saving Lives with Photo Enforcement

## Wednesday, September 10, 8:30 – 10:00 a.m.

The challenge of improving road safety is just as important now as it was when the United Nations launched its Decade of Action for Road Safety (2011-2020). However as budget restraints impact network operations and even basic road maintenance budgets are cut, we have to be smarter about how we try to improve safety.

A key benefit of ITS deployment is improved information, management, and incident awareness response and road safety.

This session will focus on the safety contribution of ITS, look as examples of real benefits, consider public perception of safety cameras and discuss how to ensure that road safety is considered as a primary objective of utilizing new technology for our transport systems.

**Organizer**
Robert De Beukelaer, Xerox Services, Solution Delivery Director EMEA, Netherlands

**Moderator**
Susan Spencer, Susan Spencer & Associates, Partner, Canada

**Speakers**
Eva Lundberg, Swedish Transport Administration, Project Leader Traffic Safety Cameras, Sweden

Paul Vorster, ITS South Africa, CEO, South Africa

Eva Molnar, United Nations Economic Commission for Europe - UNECE, Director, Division of Transport, Switzerland

Robert De Beukelaer, Xerox Services, Solution Delivery Director EMEA, Netherlands

**Session Track**
■ Traffic Safety

## SIS40 – Leveraging ITS and the Internet of Things to Enable Complete Streets

**Wednesday, September 10, 8:30 – 10:00 a.m.**

Complete Streets policies are being adopted around the world to improve public infrastructure and livability. With over 550 policies in place in the United States alone, up from just 219 in 2010, this trend has gained significant momentum in recent years. Meanwhile Intelligent Transportation Systems and the Internet of Things with all the buzz at this year's Consumer Electronics Show, is quickly evolving the world around us to enable unprecedented amounts of data collection and intelligent automation.

Communities can leverage ITS and the Internet of Things to make Complete Streets policies a reality. Environmental components that have historically been difficult to measure with statistical significance can now be measured such as detailed vehicular traffic patterns, public transit efficiency, bicycle ridership, and pedestrian volume. While many cities today already have disparate technologies for some of these applications, now all modes of travel can be analyzed to allow city planners to design and realize the goal of truly Complete Streets.

Experts in the fields of Complete Streets, ITS and Internet of Things technologies will explain how these systems can be used to enable equitable transportation options that are safer, greener, drive economic growth and encourage healthier citizens while accommodating a growing population.

**Organizer**
Hamed Benouar, Sensys Networks, Vice President of Sales and Business Development, USA

**Moderator**
To be announced

**Speakers**
To be announced

**Session Track**
■ Smart Cities

## SIS41 – ITS for Global Mega Events

**Wednesday, September 10, 10:30 – 12:00 p.m.**

This session will present how ITS takes the global mega events (e.g. World Cup Soccer, Olympic Games, etc.) which generate additional travel demands and have significant impacts on transport systems in the host cities and regions. Managing transport systems before and during a global mega event obviously is a big challenge in ITS area. Speakers from around the world who are operators of public transport, provider of ITS services with traveller information, or transport planners for mega events will introduce their experiences with transport services for the Olympic Games 2014 in Sochi, 2016 Rio de Janeiro, 2018 PyeongChang, and 2020 Tokyo. This special interest session is to be proposed again with the same title as it was planned in the 20th ITS World Congress in Tokyo, 2013.

**Organizer & Moderator**
Young-Jun Moon, The Korea Transport Institute, Director, Korea

**Speakers**
To be announced

**Session Track**
■ International Cooperation to Expand ITS

## SIS42 – Impacts and Opportunities for Automated Vehicles

**Wednesday, September 10, 10:30 a.m. – 12:00 p.m.**

Embracing a future with automated vehicles, what can we expect? Speakers will present what we know and we can anticipate in the areas of: (1) Energy and the Environment; (2) Infrastructure and Operations; (3) Institutional and Legal Issues; (4) Human Factors.

**Organizers**
Steven Dellenback, Southwest Research Institute, Director, USA

Jane Lappin, John A. Volpe National Transportation Systems Center, Research and Innovative Technology Administration, United States Department of Transportation, Program Manager, USA

**Moderator**
To be announced

**Speakers**
To be announced

**Session Track**
■ Automated Transportation

## SIS43 – What is the Most Important Point in ITS Deployment in Mega-Cities of Asia-Pacific?

**Wednesday, September 10, 10:30 a.m. – 12:00 p.m.**

In emerging countries/areas of Asia-Pacific, ITS has been already recognized and introduced as a vital tool to solve the various traffic problems efficiently, but it's not always successful. This session focuses on the traffic information system as one of the most important fundamental systems of ITS and various traffic management systems based on this system, such as traffic signal control system, BRT, ERP, ETC and so on. Speakers from ITS Asia Pacific and the Asian Civil Engineering Coordinating Council (ACECC) will introduce their experiences about these systems and discuss their effects and challenges of maintenance & operations and so on forwards the further development and deployment of ITS.

**Organizer**
Nobukazu Kanesaki, ITS Japan, Director, Japan

**Moderator**
S.K. Jason Chang, Professor, National Taiwan University / ITS-Taiwan, Chinese Taipei Chinese-Taipei

**Speakers**
To be announced

**Session Track**
■ Traffic Management

# SIS44 – Seamless Mobility — ITS in Smart Cities, an Asia Pacific Perspective

## Wednesday, September 10, 10:30 a.m. – 12:00 p.m.

By 2050, the human population will reach 9 billion people, with 75% of the world's inhabitants living in cities. Smart technologies can help address some of the challenges of rapid urbanization by improving services and managing their efficiency.

A smart city uses intelligent technology to enhance our quality of life in urban environments. Urban mobility and transport is vital for the functioning of smart cities. As cities grow and the urban sprawl gives birth to the megacities, the challenge within cities will be to integrate the different modes of transport by using the vast amounts of data more effectively.

An estimated $117 billion will be invested worldwide over the next 20 years on smart city infrastructures, including $31.2 billion in digital systems and infrastructure for smart transport solutions. A sustainable, safe and seamless co-modal mobility system will be fundamental for growth and 'Seamless Mobility' will be one pillar for achieving this success.

This Special Interest Session will explore the concepts of Seamless Mobility and how ITS systems will support and connect services across its entire transportation network, including subways, trams, buses, vehicular and bicycle traffic, and more.

**Organizer & Moderator**
Mark Byrne, Xerox Transportation Solutions, VP Sales, Australia

**Speakers**
Dean Economou, NICTA, Australia

Agachai Sumalee, University of Thailand, Thailand

Ke Zhang, Beijing Municipal Commission of Transport, Vice Director, TOCC, China

Mong Kee Sing, ITS Singapore, President, Singapore

Speaker from Japan

**Session Track**
■ Smart Cities

# SIS45 – Cooperative ITS Vehicle Architecture and Applications

## Wednesday, September 10, 10:30 a.m. – 12:00 p.m.

With vehicle-2-x communication deployment well under way, cooperative ITS will also be enhanced with hybrid infrastructure-based communication systems like 4G/LTE. This introduces and number of additional stakeholders and actor roles to ensure proper traffic and safety related information exchange on technical and administrative levels. Therefore, a converged architecture model — currently initiated not only in Europe but all regions — can provides the means for discrimination free access for various information providers and consumers to participate in the market of cooperative ITS. This session will present the related activities from Europe, USA, and Japan. Additionally, the panel will discuss respective harmonization opportunities.

The speakers represent distinguished experts in the field of cooperative ITS from all regions. Horst Wieker will present a converged architecture currently under development in close cooperation with the German authorities. Accordingly, Sam Oyama and Steve Sill will present the Japanese and U.S. activities on Cooperative ITS Architectures. Additionally, Ilja Radusch will present a number of applications utilizing such cooperative ITS architecture and aiming at fostering collaboration between drivers and travelers during their journeys. Luisa Andreone, CRF, will moderate the session.

**Organizer**
Ilja Radusch, Daimler Center for Automotive IT Innovations, Head of Department Automotive Services and Communication Technologies, Germany

**Moderator**
Luisa Andreone, Centro Ricerche Fiat S.C.p.A. (CRF), R&D EMEA Product Development, Strategic Research & Collaboration, Italy

**Speakers**
Horst Wieker, htw saar, Professor for Communication Technologies, Germany

Sam Oyama, Association of Radio Industries and Businesses (ARIB), Senior Researcher, Japan

Steve Sill, ITS Joint Program Office, Research and Innovative Technology Administration, United State Department of Transportation, Program Manager, Vehicle Safety Technology, ITS Architecture and Standards, USA

Ilja Radusch, Daimler Center for Automotive IT Innovations, Head of Department Automotive Services and Communication Technologies, Germany

**Session Track**
■ Connected Vehicles & Cooperative Systems

## SIS46 – Applying Intelligent Transportation Systems to Cross Border Issues

**Wednesday, September 10, 10:30 a.m. – 12:00 p.m.**

Intelligent Transportation Systems can facilitate the movement of people and goods across international borders. Examples of the application of these technologies can be found at the Detroit-Windsor border and the Port Huron-Sarnia border between Canada and the United States. The Detroit-Windsor crossing is particularly important for freight movement in North America. Approximately 7400 commercial vehicles per day make this crossing.

This session is intended to address cross-border traffic management and cross-border supply chains.

**Organizer**
Richard Beaubien, Beaubien Engineering, Managing Director, USA

**Moderator**
To be announced

**Speakers**
Bill Anderson, University of Windsor, Ontario Research Chair in Cross Border Studies, Canada

Neal Belitsky, Detroit Windsor Tunnel, Director of Operations, USA

Stephen Erwin, Ontario Ministry of Transportation, Head, Intelligent Transportation Systems Program

**Session Track**
■ ITS Rules and Standards

## SIS47 – National ITS Associations — Driving Mobility Deployment

**Wednesday, September 10, 10:30 a.m. – 12:00 p.m.**

National ITS Associations are leading the debate on the future of our transportation services. From organizing events and conferences through spreading knowledge and understanding and providing advice and advocacy to government, the influence and part they play in shaping policy and deployment is considerable. Increased cooperation between the national associations promises to help really accelerate ITS deployment. This session will provide insight into how ITS Associations are helping to accelerate ITS deployment.

**Organizer**
Richard Harris, Xerox Services, Solution Director, International Transportation and Government, United Kingdom

**Moderator**
Eric Sampson, Newcastle University, Professor, United Kingdom

**Speakers**
Sing Mong Kee, ITS Singapore, Board Member, Singapore

Hajime Amano, ITS Japan, President and CEO, Japan

Susan Harris, ITS Australia, CEO, Australia

Thomas Kern, ITS America, Executive Vice President, USA

Christer Karlsson, ITS Sweden, CEO

Richard Harris, Xerox Services, Solution Director, International Transportation and Government, United Kingdom

**Session Track**
■ New Mobility

## SIS48 – Smart Parking: The Foundation and Accelerator for the Smart City and Connected Car

**Wednesday, September 10, 10:30 a.m. – 12:00 p.m.**

Parking has an undeniable impact on local traffic, economies, and sustainability. New intelligent parking technology helps motorists find open spaces in real time. But how can cities use this technology to coordinate resources for more effective transportation, policy, and business? And how do smart parking systems further the development and success of the Connected Car? Many smart city and technology industry leaders are calling parking the "killer app" for developing the Internet of Things (IoT), and smart cities themselves, as well as being a crucial element to the advancement of the Connected Car.

Experts from the technology sector, municipalities, and automobile industries discuss examples and their vision for the future of intelligent cities and the Connected Car, and what it means for businesses, governments, and economic growth.

**Organizer**
Brittany Blasing, Streetline Inc., PR Manager

**Moderator**
Praveen Chandrasekar, Frost and Sullivan, Research Manager, USA

**Speakers**
Kurt Buecheler, Streetline, Inc., SVP Business Development and Channel Partners

Peter Kosak, General Motors, Executive Director of Urban Mobility

Hardik Bhatt, Cisco, Director, S+CC IoE for Public Sector, Industry Solutions Group

**Session Track**
■ Smart Cities

## SIS49 – Global Perspectives: Cooperative Energy Efficient Applications

**Wednesday, September 10, 1:30 – 3:00 p.m.**

This session was in the program of the previous ITS World Congress, but canceled due to a typhoon]. Around the globe many programs acknowledge the potential of cooperative technology to cut down fuel consumption and emission. This session offers an overview of current activities and recent results from the European Union, United States and Japan. Presentations will focus on recent lessons learned from pilots and validation, evaluation and application impact, as well as successful application design and deployment aspects. Regional programs have converged through collaboration efforts such as an International Joint Report on assessment methodology and a working group on sustainability applications as part of the EU-US ITS cooperation. This years' session aims to update the state of play and set the research agenda.

**Organizer**
Jaap Vreeswijk, Imtech Traffic & Infra, Senior Researcher, Netherlands

**Moderator**
Martijn de Kievit, TNO, Consultant, Netherlands

**Speakers**
Matthew Barth, University of California - Riverside, Professor of Electrical Engineering, Director of CE-CERT, USA

Detlef Kuck, FORD

Jaap Vreeswijk, Imtech Traffic & Infra, Senior Researcher, Netherlands

Hesham Rakha, Virginia Tech, Professor, USA

Speaker from Japan

**Session Track**
■ Sustainability

## SIS50 – Towards Automation Deployment

**Wednesday, September 10, 1:30 – 3:00 p.m.**

The goal of this special session is to discuss the strategic issue of automation research challenges and deployment and to open the debate between a Full Automation scenario and a scenario where automation will be introduced gradually and step by step leading consequently to mixed traffic scenarios where possibly all modes of automation will be present. The session will also examine the new research activities in the area and especially the Adaptive IP evolutions. SIS attendees will have the opportunity to learn more about the new and integrated automated functions that will be developed in the framework of the project and also discuss the still remaining research challenges that need to be addressed to enable deployment.

**Organizer & Moderator**
Angelos Amditis, Institute of Communication and Computer Systems, Research Director, Project Manager, Greece

**Speakers**
Angelos Amditis, Institute of Communication and Computer Systems, Research Director, Project Manager, Greece

Luisa Andreone, Centro Ricerche Fiat, Project Manager European Network, Italy

Aria Etemad, Volkswagen AG, Senior Project Manager, Germany

Adriano Alessandrini, CTL - Centro di ricerca per il Trasporto e la Logistica, Università degli Studi di Roma “La Sapienza”, Researcher, Italy

Steven Shladover, California PATH, ITS Berkeley, University of California, Research Engineer/ Program Manager, USA

Masao Fukushima, R&D Engineering Management Division, NISSAN MOTOR CO.,LTD, Technical Consultant, Japan

**Session Track**
■ Automated Transportation

## SIS51 – Public Transport in Mega Cities

**Wednesday, September 10, 1:30 – 3:00 p.m.**

Due to the increasing population and vehicles, the traffic jam and Eco problems in mega cities/regions are becoming serious. Convenient, efficient public transport service will contribute more to solve the jam and Eco problems in mega cities/regions, also to support the economic development. It will be discussed in this session how to improve the public transport services through useful ITS technologies.

**Organizer**
Weiyun Jiao, China National ITS Center, Department Manager, China

**Moderator**
To be announced

**Speakers**
To be announced

**Session Track**
■ Public Transit

# SIS52 – Road Authorities' Strategies for Moving from Co-operative Systems to Automation

## Wednesday, September 10, 1:30 – 3:00 p.m.

Cooperative systems in the field of road vehicles have been a subject for research and development for many years. In parallel, the development towards more automated traffic system has been evolving. The autonomous vehicle is the most central part in this development and is driven by the vehicle-OEMs. The autonomous vehicle will primarily address the shortcomings of the human being, first and most to support traffic safety, but will also address comfort and efficiency.

This session will give some national road authorities views of cooperative systems, as a paradigm itself but also as a technology to support automation.

The session will also highlight steps to be taken to support the development and deployment and to assess the need for further research and for field operational tests, but also the need for policy development and strategic statements from the side of national road authorities.

**Organizer**
Bengt Hallström, Swedish Transport Administration, Analyst and Senior Advisor, Sweden

**Moderator**
Jan Bergstrand, Swedish Transport Administration, Head of Section, Sweden

**Speakers**
Risto Kulmala, Finnish Transport Agency, Principal Advisor on ITS, Finland

Anders Godal Holt, Norwegian Public Roads Administration, Head of Section ITS, Norway

Bengt Hallstrom, STA (Swedish Transport Administration), Analyst and Senior Advisor, Sweden

**Session Track**
- Connected Vehicles & Cooperative Systems

# SIS53 – Evaluation of Costs and Benefits of Cooperative Systems and Automation Applications

## Wednesday, September 10, 1:30 – 3:00 p.m.

As Connected Vehicle technology and programs mature and move from prototyping to pilot implementation phases, evaluating the costs and benefits and sharing the successes and lessons learned from these implementations becomes increasingly important to help promote wide-scale deployment. This session will share findings from the ongoing U.S. Department of Transportation ITS JPO Connected Vehicle-related program evaluations and benefit-cost assessments, and from similar efforts being conducted by our EU and Japanese counterparts, as well as joint international efforts. Specific topics will include various evaluation types, approaches to estimating costs and benefits, challenges involved in estimation along with mitigation strategies, methods for evaluation of effectiveness, and tools to harmonize costs and benefits from different implementations.

This panel will be of particular value to public and private sector decision-makers. Information on approaches to evaluation of costs and benefits will help public sector decision-makers develop plans for deployment and identify key issues and uncertainties that are likely to influence the decision to deployment. Private sector decision-makers can get an understanding of the key challenges associated with developing the business case for deployment, and identify areas for potential burden sharing with the public sector.

**Organizer & Moderator**
Dale Thompson, U.S. Department of Transportation, Transportation Specialist, USA

**Speakers**
Victoria Adams, Booz Allen Hamilton Inc., Associate Director of Fusion Analytics Center, USA

Dale Thompson, U.S. Department of Transportation, Transportation Specialist, USA

Maxime Flament, ERTICO-ITS Europe, Head of Sector SafeMobility

Koichi Sakai, National Institute for Land and Infrastructure Management, Senior Researcher, ITS Division, Japan

Emily Nodine, Volpe National Transportation Systems Center, U.S. Department of Transportation, Mechanical Engineer, Advanced Transportation Technologies Center of Innovation, John A. Volpe National Transportation Systems Center, Research and Innovative Technology Administration, USA

Alexander Jendzejec, Booz Allen Hamilton Inc., USA

**Session Track**
■ Connected Vehicles & Cooperative Systems

## SIS54 – International Harmonization of The Interoperability Assessment Processes

**Wednesday, September 10, 1:30 – 3:00 p.m.**

Interoperability defines the ability of devices to communicate together in order to provide connected services. Interoperability is granted by implementing technical specification based on standards and ensuring that these implementations are compliant to the standards as well as minimum performance requirement.

Different continents are likely to apply for different schemes of standards. Furthermore, the compliancy assessment applicable to product and services may differ as well. These differences are creating additional constraints to suppliers aiming at delivering similar products for a global market. Also, significant differences in quality criteria may create a lack of trust from the users.

Harmonizing Interoperability assessment method is therefore critical to allow global markets and keep the user confident in ITS services.

The session aims at comparing and discussing the different methodologies and processes targeted by the stakeholder of the three continents. Differences will be highlighted and the way to ensure harmonization across the Interoperability assessment schemes will be discussed. It is expected that the stakeholders will express recommendations to ensure that cost efficient and harmonize test procedures are applied globally.

**Organizer & Moderator**
Francois Fischer, ERTICO ITS-Europe, Senior Project Manager, Belgium

**Speakers**
Björn Bunte, CETECOM

Christian Rousseau, Renault SAS, Strategic Expertise Leader for Mobility and Transport Systems, France

Hans-Jürgen Mäurer, DEKRA, Head of Development Engineering, Germany

Jean-Michel Henchoz, DENSO International Europe, Belgium

Walton Fehr, ITS Joint Program Office, U.S. Department of Transportation, Manager, ITS Systems Engineering, USA

**Session Track**
■ ITS Rules and Standards

## SIS55 – Implications of SHRP 2 Reliability Research for ITS

**Wednesday, September 10, 1:30 – 3:00 p.m.**

Road users understand travel time reliability, at least intuitively. Often they build in extra travel time to be on time to compensate for unexpected events. Travel time reliability has just taken on more importance because Congress recently passed MAP-21. As a result, all states and MPOs must adopt performance-based planning and programming and address travel time reliability, among other goals. SHRP 2 developed significant research products relevant to ITS that can help achieve the reliability goal. Examples include the next generation of traffic monitoring systems; integrating reliability into simulation models; and ideas for communicating reliability traveler information.

**Organizer**
William Hyman, Transportation Research Board, Senior Program Officer

**Moderator**
To be announced

**Speakers**
To be announced

## SIS56 – Using Information and Telecommunication Technologies for Improving ITS Operations

**Wednesday, September 10, 1:30 – 3:00 p.m.**

Creative uses of information and telecommunication technologies in both the private and public sectors provide opportunities for better operations of ITS systems, improved communications with system users (travelers), and enhanced planning for future transportation needs. This session will look at technologies for better decision making, more efficient operations, and better customer communications. Special attention will be given to adopting cloud solutions, use of geospatial decision tools, virtualization, mobility, social networks and security.

**Organizer & Moderator**
C. Douglass Couto, Consultant, USA

**Speakers**
Adam Feng, Industrial Technology Research Institute (ITRI), Department Manager, USA

Terry Bills, ESRI, Transportation Industry Manager, USA

## SIS57 – Telematics Services and Dynamic Re-charging Solutions For Market Integration Of Electric Vehicles

**Wednesday, September 10, 3:30 – 5:00 p.m.**

This session presents the latest developments in the area of Electro-mobility and especially solutions that may alleviate the drawbacks of existing on-board battery packs, namely on-road charging and ITS providing dynamic and real time information on vehicle range and on charging possibility. In more detail, a proposal for a general architecture will be presented, which will allow the integration of electric vehicles into the different infrastructure systems cooperating with each other, so as to offer precise telematics services and charging management services to users based on real time information. The different available inductive charging technologies will be also presented as well as a methodology so as to identify the benefits and costs from the wide implementation of such technologies, so that the investments required in the coming years for widespread implementation and exploitation of electric vehicles can be fully defined and quantified. Examples of implementation of ITS technologies and inductive charging technologies, conceived to enable full integration in the grid and road infrastructure within urban- and extra-urban environments for a wide range of future electric vehicles, will be also presented.

**Organizer & Moderator**
Angelos Amditis, Institute of Communication and Computer Systems, Research Director, Project Manager, Greece

**Speakers**
John Inglish, WAVE (Wireless advanced Vehicle electrification) Company, Board of Directors member, USA

Sebastiaan Meijer, KTH Royal Institute of Technology, Associate Professor, Head of GaPSlabs, Sweden

Denis Naberezhnykh, TRL LIMITED, Head of Low Carbon Vehicle and ITS Technology, United Kingdom

Angelos Amditis, Institute of Communication and Computer Systems, Research Director, Project Manager, Greece

Lan Lin, Hitachi Europe Limited, Senior Researcher, France

Chris Borroni-Bird, Qualcomm Technologies Inc, VP Strategic Development, USA

## SIS58 – The Importance of the Back-office — Addressing the Payment Processing and Reconciliation Challenge

**Wednesday, September 10, 3:30 – 5:00 p.m.**

Transportation infrastructure operators are increasingly looking at how their back-office systems support them in achieving operating efficiencies through back-office consolidation and account operability while at the same time addressing the ever increasing demand for strict accountability for funds, payment data security and personal data security. This session explores current back-office challenges and solutions being deployed to address these challenges.

The session would feature a discussion one-account, the provision of financial clearing house and reconciliation solutions and services to agencies in a multi-operator environment, promote the use of commercial-off-the shelf solutions for financial accounting and the automated clearing and reconciliation solutions that Cubic developed and deployed over the years.

**Organizer**
To be announced

**Moderator**
To be announced

**Speakers**
To be announced

## SIS59 – Paving the Way for Self-Driving Cars: Legislative and Legal Issues on the Horizon for Autonomous Vehicles

**Wednesday, September 10, 3:30 – 5:00 p.m.**

Automated vehicle (AV) technology is advancing toward implementation, but critical public policy and legal issues must be addressed to allow for widespread use of these vehicles, including:

- Achieving the economic and political will to fund the infrastructure necessary to make AVs an everyday reality.
- Defining governmental roles in funding and regulating AV technology, and achieving uniformity in regulations.
- Amending existing laws, including state motor vehicle, penal, and insurance codes to permit the use of AV technology.
- Delineating liability for accidents, misuse, and other problems that could be emerge from widespread use of AV technology.
- Addressing the legal risks for vehicle manufacturers and technology suppliers.
- Protecting data used in AV technology.

This session will be conducted in a panel format that allows for discussion of these issues and possible solutions. Experts from fields such as government/regulatory, technical/engineering, legal, lobbying, insurance, and academia will offer diverse perspectives on these key public policy and legal issues.

**Organizer**
Thomas Manganello, Warner Norcross & Judd LLP

**Moderator**
To be announced

**Speakers**
To be announced

**Session Track**
■ Automated Transportation

## SIS60 – Radiocommunication Technologies for Advanced ITS

**Wednesday, September 10, 3:30 – 5:00 p.m.**

In this session, the speakers invited from Europe, the United States, Japan, and the automaker will report the current status of their ITS radiocommunication policies, standards, and technologies.

We will figure out and dissect current issues regarding our international harmonization of ITS radiocommunication standards and related projects, and then discuss solutions to each.

**Organizer**
Takahiro Ueno, Ministry of Internal Affairs and Communications, Deputy Director, Japan

**Moderator**
Sam Oyama, Association of Radio Industries and Businesses (ARIB), Senior Researcher, Japan

**Speakers**
Sadayuki Tsugawa, Meijo University, Professor, Japan

Takahiro Ueno, Ministry of Internal Affairs and Communications, Deputy Director, Japan

John Kenney, TOYOTA Info Technology Center, USA, Principal Researcher, USA

Speaker from Auto Industries, Japan

Speaker from European Telecommunications Standards Institute

## SIS61 – Vehicle to Infrastructure Considerations for Transportation Agencies

**Wednesday, September 10, 3:30 – 5:00 p.m.**

Unlike “traditional” road and transportation projects, “Vehicle-to-Infrastructure” solutions require the seamless integration of three previous independent entities…roadside infrastructure, the vehicle, and a functioning application…in order to be feasible. In this session, we will hear from experts with experience in deploying advanced transportation technology on what to expect with initial vehicle-to-infrastructure deployments, challenges faced during the adoption and deployment of this new technology (some of which may have “tried and true” solutions, and others which may have never before been faced many transportation agencies), and what the technology means to the future of surface transportation.

**Organizer**
Matt Smith, Michigan Department of Transportation, ITS Program Manager

**Moderator**
To be announced

**Speakers**
To be announced

## SIS62 – Strategy of Practical Implementation of V-I Cooperative Systems for Traffic Accidents Avoidance

**Wednesday, September 10, 3:30 – 5:00 p.m.**

It is important for all countries to protect road traffic users from traffic accidents, especially the critical ones. These negative impacts in motorized societies are created by human errors. We think if a driver could recognize the approach of dangers in advance with ITS, it can save him/her from committing these errors, and prevent many traffic accidents before they occur. We believe that V-I systems for traffic accident avoidance are indispensable technologies as autonomous vehicle technologies rapidly grow around the world.

This session aims to introduce the verification of our driving safety support systems demonstrated at ITS World Congress Tokyo showcase and to discuss the technological and institutional subjects of V-I Cooperative systems for traffic accident avoidance, including the roadmap of driving support systems advancing in Japan, EU and the United States.

**Organizers**
Shigehiro Morokuma, National Police Agency, Japan

Takashi Kimura, UTMS Society of Japan, Japan

**Moderator**
Takashi Oguchi, Institute of Industrial Sciences, the University of Tokyo, Professor, Japan

**Speakers**
To be announced

**Session Track**
■ Connected Vehicles & Cooperative Systems

## SIS63 – Government Initiatives in Vehicle Automation

**Wednesday, September 10, 3:30 – 5:00 p.m.**

This session will provide a high level view on the policy and research approaches in Europe, Japan, and the U.S. in the area of vehicle automation, in both the near term and long term. Speakers will be asked to focus on discrete levels of automation, as well as setting (highway, urban), and the role of the government in making automated driving a reality.

**Organizer**
Richard Bishop, AUVSI, Vehicle Automation Expert

**Moderator**
To be announced

**Speakers**
To be announced

**Session Track**
■ International Cooperation to Expand ITS

## SIS64 – Data, Directives and Regulations: How Crowd Sourced Data is Helping Agencies Meet New Rules

**Wednesday, September 10, 3:30 – 5:00 p.m.**

Both the U.S. and the EU have taken steps in recent years to promote the availability of real-time traffic information on major highways. The U.S. Federal Highway Administration has established by Rule the Real-Time System Management Information Program (RTSMIP) with initial requirements becoming active November 2014. The European Union has established the ITS Directive as a legal framework to accelerate the deployment of innovative transport technologies, including specifications for EU-wide real-time traffic information services, with a subset of free minimum services. This session will review the status of these regulatory actions and provide real-world examples of how agencies are utilizing the latest technologies and business models to meet and exceed these regulations.

**Organizer**
Pete Costello, INRIX, Director Business Development, Public Sector, USA

**Moderator**
To be announced

**Speakers**
To be announced

**Session Track**
■ Big Data and Open Data

## SIS65 – Can we Take Traveler Information to the Next Level to Improve Mobility?

**Thursday, September 11, 8:30 – 10:00 a.m.**

Technology deployment has been critical in improving mobility from the view of state, regional, and local transportation agencies, travelers, and Federal governments. This session will explore answers to the following critical questions: (1) Do we know enough about customer values and quality requirements to develop high-value services that will result in an improvement in mobility? (2) How would network performance change if more private travelers made more economical trip choices? (3) What is the threshold level of inconvenience or cost that motivates travelers to change their travel patterns and modes? (4) What if network managers could predict the impact of real-time information on travelers' trip choices, and use that information to improve network conditions?

**Organizer & Moderator**
Carol Schweiger, TranSystems Corporation, Vice President, USA

**Speakers**
Martin Böhm, AustriaTech GmbH, Head of Unit ITS Deployment, Austria

Berrin Kahraman, The Republic of Turkey Transport, Maritime and Communication, Strategy and Development Department

Tetsuo Ishizuka, East Japan Railway Company, Director of Frontier Service Development Laboratory

Melanie Crotty, Metropolitan Transportation Commission, Director, Operations

**Session Track**
■ New Mobility

## SIS66 – How Can We Design Better Freight Transport ITS Solutions?

**Thursday, September 11, 8:30 – 10:00 a.m.**

How do we handle a growing transport demand when we cannot curb mobility? We are facing an increased capacity strain especially in the urban environment and the interface to long distance transport. The transport system becomes increasingly incident sensitive. Reliability cannot be taken for granted. With limited possibilities of expanding capacity we will have to use existing infrastructure as efficient as possible.

ITS freight services have the potential to make a difference by promoting a more reliable freight transport flow through transport corridors and urban transport networks. By informing and managing traffic with the help from freight related data, various information services, access services, priority services, booking services, intelligent truck parking, etc., rolling stock can make a better use of the existing infrastructure. Cooperative systems will increase the potential of ITS services.

How can we design a more efficient and reliable transport system by freight ITS solutions?

We will address the needs by presentations from different perspectives.

a. The policy perspective
b. The industrial and transport buyer perspective
c. The urban perspective and especially the access complexity
d. The transport provider perspective
e. The modal shift perspective.
f. The infrastructure provider perspective and a set of potential ITS services

**Organizer**
To be announced

**Moderator**
Arne Lindeberg, Swedish Transport Administration, Project manager, Sweden

**Speakers**
Fotis Karamitsos, European Commission, DG MOVE, Director, Belgium

Carlo Michelacci, Municipality of Bolognaa, Italy

Michael Nielsen, IRU, Belgium

Niels Heine, CPL, Germany

Arne Lindeberg, Swedish Transport Administration, Project manager, Sweden

**Session Track**
■ Freight

## SIS67 – Updates of Connected Vehicle in China

**Thursday, September 11, 8:30 – 10:00 a.m.**

The deployment of the technology of connected vehicles is extending worldwide nowadays. This concept is also a popular topic both in the academics and the industries in China. In this session, China's experts both from the academics and the industries will share the updates of connected vehicles with the peers from other countries and try to find a reasonable way to accelerate the deployment of connected vehicles in China.

**Organizer**
Weiyun Jiao, China National ITS Center, Department Manager, China

**Moderator**
To be announced

**Speakers**
To be announced

**Session Track**
■ Connected Vehicles & Cooperative Systems

## SIS68 – Cooperative Driving Technology and Standardization

**Thursday, September 11, 8:30 – 10:00 a.m.**

Vehicle IT convergence is steadily stimulating technical innovation in autonomous vehicle and intelligent road infrastructure field. Cooperative driving technologies such as Cooperative Adaptive Cruise Control (CACC) and vehicle platooning is practically proved and applicable on highway in near future. Also road infrastructure will provide situation related information and traffic signal information to vehicle side. Cooperative driving technologies are based on V2X communication to share information between vehicle and road infrastructure. Thus it has communication standard issues in V2X communication protocol and message format.

We present the current cooperative driving technology development and standardization activities from USA, Europe and Asia.

**Organizer & Moderator**
Hyun Seo Oh, ETRI, Principal Researcher, Korea

**Speakers**
Han Berg Cho, ETRI, Principal Researcher, Korea

Umit Ozguner, The Ohio State University, Professor, USA

Bart Nitten, TNO, Project Manager of CACC, Netherlands

**Session Track**
■ Connected Vehicles & Cooperative Systems

## SIS69 – eCall Advancement to Deployment — Global Perspective

**Thursday, September 11, 8:30 – 10:00 a.m.**

eCall deployments are poised to take effect across the America's, Pacific Rim, Europe, and Russia.

eCall systems in Europe and Russia have the potential to positively influence casualties.

This session will discuss the deployment of eCall from the perspective of the four geographic areas.

What is different across the continents?

Will the mandated deployment of eCall in Russia and Europe alter the view points from continents where eCall is not currently deployed?

What can be learned from each sector regarding:
• Policy and Strategy
• Services and Functions
• Governance, Cooperation and Organizational structure.

With understanding could a common approach to eCall benefit the wider society?

**Organizer & Moderator**
Andy Rooke, ERTICO ITS-Europe, Senior Project Manager, Belgium

**Speakers**
Cathy Bishop, GM OnStar, Global Emergency and Strategy Outreach Manager OnStar/Global Connected Consumer GM Public Policy, USA

Minoru Nakamura, Yokasuka Research Park, Director, Japan

Marcel Visser, GEMALTO, VP Automotive M2M, Germany

Francois Fischer, ERTICO ITS-Europe, Senior Project Manager, Belgium

## SIS70 – Hackproof V2X Security Solutions

**Thursday, September 11, 8:30 – 10:00 a.m.**

The purpose of this session is to discuss the requirements and solutions for secure V2X communication. We will explore the issues related to the process of verifying the authenticity and integrity of the messages and will discuss the methodologies to implement this process under dense traffic conditions.

**Organizer**
To be announced

**Moderator**
To be announced

**Speakers**
To be announced

## SIS71 – Application of Big Data to Transportation Operations & Planning

**Thursday, September 11, 8:30 – 10:00 a.m.**

Big Data is a popular term used to describe the exponential growth and availability of data, both structured and unstructured. And Big Data may be as important to business — and society — as the Internet has become. Why? More data may lead to more accurate analysis. More accurate analysis may lead to improved decision-making. And better decisions can mean greater operational efficiencies, cost reductions, and reduced risk.

With respect to transportation, one can already see the emergence of Big Data sets in applications such as the connected vehicle, electronic ticketing for transit, electronic toll collection and congestion pricing, traveler information systems, and advanced traffic management systems. There is also an increased possibility of regional coordination of transportation operations by merging these Big Data sets, analyzing the underlying patterns and trends, and using the results to support enhancements in planning and programming, as well as the development of new transportation strategies.

This session will address some of the overarching questions associated with Big Data and its relevance to transportation planning and operations. This would include discussing what "Big Data" means to different entities in the public and private sectors, the relevance of Big Data to transportation, and identification of the most significant issues and arrangements (technological, organizational, and commercial) that need to be considered if we are to successfully harness the power of Big Data for use in transportation.

**Organizer**
Armand Ciccarelli, Appian Strategic Advisors, Principal, USA

**Moderator**
Bob McQueen, The 0Cash Company, CEO, USA

**Speakers**
Shelley Row, Shelley Row Associates LLC, President & CEO, USA

Armand Ciccarelli, Appian Strategic Advisors, Principal, USA

Eric Hill, MetroPlan Orlando, Director of System Management & Operations, USA

**Session Track**
■ Big Data and Open Data

## SIS72 – Automated Driving Technology Research in Japan — Strategic Innovation Promotion Program

**Thursday, September 11, 8:30 – 10:00 a.m.**

Built-in driver assistance features will be integrated with connected vehicle technologies for safety and efficiency. Evolutionary process will continue toward higher level of automated driving. Japanese government initiated a research project on automated driving systems under Cross-Ministerial Strategic Innovation Promotion Program (SIP). Scope of the project includes 1) development and verification of automated driving technologies, 2) development of evaluation models and simulation technologies on vehicle behavior and collision to effectively reduce traffic fatalities and congestion, 3) international cooperation, and 4) deployment for next generation urban transportation services. Program Director and other members of the project will present objectives, goals and technologies and discuss social implications.

**Organizer & Moderator**
Hajime Amano, ITS Japan, President and CEO, Japan

**Speakers**
Hiroyuki Watanabe, Council for Science and Technology, Cabinet Office, Program Director, Japan

## SIS73 – Future Mobility Beyond 202X

**Thursday, September 11, 10:30 a.m. – 12:00 p.m.**

Speakers will discuss the future mobility beyond 202X following Tokyo 2013.

In conjunction with ITS, the new mobilities with different energy sources will provide additional values for people in many different scenarios. In this session, expect speakers from all over the world to bring future visions of transportation in various circumstances and share the new value for many different transportation users.

Expected outcomes from this session are to share the bright future with new mobilities and discuss the task to be resolved.

**Organizer**
Takahiko Uchimura, ITS Japan, Japan

**Moderator**
To be announced

**Speakers**
To be announced

**Session Track**
■ New Mobility

## SIS74 – Towards Deployment of Automated Vehicles — Requirements for Road Testing

**Thursday, September 11, 10:30 a.m. – 12:00 p.m.**

Automated vehicles are promising development lines for the automotive industry with several manufacturers designing for mass market introduction. Different automation levels have been defined linked with several time-to-market estimations. The industry needs to test prototypes to validate technology while authorities need to resolve how to test on public roads to assess benefits and evaluate the technology while maintaining safety. A common approach to testing automated vehicles on public roads is necessary in order to minimize risks for road users while not damaging the technology acceptance.

This Special Interest Session will summarize the different initiatives and viewpoints of the main stakeholders regarding the evaluation and assessment of the technology, the mandatory or voluntary regulations to be applied along the technology lifecycle, and the different approaches to public road testing while emphasizing the need for a common, public-private, international approach.

**Organizers**
Álvaro Arrúe, IDIADA Automotive Technology, Project Manager, Spain

Felix Fahrenkreg, IKA, Germany

**Moderator**
Eric C. Williams, IIHS, Attorney, USA

**Speakers**
Barbara Wendling, Volkswagen of America, Safety Affairs & Vehicle Testing, USA

Felix Fahrenkreg, IKA, Germany

Richard Bishop, NHTSA, USA

Tomas Gea i Calza, Barcelona Municipality, Innovation Manager, Spain

Akio Hosaka, HIDO, Senior Researcher, Japan

**Session Track**
■ Automated Transportation

## SIS75 – Traffic Sensing by Various Manners

**Thursday, September 11, 10:30 a.m. – 12:00 p.m.**

Traffic sensing is the key for traffic demand management. Traditionally, sensing devices, such as loop counter and ultrasonic detector, are embedded into the road infrastructure. As all of you may know, thanks to the ICT technology, data created from probe cars or smartphone applications become one of the promising sources for providing mobility services and the traffic management. Or it may collect from advanced sensing technology such as image processing and active sensing. However, data from different sources have different characteristics. This session will try to bring various approaches in one session and discuss in wide range their advantages and disadvantages from various applications point of views.

**Organizer & Moderator**
Nobuyuki Ozaki, Toshiba Corporation, Senior Fellow, Japan

**Speakers**
To be announced

**Session Track**
■ Traffic Management

## SIS76 – The Impacts of Connected Vehicle Technology on Transportation Agency Operations

**Thursday, September 11, 10:30 a.m. – 12:00 p.m.**

This session will summarize connected vehicle deployment considerations from a practitioner's perspective, applying lessons learned from Safety Pilot and other connected vehicle test bed programs around the country. The session will also review the lessons learned from various test bed programs and provide a forum for discussion on technical and institutional problems shared among the test beds. It will offer realistic guidance to practitioners in light of the 2014 NHTSA decision. Infrastructure considerations related to roadside equipment, communications, head-end hardware, and software will be emphasized. Policy and other institutional considerations will also be addressed. The discussion of V2I deployment needs will focus on applications that support state and local agency operational objectives related to safety, mobility, traffic operations, multi-modal integration, and asset management.

**Organizer**
James Barbaresso, HNTB Corporation, Vice President, Intelligent Transportation Systems, USA

**Moderator**
Matt Smith, Michigan Department of Transportation, ITS Program Manager

**Speakers**
Gary Piotrowicz, Road Commission for Oakland County

**Session Track**
■ Connected Vehicles & Cooperative Systems

## SIS77 – Modeling Connected Vehicle Applications and Dynamic Management Strategies: Issues and Challenges

**Thursday, September 11, 10:30 a.m. – 12:00 p.m.**

The Analysis, Modeling, and Simulation (AMS) of Active Transportation Demand Management (ATDM) and Dynamic Mobility Applications (DMA) requires a partnership of many different disciplines ranging from traditional transportation modeling to wireless communication and system management decision making. As part of better understanding the future applications of DMA and ATDM strategies, the U.S. Department of Transportation (U.S. DOT) is sponsoring a project for the development of AMS Testbeds for the purpose of evaluating different ATDM strategies and DMA applications in various combinations. AMS Testbeds will serve as virtual computer based environments in a laboratory setting to facilitate detailed modeling and analysis. This panel brings together experts who have evaluated many applications related to advanced and dynamic mobility strategies using AMS techniques.

This panel session will explore different aspects of this task, including:
- The heterogeneity of travelers decisions in response to dynamic management strategies.
- The assessment of behavioral models in the different stages of trip planning.
- The Connected Vehicles and/or portable devices applications and future challenges.
- The influence of using different wireless communications methods/protocols on the AMS system.
- The evaluation and validation of the Active Traffic Management process.

**Organizer**
James Colyar, U.S. Department of Transportation – Federal Highway Administration, Transportation Specialist, USA

**Moderator**
Karl Wunderlich, Noblis, Fellow, USA

**Speakers**
Balaji Yelchuru, Booz Allen Hamilton, USA

Ismail Zohdy, Booz Allen Hamilton, Associate, USA

Ram Pendyala, Arizona State University, Professor, USA

Thomas Bauer, Mygistics, Inc., Chief Operating Officer, USA

Alex Gerodimos, TSS-Transport Simulation Systems, President, USA

**Session Track**
■ Connected Vehicles & Cooperative Systems

## SIS78 – Collision of the Physical & Cyber Security in an ITS World

**Thursday, September 11, 10:30 a.m. – 12:00 p.m.**

Panel session discussing the collision of the physical and cyber worlds brings new challenges to securing the transportation sector including the customer experience, passenger journey, and treatment of our freight in every mode. These require greater consideration as to the impact of threats on infrastructure and processes calling for deeper attention on the means of attack, their consequences, requiring a visionary thinking to risk mitigation, its impacts, and organizational development.

The greatest risk that transportation organizations are bracing themselves for is the combination of both physical and cyber-attacks on their infrastructure; this is the highest risk factor that many are working to control within corporate risk registers. The explosion of social media applications, on-line technologies and self-service user terminals provide an avenue for increased risk.

In this panel debate, hear from senior security staff from an infrastructure operator (Heathrow Airport), a Semiconductors manufacturer (NXP) and a service provider (CGI) as to the main challenges and how the industry is looking to overcome them.

**Organizer & Moderator**
Theo Quick, CGI, Director - Global Transport, Post & Logistics Industry, United Kingdom

**Speakers**
Timo van Roermund, NXP, Senior Research Scientist

Mark Jones, Heathrow Airport

Cheryl Martin, CGI

## SIS79 – SMART Tolling for Achieving Future Green Road

**Thursday, September 11, 10:30 a.m. – 12:00 p.m.**

This session will focus on smart tolling systems for Smart Highway. In Smart Highway, operators and drivers would be able to see real time traffic information. The smart highway is a next generation road aiming to be Congestion Free, Stop Free and Accident Free through traffic information services. Smart tolling systems support toll collection, enforcement for overloaded vehicles, speed violation and others base on wireless communication systems. This session will introduce development of a smart tolling system as a multilane free flow road charging systems. Further, it will provide an opportunity to share best practices in the world.

**Organizer**
Ki Han Lee, Seoul Women's University, Professor, Korea

**Moderator**
Joseph Averkamp, America Commercial and State Government Transportation, Senior Director, Technology, policy and Technical Strategy, USA

**Speakers**
Trond Foss, SINTEF Technology and Society, Norway

Paula Okunieff, Xerox, Sr. Solutions Architect, USA

Ki Han Lee, Seoul Women's University, Professor, Korea

Young-Jun Moon, The Korea Transport Institute, Director, Korea

**Session Track**
■ Traffic Management

# SIS80 – Security for Connected Vehicles

## Thursday, September 11, 10:30 a.m. – 12:00 p.m.

Connected vehicles will need to be equipped with a Security Certificate Management System (SCMS) that will allow each vehicle to have some confidence that a received message was sent from a certified device and that the message was not altered between transmission and reception.

To be effective, the SCMS must be capable of revoking the security certificate from a vehicle that has developed a signal problem, whether maliciously or innocently, and either prevent that vehicle from generating new signals until the problem is repaired, notify other vehicles sharing the road to decline to accept signals from the vehicle with a revoked security certificate, or both. While the SCMS will distribute revocation information, the reception of this information to individual vehicles will vary. In addition, the security certificates will need to be renewed from time to time, because current technology does not support the creation of a certificate that will last the expected life of a vehicle.

Security systems to support connected vehicles are under development in both the U.S. and Europe. This development has revealed both technical and policy issues which must be addressed prior to completion.

This session will focus on the status of the security system in each region and will discuss the similarities and differences between them.

**Organizer**
To be announced

**Moderator**
To be announced

**Speakers**
To be announced

# SIS81 – A Web Resource on ITS and Network Operations from the World Road Association

## Thursday, September 11, 1:30 – 3:00 p.m.

The World Road Association (PIARC) ITS Handbook has been a resource to ITS professionals for many years. It is now being developed as a web based resource for ITS professionals and others seeking to access authoritative information on ITS. Funded by the U.S. Department of Transportation and managed by ITS America, the international team of authors are working to provide practitioners with an easily accessible and referenced resource.

This session will provide an update on progress and highlight various aspects of the resource coverage to help spread knowledge and encourage use of this new tool.

**Organizer**
Richard Harris, Xerox Services, Solution Director, International Transportation and Government, United Kingdom

**Moderator**
Thomas Kern, ITS America, Executive Vice President, USA

**Speakers**
Risto Kulmala, Finnish Transport Agency, Principal Advisor on ITS, Finland

Stig Franzen, Chalmers university of Technology, Sweden

Richard Harris, Xerox Services, Solution Director, International Transportation and Government, United Kingdom

# SIS82 – Maritime Informatics — How ITS Is Transforming the Shipping Industry

## Thursday, September 11, 1:30 – 3:00 p.m.

The shipping-sector is a vast part of the global transport system. However, it is underrepresented when it comes to attention and dissemination in the area of ITS and ICT for transport.

In many ways the shipping-sector have not utilized the potentials of ICT much depended on expensive communication, segmented business structure and in many cases — old habits. However, shipping is on the same hand far ahead of the land-transports when it comes to implementation of ITS infrastructure. Almost all sea-going vessels are equipped with real-time positioning, access-control, and IT-based security systems. All mandated by IMO from safety and security point of view, but not utilized by the industry for the benefits of process-enhancement and the development of new business-models in the way IT effects other segments of the transport system.

There are signs that the shipping industry is slowly starting to adapt to the digital age. More and more vessels now have internet-connection onboard, there are interesting projects launched in the area of Sea Traffic Management (STM) where ITS is playing a vital part and current environmental challenges requires a much higher degree of integration and transparency in order to affect the transport system in a more sustainable direction. ITS will also be an important tool in enabling shipping to be a fully integrated part of the multi-modal chain.

A special interest session in the area of Maritime ITS and informatics which, we believe could be a welcomed new topic at the ITS world congress, initiating a higher degree of knowledge- and solution-transfer between different transports sectors.

We propose a special interest session that should cover at least the following three areas of interest:
- Sea Traffic Management
- Maritime ITS for energy efficiency
- Maritime ITS for an efficient global logistic chain

**Organizer**
Per-Erik Holmberg, Viktoria Swedish ICT, Business Manager, Researcher Maritime Informatics, Sweden

**Moderator**
Mikael Lind, Viktoria Swedish ICT, Research Manager, Sweden

**Speakers**
Richard Watson, University of Georgia, Professor, USA

Jin Park, Korean institute of Ocean Science and technology, Senior Research Scientist, Maritime Safety Research Division, Korea

Ulf Svedberg, Swedish Maritime Authority, Senior Coordinator, Innovation & Development, Sweden

Per-Erik Holmberg, Viktoria Swedish ICT, Business Manager, Researcher Maritime Informatics, Sweden

## SIS83 – Adaptive Signal Control Technologies in the World of Connected and Automated Vehicles

**Thursday, September 11, 1:30 – 3:00 p.m.**

Adaptive Signal Control Technologies (ASCT) represent one of the most efficient ITS applications. These technologies have been used for decades to alleviate traffic congestion, improve safety, and reduce carbon footprint on urban streets around the world. While these systems have struggled to increase their presence on U.S. roads for many years, we have recently seen significant increase in their deployments. However, our transportation paradigm is about to change significantly with more automation and connectivity being added in every aspect of our transportation system. Programs such as Connected Vehicle Technology and Automated Vehicles require that we reinvestigate roles of each of the transportation system's components. This session will address purpose, significance, and future needs of ASCT in the new world of connected and automated transportation. The session will bring together the leading experts from the ASCT industry from vendor, public agency, and academic sides. The main focus will be on identifying current features and future needs to integrate ASCT into Connected Vehicle and Automated Vehicles initiatives. The presentations will cover both current efforts with particular ASCTs and future needs and trends. The session will focus both on presenting the current state-of-the-practice deployments and the state-of-the-art technologies.

**Organizer & Moderator**
Aleksandar Stevanovic, Florida Atlantic University, Assistant Professor, USA

**Speakers**
Doug Gettman, Kimley-Horn, USA

Larry Head, University of Arizona, Associate Professor & Department Head, Systems & Industrial Engineering, USA

Reggie Chandra, Rhythm Engineering, CEO, USA

Steven Shaw, Roads and Maritime Services, Australia

**Session Track**
- Connected Vehicles & Cooperative Systems

## SIS84 – The Internet of the Auto: Clouds, Crowds & Traffic

**Thursday, September 11, 1:30 – 3:00 p.m.**

The Internet of the Automobile defines how disruptive technologies are connecting the driver, the car, and the road network, devices, apps, and data all through inter-connected networks.

Using real-world examples of "Clouds, Crowds, and Traffic," this session will explore the benefits of Big Data in delivering intelligent driving services such as traffic, parking, fuel, EV services, and road weather to help automakers improve the driving experience for consumers and to reduce the individual, economic, and environmental toll of global traffic congestion.

The session will explore the future of connected navigation based upon revolutionary approaches of vehicle OEMs and infotainment providers in integrating smartphone connectivity, apps, and cloud services into the car while integrating vehicle probe data and mobile crowdsourcing to deliver better navigation experiences. Additionally, attendees will learn how emerging AI techniques such as predictive analytics, pattern recognition and machine learning are the catalyst for a new generation of services.

**Organizer**
Pete Costello, INRIX, Director Business Development, Public Sector, USA

**Moderator**
To be announced

**Speakers**
To be announced

# SIS85 – Accessibility 360 — ITS-enhanced Accessible Transportation Services

## Thursday, September 11, 1:30 – 3:00 p.m.

According to the World Report on Disability (2011) published by the World Health Organization and World Bank, "… more than one billion people in the world live with some form of disability. In the years ahead, disability will be an even greater concern, because its prevalence is on the rise." The report further noted, "lack of access to transportation" as a barrier for people with disabilities obtaining employment, training, healthcare, and participation in community life. In 2013, the United States Department of Transportation (USD) launched the Accessible Transportation Technologies Research Initiative (ATTRI) that seeks to enhance mobility choices and quality of life for travelers with disabilities. Recent ITS research in connected vehicle and automation, along with other technological innovations, such as assistive robots and crowdsourcing, could lead to many possibilities and help create seamless transportation environments for all citizens. ATTRI seeks to leverage these technologies to empower travelers of all abilities to reliably, safely and independently plan and execute travel.

The session speakers will facilitate international dialogs and discuss few innovative concepts and technological advances in accessible transportation to enhance accessibility for all, including travelers with disabilities.

**Organizer**
Gwo-Wei Torng, Noblis Inc., Principal, USA

**Moderator**
Mohammed Yousuf, Federal Highway Administration, U.S. Department of Transportation, Office of Operations R&D, Turner Fairbank Highway Research Center, USA

**Speakers**
To be announced

## SIS87 – From Vertical to Horizontal to Connected Clouds

**Thursday, September 11, 1:30 – 3:00 p.m.**

Intelligent Transportation System solutions are increasingly faced with a demand for flexibility, short time-to-market and the ability to react to rapidly evolving customer expectations and business environments. Corresponding solutions therefore have to work across service providers, platform providers and businesses. Vertical service and solution designs, targeting specific services, deployment or business relations, are getting increasingly challenged due to their inflexibility and evolution cost. Horizontal system designs, separating connectivity provisioning from service enablement functions, and separating the latter from content management and service operations, are the foundation for scale and re-use. Loosely coupled concepts, with cloud ready deployments and international operations, are paving the way forward for flexible and cost efficient service provisioning within ITS businesses. This session with touch base on what has been achieved by the presenting industry leaders, what this could mean for pay-as-you-grow business models and for software-as-a-service deployments. An outlook to the next steps in the ITS systems transformation will be given. Challenges like interacting clouds and research ideas for linking ITS business domains will be discussed.

**Organizer**
Friedhelm Ramme, Ericsson Global Competence Hub, Ericsson GmbH, Manager Automotive, Germany

**Moderator**
Olle Isaksson, Ericsson Global Services, Head of Transport & Automotive, Sweden

**Speakers**
Roopesh Das, Wallenius Wilhelmsen Logistics, Director, IT Architecture & Center of Excellence, USA

Claes Herlitz, Ericsson AB, Head of Public Transport, Sweden

Friedhelm Ramme, Ericsson Global Competence Hub, Ericsson GmbH, Manager Automotive, Germany

**Session Track**
■ Big Data and Open Data

## SIS88 – The Connected Car Becomes the Ultimate Mobile Device

**Thursday, September 11, 1:30 – 3:00 p.m.**

We're on the cusp of a technology revolution that will fundamentally change the way we interact with cars as well as how we build and manage our future highways. Drivers around the world waste the equivalent of one week's vacation idle in traffic, robbing our economies of billions of dollars and polluting the planet. But connected cars and vehicle to vehicle communications could hold the key to improving urban mobility.

We're just beginning to tap the potential of Big Data, V2V and V2I communications. With data collected from connected cars set to proliferate, the road ahead is paved with the insights we need to understand the individual, economic and environmental toll of congestion in ways that makes our roads smarter and traffic-powered navigation systems in our vehicles indispensable to the world's one billion drivers. For example, vehicles that know the safest routes through storms based on road conditions sharing insight with other vehicles as well as transportation agencies helping them dispatch snow and ice removal vehicles to impacted locations more quickly.

In this session, executives from INRIX and leading global automakers will discuss how Big Data is feeding both city planning and automotive design to deliver on this vision for future mobility.

**Organizer**
Jim Bak, INRIX, Senior PR & Marketing Manager

**Moderator**
Bryan Mistele, INRIX, CEO, USA

**Speakers**
Doug VanDagens, Ford Motor Company, Global Director of Connected Services Solutions, USA

Robert Hein, BMW Group, Head of Personal Mobility & Adaptivity, Germany

Brian Inouye, Toyota Motor Company, National Manager Technology & Engineering

Daniel Grill, Mercedes Benz Research & Development, Director App Development Group

**Session Track**
■ Connected Vehicles & Cooperative Systems

# Technical/Scientific Sessions

## TS01 – Using Simulation For Traffic Management Applications

**Monday, September 8, 10:30 a.m. – 12:00 p.m.**

**13139** **MATLAB-VISSIM Interface for Online Optimization of Green Time Splits**
Prateek Bansal, The University of Texas at Austin, Graduate Research Assistant, USA

**13290** **Monitoring and Simulation for Traffic Management with Telematics Probe Data**
Shinya Yano, Mitsubishi Heavy Industries, Japan

**13658** **Validation and Quality Management of the San Diego I-15 ICM Aimsun Online Real-time Simulation Model**
Matthew Juckes, Transport Simulation Systems, Senior Project Manager, USA

**13667** **Deconstructing Traffic to Construct Simulation Models**
Satya Muthuswamy, KLD Engineering, P.C., President, USA

**13708** **A Web Application of Flexible Open-structure Traffic Simulation**
Xuan Shi, University of Wisconsin - Madison, Research Assistant, USA

## TS02 – Local Based Travel Information

**Monday, September 8, 10:30 a.m. – 12:00 p.m.**

**12111** **Development of Integrated System for Real-time Traffic Information on Social Network Services**
Hyokyoung Eo, Korea Institute of Construction Technology, Researcher, Korea

**12346** **Traffic Information Service by Data Fusion Apps and BIS**
Bumjin Park, Korea Institute of Construction Technology, Senior researcher, Korea

**13007** **The Current Situation and Prospect of the Travel Information Service in Megacities of China**
Jian Gao, National ITS Research Center, Research Institute of Highway Ministry of Transport, China, Engineer, China

**13746** **A Smarter Trip Planning with a Broader Application of ITS Engineering**
Ehsan Beheshtitabar, Linkoping University, Iran

## TS03 – Connected Vehicle Deployment and Field Tests

**Monday, September 8, 10:30 a.m. – 12:00 p.m.**

**Session Track:** ■ Connected Vehicles & Cooperative Systems

**13434** **IEEE 1609 Protocol Conformance Test Tool**
Yen-Chu Huang, Industrial Technology Research Institute, Chinese-Taipei

**12075** **Bringing Connectivity to Automation — A Vehicle-based Researcher Platform to Field Test Operational Concepts**
Christopher Armstrong, Leidos, Transportation Engineer, USA

**13237** **Maricopa County Department of Transportation SMARTDrive Program: Connected Vehicle Applications in Arterial Environment**
Faisal Saleem, Maricopa County DOT, ITS Branch Manager & MCDOT SMARTDrive Program Manager, USA

**13253** **Preparing a Possible Oregon Road Map for Connected Vehicle/Cooperative Systems Deployment Scenarios**
Robert Bertini, Portland State University Department of Civil and Environmental Engineering, Professor, USA

**13263** **High Level Deployment Concepts for Connected Vehicles**
Brian Burkhard, Transpo Group, Vice President, USA

**13673** **Early Deployment of V2I Technology on a "Smart Corridor"**
Jeff Hochmuth, CDM Smith, Senior ITS Engineer, USA

## TS04 – V2X Technology Evaluations

**Monday, September 8, 10:30 a.m. – 12:00 p.m.**

**Session Track:** ■ Connected Vehicles & Cooperative Systems

**12305** **V2V Prototype System Construction and Analysis in Campus Environment**
Luoyi Huang, DENSO (China) Investiment Co., Ltd., China

**13271** **The Use of Wireless Data Devices as Smart Transponders**
Enrique Cramer, Intelligent Imaging Systems, Inc., Business Development Director, Canada

**13279** **V2V 5.9 GHz RF Channel Models**
Paul Alexander, Cohda Wireless, CTO, Australia

**13311** **Decentralized Congestion Control for DSRC Systems: A Comparison**
Malik Khan, Cohda Wireless, R&D Engineer, Australia

## TS05 – Cooperative ITS System Standards

**Monday, September 8, 10:30 a.m. – 12:00 p.m.**

**Session Track:** ■ ITS Rules and Standards

**12034** **Investigation of ITS Coexistence on the Physical Layer**
Liesbeth Gommé, NXP Semiconductors, Belgium

**12804** **Major European C-ITS Corridor Project Defines V2I Functions & Interfaces Subtitle: "Traffic Management in a C-ITS Environment"**
Anto Komarica, Kapsch TrafficCom AG, Solution Manager, Austria

**13459** **SCORE@F project: Cooperative ITS and DATEX II at the Service of Roads Operators and Roads Users**
Ludovic Simon, CEREMA / DTerIDF, Head of Unit, France

**13484** **Session-Based Communication over IEEE 802.11p for Novel Complex Cooperative Driver Assistance Functions**
Oliver Sawade, Fraunhofer FOKUS, Senior researcher, Germany

**13548** **Connected Vehicle Integration Research and Design Guidelines Development: Formative Expert Interviews**
Naomi Dunn, Virginia Tech Transportation Institute, Research Associate, USA

## TS06 – Policy Changes To Connected and Autonomous Vehicles

**Monday, September 8, 10:30 a.m. – 12:00 p.m.**

**Session Track:** ■ International Cooperation to Expand ITS

**12136** **ITS Horizon Scan 2.0: Examining the Larger Trends that will Impact Transportation**
Michael McGurrin, Noblis, Senior Fellow, Transportation Systems, USA

**12644** **A Review and Analysis of State Regulatory Approaches to Automated Vehicles**
Eric Paul Dennis, Center for Automotive Research, Transportation Systems Analyst, USA

**12645** **A Review and Analysis of the National Highway Traffic Safety Administration Preliminary Statement of Policy Concerning Automated Vehicles**
Eric Paul Dennis, Center for Automotive Research, Transportation Systems Analyst, USA

**12753** **Barriers to Successful Implementation of a National DSRC Connected Vehicle Network**
Eric Paul Dennis, Center for Automotive Research, Transportation Systems Analyst, USA

## TS07 – Routing Strategies for Improved Eco-Driving

**Monday, September 8, 10:30 a.m. – 12:00 p.m.**

**12481** **Connectivity-Enhanced Route Selection and Adaptive Control for the Chevrolet Volt**
Eric Wood, National Renewable Energy Laboratory, Research Engineer, USA

**12563** **Eco-navigation Route Choice Evaluations with a Simplified, Macro-model for Fuel Consumption and Emissions Estimation**
Yunjie Zhao, University at Buffalo, USA

**13012** **A Methodology for Eco-Routing Based on Vehicle Fuel Consumption and Emissions**
Weixia Li, Tsinghua University, China

**13660** **Trip Prediction Using GIS for Vehicle Energy Efficiency**
Dominik Karbowski, Argonne National Laboratory, USA

**13687** **A Connected Vehicle Supported Routing Strategy for Electric Vehicles**
Kakan Dey, Clemson University, Graduate Research Assistant, USA

## TS08 – Smart Parking 1

**Monday, September 8, 10:30 a.m. – 12:00 p.m.**

**12418** **Payment Platform Model for Parking — Parking Operator Approach**
Tami Koivuniemi, Finnpark Ltd., Chief Operating Officer, Finland

**12584** **Parking Data Broker — Flexible Parking Data Management Across Enterprise and Beyond**
Ali Lattunen, Finnpark Ltd, Technology Specialist, Finland

**13006** **Implementation of an Autonomous ParkingSystem in a Parking Lot**
Po-Kai Tseng, Automotive Research & Testing Center, Chinese-Taipei

**13407** **I-94 Truck Parking Information and Management System — Providing Value through Success Management**
Collin Castle, Michigan Department of Transportation, Connected Vehicle Technical Manager, USA

**13551** **Evaluation of Dynamic Parking Lot Vacancy Information Board at the Rest Area Entrance**
Tadahisa Muramatsu, Central Nippon Expressway Company Limited, Japan

## TS09 – New Frontiers For ITS

**Monday, September 8, 10:30 a.m. – 12:00 p.m.**

**12385** **Traffic Signal Control Using Cellular Communications**
Robert Blount, Broward County Traffic Engineering DIvision, communications manager, USA

**13273** **MnPass Easy; Keeping the H.O.T. Lane Hot**
Brian Scott, SRF Consulting Group, Inc., Principal, USA

**13716** **Integrating Roadway Tunnels Into the Regional Traffic Network**
David Markt, Schneider Electric, Solution Architect, USA

**13726** **Innovations in Automated Airport Ground Transportation Management Systems**
Forrest Swonsen, TransCore, Director, Airport Systems & Services

**13783** **Latest Achievements in the Operation of an Innovative AID Sastem for Road Tunnels**
Peter Böhnke, ave GmbH, Managing Director, Germany

## TS10 – Safety Based Sensor Systems

**Monday, September 8, 10:30 a.m. – 12:00 p.m.**

**Session Track:** ■ Traffic Safety

**12237** **Advanced Driver Assistance Systems Model-based on Vehicle of a Front Camera and Side Cameras Achieve Departure Warning**
Chiu cheng-Yu, HAITEC, Engineer, Chinese-Taipei

**12251** **Improving Performance of DS/SS IVC Scheme based on Location Oriented PN Code Allocation by Restricting Communication Distance**
Reiki Kusakari, Tokyo University of Science, Student, Japan

**12450** **Elements to Consider for Parking Automation**
Yu Hiei, Toyota Motor Corporation, Japan

**13146** **Implementation of a Computer Vision Based Advanced Driver Assistance System in Tizen IVI**
Gorka Velez, Vicomtech-IK4, Spain

**13595** **Driving with Multi-dimensional Multi-view**
Anne Schmiedeberg, Car Buddy Corporation, President, USA

## TS11 – Recent Developments in Data Collection

**Monday, September 8, 10:30 a.m. – 12:00 p.m.**

**Session Track:** ■ Big Data and Open Data

**12394** **A Train Speed Measure and Arrival Time Prediction System for Highway-Rail Grade Crossings**
Yifeng Chen, Nebraska Transportation Center, Research Assistant, USA

**13621** **License Plate Recognition As a Tool for Fiscal Inspection**
Cledson Sakurai, Universidade Federal de São Paulo, Professor, Brazil

**12192** **Towards Risk Prediction Considering People Flow**
Mikio Sasaki, DENSO Corporation, Project Manager, Japan

**12315** **Performance Evaluation of Transit Data Formats on a Mobile Device**
Sean Barbeau, University of South Florida, Principal Mobile Software Architect for R&D, USA

**12846** **Gait Based Pedestrian Identification with Reducing Dependency of Accelerometer Position**
Takeshi Sawada, Toyota Info Technology Center Co., Ltd., Japan

## TS12 – Implications of Driver Behavior on ITS System Performance

**Monday, September 8, 3:00 – 4:30 p.m.**

**Session Track:** ■ Driver Behavior and Support

**12630** **Assessing the Implications of Age on Applying Visual-manual Distraction Guidelines to Portable Telematics Interactions**
Yu Zhang, DENSO International American, Inc., Senior Design Engineer, USA

**12789** **Driver Vehicle Interaction and the Impact of Interruption Type on Task Completion and Driving Performance of a Connected Vehicle System**
LaTanya Holmes, Virginia Tech Transportation Institute, Research Associate, USA

**13096** **Prediction of the Meta-stability Phase through Analysis of Driving Behavior**
Toshio Ito, Shibaura Institute of Technology, Professor, Japan

**13103** **Effects of Auditory and Visual Secondary Tasks on Drivers' Vision: an Ergonomics Research for IVIS**
Tong Zhu, Chang'an University, Associate Professor, China

## TS13 – Big Data Management and Analysis

**Monday, September 8, 3:00 – 4:30 p.m.**

**Session Track:** ■ Big Data and Open Data

**12208** **The Significance of the Insignificant**
Jason Moss, Mouchel, Technical Director, United Kingdom

**12889** **Performance Metrics Trend Analysis of Features Present in Transportation Systems**
Alvaro Gil, Xerox Innovation Group, Senior Research Scientist, USA

**13020** **A*DAX for Transport Data Management, Sharing and Analytics**
Huayu Wu, Institute for Infocomm Research, Singapore

**13238** **Management Procedures for Data Collected via Intelligent Transportation Systems**
Qiang Hong, Center for Automotive Research, Senior Research Scientist, USA

**13308** **Big Trucks; Big Data: Opportunities for Improvements in Carrier Performance and Profitability**
Dan Filby, First Advantage, Executive Vice President and Managing Director, USA

## TS14 – Evaluating Deployments

**Monday, September 8, 3:00 – 4:30 p.m.**

**12896** **A Review of International ITS Procurement Methods and Recommendations on How to Improve Its Procurement in Australia**
Clarissa Han, ARRB Group Ltd, Senior Research Scientist, Australia

**13038** **Post-hoc Data Analyses of Four Regional Its Deployments**
Vaishali Shah, Noblis, Lead Transportation Analyst, USA

**13111** **Motivations for Adopting a New, Innovative Travel Service: Insights from the Ubigo Field Operational Test in Gothenburg**
Jana Sochor, Chalmers University of Technology, Postdoctoral Researcher, Sweden

**13367** **Deploying ITS Services: Case Finland-Russia Smart Transport Corridor**
Karri Rantasila, VTT – Technical Research Centre of Finland, Key Account Manager, Finland

## TS15 – Innovations in Bus Vehicle Systems

**Monday, September 8, 3:00 – 4:30 p.m.**

**Session Track:** ■ Public Transit

**12083** **Improving the Quality of In-vehicle Wireless LAN Based on Measured Throughput**
Tsuyoshi Takahashi, Iwate Prefectural University, Japan

**12558** **I-Bus Platform for Bus Access Control in Art Cities**
Paolo Guarnieri, Autostrade Tech S.p.A., Business development, Italy

**12579** **Bus Fleet Speed Guidance Strategy in VII Environment**
Tianzi Chen, Tongji University, China

**12788** **Transit ITS Research: Dynamic Bus Operations**
Tim Witten, Blacksburg Transit, ITS/Special Projects Manager, USA

## TS16 – Signal and Arterial Applications

**Monday, September 8, 3:00 – 4:30 p.m.**

**12500** **Vehicle and Pedestrian Signal Optimization at Intersection Utilizing Intelligent Vision Sensors**
Shunsuke Kamijo, Institute of Industrial Science, the University of Tokyo, Japan

**12818** **Does Adaptive Signal Control Work? Evaluating Oregon's Five Corridors with High-Resolution Performance Data**
Shaun Quayle, Kittelson & Associates, Inc., Senior Engineer, USA

**13106** **Minimal Sufficient Network: System for Optimal Traffic Sensor Evaluation and Placement on Arterial Roads**
Joanne Cheong, Land Transport Authority of Singapore, Manager, Intelligent Transport Information Management, Singapore

**13670** **Individual Vehicle Level Evaluation of Loop, Video Image, and Microwave Detector**
Jinhwan Jang, Korea Institute of Construction Technology, Research Specialist, Korea

## TS17 – ITS, Sustainability and Business Cases

**Monday, September 8, 3:00 – 4:30 p.m.**

**Session Track:** ■ Sustainability

**12000** **ITS for Sustainable Mobility on Trans European Networks — Example of Pan-European Corridor II**
Roman Himmler, Kapsch TrafficCom AG, Manager Business Development, Austria

**12561** **The Economic Case for Connected Vehicle Infrastructure**
David Miller, Siemens Road and City Mobility, Principal Systems Engineer, USA

**12573** **Aiming at an "Intelligent Transportation Society" that We Can be Proud Of. "The Action Plan for the Development of a Transportation Community (2011–2015)"**
Koji Arita, Toyota City, Japan

**13105** **Towards Self-Sustaining 511 Systems**
Alan Clelland, Iteris, USA

**13784** **ITS Factory — Intelligence to Boost Smart City**
AKI Lumiaho, Tampereen Viatek Oy, Project Manager, Finland

## TS18 – Challenges For Smart Cities

**Monday, September 8, 3:00 – 4:30 p.m.**

**12008** **ITS Innovation Stockholm Kista — New Innovative ITS Solutions Help Stockholm Commuters**
Jens Löfgren, Sweco, Project Manager, Sweden

**12848** **Stepwise Approach to Technical Operations**
Konrad Weichmann, Siemens AG, Senior Service Manager, Germany

**13033** **Real-time, On-line Simulation Development for Advanced, Integrated, Energy Efficient Green Port/ITS/ICT Operations in China**
Edmond Chang, EDCPC, Inc., President, CEO, USA

**13217** **Adapting Municipal Service Delivery to the Digital Age — the Washington, DC Approach**
Soumya Dey, District Department of Transportation, Director of Research & Technology Transfer, USA

**13689** **ICMU - Integrated Center for Urban Mobility — São Paulo, Brazil**
Olímpio Barros, CET, Engineer, Brazil

## TS19 – Route Guidance Systems

**Monday, September 8, 3:00 – 4:30 p.m.**

**12657** **Street Scanner Geo Location**
J.R. Richardson, Raytheon, Sr. Principal Systems Engineer, USA

**12184** **A New Option for ATIS: Hands-Free, Eyes-Free, Highway Advisory Smart Phone Application**
David Jones, HNTB Corporation, Regional Manager ITS and Toll Technologies, USA

**12218** **Engineering a Statewide Travel Time Engine for Virginia**
David Robison, Open Roads Consulting, Senior Systems Engineer, USA

**12452** **The Development of Traffic Estimation System in Distributed Stream Processing Architecture**
Peng-Jui Tseng, Chunghwa Telecom Co., Ltd., Chinese-Taipei

**13168** **A Distributed Approach for Harnessing Regional Knowledge in Transregional Vehicle Routing**
Hannes Koller, Austrian Institute of Technology, Austria

## TS20 – Road User Charging 1

**Monday, September 8, 3:00 – 4:30 p.m.**

**Session Track:** ■ Economic Growth

**12464** **Toll Interoperability: Benefits, Models and Solutions**
Paul Leghart, sanef its, CTO, USA

**12693** **The Convergence of Road Markets to Face the Current Challenge of Financing Tomorrow's Road**
Simon Mc Beth, sanef its, Director of Communications and Customer Relations, Ireland

**13442** **No GPS Required: Road Usage Charging and the Future of Transportation Finance**
Matthew Dorfman, D'Artagnan Consulting LLP, Partner, USA

**13566** **The Convergence of ITS and Tolling**
Christopher Body, Kapsch TrafficCom North America, Vice President, Business Development, USA

## TS21 – Traffic Safety Applications

**Monday, September 8, 3:00 – 4:30 p.m.**

**Session Track:** ■ Traffic Safety

**12198** **Lessons Learned from Evaluation of the Interactive Project and Next Steps Towards Evaluation of Automated Driving**
Felix Fahrenkrog, Institut fuer Kraftfahrzeuge, RWTH Aachen University, Germany

**12426** **A Trial of Real-time Server-based Cooperative System for Safety Use Case**
Masashi Satomura, Honda R&D Co., Ltd., Chief Engineer, Japan

**12998** **An Evaluation of Intelligent Roundabouts Under V2V and V2I**
Jeong-Eun Eom, Pukyong National University, Korea

**13570** **Status of Development of Vehicle-to-Infrastructure (V2I) Safety Applications**
Carl K. Andersen, U.S. Department of Transportation, Connected Vehicle Program Manager, USA

**13677** **Intelligent Turn Signals: A Vital Link to an Intelligent Transportation Future**
Richard Ponziani, RLP Engineering, President, USA

## TS22 – Driver Support Systems on Personal Devices

**Monday, September 8, 3:00 – 4:30 p.m.**

**Session Track:** ■ Driver Behavior and Support

**12177** **A Dynamic Route Selection Methodology for Progressive Vehicle Navigation Applications**
Mohamad Abdul-Hak, Mercedes Benz Research and Development, Engineering Manager, USA

**12733** **Investigation of the Efficacy of Information Provision Services through Cooperative ITS**
Daisuke Watanabe, National Institute for Land and Infrastructure Management, researcher, Japan

**13498** **Vehicle Telematics: A Key Element to an Ecodriving Strategy in Commercial Vehicle Fleets**
Benoit Vincent, FPInnovations - PIT, Senior researcher, Canada

**13682** **Counteracting Traffic Congestion using Intelligent Feedback**
David Drum, University of Missouri, USA

**13720** **White Labeling of Mobile Traffic Apps — A Practitioner Guide for Highway Authorities and Private Companies**
David Kamnitzer, IBI Group, Director, Canada

## TS23 – Driver Assist Systems

**Tuesday, September 9, 10:30 a.m. – 12:00 p.m.**

**Session Track:** ■ Driver Behavior and Support

**12468** **Providing Real-time Driving Volatility Information**
Jun Liu, The University of Tennessee, Knoxville, Research Assistant, USA

**12863** **Map Based Intersection Collision Avoidance**
Erdem Ergen, KocSistem Bilgi ve Iletisim Hizmetleri, Turkey

**13220** **A Vehicle Behavior Analysis when the Merging Support Information is provided in Urban Highway Using a Driving Simulator**
Toshiyuki Nakamura, Department of Urban Management Graduate School of Engineering, Kyoto University, Assistant Professor, Japan

**13065** **Quick Response Code as an Alternative Solution to Classical V2I Communication System**
Jitendra Shah, Ford Research Center Aachen GmbH, Senior Research Engineer, Germany

**13604** **Development of an Advisory Response Model for a Connected Vehicle Enabled Freeway Merge Assistance System: Interim Status**
Md Tanveer Hayat, Center for Transportation Studies, Graduate Research Assistant, USA

## TS24 – Road User Charging 2

**Tuesday, September 9, 10:30 a.m. – 12:00 p.m.**

**Session Track:** ■ Economic Growth

**12914** **Congestion Charging: Influence of Public Consciousness on Acceptability in Jakarta Metropolitan Area**
Sugiarto -, Department of Civil Engineering, Nagoya University, Doctoral Student, Japan

**12027** **European Nationwide ETC Systems — Retire or Refurbish?**
Michael Bibaritsch, Prime Consulting Services, CEO & Senior Consultant, Austria

**12444** **New Functions of the Electric Toll Collection System**
Hironori Osaki, West Nippon Expressway Company Limited, Japan

**13383** **Innovative Enforcement Systems for Road Tolls**
Per Ola Clemedtson, NetPort Science Park, project manager, Sweden

**13545** **Integrated System Delivery of a Tolling and Traffic Management System for the Capital Beltway I-495 Express Lanes Design Build Project in Virginia**
Olu Adeyinka, Transurban, Electronic Tolling & Traffic Management Systems Manager, USA

## TS25 – Data Sharing and Open Source Data

**Tuesday, September 9, 10:30 a.m. – 12:00 p.m.**

**Session Track:** ■ Big Data and Open Data

**12414** **Open Data: Challenges and Opportunities for Transit Agencies**
Carol Schweiger, TranSystems Corporation, Vice President, USA

**13186** **Open Source Development Model for Transportation Industry: Case Study District Department of Transportation**
Rakesh Nune, District Department of Transportation, ITS Engineer, USA

**13214** **The TMDD Standard — Data Aggregator for the Infrastructure**
Siva Narla, Institute of Transportation Engineers, Senior Director, Transportation Technology, USA

**13494** **Implementing the IDTO Bundle: Leveraging Today's Emerging Technology to Benefit the Traveling Public**
Thomas Timcho, Battelle Memorial Institute, Senior Research Scientist, USA

**13758** **Making Open Data Usable for Mobile Apps**
Christian Aamodt, CIBER Norway, CTO, Norway

## TS26 – Driving Safety

**Tuesday, September 9, 10:30 a.m. – 12:00 p.m.**

**Session Track:** ■ Traffic Safety

**13174** **Acoustic Segmentation, Identification and Localization of Emergency Vehicles for Safer and Comfortable Driving**
Sacha Vrazic, IMRA EUROPE SAS, Head of German Research Office, Germany

**13296** **Characteristics between Driving Operation and Brain Activity in Curve Sections**
Shuguang Li, Graduate School of Engineering, the University of Tokyo, Japan

**13435** **Influence of the Driving Context in the Controllability Assessment**
Andreas Puetz, Institut für Kraftfahrzeuge (ika), RWTH Aachen University, Scientific Assistant, Germany

**13785** **Rider and Powered Two-wheeler Mobility Through Industry and User Communities Cooperation**
AKI Lumiaho, Ministry of Transport and Communications, Senior Adviser, Finland

## TS27 – Congestion and Demand Management

**Tuesday, September 9, 10:30 a.m. – 12:00 p.m.**

**12743** **The Tel Aviv Fast Lane — HOT Lane Management in Israel**
Thomas Sachse, Siemens AG, Traffic Engineering Expert, Germany

**13189** **Demand Management to Solve Congestion and Air Quality Issues**
Andy Gill, Siemens plc, United Kingdom

**13331** **Provision of Information on Traffic Congestions by Various Means, and Measures Against Such Congestions**
Hiroyuki Hasegawa, East Nippon Expressway Company Ltd, Japan

**13382** **The Effects of Variable Mandatory Speed Limits on the M1/A12 Westlink — An Urban Context**
Jennifer Ogawa, Mott MacDonald, United Kingdom

**13703** **On the Brink of Change; A Look at the Evolution of a Managed Lanes Project in South Florida**
Alicia Torrez, Media Relations Group, Sr. Public Information Officer

## TS28 – ITS Weather Systems 1

**Tuesday, September 9, 10:30 a.m. – 12:00 p.m.**

**12887** **Evaluation of Weather Responsive Variable Advisory Speed System in Portland, Oregon**
Robert Bertini, Portland State University Department of Civil and Environmental Engineering, Professor, USA

**13043** **Road Weather Applications and End-user Services of FOTsis**
Pertti Nurmi, Finnish Meteorological Institute, Head of Meteorlogical Applications, Finland

**13124** **ITS Technology for Winter Road Management**
Kinta Hoshi, NEXCO Engineering Niigata Co., Ltd., Construction consultant, Japan

**13241** **Development and Deployment of Innovative Weather Responsive Traffic Management Strategies**
Deepak Gopalakrishna, Battelle, Program Manager, USA

**13480** **An All-Weather Above-Ground Traffic Sensor**
Saad Bedros, Image Sensing Systems, Technical Research Manager, USA

## TS29 – Developments in Probe Data Collection

**Tuesday, September 9, 10:30 a.m. – 12:00 p.m.**

**12648** **Innovative Evaluation of Third Party Probe Vehicle Data**
Charles Lattimer, Atkins, Program Manager, USA

**12783** **Assessing Network Changes Attributed to Opening a New 67 Mile Segment of I-69 Using Field Data from Bluetooth Probe Vehicles**
Ben Smith, Purdue University, Graduate Assistant, USA

**13299** **Cellular Probe Technologies Moving Forward: The Current Trends and Perspectives on 3G, 4G, and Smartphone Applications**
Meredith Cebelak, University of Texas at Austin, USA

**13370** **Examples of Utilization Systems for Probe Information Obtained from Its Spots**
Yoshihiro Tanaka, National Institute for Land and Infrastructure Management (NILIM), Researcher, Japan

**13468** **Integrating Probe Vehicles and Stationary Detector Data to Construct Accurate N-curve**
Khairul Anuar, Old Dominion University, USA

## TS30 – Public Transportation Modeling

**Tuesday, September 9, 10:30 a.m. – 12:00 p.m.**

**Session Track:** ■ Public Transit

**13269** **Improvement of Bus Arrival Time Estimation Model by Weighted Moving Average Method**
Jisoo Kim, Korea Institute of Construction Technology, Researcher, Korea

**13669** **Rapid Index Model for Public Transit Monitoring Based on Real-time Bus GPS Data**
Ledian Zhang, Beijing University of Technology, China

**13188** **Near-side Bus Stop with Queue Jumper Lane Under Connected Vehicles**
Jia Hu, University of Virginia, Research Assistant, USA

**13288** **Optimized Transit Network Design Using Visum Simulation Tool**
Ravi Shankar K V R, NIT Warangal India, Assistant Professor, India

**13597** **Investigation of the Impact of Bus Blockage on Performance of Signalized Intersections by Using the Cell Transmission Model**
Sinan Yildirim, Gediz University, Turkey

## TS31 – Innovative Traffic Data Collection and Analysis Strategies

**Tuesday, September 9, 10:30 a.m. – 12:00 p.m.**

**Session Track:** ■ Big Data and Open Data

**12089** **Polycentricity of the Urban Structure: Spatial Movements Analysis in Shanghai with Smart Card Data**
Weifeng Li, Key Laboratory of Road and Traffic Engineering of the Ministry of Education, Tongji University, China

**12673** **An Approach for Rail Transit Ridership Analysis Based on Large-scale Mobile Phone Data**
Weifeng Li, Key Laboratory of Road and Traffic Engineering of the Ministry of Education, Tongji University, China

**13070** **Forecasting Changes of Traffic Flow Caused by Road Incidents**
Wei Liu, National ICT Australia, Researcher, Australia

**13179** **An Approach for Home-Workplace Spatial Organization Analysis Based on Large-Scale Mobile Phone Data**
Xiaoyun Cheng, Key Laboratory of Road and Traffic Engineering of the Ministry of Education, Tongji University, China

## TS32 – Innovations in Video and Aerial Sensing

**Tuesday, September 9, 10:30 a.m. – 12:00 p.m.**

**12096** **Exemplar-based Object Detection using Car-mounted Fisheye Cameras for 360-degree Object Detection**
Chikao Tsuchiya, Nissan Motor Co., Ltd., Researcher, Japan

**12946** **Using Unmanned Aerial Vehicles for Traffic and Road Management**
Erwin Vermassen, Nimera BVBA, Managing Director, Belgium

**13373** **The First Step Approach for Neuro-ITS — An Investigation on Multi-view Scenes**
Mikio Sasaki, DENSO Corporation, Project Manager, Japan

**13608** **Evaluating the Use of Unmanned Aerial Vehicles for Transportation Purposes: A Michigan Demonstration**
Colin Brooks, Michigan Tech Research Institute (MTRI), Research Scientist, USA

## TS33 – National Efforts to Plan and Deploy ITS Systems

**Tuesday, September 9, 10:30 a.m. – 12:00 p.m.**

**Session Track:** ■ International Cooperation to Expand ITS

**12301** **Johannesburg (Economic Hub of South Africa):a Smart, Sustainable City Through ITS**
Darryll Thomas, Johannesburg Roads Agency, Department Head: Mobility & Freight, South Africa

**12382** **National Transport Management in Sweden**
Stefan Janson, Trafikverket, Sweden

**12471** **ITS Deployment in Africa**
Abiyu Berlie, MTA Bridges & Tunnels, USA

**13547** **ITS Development in the Arab Middle East: Planning and Design**
James Powell, CDM Smith Inc., Principal Engineer, USA

**12589** **Abu Dhabi Multimodal ITS Strategy & Action Plan (Business Opportunities in the UAE)**
Salah Al-Marzouqi, Abu Dhabi Department of Transport, Director Integrated ITS Division, United Arab Emirates

## TS34 – Cooperative Systems Research and Development

**Tuesday, September 9, 1:00 – 2:30 p.m.**

**Session Track:** ■ Connected Vehicles & Cooperative Systems

**12194** **The Estimated Truth Will Evolve on Neuro-ITS**
Mikio Sasaki, DENSO Corporation, Project Manager, Japan

**13513** **Intelligent Network Flow Optimization (INFLO) Prototype Development and Testing — An Overview and Status**
Theodore Smith, Battelle, Manager, Transportation Policy Research and Assessment, USA

**13516** **Response, Emergency Communications, Uniform Management, and Evacuation (R.E.S.C.U.M.E.) Prototype Development and Testing — An Overview and Status**
Theodore Smith, Battelle, Manager, Transportation Policy Research and Assessment, USA

**13616** **Taxi Hailing System Using Connected Vehicle Technology**
Mohammad Hoque, East Tennessee State University, Assistant Professor, USA

**13684** **Extending Connected Vehicle and Cooperative System Concepts to Non-motorized and Vulnerable Transportation System Users**
Robert Bertini, Portland State University, Professor, USA

## TS35 – Real Time Information for Multimodal ITS Applications

**Tuesday, September 9, 1:00 – 2:30 p.m.**

**12757** **Web-based Dynamic Routing and Scheduling System for SMES: Concept and Perspective**
Tomio Miwa, Nagoya University, Associate Professor, Japan

**13003** **A Study on the Real-time Scheduling and Routing for the Major Online Supermarket**
SeungHyun KIm, Pukyung national university, Korea

**13125** **Real-time Travel Information Using Bus AVL Data**
Yingying Chen, SUPCON I.T., China

**13257** **Co-modal Adaption Between Modes of Transport — River Information Services for River Göta Älv**
Per-Erik Holmberg, Viktoria Swedish ICT, Business Manager, Researcher Maritime Informatics, Sweden

**13659** **Potentials of ITS-Applications and Traffic Information for Consignors, Consignees and Logistics Service Providers**
Andreas Pell, University of Applied Sciences Upper Austria, Research Associate, Austria

## TS36 – Policy and Strategy Benefits and Lessons Learned in ITS

**Tuesday, September 9, 1:00 – 2:30 p.m.**

**Session Track:** ■ International Cooperation to Expand ITS

**12593** **Unlocking the Benefits of ITS**
Richard Harris, Xerox Services, Solution Director, International Transportation and Government, United Kingdom

**12857** **Cost-benefit Analysis of Geofencing and Pedestrian Collision Warning System for Hybrid Buses**
Tobias Thorsson, WSP Analysis & Strategy, Sweden

**12867** **Safety and Road Closure Benefits of Rural Interstate Variable Speed Limit System**
Rhonda Young, University of Wyoming, Associate Professor, USA

**13212** **FAST-TRAC — 20 Years of Innovation-Benefits and Lessons Learned**
Ahmad Jawad, Road Commission for Oakland County, ITS Manager/ Signal Systems Engineer, USA

**13712** **The Benefits of Transportation Management Center Performance Measure Reporting**
Matt Lee, URS COPORATION

## TS37 – Aspects of Multimodal Public Transportation

**Tuesday, September 9, 1:00 – 2:30 p.m.**

**Session Track:** ■ Public Transit

**12115** **Results and Public Opinion on a Full-scale Implementation of Co-modal Travel Services, Including Park and Ride, in Gothenburg Sweden**
Peter Wessel, Iterio AB, Senior Consultant ITS, Sweden

**12837** **Development of a Multi-Modal Transportation Framework in Hangzhou**
Ting Song, SUPCON Information Technology Co. Ltd., China

**13454** **Development of an Integrated Public Transportation System Based in a Train Station**
Yousuke Hidaka, East Japan Railway Company, Researcher, Japan

**13737** **APIs and French Journey Planners Interoperability**
Jean Seng, French Ministry of Transport, Multimodal information policy officer, France

**13753** **Reorganization of the Mobility Service Provision — Public Governance as a Contributor**
Sonja Heikkilä, Aalto University, Finland

## TS38 – Commercial Vehicle Enforcement Strategies

**Tuesday, September 9, 1:00 – 2:30 p.m.**

**Session Track:** ■ Freight

**13032** **High Accuracy Weight in Motion Enforcement System Implementation and Testing**
Michal Karkowski, Road and Bridge Research Institute, Telematic Team Manager, Poland

**12754** **Using On-Board Electronic Logbook Data to Analyze Truck Driver Schedules and the Hours-of-Service Rules**
Jeffrey Short, American Transportation Research Institute, Sr. Research Associate, USA

**13745** **Use the Toll System in the Detection of Overweight Cargo Vehicles & Use of Traffic Management Data in the Modernization of a Key Highway**
Karel Feix, Kapsch Telematic Services, Managing Director, Czech Republic

**12043** **Next generation Weigh in Motion**
Vincent van der Heijden, ARCADIS Netherlands BV, senior consultant, Netherlands

**12424** **Overloaded Lorry Screening by Coupling of Technologies**
Eric Klein, Cerema, Head of the traffic's metrology pole, France

**12524** **Dynamic Force Sensing — Dynamic Axis Scalewith High Speed and Heavy Running Vehicle**
Eiichi Tada, Sensing Technologies KK Japan, CEO

## TS39 – Management of Shared and Electric Vehicles

**Tuesday, September 9, 1:00 – 2:30 p.m.**

**Session Track:** ■ New Mobility

**12095** **ICT Platforms for Electromobility Services in European Cities**
Guido Di Pasquale, PluService Srl, Project manager, Italy

**12397** **Development of Personal Mobility Sharing System — Use of Segway as Personal Mobility**
Naohisa Hashimoto, AIST, Japan

**12742** **Competence Area of Electric Vehicles and Relevance of an ITS Support for Transport and Parking Issues**
Marco Bottero, Politecnico di Torino, Italy

**13543** **Multiple Station Shared Vehicle Systems Design and Operations Modeling Framework**
Akhtar Hossain, Algonquin College, Course Developer, Canada

## TS40 – Human-Machine Interface Evaluation

**Tuesday, September 9, 1:00 – 2:30 p.m.**

**Session Track:** ■ Driver Behavior and Support

**12587** **Eye Glance Time Reduction Using AR Lane Guidance**
Yoshito Kondo, AISIN AW CO.,LTD, Engineer, Japan

**12996** **Evaluation of Navigation Displays by Analysis of Gaze Direction in a Driving Simulator**
Kimihiko Nakano, the University of Tokyo, Associate Professor, Japan

**13176** **Fundamental Study of In-vehicle Information Provision Based on Cognitive Workload of Elderly Driver When Approaching an Intersection**
Toshiki Nakamura, Keio University, Japan

**13772** **Passenger Presence Effect on Elderly Drivers Evaluated by a Driving Simulator**
Kaechang Park, Kochi University of Technology, Japan

**13773** **A New Driving Ability Test to Predict Risks of Traffic Accident Types According to Ages and Leukoaraiosis**
Kaechang Park, Kochi University of Technology, Japan

## TS41 – Tools For Providing Statewide and Metropolitan Area Enforcement Incident And Emergency Management

**Tuesday, September 9, 1:00 – 2:30 p.m.**

**13180** **Critical Infrastructure Protection System: 3rd Street, NW Tunnel — Washington, D.C.**
Rakesh Nune, District Department of Transportation, ITS Engineer, USA

**12958** **Ontario Provincial Enforcement Reporting System**
Jay Jiang, Ontario Ministry of Transportation, Canada

**12988** **Research for Highway Network Management and Emergency Management Platform of Guangdong**
Ling Sun, National ITS Research Center, Research Institute of Highway Ministry of Transport, China

**13281** **Effectively Managing and Sharing Statewide Video and Data**
John Horner, Open Roads Consulting, Principal Systems Engineer, USA

**13735** **E2call an Ecall Enhancement Proposal Based on 4G Telecommunication Network and Inference Algorithms**
Gianraffaele Percannella, Telecom Italia, TPM, Italy

## TS42 – Road User Charging 3

**Tuesday, September 9, 1:00 – 2:30 p.m.**

**Session Track:** ■ Economic Growth

**12005** **Examination on Cooperation of Etc and Axle Road Scale**
Yasuyuki Matsuda, Nippon Expressway Research Institute Company Limited, Facilities Research Department, ETC Division, Japan

**12011** **User Charging Using GNSS: Challenges and Implementations for the French Electronic Fee Collection**
Grégoire Duchâteau, Thales Alenia Space, ITS Technical Manager, France

**12080** **GNSS Road User Charging in America**
Brian Michie, EROAD Limited, Founder/Senior Vice President, New Zealand

**12361** **Present Situation and Future Prospect of ETC Services in Japan**
Harumi Kikuchi, Organization for Road System Enhancement, Director, Japan

**12539** **Homologation of Road User Charging using GNSS: Approach, Standardisation and Role of GNSS Laboratories**
Grégoire Duchâteau, GUIDE, France

## TS43 – Planning and Deployment

**Tuesday, September 9, 1:00 – 2:30 p.m.**

**12505** **Planning Needs & Gap Analysis for Safety Pilot Connected Vehicle Infrastructure Deployment**
Brian Reed, Parsons, Brinckerhoff, Manager Geospatial & Applied Technologies, USA

**12865** **Deployment Strategies for Safety Pilot Connected Vehicle Infrastructure**
Brian Reed, Parsons, Brinckerhoff, Manager Geospatial & Applied Technologies, USA

**13392** **NorSIKT — Nordic System for Intelligent Vehicle Classification**
Torbjørn Haugen, NTNU - Norwegian University of Science and Technology, Associate Professor, Norway

**13522** **West Michigan ITS Network Upgrade, An Integrated Approach**
Suzette Peplinski, Michigan DOT, Traffic Safety & Operations Engineer, USA

**13681** **Pilot Program for the Implementation of Information Exchange Processes and Interoperability Protocols Between Control and Operation Centers on Toll and Free Roads, in the National Roads Network of Mexico**
Antonio Galletero, Senermex, S.A. de C.V., Project Manager, Mexico

## TS44 – Connected Vehicle Applications

**Tuesday, September 9, 1:00 – 2:30 p.m.**

**Session Track:** ■ Connected Vehicles & Cooperative Systems

**13540** **Driver-assistive Truck Platooning and Highway Safety: Features for Drivers, Fleet Managers and Highway Officials**
Joshua Switkes, Peloton Technology, CEO, USA

**13336** **Design, Implementation and Field Trail of DSRC-based Transit Signal Priority System**
Andy An-Kai Jeng, Industrial Technology Research Institute (ITRI), Chinese-Taipei

**13381** **Potential Safety Benefits of Automatic Collision Notification — A Case by Case Analysis**
Maria Ohlin, Swedish Transport Administration, Sweden

**13729** **A Methodology to Deal with Priority for Intelligent Vehicles in a Segment of a Single Lane Highway**
Ricardo Reghelin, Federal Institute of Science and Technology, Professor, Brazil

**13786** **Deployment Challenges for Truck Platooning**
Wei-Bin Zhang, California PATH, University of California - Berkeley, Research Engineer, USA

## TS45 – Energy and Emission Impacts of ITS

**Wednesday, September 10, 8:30 – 10:00 a.m.**

**Session Track:** ■ Sustainability

**12806** **Improving Bus Ride Comfort by Means of a Novel Green Light Speed Advisory Method**
Marcin Seredynski, Public Research Centre Henri Tudor, senior researcher, Luxembourg

**12856** **Public Transport Priority: An Energy Saving Its Measure**
Marco Bottero, Politecnico di Torino, Italy

**13439** **Analysis of Fuel Economy Improvement in the Eco-driving Pilot Program with Its**
Hideki Kato, Toyota Transportation Research Institute, Japan

**13569** **Optimal Design of Energy Harvesting Vehicle Suspension Systems**
Bo Huang, Simon Fraser University, PhD student, Canada

**13622** **Connected, Automated, Zero-Emission Cars Are Essential for Improving Livable, Sustainable Communities**
John Niles, Center for Advanced Transportation and Energy Solutions – CATES, Research Director, USA

**13686** **Assessing Energy Impact of Traffic Management and ITS Technologies**
Vadim Sokolov, Argonne National Laboratory, Engineer, USA

## TS46 – Advanced Vehicle Systems

**Wednesday, September 10, 8:30 – 10:00 a.m.**

**12180** **A Novel Channel Scheduling in IEEE 1609 Vehicular Networks**
Tien – Yuan Hsieh, Industrial Technology Research Institute, Engineer, Chinese – Taipei

**12527** **Calibrating Relative Pose of Non-Overlapping In-Vehicle Cameras with Laser Pointer**
Wuhe Zou, Faculty of Engineering, Tottori University, Japan

**13242** **The Application of the Human-in-the-Loop Warning Messages Notification Model in the Design of Vehicle-to-Infrastructure (V2I) Communication Systems**
Yiqi Zhang, University at Buffalo, USA

**13344** **Mobility Impacts of Cooperative Adaptive Cruise Control (CACC) under Mixed Traffic Conditions**
Joyoung Lee, New Jersey Institute of Technology, Assistant Professor, USA

## TS47 – Cooperative Vehicle Field Test Programs

**Wednesday, September 10, 8:30 – 10:00 a.m.**

**Session Track:** ■ Connected Vehicles & Cooperative Systems

**12625** **Asset, Configuration & Maintenance Management for Safety Pilot**
Anthony Gasiorowski, Parsons, Brinckerhoff, Sr. Systems Engineer, USA

**12628** **Network Architecture & Network Monitoring for Safety Pilot Connected Vehicle Infrastructure**
Anthony Gasiorowski, Parsons, Brinckerhoff, Sr. Systems Engineer, USA

**13394** **Lessons Learned: Security and Privacy in Safety Pilot Model Deployment**
Andre Weimerskirch, University of Michigan Transportation Research Institute (UMTRI), USA

**13549** **Detroit Builds First Urban Canyon Connected Vehicle Test Bed**
Sunny Jacob, City of Detroit – Traffic Engineering Division, DPW, USA

**13624** **Automating the Analysis of Field Operational Test Data for the Evaluation of Cooperative Systems**
Bart D. Netten, TNO, Senior Scientific Researcher, Netherlands

## TS48 – ITS Weather Systems 2

**Wednesday, September 10, 8:30 – 10:00 a.m.**

**12231** **Improving the Efficiency of Road Weather Data Collection**
Paul Bridge, Vaisala Inc., Offering Manager, USA

**12717** **Winter Maintenance Quality Monitoring and Stopping Distance Evaluation**
Jukka Pahkala, Noptel Oy, Technical Support Engineer, Finland

**13057** **Framework for a Comparison and Demonstration of Seasonal Weight Restriction Models Using RWIS Data**
Dawn Gustafson, Michigan DOT, USA

**13177** **AVL/GPS Use for Winter Maintenance**
Timothy Croze, Michigan Department of Transportation, Region Support Engineer, USA

**13542** **Michigan DOT Road Weather Decision Support System**
Elise Kapphahn, Michigan DOT, ITS Engineer, USA

## TS49 – Multimodal Signal Priority Management

**Wednesday, September 10, 8:30 – 10:00 a.m.**

**Session Track:** ■ New Mobility

**12629** **Traffic Signal Priority, Business Architectures and Available Solutions — Challenges and Opportunities**
Andrew Somers, Transoptim Consulting, Specialist Consultant – Network Operations and ITS, Australia

**12884** **Enhancing System Operations through Improved Reliability & Resiliency of Traffic Signals in an Urban Environment**
Soumya Dey, District Department of Transportation, Director of Research & Technology Transfer, USA

**12702** **Concept for Commuter Express Lanes on an Urban Arterial through Signal Priority**
Melissa Ackert, Florida Department of Transportation, ATMS/TSM&O Program Engineer, USA

**13471** **Build It and They Will Come — Design of Traffic Signals for Cycle Tracks in Washington, D.C.**
Wasim Raja, District Department of Transportation, Traffic Signal/ITS Manager

**12971** **Leveraging Existing Priority Control and Vehicle Detection Equipment to Create a Multi-Modal Priority Control System with DSRC**
Kevin Eichhorst, Global Traffic Technologies, System Architect, USA

## TS50 – Development in Road Pricing and Parking Management

**Wednesday, September 10, 8:30 – 10:00 a.m.**

**12497** **iPark Video-based System to Identify available Parking Locations over Large Areas**
Seri Park, Villanova University, Assistant Professor, USA

**12759** **Transitioning to a Non-enforcement, Automated Parking Payment System**
Kelly Clonts, UC Berkeley, Graduate Transportation Engineer, USA

**13016** **Value Added Services of the GNSS CN Based Road Pricing System**
Tetsuya Adachi, Mitsubishi Heavy Industries, LTD, Japan

**13172** **Vision-based Adaptive Vehicle Detection for Intelligent Parking Service**
Liyuan Li, Institute for Infocomm Research, Senior Scientist, Singapore

**13787** **Impacts of Differentiated Road Charges — A Proposed Model**
Gideon Mbiydzenyuy, Blekinge Institute of Technology, Researcher, Sweden

## TS51 – Eco-Drive Management Systems

**Wednesday, September 10, 8:30 – 10:00 a.m.**

**Session Track:** ■ Sustainability

**13794** **Study of Eco-Driving Support System for Hybrid Vehicle Considering Traffic Flow**
Katsuya Taguchi, TOYOTA Motor Corporation, Japan

**12355** **Real-World Field Testing of Green Driving Support Systems**
Philipp Seewald, Institut für Kraftfahrzeuge, RWTH Aachen University, Scientific Assistant, Germany

**12799** **Impact Assessment for Cooperative Urban Traffic Management Based on Microscopic Traffic Flow Simulation**
Jaap Vreeswijk, Imtech Traffic & Infra, Senior Researcher, Netherlands

**12855** **Improving City Environment by Pedestrian Detection and Geofencing of Hybrid Buses**
Björn Öhman, WSP Analysis & Strategy, Sweden

**13095** **Installation of Environment Protection Management System (EPMS) to the Traffic Control Systems in Tokyo**
Aki Kabasawa, Traffic Regulation Division,Traffic Bureau,Metropolitan Police Department, Japan

**13515** **Comparison of US and EU Eco — Traffic Signal Modeling Results**
Jaap Vreeswijk, Imtech Traffic & Infra, Senior Researcher, Netherlands

## TS52 – Corridor Based Travel Information

**Wednesday, September 10, 8:30 – 10:00 a.m.**

**12570** **Study on Airport Access Behavior Modification by Providing Predictive Travel Time Information in Cases of Sudden Incident**
Takeshi Matsushita, West Nippon Expressway Co.,ltd., Assistant Manager, Japan

**13285** **Multi-dimensional Geofencing**
Kyle Rush, Center for Advanced Transportation Technology, USA

**13588** **Examination of the Methods and Costs of Providing Traveler Information**
Gregory Yova, Qvision Technology, President, USA

**12807** **Comparison of National Performance Measure Data Set (NPMRDS) with Bluetooth Traffic Monitoring (BTM) Data and I-95 Corridor Coalition Vehicle Probe Project (VPP) Data**
Elham Sharifi, University of Maryland, Research Assistant, USA

## TS53 – Safety System Sensors

**Wednesday, September 10, 8:30 – 10:00 a.m.**

**Session Track:** ■ Traffic Safety

**12451** **Suppression of Interference Wave by Employing Staggered PRIon Two Frequency Interrupted CW Radar**
Takayuki Inaba, The university of electro communications, professor, Japan

**12956** **Measuring the Performance of Active Safety Algorithms and Systems**
Tony Gioutsos, Tass International, USA

**13399** **A Reliable Lane Detection Using Steerable and Average Filters**
Seunghwa Hyun, Kyungpook National University, Master Student, Korea

**13455** **Integrated Approach to Enable Real World Testing in Public Traffic by Complex Scenario Interpretation**
Daniel Jones, Ibeo Automotive Systems GmbH, Software Developer, Germany

## TS54 – Vehicle Detection and Location by Video, Sensors, and Probes

**Wednesday, September 10, 8:30 – 10:00 a.m.**

**Session Track:** ■ Connected Vehicles & Cooperative Systems

**12602** **VMS Traffic State Information's Accuracy Evaluation Method**
Rui Dou, Shanghai SEARI Intelligent System CO., LTD, Engineer, China

**13239** **Strain Gauge Strip Sensor for Precision Weigh-in-Motion System**
Kai Kroll, Intercomp Co., Research Consultant, USA

**13310** **Road Intersection Monitoring from Video with Large Perspective Deformation**
Takashi Furuya, University of Pennsylvania, USA

**13337** **BlueEye: A Bluetooth-Based Vehicle Location Identification System for Queue Length Estimation at Signalized Intersections**
Ahmed Alghamdi, Old Dominion University, Student, USA

**13676** **Variability in Travel Time Measurement Studies by the Degree of Data Aggregation**
Aleksandar Stevanovic, Florida Atlantic University, Assistant Professor, USA

## TS55 – Development of New ITS Algorithms

**Wednesday, September 10, 8:30 – 10:00 a.m.**

**12307** **Random Forest Travel Time Prediction Algorithm using Spatiotemporal Speed Measurements**
Hesham Rakha, Virginia Tech, Professor, USA

**12310** **Congestion Prediction using Adaptive Boosting Machine Learning Classifiers**
Hesham Rakha, Virginia Tech, Professor, USA

**12612** **Cloned Vehicle Detection Approach Based on the K Shortest Paths and License Plate Recognition Algorithms**
Feng Wang, Henan University of Technology, associate professor, China

**13093** **A Passenger Flow Distribution Model under Operation Interruption for Urban Rail Transit**
Wei Li, Tongji University, China

**13740** **An Automatic Calculation Method of Identifying the Hysteresis Loop Characteristics in Macroscopic Fundamental Diagram**
Zhe, Xu, zxu62@wisc.edu, University of Wisconsin at Madison, Graduate Student

## TS56 – Road User Charging 4

**Wednesday, September 10, 10:30 a.m. – 12:00 p.m.**

**Session Track:** ■ Economic Growth

**12249** **Vehicle Axle Counting using Two LIDARs for Toll Collection Systems**
Toshio Sato, Toshiba Corporation, Chief Scientist, Japan

**13019** **Design of Application Protocol Interface based on IEEE 1609.11 for Multi-Lane-Free-Flow Electronic Toll Collection Systems**
Sang-woo Chang, Hanyang University, Korea

**13084** **Multi-Lane-Free-Flow Charging System Based on ID tag**
Ieuji Saku, Mitsubishi Heavy Industries, LTD., Japan

**13302** **SMART Tolling System Based on Multi-Lane Free-Flow**
Ryena Woo, Seoul Women's University, master´s course, Korea

**13402** **The 'F' Factor — Not Only Smart But Flexible Synergies of Traffic Control and Management Systems**
John Yalda, VITRONIC Dr.-Ing. Stein Bildverarbeitungssysteme GmbH, Product Manager Tolling & ANPR Systems, Germany

## TS57 – ITS Applications to Improve Traffic Flow

**Wednesday, September 10,10:30 a.m. – 12:00 p.m.**

**11933** **Strategy of Practical Implementation of Signal Information Drive Systems**
Shigeharu Morokuma, NPA, Japan

**12298** **Performance Analysis of a Crossing Collision Prevention System using Microscopic Traffic Simulator**
Yusuke Takatori, Kanagawa Institute of Technology, Japan

**12812** **Traffic Light Assistant**
Michael Schuch, Swarco Traffic Americas, Inc., COO, USA

**12957** **Support Vector Machines — A Suitable Approach for a Prediction of Switching Times Pf Traffic Actuated Signal Controls**
Michael Schäfer, University of Kassel, Institute of Traffic Engineering and Logistics, Promotional student, Germany

**13514** **Signal Phase and Timing for Connected Vehicles: A Discussion on its' Implementation and Challenges**
Thomas Timcho, Battelle Memorial Institute, Senior Research Scientist, USA

## TS58 – Improving Intersection Safety With ITS

**Wednesday, September 10,10:30 a.m. – 12:00 p.m.**

**Session Track:** ■ Traffic Safety

**12661** **Probabilistic Pedestrian Safety Modeling in Intersections Using a Surrogate Safety Measure**
Kaveh Gharieh, Rutgers University, Graduate student, USA

**11990** **Development and Operation of the New Push-button Signal Control System**
Akiyoshi Yamazaki, Traffic Regulation Division of Traffic Department of Saitama Prefectural Police, Japan

**12332** **Improved Bike Safety at Traffic Signals Via Better Detection**
Dan Nall, Iteris, Inc., District Sales Manager, Roadway Sensors

**12627** **Intersection Safety and Mobility System (SAMS)**
Christopher Flores, Sensys Networks Inc., Director, Product Management, USA

**12938** **Priority of PT in Trondheim by Adaptive Signaling**
Kristin Kraakenes, NPRA, Senior engineer, Norway

## TS59 – Advanced Traffic Control Strategies

**Wednesday, September 10,10:30 a.m. – 12:00 p.m.**

**12140** **RoadRunner: Infrastructure-less Vehicular Congestion Control**
Jason Gao, Massachusetts Institute of Technology, USA

**12535** **Repeatability Enhancements of Traffic Simulator and Evaluation**
Hajime Sakakibara, Sumitomo Electric System Solutions, Co., Ltd., Japan

**12580** **Sophistication of MPD Traffic Control System**
Motoyoshi Noda, Tokyo Metropolitan Police Department, Japan

**12823** **Exploring the Use of Advanced Traffic Management Systems (ATMS) to Mitigate Atypical Bottlenecks**
Yang (Carl) Lu, University of Maryland, USA

## TS60 – Commercial Vehicle Operators

**Wednesday, September 10, 10:30 a.m. – 12:00 p.m.**

**Session Track:** ■ Freight

**12665** **Innovative Solutions for Sustainable Urban Freight Transport**
Meng Lu, Dutch Institute for Advanced Logistics - Dinalog, Netherlands

**12880** **Container Number Database**
Clay Packard, Florida Department of Transportation, Software Integration Manager, USA

**13048** **Empowering the Commercial Vehicle Fleet with V2X**
Steve Sprouffske, Kapsch TrafficCom North America, Manager, ITS Solutions and Pre Sales Group, USA

**13398** **Analyzing Defined Tracking and Tracing Solutions for Intermodal International Transport of Dangerous Goods**
Christian Haider, University of Applied Sciences Upper Austria, Austria

**13782** **Grade Adaptation for Improving Commercial Vehicle Fuel Economy — Experimental Results**
Rajeev Verma, Eaton Corp, USA

## TS61 – Vehicle and Driver Communication Systems

**Wednesday, September 10, 10:30 a.m. – 12:00 p.m.**

**12291** **Modernizing Hours-of-Service Compliance: Electronic Logbook**
Soona Lee, EROAD, Senior Analyst - Global Business Development, New Zealand

**13014** **Study About the Small Diversity Antenna for 5.9GHz Band V2X Communication**
Yuji Sugimoto, NIPPON SOKEN INC., Japan

**13133** **A Priority Based Transmission Scheme for Extended Channel Access in Vehicular Networks**
Jung-Hoon Song, Center for Embedded Software Technology, Senior Research Engineer, Korea

**13224** **5.9 GHz V2X Modem Performance Challenges with Vehicle Integration**
Rick Zerod, Visteon Corporation, Technical Fellow, USA

**13736** **Measuring Integrity of Navigation in Real-Time**
Antti Lange, FKF-Corporation Ltd, CEO, Finland

## TS62 – Cooperative Systems

**Wednesday, September 10, 10:30 a.m. – 12:00 p.m.**

**Session Track:** ■ Connected Vehicles & Cooperative Systems

**13387** **Compass 4D: Method to Implement Road Side Units**
Guilhem Autret, CEREMA, France

**13426** **Successful Management of a Connected Vehicle and Infrastructure Model Deployment**
Debby Bezzina, University of Michigan Transportation Research Institute, Assistant Program Manager, Safety Pilot Model Deployment, USA

**13061** **International Survey of Best Practices in Connected and Automated Vehicle Technology Research and Deployment**
Joshua Cregger, Center for Automotive Research, Industry Analyst, USA

**13400** **SCORE@F : French field operational test for cooperative systems**
Louahdi Khoudour, CEREMA, Senior Researcher, France

**13675** **Connected and Automated Vehicle Testbeds in Michigan**
Matt Smith, Michigan Department of Transportation, ITS Program Manager, USA

## TS63 – Innovations In Rural ITS

**Wednesday, September 10, 10:30 a.m. – 12:00 p.m.**

**12280** **Multi-Rural State ITS Data Sharing and Collaboration**
Robert White, Vermont Agency of Transportation, ConnectVermont ITS Administrator, USA

**12842** **Movable ITS for intensive and cost-effective traffic management for a large-scaled and short-time-period event area**
Jin-Tae Kim, Korea National University of Transportation, Professor, Korea

**12983** **Technical Paper Abstract — 2014 ITS World Conference — A Rural ITS intersection safety application for magnetometer based vehicle detection equipment**
Kyle Holgate, Global Traffic Technologies, LLC, Technical Service and Test Engineer, USA

**13268** **Rural Intersection Conflict Warning Systems — A Minnesota Statewide Effort to Reduce Fatalities**
Ray Starr, Minnesota Department of Transportation, Asst State Traffic Engineer-ITS

## TS64 – Developments in Connected and Autonomous Vehicle Systems

**Wednesday, September 10, 10:30 a.m. – 12:00 p.m.**

**Session Track:** ■ Connected Vehicles & Cooperative Systems

**12041** **Black Box Design Approach for Optimal Satand-alone V2X and Integrated Active Safety Applications Implementation**
Faroog Ibrahim, Savari Networks, Executive Director, USA

**13340** **Testing Impacts of Work Zone X2V Communication System on Safety and Air Quality in Driving Simulator**
Fengxiang Qiao, Texas Southern University, USA

**13403** **Network of Automated Vehicles: The Autonet2030 Vision**
Arnaud de La Fortelle, Mines ParisTech, Director of the Center for Robotics, France

**13643** **Automated Vehicle Zones**
Paul Godsmark, The Canadian Automated Vehicles Centre of Excellence (CAVCOE), Chief Technology Officer, Canada

## TS65 – Driver Assistance Systems

**Wednesday, September 10, 10:30 a.m. – 12:00 p.m.**

**Session Track:** ■ Driver Behavior and Support

**12758** **Development of the Device to Prevent Wrong-way Driving**
Yuichi Mizushima, NEXCO Engineering Niigata.Co.,Ltd, Manager of Planning Section, Planning Department, Japan

**12475** **From Driving Assistance Systems to Automated Driving: A Robust Approach Based on the Subsumption Architecture**
Andrea Saroldi, Centro Ricerche Fiat, Italy

**13041** **Designing of Active Front Steering Using Dynamic Inversion**
Inseok Yang, Center for IT & Automobile Convergence, Post-Doctorial Researcher, Korea

**13457** **Human-Machine Cooperation in Highly Automated Driving**
Martin Krähling, Ibeo Automotive Systems GmbH, Germany

**13529** **Evaluation and Testing of Driver Assistive Truck Platooning for Near Term Deployment**
Richard Bishop, Bishop Consulting, Owner, USA

## TS66 – Advanced Corridor Management 1

**Wednesday, September 10, 10:30 a.m. – 12:00 p.m.**

**13062** **MDOT Metro Region Integrated Corridor Management Projects**
Michael Scheuer, Parsons Brinkerhoff, Supervising Traffic Engineer, USA

**13246** **AZTech: An Approach for a Low Cost ICM Program**
Nicolaas Swart, Maricopa County DOT, Division Manager, USA

**13460** **Dynamic Corridor Congestion Management in the Los Angeles South Bay**
Allen Chen, Caltrans, ITS project Manager, USA

**13508** **Multi-Agency Fast-Tracked ITS Deployment - I-90/39/88 Problem Solving**
Scott Lee, Delcan, USA

## TS67 – Application of SmartPhone Technology To Improve Mobility

**Wednesday, September 10, 1:30 – 3:00 p.m.**

**Session Track:** ■ New Mobility

**12541** **Connected Car: The Story of a 21st Century Driver**
Eugene Tsyrklevich, Parkopedia, Founder and CEO

**12761** **Creating Big Data for Pavement Maintenance Management of Unsprung Movement Information from Sprung Acceleration**
Koichi Yagi, BumpRecorder Co., Ltd., CEO, Japan

**12952** **Impact Evaluation Methodology for Collaborative Transport Applications**
Merja Penttinen, VTT, Finland

**13132** **Changing Travel Behaviour Through Incentives Using a Smartphone Application with Automatic Travel Behaviour Detection — Results from Gothenburg**
Dirk van Amelsfort, Viktoria Swedish ICT, senior researcher, Sweden

**13323** **Enhancing Mode Choice via Crowdsourcing and Decentralization of Routing and Scheduling**
Santosh Mishra, TranSystems Corporation, Senior Transportation Planner, USA

## TS68 – New Uses For Roadside Equipment

**Wednesday, September 10, 1:30 – 3:00 p.m.**

**Session Track:** ■ Connected Vehicles & Cooperative Systems

**12947** **Modeling and Characteristics of Traffic State Generation from Loop Detector Based on Vehicular Trajectory Data**
Han Yang, Key Laboratory of Road Traffic Engineering of the Ministry of Education, Tongji University, Ph.D., China

**12513** **Status Report on Maintenance and Management of Vehicle Detector Accuracy**
Tsuyoshi Kobayashi, Tokyo Metropolitan Police Department, Japan

**12582** **Outlook on Exploitation of Infrared Beacons in Mpd Traffic Control System**
Nobuyuki Kimura, Tokyo Metropolitan Police Department, Japan

**13204** **A Study on Suitability of the USN-Based Portable Reference Equipment for ITS Systems Performance Evaluation**
Sang Hyup Lee, Korea Institute of Construction Technology, Korea

**13322** **Approach on the License Plate Recognition System Performance Improvement**
Yusuke Yasuhara, Sumitomo Electric System Solutions Co., Ltd., Japan

## TS69 – Advanced Traffic Management 1

**Wednesday, September 10, 1:30 – 3:00 p.m.**

**13379** **Co-operative Road Weather Information - Slipperiness Detection**
Eetu Pilli-Sihvola, VTT Technical Research Centre of Finland, Research Scientist, Finland

**13546** **I-80 Integrated Corridor Mobility Project**
Derek Pines, Delcan Corporation, Project Manager, USA

**12292** **Advanced Corridor Traffic Management Based on Infrastructure and Probe Data Fusion**
Toshihiko Oda, Vehicle Information and Communication System Center, General Manager, Japan

**12878** **Video on Desktop**
Clay Packard, Florida Department of Transportation, Software Integration Manager, USA

**13452** **Success Factors for tendering Advanced Traffic Management Systems**
Sebastian Althen, Siemens AG, Head of Integrated Solutions, Germany

**13517** **Operational Benefits of ATMS Deployment to Miami-Dade County**
K. K. Saxena, Kimley-Horn and Associates, Inc., Senior Vice President



## TS70 – Strategic Issues In ITS Development

**Wednesday, September 10, 1:30 – 3:00 p.m.**

**Session Track:** ■ International Cooperation to Expand ITS

**12725** **Cooperation, A Prerequisite for Result**
Annica Roos, Swedish Transport Administration, Sweden

**13405** **Mission Success: Ensuring Business Outcomes are Achieved**
Tim Woodward, Mouchel, United Kingdom

**12325** **Smarter Transportation Management through ITS**
Robert Edelstein, AECOM, Vice President of ITS in North America, USA

**12594** **Trends in Transportation and Mobility**
Richard Harris, Xerox Services, Solution Director, International Transportation and Government, United Kingdom

**12979** **Reliability is the Key to Sustainability in Transportation**
Cary Vick, Schneider Electric, Director of SmartMobility, USA

## TS71 – Transit Signal Priority

**Wednesday, September 10, 1:30 – 3:00 p.m.**

**Session Track:** ■ Public Transit

**13265** **NYC Manhattan Transit Signal Priority System Evaluation**
Lihua Zhang, TransCore, Transportation Engineer, USA

**13438** **Taichung City BRT Priority Signal System Design**
Chao-Fu Yeh, Transportation bureau at Taichung City Government, Chinese-Taipei

**13492** **Regional Transit Signal Priority Interoperability**
Daryl Taavola, URS Corporation, USA

**13567** **DSRC for Transit Vehicles in the Bay Area**
Paul Gray, Cohda Wireless, Australia

## TS72 – Driver Simulation

**Wednesday, September 10, 1:30 – 3:00 p.m.**

**Session Track:** ■ Driver Behavior and Support

**12666** **Extractioning of the Driving Features of the Elderly Drivers with Pre-dementia Drivers from Driving Simulator Test**
Chisa Takahashi, Aichi Prefectural University, Japan

**13347** **Driver Behaviour Impacts of Cooperative In-vehicle Signage**
Satu Innamaa, VTT Technical Research Centre of Finland, Senior Scientist, Finland

**13590** **Landscape Simulation Created by Optimal Alignment Search System of Highway Design and VR**
Motoya Yamasaki, Tokyo University of Agriculture, Professor, Japan

## TS73 – Probe Data Applications and Evaluations

**Wednesday, September 10, 1:30 – 3:00 p.m.**

**13458** **Improving Operations on MDOT's Freeways using Probe Vehicle Data**
Jason Firman, Michigan DOT, USA

**12383** **Field Evaluations of an Adaptive Traffic Signal Control System Using Private Sector Probe Data**
Jia Hu, University of Virginia, Research Assistant, USA

**12476** **Probe-Based Travel Time Decomposition Using Speed-time-distance Approximation Technique**
Sorawit Narupiti, Chulalongkorn University, Associate Professor, Thailand

**13063** **Analysis of Emergency Vehicle Travel Time Variance Using GPS and Gis Data**
Khairul Anuar, Old Dominion University, USA

**13605** **Detecting Vehicle Stops from Smartphone Accelerometer Data**
Mecit Cetin, Old Dominion University, Associate Professor, USA

## TS74 – Navigation System Travel Information

**Wednesday, September 10, 1:30 – 3:00 p.m.**

**12572** **A Study of NMEA Format (GPS) utilizing Short Range Data for Mobile Phone and Applied Map Deliver System**
Yuichi Takayanagi, Panasonic System Networks Co., Ltd., Japan

**12585** **Microscopic Simulation Testbed Based on ITS Environments**
Taehyeong Kim, Korea Institute of Construction Technology, Senior Researcher, Korea

**13191** **Improvement of Global Map Matching Algorithm Based on Frechet Distance**
Kai Zhang, Tsinghua University, China

**13225** **Ideal Addressing for Automotive**
Kamron Clifford, TomTom, Senior Product Line Manager, North American Map Content, USA

**13476** **Difference Between Estimated Travel Time by Car Navigation System and Real Travel Time by Probe Vehicle Test in Urban Area**
Heejin Jung, Institute of Spatial Information, Researcher, Korea

## TS75 – Innovative Approaches for ATIS

**Wednesday, September 10, 1:30– 3:00 p.m.**

**13477** **Predicting Corridor Travel Time Reliability in Real Time Using Bluetooth Data**
Zifeng Wu, University of Nebraska-Lincoln, USA

**12800** **Smarter Travel Time and Route Recommendation System**
Vinod Bijlani, IBM, Solution Architect, IBM Intelligent Transportation, India

**13075** **Utilizing the Systems Engineering Process in Support of Building a Construction Traveler Information for I-35 Widening in Central Texas**
Robert Brydia, Texas A&M Transportation Institute, Research Scientist, USA

**13142** **A Hybrid Approach for Feature Selection and Freeway Travel Time Prediction Using Biogeography-based Optimization and Support Vector Regression**
Prateek Bansal, The University of Texas at Austin, Graduate Research Assistant, USA

## TS76 – Innovations in Network Management

**Wednesday, September 10, 1:30 – 3:00 p.m.**

**12735** **Improved Incident Management through Anomaly Detection in Historical Records**
Ronnie Taib, National ICT Australia, Senior Research Engineer, Australia

**12739** **Planning Implications of Dynamic Tolling on Travel Time Distributions**
Emily Moylan, UC Berkeley, USA

**12901** **Real-time Traffic Queue Length Estimation at the Freeway Off-ramp Using Dual-zone Detectors**
Xianfeng Yang, University of Maryland, Research Assistant, USA

**12969** **Alternative Performance Measures and Weighting for Quantifying Spatial and Temporal Congestion Using Probe Data**
Thomas Brennan, The College of New Jersey, Assistant Professor, USA

**13013** **A Study of Traffic Volume Fluctuation Considering Traffic Incidents in Hanshin Expressway Network**
Akito Higatani, Hanshin Expressway Co., Ltd., Engineer, Japan

## TS77 – Sensing the Vehicle Environment

**Wednesday, September 10, 3:30 – 5:00 p.m.**

**Session Track:** ■ Connected Vehicles & Cooperative Systems

**13307** **DSRC Radar - Sensing the Environment with DSRC**
John Buetefuer, Cohda Wireless Pty Ltd, Lead Research Engineer, Australia

**13366** **Optimization of Computer Vision Algorithms in Codesign Methodologies**
Marcos Nieto, Vicomtech-IK4, Spain

**13391** **Forward-Backward Object Tracking for Generation of Reference Scenarios Based on Laser Scan Data**
Martin Spencer, Ibeo Automotive Systems GmbH

**13598** **Stereo Vision Approach for Night Time Pedestrian Detection and Protection**
Mario Haddad, TK Holdings, Inc., USA

## TS78 – Measuring Performance

**Wednesday, September 10, 3:30 – 5:00 p.m.**

**12286** **Automated Traffic Signal Performance Measures — A Simplified Alternative Architecture**
Mark Taylor, Utah Department of Transportation, Traffic Signal Operations Engineer, USA

**12965** **Comparison of Travel Times Displayed on Dynamic Message Signs with Bluetooth Traffic Monitoring (BTM) Travel Time Data in Pittsburgh, PA**
Elham Sharifi, University of Maryland, Research Assistant, USA

**13164** **Punctuality As Performance Metrics for Efficient Transportation Systems**
Mikael Lind, Viktoria Swedish ICT, Research Manager, Sweden

**13561** **Safety and Operational Performance Measures from Radar-based Vehicle Detection Systems**
Peter Rafferty, Wisconsin Traffic Operations and Safety Lab, ITS Program Manager, USA

**13693** **Measuring Performance on Interrupted Flow Facilities with GPS Probe and Bluetooth Traffic monitoring Data**
Stan Young, University of Maryland, Research Engineer, USA

## TS79 – Multi Object Collision Avoidance

**Wednesday, September 10, 3:30 – 5:00 p.m.**

**Session Track:** ■ Connected Vehicles & Cooperative Systems

**12200** **Validation & Acceptability of Crossing Collision Prevention System at Unsignalized intersections by V2I Cooperative Systems**
Yasunari Iwata, Totoya Motor Corporation, Japan

**13185** **Real-time Multiple Object Recognition for Collision Avoidance Using Wide Angle Stereo Camera**
Dzmitry Tsishkou, IMRA Europe S.A.S, France

**13277** **Vehicle-to-Pedestrian Cooperative Safety Application**
Radovan Miucic, Honda R&D, PhD, USA

**12273** **Methodology for Designing Intersection Collision Avoidance Systems Based on Multiobjective Criteria**
Kazutoshi Nobukawa, University of Michigan Transportation Research Institute, Postdoctoral Research Fellow, USA

**13171** **Visual Recognition of Pedestrians with Deep Neural Networks**
Ikuro Sato, DENSO IT Laboratory, Inc., senior engineer, Japan

## TS80 – Traffic Control

**Wednesday, September 10, 3:30 – 5:00 p.m.**

**12399** **Yellow Light and Yellow Light Dilemma — An Independent Scrutinization from the View of Logic**
Aiken, Jiantong NI, AEIOsoft Mobility & Road Safety Laboratory, China

**12419** **An Evaluation of Adaptive Traffic Control System in Istanbul, Turkey**
Fatih Gündoğan, ISBAK Inc., Turkey

**13472** **A Rationale for Incorporating ITS Applications' Effect Into the HCM Signalized Facilities Analysis Procedure**
Jia Hu, University of Virginia, Research Assistant, USA

**13495** **Real-time Traffic Control for Urban Environments: Expanding the Surtrac Testbed Network**
Gregory Barlow, Carnegie Mellon University, USA

**13509** **Variable Speed Limit Analysis on the Highway Istanbul**
Fatih Gündoğan, ISBAK Inc., Turkey

## TS81 – Academic Issues on Public Transportation

**Wednesday, September 10, 3:30 – 5:00 p.m.**

**Session Track:** ■ Public Transit

**12888** **Selection Guidelines and Anomaly Detection of Performance Metrics in Transportation Systems**
Alvaro Gil, Xerox Innovation Group, Senior Research Scientist, USA

**13196** **A Web Platform for User-Oriented Reliability Diagnosis in Bus Transit Services**
Benedetto Barabino, Technomobility, Italy

**13208** **Personal Traveller Advisors: The New Frontier of Multimodal Network Information**
Agostino Nuzzolo, Tor Vergata University of Rome, Italy

**13216** **Using Archived Bus Health Data to Inform the Design of a Transit Signal Priority Project in New York City**
Shu-Yuan Wu, Graduate Center, City University of New York, USA

## TS82 – Innovations in Traffic Data Collection and Analysis

**Wednesday, September 10, 3:30– 5:00 p.m.**

**Session Track:** ■ Big Data and Open Data

**12322** **Using Mobile Data for Weather Response Traffic Management**
Steven J. Cook, P.E., Michigan Department of Transportation, System Operations and Maintenance Engineer, USA

**12647** **Operation and Use of an Enhanced Real-Time Traffic Statistics Reporting System**
Corey Quinn, Orlando-Orange County Expressway Authority, Director of Expressway Operations, USA

**13044** **Use of Traffic and Citizen Tweets for Incident Management for District Department of Transportation**
Rakesh Nune, District Department of Transportation, ITS Engineer, USA

**13436** **A Study on Automated Data Collection and Deduction of Road Updates Using Public Tender Notices**
Satoru Nakajo, Mitsubishi Research Institute,Inc, Principal Consultant, ITS Business Group,, Japan

**12613** **Procurement of Real Time Traffic Data**
Charlotte Vithen, Danish Road Directorate, Director Roads and Traffic, Denmark

**13017** **Learning Mobility User Choice and Demand Models from Public Transport Fare Collection Data**
Frederic Roulland, Xerox Research Centre Europe, France

## TS83 – Crash Data Analysis

**Wednesday, September 10, 3:30– 5:00 p.m.**

**11948** **Pattern Matching Longitudinal Acceleration Time Series Data to Identify Crashes in Naturalistic Driving Data**
Robert Kluger, University of Virginia, Graduate Research Assistant, USA

**12678** **Characteristics and Contributing Factors of Serious Single Passenger-vehicle Collisions in Beijing from 2009 to 2013**
Quan Yuan, University of Washington, Research Scholar, USA

**12972** **A Model-Based Crash Prediction Technique for Chinese Roadway Segments**
Seyed Vaghefi, Rutgers University, Ph.D. Student, USA

## TS84 – Security Challenges For ITS Systems

**Wednesday, September 10, 3:30 – 5:00 p.m.**

**12097** **Guidelines for Vehicle Cyber Security**
Hirofumi Onishi, Alpine Electronics, Specialist, USA

**12270** **A Case Study on Information Security and Cyber Risks Implementation on an IP/MPLS Network**
Gabriel Ozique, Fluor Corporation, Senior Fellow, United Kingdom

**12611** **An Efficient Prototype Implementation for Message Security in V2X Communication**
Kees Moerman, NXP Semiconductors, Senior Scientist, Netherlands

**13502** **Over the Air Software Updates in a Secure Automotive Environment**
Dan Presidio, Movimento, Director of Engineering, USA

## TS85 – New Developments in Probe and Floating Car Data Processing

**Wednesday, September 10, 3:30 – 5:00 p.m.**

**12670** **Real Time Visualization of Probe Information Using Web Based Technologies**
Hiroyuki Kumazawa, Osaka Sangyo University, Japan

**12945** **Developing an Objective Measure of Urban Congestion across the Globe: the TomTom Traffic Index**
Nick Cohn, TomTom, Head of Business Development, Netherlands

**13134** **Design of System Configuration for Floating Car Traffic Information Provision Service on Cloud Computing Environments**
Takuya Sue, FUJITSU LIMITED, Japan

**13375** **A Proactive Route Search Method for An Efficient City Surveillance**
Osamu Masutani, Denso IT Laboratory, Inc., Chief engineer, Japan

**13665** **Transportation Database Development Using Floating Car Data**
Evan Burton, National Renewable Energy Laboratory, Database Engineer, USA

## TS86 – Communication Platforms for Vehicles and Drivers

**Wednesday, September 10, 3:30 – 5:00 p.m.**

**12350** **Development, Piloting and Deployment of Co-operative Mobility Services of the Future-Experiences of the CoMoSeF Project**
Pekka Eloranta, Mobisoft Oy, Director EU Projects, Finland

**12894** **Achieving Interoperability between the Emerging C-ITS Platform and Existing ITS Infrastructure in Australia**
David Green, ARRB GROUP, Australia

**13011** **Study on Interference Signal Cancellation In-vehicle Communication Systems**
Ippei Sugae, AISIN SEIKI CO., LTD., Japan

**13446** **V2I After the V2V Mandate: Safety, Semi-Autonomous Vehicles, and the Case for Connected Vehicle Roadside Infrastructure**
Matthew Dorfman, D'Artagnan Consulting LLP, Partner, USA

**13792** **Proposal of Feasible ASV Services using V2V Communications based on FOT in Hiroshima**
Takayuki HIRASAWA, the University of Tokyo, Japan

## TS87 – Intelligent Work Zones

**Wednesday, September 10, 3:30 – 5:00 p.m.**

**13600** **Analysis of the Impacts of Freeway Work Zones and Incidents Using Bluetooth Data**
Geza Pesti, Texas A&M Transportation Institute, USA

**13248** **Intelligent Work Zone Data Collection and Evaluation**
Ray Starr, Minnesota Department of Transportation, Asst State Traffic Engineer-ITS

**13503** **Data, Models, and Construction Permits**
Satya Muthuswamy, KLD Engineering, P.C., President, USA

**13511** **Real Time Work Zone Delay Messaging**
Bryan Chamberlain, Utah Dept of Transportation, Resident Engineer, USA

**13656** **Smart Work Zone — Fully Integrated Operations and Management**
Elyse Morgan, Illinois State Toll Highway Authority, USA

## TS88 – Collision Avoidance Systems

**Thursday, September 11, 8:30 – 10:00 a.m.**

**Session Track:** ■ Connected Vehicles & Cooperative Systems

**11962** **A Novel Controller Design for Collision Avoidance Systems Using Sensor Fusion Method**
Ming Hung Li, Automotive Research & Testing Center, Chinese – Taipei

**12463** **Definition of a Microscopic Traffic Simulations Driver Model for Inter-urban Intersections**
Jens Klimke, Institut für Kraftfahrzeuge, RWTH Aachen University, Research assistant, Germany

**13081** **Collision Avoidance System based on Adaptable Speed**
Dong Seog Han, Kyungpook National University, Professor, Korea

**13453** **Cooperative Collision Warning Application for High Speed Track Safety Management**
Álvaro Arrúe, IDIADA Automotive Technology, Project Manager, Spain

**13690** **An Evaluation Into Vehicle to Vehicle Based Intersection Collision Avoidance Via DSRC**
Mohammad Horani, University of Detroit Mercy, Research assistant, USA

## TS89 – Developing an ITS Workforce

**Thursday, September 11, 8:30 – 10:00 a.m.**

**Session Track:** ■ Economic Growth

**12284** **"Connecting Today's Young Talent with Tomorrow's Global Needs"**
Karl Klimek, Square One Education Network, Executive Director, USA

**12455** **Virtual ITS Training — A Reality!**
Peter von Heidenstam, Swedish Transport Administration, Transport Planner, Sweden

**12781** **Strengthening University ITS Teaching for the Workforce**
Mac Lister, ITS Joint Program Office, United States Department of Transportation, ITS PCB Program Manager, USA

**12782** **Building the Future Transportation Workforce: Its Skills and Competencies**
Mac Lister, ITS Joint Program Office, United States Department of Transportation, ITS PCB Program Manager, USA

**13636** **Reinventing Traffic Operations Center Resource Management**
Joanna Scott, Atkins, TOC Program Manager, USA

## TS90 – Innovative Traffic Management Concepts and Systems

**Thursday, September 11, 8:30 – 10:00 a.m.**

**12532** **Traffic Facilitation Field Operation Tests in Expressway Sag Sections Based on Adaptive Cruise Control**
Fumihiko Kanazawa, National Institute for Land and Infrastructure Management, Head, ITS Division, Japan

**12937** **Intelligent Condition-based Mega-city Traffic Management System: A Novel Comprehensive 'Holographic' Information Approach**
Zhi Han, China Merchants Chongqing Communications Research & Design Institute Co., Ltd., Chief Scientist, China

**13035** **Effective Traffic Management Practice Needed to Combat the Growing Traffic Congestion in Many Developing Countries**
Edmond Chang, EDCPC, Inc., President, CEO, USA

**13378** **Evaluation Method for Analysis of Congestion Reduction Effect of VICS Information Service Using Traffic Simulation**
Toshihiko Oda, Vehicle Information and Communication System Center, General Manager, Japan

**13564** **An Overview of the Analysis, Modeling, and Simulation (AMS) Testbed to Support Dynamic Mobility Applications (DMA) and Active Transportation and Demand Management (ATDM) Programs**
Balaji Yelchuru, Booz Allen Hamilton, USA

## TS91 – Video Detection & Processing

**Thursday, September 11, 8:30 – 10:00 a.m.**

**12158** **Registration of Aerial Images Using Pseudo – Orthogonal Space**
Koji Iigura, Shizuoka Institute of Science and Technology, Japan

**12233** **VectorSense™ Technology for Enhanced Traffic Information, Safety and Corridor Management**
Randy Hanson, International Road Dynamics Inc., Executive Vice President and COO, Canada

**12601** **Enhanced Image Processing – Why the Tolling Industry Should Apply a Holistic Approach to Image Handling**
Frank Kjelsli, Q – Free ASA, Business Development Manager, Norway

**13203** **Understanding the Potential Benefits of Video Analytics to Support Traffic Data Collection, Incident Detection, and Animal Detection**
Mike Barnet, Ministry of Transportation of Ontario, Canada

## TS92 – Regional and Statewide Integrated ITS Deployments

**Thursday, September 11, 8:30 – 10:00 a.m.**

**Session Track:** ■ International Cooperation to Expand ITS

**12517** **A new Central System with Disaster Recovery functions — for Business Continuity of Road Traffic Control**
Atsushi Edahiro, West Nippon Expressway Company Limited, Japan

**13483** **NC Operations Business Maturity: Preparing for a New ATMS**
Jennifer Portanova, North Carolina Department of Transportation, State Traffic Operations Engineer, USA

**12719** **Multi-Model Transportation Operations, SFMTA, A Project Update**
Clifford Conklin, HNTB Corp, Senior Project Manager, USA

**13706** **Operating a Transportation Management Center**
Matt Lee, Michigan Department of Transportation, USA

**13788** **Traffic Simulation of Land Border Checkpoint Operations: An Investigation on ITS Feasilibity in South-East Asian Context**
Ghim Ping Ong, National University of Singapore, Lecturer, Singapore

## TS93 – Data Management Strategies

**Thursday, September 11, 8:30 – 10:00 a.m.**

**Session Track:** ■ Big Data and Open Data

**12135** **Generating Summaries from Field Operational Test Data**
Sami Koskinen, VTT Technical Research Centre of Finland, Finland

**12679** **Design and Implementation of location – aware contents distribution platform utilizing precise probe vehicle data**
Yasuhito Tsukahara, Keio University, Student, Japan

**13182** **A Platform for Sharing Data from Field Operational Tests**
Yvonne Barnard, ERTICO – ITS Europe, Belgium

**13614** **Analyzing Data from the Safety Pilot Infrastructure: Influencing Future Deployments**
Lee Mixon, Mixon Hill, Inc., President, USA

## TS94 – Integrated Corridor Operations

**Thursday, September 11, 8:30 – 10:00 a.m.**

**12470** **Amalgamating UDOT ITS Databases to Evaluate Corridor Strategies and Projects**
Grant Farnsworth, HNTB, USA

**13497** **Zoo Interchange: Integrated Corridors as a Construction Management Tool**
Chris Hager, Wisconsin DOT, Project Manager, USA

**13651** **Evaluating Integrated Corridor Management Response Plans in the San Diego Region**
Michael Washkowiak, Kimley – Horn and Associates, Inc., Project Manager, USA

**13671** **Deploying a "Smart Corridor" Today, for Tomorrow's Needs: ATM and Connected Vehicles**
Jeff Hochmuth, CDM Smith, Senior ITS Engineer, USA

**13779** **Connected mobility services in an integrated city**
Siebe Turksma, Imtech Traffic & Infra, Netherlands

## TS95 – Traveler Information Challenges

**Thursday, September 11, 8:30 – 10:00 a.m.**

**12416** **Evaluation of a Driving Route Display System for Heavy Vehicles**
Takahiro Tsukiji, National Institute for Land and Infrastructure Management, Researcher, Japan

**13377** **The Digital Road Authority: creating synergy between the information and intentions of public parties, private parties and traveller**
Daphne van Leeuwen, Trinite, Netherlands

**13718** **A Traveller Information Platform for Modern Smart Cities**
Saurav Bhattacharyya, Quantum Inventions, CEO, Singapore

**12084** **Ottawa Nav — A Context Awareness Traveller Information Platform**
Philippe Landry, City of Ottawa, Manager, Traffic Services, Canada

**13009** **Traffic Data Quality Assurance Program for a Consistent and Reliable Accurate Data Collection and Information Dissemination**
James Zhou, Land Transport Authority of Singapore, Senior Engineer, Intelligent Transport System Development, Singapore

## TS96 – Driver Behavior and Cognition Of Signage And Markings

**Thursday, September 11, 8:30 – 10:00 a.m.**

**Session Track:** ■ Driver Behavior and Support

**12577** **A Development of Road Surface Temperature Prediction System by Using Vehicle Ambient Temperature of Can Data**
Youngkyun Kang, Hyundai Engineering & Construction, Chief Research Engineer, Korea

**13087** **Investigation of Graphic Symbols Displayed on Expressway Information Board**
Hideki Takahashi, Central Nippon Expressway Company Limited, Senior Expert, Japan

**13330** **Large-scale Image Registration for Road Markings Deterioration Management from In-Vehicle Camera Images and Logged Can Data**
Sakiko Nishino, Aichi Prefectural University, Japan

**13386** **Evaluation of effects of traffic sign and signal by using driving**
Toshiyuki Sugimachi, the University of Tokyo, Project researcher, Japan

**13485** **Validation Study on Evaluation of Traffic Safety Installations Using fNIRS**
Kouji Yamamoto, Central Nippon Expressway Co.,Ltd, Director, Japan

## TS97 – New Techniques To Analyze, Predict, and Mitigate Traffic Safety

**Thursday, September 11, 8:30 – 10:00 a.m.**

**Session Track:** ■ Traffic Safety

**12467** **P4S China Architecture**
Mohsen A. Jafari, Center for Advanced Infrastructure and Transportation, Professor, USA

**12581** **Control Techniques for Traffic Accident Deterrence — Effects of Traffic Signal Control for Speeding Prevention**
Motoyoshi Noda, Tokyo Metropolitan Police Department, Japan

**12851** **Practical Use of the Real Time Traffic Hazard Prediction on Hanshin Expressway**
Takashi Kodama, Traffic planning group, Chief, Japan

**13102** **Michigan DOT Metro Region Dynamic Curve Warning Systems**
Matt Klawon, URS Corporation, Manager, ITS and Traffic Engineering Services

**13218** **Improving Traffic Safety with ITS: Results from a Trial Installation**
Raza Muhammed, The Danish Road Directorate, Project Manager, Denmark

## TS98 – Implications and Assessment of Automated Driving

**Thursday, September 11, 8:30 – 10:00 a.m.**

**Session Track:** ■ Automated Transportation

**12443** **Multi-class Driverless Vehicle Cooperation for Mobility-on-Demand**
Scott Pendleton, National University of Singapore, Singapore

**12649** **Automated Vehicle Technology Survey of Industry Stakeholders**
Eric Paul Dennis, Center for Automotive Research, Transportation Systems Analyst, USA

**12864** **The Implications of Fully Automated Driving for the Automotive Industry**
Ian Riches, Strategy Analytics, Director – Global Automotive Practice, United Kingdom

**12886** **Autonomous Vehicle Technology: How to Best Realize its Social Benefits**
James Anderson, RAND Corporation, Senior Behavioral Scientist, USA

**13258** **Technical Challenges for Fully Automated Driving Systems**
Steven Shladover, California PATH, ITS Berkeley, University of California, Research Engineer/Program Manager, USA

**13734** **Towards Holistic Assessment of Automated Driving**
Merja Penttinen, VTT, Finland

## TS99 – Advanced Traffic Management 2

**Thursday, September 11, 10:30 a.m. – 12:00 p.m.**

**12502** **Analysis of Areas of Vegetation Using Satellite Images and Three-Dimensional Map**
Tomoya Hasegawa, Shizuoka University, Japan

**12652** **Testing Non-Intrusive Sensors to Replace Loop Systems: A Case Study from the UK's Highways Agency**
Bryan Jarrett, Wavetronix, USA

**12740** **Proposal of a Cooperative Infrastructure-Vehicle System for Traffic Signal Control**
Noriyuki Tsukada, Nissan Motor Co.,Ltd, Japan

**13026** **Strategy Management Toward Smart City**
Roberta Marinò, SWARCO, Junior researcher, Italy

**13512** **Unified Evaluation Method for Traffic Control Logarithms**
Jaap Vreeswijk, Imtech Traffic & Infra, Senior Researcher, Netherlands

## TS100 – Incident Management In Large Metropolitan Areas

**Thursday, September 11, 10:30 a.m. – 12:00 p.m.**

**13657** **Event-Driven Incident Management in the District of Columbia with the Capital Traffic Operations Platform**
Xianding Tao, District Department of Transportation, Senior ITS Engineer, USA

**12074** **Managing Metro Detroit Traffic Incidents Through Partnerships**
Richard Beaubien, Beaubien Engineering, Managing Director, USA

**13256** **San Mateo County Smart Corridor Project — Providing Alternate Routes During Incidents**
Rich Shinn, Iteris, USA

**13601** **Florida Department of Transportation District Six Evolution of Incident Management Program**
Joseph Snyder, AECOM, TMC Manager, USA

**13650** **The Use of ITS in Incident Management for the Illinois State Toll Highway Authority**
Jeff Hochmuth, CDM Smith, Senior ITS Engineer, USA

**13696** **Use of ITS in new Integrated Center for Urban Mobility Sao Paulo**
Olímpio Barros, CET, Engeneer, Brazil

## TS101 – Smart Parking 2

**Thursday, September 11, 10:30 a.m. – 12:00 p.m.**

**12309** **Automatic Car Parking Payment via Telepass Parking system**
Paolo Guarnieri, Autostrade Tech S.p.A., Business development, Italy

**12423** **Smart parking solution assessment for reduce urban traffic jams**
Eric Klein, Cerema, Head of the traffic's metrology pole, France

**13259** **LA Express Park™ — Curbing Downtown Congestion Through Intelligent Parking Management**
Peer Ghent, Los Angeles Department of Transportation, Senior Managment Analyst, USA

**13306** **Vehicle Coordinates Sensing for C-AVP Using Surveillance Cameras**
Naoki Osawa, Honda R&D Co., Ltd. Automobile R&D Center, Chief Engineer, Japan

**13738** **PARKING DEVELOPING ITS OWN SPACE**
Richard Harris, ITS UK, International Director, United Kingdom

## TS102 – Innovative Uses Of Probe Data

**Thursday, September 11, 10:30 a.m. – 12:00 p.m.**

**12530** **Detecting Abnormal Traffic Using Traffic Data**
Shotaro Ohira, Sumitomo Electric System Solutions Co., Ltd., Assistant Manager, Japan

**12598** **Estimating Time-Varying O/D Information on the Base of Detector Pulse Data and FCD Measurements**
Thomas Riedel, Adaptive Traffic Control AG, Managing Director, Switzerland

**12760** **Expressway Operations Management Using a GPS Vehicle Location Management System**
Masanori Tomita, NEXCO Engineering Niigata Company Limited, Senior Staff Member, ITS Development Section, Japan

**13341** **Estimation of Real-time Origin-destination Flow Using Mobile Sensor Network**
Joyoung Lee, New Jersey Institute of Technology, Assistant Professor, USA

**13368** **Application of Probe Data in Estimating Volume, Average Travel Time and Delay in an Intersection**
Takashi Oguchi, Institute of Industrial Sciences, the University of Tokyo, Professor, Japan

## TS103 – Reduction of Fuel Consumption

**Thursday, September 11, 10:30 a.m. – 12:00 p.m.**

**12496** **Traffic Jam Reduction with Cooperative Cruise Control**
Tomoyuki Doi, Toyota Motor Corporation, Assistant Manager, Japan

**13001** **Development of an Algorithm for the Dynamic Curve Speed Warning System**
Ji-Eun Choi, Pukyong National University, Korea

**13615** **Comparative Evaluation of Fuel Consumption Estimation Models**
Byungkyu (Brian) Park, University of Virginia, USA

**13714** **Context-sensitive Eco-driving Scores**
Kanok Boriboonsomsin, University of California, Associate Research Engineer, USA

**13759** **Fuel Economy Improvement Potential of a Heavy Duty Truck using V2x Communication**
Rajeev Verma, Eaton Corp, USA

## TS104 – Collision Warning Systems

**Thursday, September 11, 10:30 a.m. – 12:00 p.m.**

**Session Track:** ■ Connected Vehicles & Cooperative Systems

**12861** **Speed Management at Bends Using LDM**
Cigdem Cavdaroglu, KocSistem Bilgi ve Iletisim Hizmetleri, Analysis and Design Leader, Turkey

**12835** **Vehicle Collision Warning System Based on Fuzzy Inference**
Yongyao Yang, SUPCON Information Technology Co. Ltd., China

**13008** **Methodology for Evaluating Effectiveness of In-vehicle Pedestrian Warning Systems Using Driving Simulator**
Cheol Oh, Hanyang University at Ansan, Associate Professor, Korea

**13114** **FCW Algorithm Adaptive to Driver Behavior Change: Conceptual Framework and Experimental Validation**
Jianqiang Wang, Tsinghua University, China

**13274** **The Effects of Lead Time of Verbal Collision Warning Messages on Driving Performance**
Jingyan Wan, University at Buffalo, USA

## TS105 – New Trends In Detection

**Thursday, September 11, 10:30 a.m. – 12:00 p.m.**

**Session Track:** ■ Automated Transportation

**12282** **Length-Based Vehicle Reidentification for Travel Time Measurement**
Nathan Webster, Iteris, Inc., Analytics Consultant, USA

**12330** **New Detection Technology Eliminates Dilemma Zones**
Nader Ayoub, Iteris, Inc., Associate Vice President, Roadway Sensors, USA

**13292** **Millimeter-wave Multi-channel Electronic Scan Radar in 65-nm CMOS**
Kiyokazu Sugai, FUJITSU TEN LIMITED, Japan

**13724** **Is Ramp Metering Coming to NC?**
Alf Badgett, ATKINS, Senior ITS Engineer, ITS Division

**13780** **The Accuracy Levels of Vehicle Detectors Commonly Used in Korea Based on the Results of Quality Certification Test**
Sang Hyup Lee, Korea Institute of Construction Technology, Research Fellow, Korea

## TS106 – Developments in ITS Based Safety Systems

**Thursday, September 11, 10:30 a.m. – 12:00 p.m.**

**Session Track:** ■ Traffic Safety

**12100** **Older Driver Crash Trend Evaluation Relating to Societal Change and Intelligent Transportation Systems**
Seri Park, Villanova University, Assistant Professor, USA

**12160** **A Study to Consider the Most Appropriate Alert Point to Assist Pedestrians Crossing at Intersection**
Hidekatsu Hamaoka, Akita University, Japan

**12316** **Safety Assessment and Spatial Exploration of Automated Red-Light Running Enforcement Cameras**
Mohamed Ahmed, University of Wyoming, Assistant Professor, USA

**12803** **A GPS-enabled Smart Phone App with Simplified Diagnosis Functions of Driving Safety and Warning Information Provision**
Junyi Zhang, Graduate School for International Development and Cooperation, Hiroshima University, Professor, Japan

**13700** **Increased Persistence of Wi-Fi Direct Adhoc Networks for Smartphone-based Collision Avoidance**
Clark Hochgraf, Rochester Institute of Technology, Associate Professor, USA

## TS107 – Vehicle and Driver Models and Algorithms

**Thursday, September 11, 10:30 a.m. – 12:00 p.m.**

**12432** **The Implantation of Unified Diagnostic Services on Internet-connected Vehicles**
Chu-yuan Hsu, Automotive Research & Testing Center, Chinese-Taipei

**12510** **Development of Control Algorithm for Safety Systems Using Fusion of V2X and Environmental Sensors**
Manbok Park, MANDO Corporation, Senior Researcher, Korea

**12654** **Virtual Driving Scenarios from Real-world Test Drive Data for Automated Evaluation of ADAS Applications**
Roy Bours, TASS International, Netherlands

**13130** **Discriminating Relationship of Different Driver States and Driving Based on Gaussian Mixture Model**
Yuto Hayata, Aichi Prefectural University, Student, Japan

**13429** **Retrofitting of Adas in Personal Vehicles**
Erik Andersson, SWECO TransportSystem AB, Traffic planner, Sweden

## TS108 – Advanced Corridor Management 2

**Thursday, September 11, 10:30 a.m. – 12:00 p.m.**

**12545** **Compliance and Enforcement on Smart Motorways**
Matthew Clarke, Atkis, Head of Technology and Lighting Design, United Kingdom

**12960** **Smart Mobility for Arterial ITS**
Farhad Pooran, Schneider Electric, Vice President of Engineering, USA

**13088** **Planning an Active Arterial Management Program**
Melissa Ackert, Florida Department of Transportation, ATMS/TSM&O Program Engineer, USA

**13325** **Traffic Performance of Integrated Arterial and Motorway Traffic Management Policies Using SCATS**
Christian Chong-White, Roads and Maritime Services, Traffic Algorithm Development Manager, Australia

## TS109 – User Behavior

**Thursday, September 11, 10:30 a.m. – 12:00 p.m.**

**Session Track:** ■ Driver Behavior and Support

**12653** **The Future of Driver Assistance: Driver Mental State Monitoring**
Ronnie Taib, National ICT Australia, Senior Research Engineer, Australia

**12655** **Development of a Risk Assessment Tool Based on Driver Behavior and Environment**
Farbod Farzan, Rutgers University, PhD Candidate, USA

**12843** **Driver Visual Distraction Analysis Using Percent Area of Interest Method**
Asako Yumoto, Fujitsu Laboratories Ltd., Japan

**12908** **Survey of User Attitudes to Traffic Smoother Services**
Kazufumi Suzuki, National Institute Land, Infrastructure and Management, Research Engineer, ITS Division, Japan

**13764** **ViFa 65plus — Visual Driver Assistance Systems for Elderly Drivers**
André Welzel, Chemnitz University of Technology, Germany

## TS110 – ITS Developments in Evolving Markets

**Thursday, September 11, 1:30 – 3:00 p.m.**

**Session Track:** ■ Economic Growth

**13275** **National ITS Architecture for Mexico V.2**
Miguel Lopez, TEKIA INGENIEROS DE MÉXICO, SA de CV., General Directorade, Mexico

**12300** **Sustainable Strategy for Cost-Effective ITS Deployment in Nigeria: Lessons from the Korea City-by-City Model**
Joshua Adetunji Odeleye, Nigerian Institute Of Transport Technology, Assistant Director, Nigeria

**12776** **Providing Big Picture of Evolving ITS Market in Iran, Using Pest Analysis**
Hamid Mahyad, Iran Telecommunications Research Center, Iran

**13575** **Accelerating the Adoption of Intelligent Transport Systems in Low-Income Countries**
Marty Makinen, Results for Development Institute, Principal and Managing Director, USA

**13701** **Potentials for Intelligent Transportation Systems Deployment in Developing Countries — A Case Study**
Sakib Mahmud Khan, Clemson University, Graduate Research Assistant, USA

## TS111 – Future Directions In Automated Driving

**Thursday, September 11, 1:30 – 3:00 p.m.**

**Session Track:** ■ Automated Transportation

**12134** **The Interrelationships between Connected and Automated Vehicle Technologies**
Michael McGurrin, Noblis, Senior Fellow, Transportation Systems, USA

**12917** **Industry-government Joint Research of Preparation Method of Road Structure Data for Automated Driving**
Atsushi Kimura, NILIM, Japan

**13384** **The Way Towards Highly Automated Driving**
Werner Huber, BMW Group, Germany

**13647** **Automated Driving: The Way Forward**
Meng Lu, Dutch Institute for Advanced Logistics, Program Manager International, Netherlands

**13683** **Implications of Connected Automation**
Sudharson Sundararajan, Booz Allen Hamilton, Senior Consultant, USA

## TS112 – Challenges in Big Data Management

**Thursday, September 11, 1:30 – 3:00 p.m.**

**Session Track:** ■ Big Data and Open Data

**12478** **Crafting Measures from the National Performance Management Research Data Set**
Peter Rafferty, UW-Madison, ITS Program Manager, USA

**12726** **Intelligent Synthesis and Real-time Response using Massive Streaming of Heterogeneous Data (INSIGHT) and its effect on Intelligent Transport Systems (ITS) in Dublin City, Ireland**
Dermot Kinane, Dublin City Council, Intelligent Transportation Systems Officer, Ireland

**13192** **Singapore-in-Motion: More Data Leads to Better Understanding**
Liang Yu, Institute for Infocomm Research, Scientist, Singapore

**13585** **Real-time Big Data for Improved Traffic Management and Congestion Reduction**
Ronnie Beggs, SQLstream, Product Management, USA

**13607** **Development and Implementation of a Real-time Big-data Management Architecture for Effective Adaptive Traffic Signal Control**
Wuping Xin, KLD Engineering, P.C., CTO, USA

## TS113 – Tools to Improve Transit Services

**Thursday, September 11, 1:30 – 3:00 p.m.**

**Session Track:** ■ Public Transit

**13627** **Implementation of Open Source TSP**
David Phillips, TranSystems, Sr Transportation Planner, USA

**13320** **Augmenting the Transit Operations Management Tools with Emerging Technologies**
Santosh Mishra, TranSystems Corporation, Senior Transportation Planner, USA

**13324** **Advances for an Advanced Public Transport System "APTS" at West Central Metropolitan Area Colombia**
Natalia Giraldo, ASEMTUR, Development Coordinator, Colombia

**13447** **Transit Light Rail Incident Response Before and After ICM Deployment: Strategies and Constraints**
Lee Biernbaum, Volpe Center, U.S. Department of Transportation, Economist, USA

**12989** **Real-Time Bus Scheduling via Proacitve Bus Demand Estimation**
Yangrok Jeong, Pukyong National University, Korea

## TS114 – Regional Examples of ITS Deployments

**Thursday, September 11, 1:30 – 3:00 p.m.**

**13031** **Traffic/Travel Information Integration Service Through User-Based, Open-Architecture, Public-Domain, Cloud-Computing**
Edmond Chang, EDCPC, Inc., President, CEO, USA

**13424** **MDOT DUAP Project — The Agency of the Future**
Collin Castle, Michigan Department of Transportation, Connected Vehicle Technical Manager, USA

**13467** **Strategic Assessment on Emerging Innovative Transportation Technologies for Future Transportation in Texas**
Peter(Jing) Jin, University of Texas at Austin, Postdoctoral Fellow, USA

**13501** **Mainstreaming ITS in the IT Environment: Illinois Tollway Traffic and Incident Management System (TIMS)**
John Benda, Illinois State Toll Highway Authority, General Manager of Maintenance and Traffic, USA

**13668** **Intelligence in Urban Mobility for World Cup 2014: A Case Study of the Sao Paulo Arena**
Alessandro Santiago Santos, Institute for Technological Research (IPT), Research, Brazil

## TS115 – Development of Cooperative ITS Architecture

**Thursday, September 11, 1:30 – 3:00 p.m.**

**Session Track:** ■ International Cooperation to Expand ITS

**13520** **Best Practices in Implementing ITS Architectures**
John Baker, ConSysTec, Technical Staff, USA

**12741** **Advancing the Cooperative ITS Architecture: Data Collection and Business Projection**
Federico García-Linares, OHL Concesiones, Spain

**12745** **CAR2X Systems Network Architecture and Possible Application**
Kurt Eckert, Robert Bosch GmbH, Project Manager, Germany

**12976** **Connected Vehicles — Who's in the Driving Seat?**
Ian Patey, Mouchel, Chief Technical Director, United Kingdom

**13707** **Connected Vehicle Reference Implementation Architecture: Common Language and Application Tools**
Clifford Heise, Iteris, Inc., Vice President, Federal and Research, USA

**13711** **Evolving the National ITS Architecture to Support Connected Vehicle**
Clifford Heise, Iteris, Inc., Vice President, Federal and Research, USA

## TS116 – Standardization

**Thursday, September 11, 1:30 – 3:00 p.m.**

**Session Track:** ■ ITS Rules and Standards

**12326** **Australian Cooperative ITS Platform — Prepared to Adopt and Adapt**
Freek Faber, ARRB GROUP, Australia

**12643** **A Proposed Taxonomy of Intelligent Transportation Systems, Connected Vehicle Systems, and Automated Vehicle Systems**
Eric Paul Dennis, Center for Automotive Research, Transportation Systems Analyst, USA

**12438** **Standardization of Variable Message Signs in Korea**
Weoneui Kang, Korea Institute of Construction Technology, Senior Researcher Fellow, Korea

**13178** **Advanced Transportation Management Systems based on International Standards**
Knut Evensen, Q-Free ASA, Chief Technologist, Norway

**13404** **Converge — Future IRS-infrastructures As Open Service Networks**
Horst Wieker, htw saar, Professor for Communication Technologies, Germany

## TS117 – Innovative Modeling Techniques

**Thursday, September 11, 1:30 – 3:00 p.m.**

**13587** **Approach for Freeway Work Zone Capacity Estimation Incorporating Probe Vehicle Data**
Joyoung Lee, New Jersey Institute of Technology, Assistant Professor, USA

**12024** **Traffic Signal Control Based on Particle Swarm Optimization**
Kuen-Rong Ro, Telecommunication Laboratories, Chunghwa Telecom Co., Ltd., Chinese-Taipei

**12696** **When Gap Acceptance Does Not Apply — A New Approach**
Erlend Aakre, NTNU Traffic Engineering Research Centre, Norway

**12850** **A Practical Simple Technique to Detect Abnormal Traffic Flow in Freeway**
Hamid Torfehnejad, Road Maintenance and Transportation Organization, ITS Group Manager, Iran

**13346** **Modeling of Weak Lane Discipline Following Behavior in Mixed Traffic Conditions**
Mariam Abraham Deepthi, NIT Warangal, Post Graduate Student, India

## TS118 – Radio Communications for ITS

**Thursday, September 11, 1:30 – 3:00 p.m.**

**12050** **DSRC Performance Assessment under Critical Radio Environment**
Hirofumi Onishi, Alpine Electronics, Specialist, USA

**12528** **An Examination of the Applicability of a Film Antenna for 700 MHz Band ITS**
Atsuo Iwase, Panasonic Corporation, Japan

**12836** **A Novel Traffic Micro Radio Station Implemented via DSRC Network Technology**
Quanfang Fan, SUPCON, China

**13488** **Improved Resource Utilization and Transmission Quality for V2X Communication**
R. Tugrul Güner, Kapsch TrafficCom AG, Austria

**13688** **Wireless Vehicular Safety Systems: DSRC Radio In-Vehicle Evaluator (DRIVE)**
Brian Gallagher, DENSO International America, Inc., USA

# TS119 – Autonomous Driving Systems

## Thursday, September 11, 1:30 – 3:00 p.m.

**Session Track:** ■ Automated Transportation

**11885** **The Future of Mobility Is Now**
Guy Fraker, AutonomouStuff LLC., Vice President, USA

**12104** **The Effect of Autonomous Speed Control System: An Investigation on Minimum Headway and Driver's Acceptance**
Yunfei Hou, University at Buffalo, USA

**12722** **Intersection Management of Autonomous Vehicles using an Agent-based Passenger Priority Framework**
Hesham Rakha, Virginia Tech, Professor, USA

**13654** **Vehicle Automation and the Duty to Act**
Noah Goodall, Virginia Department of Transportation, Research Scientist, USA

# Interactive Sessions

## IS01 – Interactive 1

**Monday, September 8, 10:30 a.m. – 12:00 p.m.**

**12133** **Information About $CO^2$ Emissions From Transport Services — The French Experience**
Eric Louette, Ministry of Ecology,Sustainable Development and Energy, officer, France

**12755** **Operational Benefits of InSync Adaptive Signal Control for Nonrecurring Traffic Conditions**
Aleksandar Stevanovic, Florida Atlantic University, Assistant Professor, USA

**13034** **From Intelligent Transport System (ITS) Integration to Effective Smart City (SC) Implementation**
Edmond Chang, EDCPC, Inc., President, CEO, USA

**13206** **A Study of Optimal DSRC antenna for Multi lane free flow**
Kenta Kakizaki, Aoyama Gakuin University, Department of Electrical Engineering and Electronics, College of Science and Engineering, Japan

## IS02 – Interactive 2

**Monday, September 8, 3:00 – 4:30 p.m.**

**12633** **GNSS Pseudorange Evaluation Using 3-dimensional Map**
Shunsuke Miura, the University of Tokyo, Japan

**13300** **Predicting Taxi Pickups Using Spatial Partitioning**
Wei Wu, Institute for Infocomm Research, Scientist, Singapore

**13388** **Communication System Development Based On Free-flow, Multi-lane, High Speed**
Ryena Woo, Seoul Women's University, master´s course, Korea

**13437** **Multi-Level Evaluation of the benefits of Intelligent Transportation Systems**
Mohammed Hadi, Florida International University, USA

**13506** **Scaling Up Penetration Rates in Field Testsby Emulating V2X Communication**
Bart D. Netten, TNO, Senior Scientific Researcher, Netherlands

## IS03 – Interactive 3

**Tuesday, September 9, 10:30 a.m. – 12:00 p.m.**

**13556** **Cost-Effective Monitoring and Evaluation of the M2M Pilot Project**
Jill Hayden, Atkins, Principal Consultant, United Kingdom

**13573** **The Vision of Zero Queuing (It's About Time)**
Helge Jensen, Agency for Urban Environment, City of Oslo,, Department director Traffic and technology, Norway

**13642** **Infrastructure-based Sensors Augmenting Efficient Autonomous Vehicle Operations**
Myungsoo Jun, National Renewable Energy Laboratory, USA

**12849** **Navigation System using Zigbee in Shopping Mall**
Yuya Takahashi, Tokyo University of Science, Student, Japan

**12905** **Modeling and Characteristics of the Fundamental Diagram for Lagrangian-Space Kinematic Wave Model**
Han Yang, Key Laboratory of Road Traffic Engineering of the Ministry of Education, Tongji University, Ph.D, China

## IS04 – Interactive 4

**Tuesday, September 9, 1:00 – 2:30 p.m.**

**13064** **State-of-the-Art Yard Management**
Ian Harriman, BLIC North America, Inc., ITS Consultant, USA

**13089** **Development Of Trajectory Analysis Function By Analyzing Location Information**
Yuichi Ikeda, Fujitsu, Japan

**13195** **City-wide Road Distress Monitoring with Smartphones**
Christoph Mertz, Carnegie Mellon University, Principle Project Scientist, USA

**13401** **Wireless Zigbee Sensor Applied to Temperaturare Measurement**
Marcelo Bender Perotoni, UFABC, PROFESSOR, British Virgin Islands

## IS05 – Interactive 5

**Wednesday, September 10, 8:30 – 10:00 a.m.**

**13793** **Dangerous Goods Compliance on Australian Roads**
Soren Tellegen, Kapsch TrafficCom Australia Pty Ltd, Australia

**13316** **The Smooth Operation at ETC Lane in the Event of Large-scale System Failure**
Hidenori Sugimoto, Highway Toll Systems Co., Ltd., Japan

**13553** **A Simulation Test – Bed for Evaluating Active Traffic Network Management Systems**
Hossein Hashemi, Southern Methodist University, Graduate Research Assistant, USA

**12623** **Cloud Impacts on Pavement Temperature in Energy Balance Models**
Curtis Walker, University of Nebraska – Lincoln, Graduate Research Assistant, USA

**12798** **Adaptive Streaming Systems for Vehicles: Available Technologies**
Jianping Chen, Institute for Infocomm Research, Scientist, Singapore

**13519** **Loss Aversion, Goal Framing and the Design of an Information Strategy for Roadside DRIPs**
Jaap Vreeswijk, Imtech Traffic & Infra, Senior Researcher, Netherlands

## IS06 – Innovative ITS Based Safety Systems Interactive Session

**Wednesday, September 10, 1:30 – 3:00 p.m.**

**12845** **Field Trials of a WAVE/DSRC-based Weigh-In-Motion (WIM) System in Taiwan**
Yen-Chu Huang, Industrial Technology Research Institute

**12031** **Characterizing Cell Phone Use at Signalized Intersections**
Thomas Brennan, The College of New Jersey, Assistant Professor, USA

**12092** **Effect Evaluation of Vehicle-Infrastructure Cooperative Right Turn Collision Prevention System**
Nakamura Shunsuke, TOYOTA MOTOR CORPORATION, Japan

**12646** **Wrong-Way Driving Detection and Prevention System: A Pilot Deployment**
Charles Lattimer, Atkins, Program Manager, USA

# IS07 – Advanced Traffic Management Interactive Session

## Wednesday, September 10, 3:30 – 5:00 p.m.

**13533** **Calibration of Smart Motorways and Comparison of Two Schemes**
Jill Hayden, Atkins, Principal Consultant, United Kingdom

**12879** **Planning for Active Traffic Management in Southeast Michigan**
Stephanie Palmer, Michigan Department of Transportation, Region Traffic Safety and Operations Engineer, USA

**13304** **Context and Business Rules Driven Active Traffic Management System**
Victoria Thio, IBM, Manager, USA

**13305** **Development of A Comprehensive Control Strategies to Mitigate Congestion on Freeway With Long Tunnel**
Tien-Pen Hsu, National Taiwan University, Associate Professor, Chinese-Taipei

**13371** **An Analysis of Effect of Increase in Routes Covered by Information Service upon Driver's Route Choice Behavior**
Nobuhiro Uno, Graduate School of Management & Department of Urban Management Graduate School of Engineering, Kyoto University, Associate Professor, Japan

# International Benefits, Evaluation, and Costs and Pan American and Middle East (IBEC) Sessions

## IBEC1 – Will There be an Attractive/Convincing Cost Benefit Case Introducing C2X and Automated Vehicle Driving in Road Transportation?

**Wednesday, September 10, 8:30 – 10:00 a.m.**

Today the number of transportation related fatalities is around 800.000 per year growing to possibly 1.2 million by 2025 globally. (IRF has launched "2013: A Decade of Action" to countermeasure this unacceptable trend in road transportation.

The upcoming implementation of V2X communication, together with the developments of advanced ADAS in next generation vehicles, will finally enable automatic driving. This bears the potential to avoid almost 100% of fatalities, as well as any other crashes between vehicles, vehicles and vulnerable persons on roads, as well as with fixed infrastructure installations. This will save hundreds of billions € (maybe 2 trillion €) annually! At this very moment all technological developments are being pushed by the vehicle industry as a matter of customer relation and competition between automotive industries. Is safety not also the core responsibility of governments of all states? Why do they not push the mandatory functionality as a matter of certification of vehicles? The session will discuss the role of vehicle manufacturer versus vehicle certification (Zulassung) to ensure to have the vital lifesaving functionally in the vehicles in a coordinated way as soon as possible.

**Organizer**
Reinhard Pflliegl, A3PS, CEO, Austria

**Session Track**
■ Connected Vehicles & Cooperative Systems

## IBEC2 – Evaluation and the Technology Showcase

**Wednesday, September 10, 1:30 – 3:00 p.m.**

The Technology Showcase has become an integral element of World Congresses. Detroit is no different, with as many as 20 or more demonstration projects in the works for the September World Congress. IBEC has invited several partners involved in the Showcase to present their thinking on the technologies they are testing and introducing in the marketplace, with a particular emphasis on the evaluation protocols they applied to support their decision process. Effectively done, this ensures each technology application generates a sufficient return on investment to merit its organization's commitment.

**Organizer**
Thomas Kern, ITS America, Executive Vice President, USA

## IBEC3 – Evaluation of Connected Vehicles

**Wednesday, September 10, 3:30 – 5:00 p.m.**

The connected world of vehicles and infrastructure promises to revolutionize mobility services. From vehicles that will not crash into each other, to unprecedented information derived from increased data quality and volume — the connected world provides intriguing opportunities to save lives, increase efficiency, and to secure community-wide benefits of ITS.

Understanding the potential of these innovations and how they would operate in a real-world environment is critical for policy development, investment strategies, network operations and management, driver education, and legal and regulatory aspects.

This Special Interest Session will summarize and present the key points from the IBEC Pre Congress workshop (September 6, 2014).

**Organizer**
Richard Harris, ITS UK, International Director, United Kingdom

**Session Track**
- Connected Vehicles & Cooperative Systems

## IBEC4 – Evaluation of Highly Automated Driving and Truck Platooning

**Thursday, September 11, 8:30 – 10:00 a.m.**

The expected deployment of highly or fully automated road transport for both individual passenger cars and for trucks increasingly raises questions about how these new ITS-based systems can and will be evaluated in terms of their benefits and costs. These systems promise to: (i) improve traffic safety by reducing driver workload and minimizing human errors due to driver distraction or reduced vigilance; (ii) increase mobility through a reduction of congestion in urban areas and on motorways by increasing vehicle density and minimizing speed variations; (iii) reduce vehicle emissions and fuel consumption; and (iv) provide important individuals, organizational and commercial productivity improvements (e.g. through road-trains for freight distribution). However, to what extent, if any, are these benefits actually likely to be realized? Can we model the future? How will drivers actually behave and react? What happens when there is a crash — are occasional tragedies something we can factor in to the benefits and costs calculations? What new metrics and performance measures do we need to consider in planning field operational tests? The session will focus on the challenge of evaluating these potential benefits and costs, and feature illustrative evaluation studies on such automated transport.

**Organizer**
Alan Stevens, Transport Research Laboratory, Chief Research Scientist, United Kingdom

# IBEC5 – Evaluating Benefits and Business Cases for Cooperative ITS (Connected Vehicles)

## Thursday, September 11, 1:30 – 3:00 p.m.

Cooperative ITS (also called C-ITS and connected vehicle) provides services that involve communicating information between vehicles (V2V) and/or between vehicles and the road infrastructure (V2I). Services include short latency safety messages (e.g. pre-collision preparation), collection of "probe vehicle" travel times, and provision of dynamic congestion and routing information. Additionally, some countries have established dedicated beacon infrastructures for V2I services or are trialling a beacon-based architecture for some applications. With such a wide range of services and options, pre-deployment assessment and during deployment evaluation are both challenging and important.

This session will discuss methods of evaluating the incremental benefits of C-ITS beyond non-cooperative systems and provide examples of on-going deployment practice.

**Organizer**
Alan Stevens, Transport Research Laboratory, Chief Research Scientist, United Kingdom

**Session Track**
- Connected Vehicles & Cooperative Systems

# Middle East and Africa ITS Initiatives Sessions

## INT01 – IRF'S Arabian Gulf Region Showcase

**Tuesday, September 9, 10:30 a.m. – 12:00 p.m.**

The Gulf Cooperating Council (GCC) consists of UAE, Saudi Arabia, Qatar, Kuwait, Bahrain, and Qatar – by far the richest and most dynamic economies in the Arabian Gulf region. In 2012, the region had a fast-growing population estimated at 42,100,000, a nominal GDP of $2.1 trillion USD, and per capita GDP of $33,005.

A number of important ITS projects will be presented in this session, ranging from major ITS standards projects in the United Arab Emirates, to traffic violation enforcement in Saudi Arabia, to state-of-the-art intelligent transport projects in Qatar.

**Speakers**
The speakers are drawn primarily from the public sector agencies that are managing and funding the projects, with assistance from some of their main international consultants.

## INT02 – Africa — A New Growth Area for ITS

**Thursday, September 11, 10:30 a.m. – 12:00 p.m.**

Developed as a problem-solving approach, Intelligent Transport Systems grew from its initial humble beginnings, to flavor-of-the-month, to value-adding deployment, to "you want MORE funding!" and to maturity. Hence, a "deployment ceiling" in many of the traditional and subsequent ITS markets. To sustain its growth, the ITS industry needs to offer new solutions and to new markets. Africa is one such new growth area with GDP growth for Africa as a whole at 6.6% in 2013 (AfDB Statistics Department). With the Continent settling down to increasing political and economic stability, there is strong positive support from international funders and donor organizations. Linked to a massive emerging consumer and commuter markets, Africa offers new opportunities for those that have the stamina to enter this exciting, yet challenging, environment. ITS Ethiopia, ITS Nigeria, and ITS South Africa are the founding members in the establishment of ITS Africa that will play a facilitating role for this new phase in ITS deployment on the continent. The format will be a brief introduction, four short presentations, and then an interactive discussion.

**Organizer & Moderator**
Paul Vorster, ITS South Africa and Member ITS Africa Working Group, CEO, South Africa

**Speakers**
Abiyu Berlie, New York City Metropolitan Transport Authority, Founding Member of ITS Ethiopia, ITS Program Coordinator, USA

Debo Shopade, ITS Nigeria/Genyz Transport Solutions, Transport Technology Professional, United Kingdom

Joshua Adetunji Odeleye, Nigerian Institute Of Transport Technology, Assistant Director, Nigeria

# Annual Meeting Sessions

## AM01 – Sustainable Transportation Performance Measures: Best Practices

**Monday, September 8, 10:30 a.m. – 12:00 p.m.**

This session will present examples of best practices and deployed ITS technologies on the use of performance measures associated with sustainable transportation. As such, the presentation will cover topics ranging from environmental, economic, and social sustainability performance measures along with mobility, safety, and system reliability.

**Organizer & Moderator**
Farhad Pooran, Schneider Electric, Vice President of Engineering, USA

**Speaker**
Adam Moser, Pinellas County Public Works, Senior Engineer, USA

Ramin Masssoumi, ITERIS, Vice President

Mohammed Hadi, Florida International University, USA

Hamed Benouar, Sensys Networks, Vice President of Sales and Business Development, USA

**Session Track**
■ Sustainability

## AM03 – Commercial Vehicle and Freight Movement Technologies for Safety, Efficiency, Mobility, and Enforcement

**Monday, September 8, 3:00 – 4:30 p.m.**

This session will survey leading and innovative technology projects in the commercial vehicle and freight movement areas of transportation. The session will focus on four different technology applications: road weather/maintenance operations, crash avoidance systems and return on investment, traveler information for freight movement, and roadside screening.

**Organizer**
Richard McDonough, New York State Department of Transportation, Director of the Planning and Development Bureau, Office of Modal Safety and Security

**Moderator**
To be announced

**Speakers**
To be announced

**Session Track**
■ Freight

## AM05 – Transportation Management Centers — Past, Present, and Future

**Tuesday, September 9, 10:30 a.m. – 12:00 p.m.**

This session will investigate the past, present, and future of TMCs, with one panelist discussing each. Some of the questions to be addressed by the panel include: What is the current state of TMCs across the country? What will TMCs of the future look like and be capable of? What do DOTs need to do to get this point? This last question is the most pertinent, as the organizer of the session would like to come up with concrete suggestions on how to do this. During the "TMC of the future" portion of the session, which will come last, the session will relocate to the exhibition hall floor so that the panelist can demonstrate to the session audience the planned mock TMC.

**Organizer & Moderator**
Robert Edelstein, AECOM, Vice President of ITS in North America, USA

**Speakers**
Steve Kuciemba, Parsons Brinckerhoff, Vice President, USA

Steve Corbin, State Road and Tollway Authority, Director of Operations, USA

**Session Track**
■ Traffic Management

## AM06 – Integrated Corridor Management

**Tuesday, September 9, 10:30 a.m. – 12:00 p.m.**

Multimodal Solutions, early lessons learned from the first six months of operations of the Dallas and San Diego Integrated Corridor Management Demonstrations. Description of the opportunities by the next wave of deployers.

**Organizer & Moderator**
Brian Cronin, ITS Joint Program Office, United States Department of Transportation, Team Leader, ITS Research and Demonstration

**Speaker**
J. Alex Estrella, San Diego Association of Governments, Regional Planner, USA

# AM07 – U.S. Department of Transportation ITS Strategic Plan

## Tuesday, September 9, 1:00 – 2:30 p.m.

ITS Joint Program Office will summarize key theme areas and programs planned for the 2015-2019 ITS Strategic Plan.

**Organizer**
To be announced

**Moderator**
Ken Leonard, ITS Joint Programs Office, United States Department of Transportation, Director of the Intelligent Transportation Systems, USA

**Speakers**
Kate Hartman, ITS Joint Program Office, United States Department of Transportation

Dale Thompson, United States Department of Transportation, Transportation Specialist, USA

Walton Fehr, ITS Joint Program Office, United States Department of Transportation, Manager, ITS Systems Engineering, USA

Kevin Dopart, Noblis, Manager, USA

Valerie Briggs, ITS Joint Program Office, United States Department of Transportation, VII Policy Program Manager, USA

## AM08 – Transportation System Management and Operations

**Wednesday, September 10, 8:30 – 10:00 a.m.**

The AASHTO Subcommittee on System Operations and Management (SSOM) proposes to sponsor a Special Interest Session (there is actually enough material on this topic for more than one session) on Transportation System Management and Operations (TSM&O). TSM&O is a growing trend in transportation that emphasizes the need to improve the efficiency of the existing transportation system as an alternative to building expensive new facilities, as has been done in the past, in order to handle growing demand. Strategies to be considered for improving efficiency include Integrated Corridor Management and Active Traffic Management, as well as widespread implementation of connected and automated vehicle technologies.

Specifically, the session(s) will cover the following topics:

- Transportation System Management and Operations Program Plans [NCHRP Project 20-7(345)]
- Next Generation TSM&O Strategic Research Framework [NCHRP Project 20-7(359)]
- AASHTO Connected/Automated Vehicle Research Roadmap (NCHRP Project 20-24)
- Federal/State Perspectives for Linking Research to Planning and Operations

One possible approach to handle these materials is to host two related sessions: one on public sector and operations program-related research, and a second on industry-oriented research.

**Organizer**
To be announced

**Moderator**
To be announced

**Speakers**
To be announced

## AM10 – Organizational Success at Local Chapters

**Wednesday, September 10, 10:30 a.m. – 12:00 p.m.**

This session will include presentations from all categories of annual State Chapters Award winners with PowerPoint summaries of their award applications and elaborations in each category that will highlight best practices and successes in their chapters. Local chapters will get to share ideas and see items they may wish to emulate to make their own chapters stronger. The presenters will have the opportunity to showcase their selected ITS projects, small and large, local and national. It is hoped that demonstrations of these project successes and corresponding partnerships at work would increase public and private sector interests in chapter affiliations.

**Organizer**
To be announced

**Moderator**
To be announced

**Speakers**
To be announced

## AM11 – Private Consumer Applications and the Growing Request to Interface to Public Traffic Systems

**Wednesday, September 10, 10:30 a.m. – 12:00 p.m.**

Developers of traffic information systems and third-party smartphone and automotive applications have started to request interfaces with public traffic data and software systems — for example, a smartphone application which predicts a driver's wait time at a red light. The intent of this session is to bring together private sector app developers with public sector officials to discuss some of the issues regarding the use of public data for this purpose. Some of the questions to be addressed by the panel include: What is the protocol for allowing app developers to access, use, and share data? How should issues such as security, liability, and data quality control be handled?

**Organizer**
Adam Moser, Gresham, Smith and Partners, Senior Engineer

**Moderator**
Mike McGurrin, Noblis, Senior Fellow, Transportation Systems

**Speakers**
Jeff Spinazze, Econolite Group Inc, Senior Vice President, USA

Nisar Ahmed, Metropolitan Transportation Commission, Oakland, CA, Technical Program Coordinator, 511 Traveler Information Program

**Session Track**
■ Big Data and Open Data

## AM12 – Future of Fleet Automation

**Wednesday, September 10, 1:30 – 3:00 p.m.**

Highly automated trucks will use advanced sensing and computing technologies to provide improvements over human performance. Applied in carefully selected operating environments and with appropriate fault-handling features, fleet automation will result in significant decreases in the frequency and severity of highway crashes. This has been recognized in major truck automation development projects in Japan, Germany, and the Sweden. This session will focus on existing and future planned developments in fleet automation around the world including the North America, Asia, and Europe.

**Organizer & Moderator**
Steven Underwood, Institute for Advanced Vehicle Systems, University of Michigan - Dearborn, Director, USA

**Speakers**
Osman Altan, Federal Highway Administration

Daniel Bartz, TARDEC, USA

Richard Bishop, Bishop Consulting, Owner

**Session Track**
■ Automated Transportation

## AM13 – FHWA Infrastructure Deployment Guidance

**Wednesday, September 10, 1:30 p.m. – 3:00 p.m.**

FHWA will discuss areas of analysis for the 2015 Initial Infrastructure Guidance

**Organizer**
To be announced

**Moderator**
Jeffrey Lindley, Federal Highway Administration, United States Department of Transportation, Associate Administrator of Operations

**Speakers**
To be announced

## AM14 – Autonomous Vehicles: Savior of the Western World or an Over-Hyped Version of new Cars?

**Wednesday, September 10, 3:30 – 5:00 p.m.**

This session would present a range of views regarding the development of autonomous vehicles. These range from true believers who see driverless vehicles being sold within the next few years and generating a new way of transportation with significant implications for everything from urban form to traffic congestion. Others see this as a modestly paced natural development of technical improvements.

**Organizer**
To be announced

**Moderator**
To be announced

**Speakers**
To be announced

**Session Track**
■ Automated Transportation

## AM16 – The Sharing Economy and Shared Mobility

**Thursday, September 11, 8:30 – 10:00 a.m.**

While sharing resources is not a fundamentally new model of social interaction, the presence of a "sharing economy" is a rapidly growing, innovative concept. The sharing economy is an economic model based on "sharing" rather than "owning" assets. It is described by San Francisco Planning and Urban Research as "fundamentally capitalist yet simultaneously more socially and environmentally conscious," and is hailed by many as an opportunity to enhance the sustainability of the current economy while simultaneously yielding various additional co-benefits. High levels of online connectivity, "living local" community-oriented awareness, and heightened consciousness of costs and environmental issues have caused the sharing economy to flourish across the United States. The sharing economy allows for the sharing of numerous forms of property, such as home-sharing, ridesharing, bikesharing, carsharing, and more. Carsharing, bikesharing, ridesharing, and transportation networking companies are among the most popular subsets of the sharing economy, and they operate within a number of different frameworks. This session provides an introduction to the sharing economy and its various transportation services.

**Organizer & Moderator**
Susan Shaheen, University of California, Berkeley, Adjunct Professor and Co-Director: Transportation Sustainability Research Center

**Speakers**
Lisa Gansky, The Mesh, CEO and Entrepreneur

Sunil Paul, Sidecar, CEO

Michael Jones, CEO, Alta Planning & Design

Mark Norman, Zipcar, President

Sean O'Sullivan, Carma, CEO, Ireland

John Zimmer, Lyft, Co-Founder

**Session Track**
■ New Mobility

## AM17 – ITS Improvements that Lead to Safety: The State Perspective

**Thursday, September 11, 8:30 – 10:00 a.m.**

As we move through the 21st century, Intelligent Transportation Systems (ITS) are beginning to take a substantial foothold in current and future deployment plans. Although ITS solutions offer improvements across all areas of transportation, it is the potential for dramatic safety improvements that has the attention of many transportation officials. During this session speakers from State DOTs will share their perspectives on ITS through showcasing their current and future planed ITS deployments for the next 5, 10, and 20 years. Learn how ITS has demonstrated lifesaving outcomes and what benefits are anticipated for the next generation deployments.

**Organizer**
To be announced

**Moderator**
To be announced

**Speakers**
To be announced

**Session Track**
■ Traffic Safety

## AM18 – Human Factors Leading to Safe and Connected Automation

**Thursday, September 11, 10:30 a.m. – 12:00 p.m.**

Driver distraction plays a predominant role in traffic crashes. The connected-automated vehicle stands to significantly improve transportation safety by reducing, and possibly eliminating, crashes that arise from driver inattention. However, the pathway to connected automation faces many human factor challenges. First, information services, rather than safety, may be the driving force behind the demand for connected vehicle technology. Managing the amount of information delivered to drivers so that drivers do not become overloaded is a considerable concern. Secondly, such information services stand to greatly draw drivers' attention away from the road once the vehicle's operation becomes partially automated. As such, it is imperative that connected/automated vehicles be designed to convey their capabilities, deter over-reliance, and safely transfer control back to drivers when they fail. This panel will discuss how connected/automated vehicles can be designed to address these human factors issues by following an iterative user-centered design process throughout the design cycle.

**Organizer**
To be announced

**Moderator**
To be announced

**Speakers**
To be announced

**Session Track**
■ Traffic Safety

## AM19 – DSRC Spectrum Sharing

**Thursday, September 11, 10:30 a.m. – 12:00 p.m.**

The panel will discuss aspects of the President's Broadband Initiative as well as the current status of spectrum sharing proposals in the 5.9 GHz band, and results of testing on whether unlicensed users can coexist with V2V and V2I safety applications without causing interference and/or denial of service.

**Organizer**
To be announced

**Moderator**
John Augustine, ITS Joint Program Office, United States Department of Transportation, Managing Director, USA

**Speakers**
To be announced

## AM20 – New Urban Mobility: Is This the Death of Public Transit as we Know it?

**Thursday, September 11, 1:30 – 3:00 p.m.**

The combination of technology and new institutions has generated new ways to achieve urban mobility. These range from shared cars and bicycles to autonomous vehicles to telecommuting; to jitneys and on-call cars. Do these compete with traditional transit, picking off customers or can they help transit by providing "last mile" access? What alternative strategies are possible?

**Organizer**
To be announced

**Moderator**
To be announced

**Speakers**
To be announced

**Session Track**
■ New Mobility

## AM21 – Deployment Incentives Report

**Thursday, September 11, 1:30 – 3:00 p.m.**

MAP-21 Required United States Department of Transportation to prepare a report on ITS deployment incentives. Come hear about the report and deployment opportunities.

**Organizer**
To be announced

**Moderator**
Robert Sheehan, United States Department of Transportation, ITS Joint Program Office, USA

**Speakers**
Robert Rupert, Federal Highway Administration, United States Department of Transportation, USA

Jeffrey Spencer, Federal Transit Administration, United States Department of Transportation, ITS Team Leader, USA

# Technology Showcases

The 2014 ITS World Congress Technology Showcase will provide attendees a hands-on experience to the demonstrations like no Congress has before. Currently, more than 30 demonstrations are being considered. A wide range of technologies will be on display on Michigan's Belle Isle, including connected and autonomous vehicles, electric vehicles, robotics, sensor technology, real-time weather and road conditions data analysis, and many others.

Every demonstration within the 2014 Technology Showcase will tell the story of how the ITS industry is reinventing transportation in our connected world. It will help promote awareness and a greater understanding of ITS today, increase the connectivity throughout the ITS stakeholder community, and foster international harmonization and collaboration.

All of the demonstrations in the Technology Showcase will run daily with select hours and transportation will be provided to and from Bell Isle. **For all demonstrations, please arrive at the kiosks located on the exhibit floor at least 30 minutes before your demonstration time to allow for transportation.**

## Cut River Bridge Structural Health Monitoring

**Alfred Benesch and Company**

Live camera feed of the Cut River Bridge (U.S.-2) will be displayed to show how the use of this technology can provide the latest information on current bridge traffic. In addition, weather conditions such as current temperature, wind speeds, rain accumulation etc., as well as heavy trucks configurations such as axles and gross weight, speed and the impact of the heavy trucks (strain) over the bridge are to be shown. Also, the count of all vehicles crossing the bridge will be displayed to show the traffic volume of the bridge in a typical summer day.

## A New Cycling Experience

**Bosch**

This is the new cycling, the new riding experience. This is ebiking: Electrical energy supports muscle power during pedaling. With the drive system developed by Bosch eBike Systems, steep becomes flatter, far away becomes closer, long becomes shorter, and fast becomes easier.

## Advanced HMI Cockpit Management

**DENSO Corporation**

With the onset of the connected car, DENSO Corporation will be showcasing two vehicles with the capability to communicate over the DSRC channel as well as through 4G LTE. The advanced HMI Cockpit system will then determine how, when, and where to display this information to the driver. This will be a live drive demo, utilizing two vehicles. The vehicles will be able to accommodate three passengers per car. The demo should take about 20 minutes to complete.

## V2X Enabled Automated Driving

**DENSO International America Inc.**

This showcase demonstrates the advantage of enhanced ADAS combining functions of V2V, V2I, and V2C for convenience and safety.

## Multi-Modal Intelligent Traffic Signal System (MMITSS)

**Econolite, University of Arizona, Savari Networks**

The MMITSS partners will demonstrate a multi-modal intelligent traffic signal system that will operate in a connected vehicle environment. The main objective is to demonstrate the operation of a multi-modal priority signal control system in which several priority requests from different modes of transportation (e.g. emergency vehicles, public transit, and pedestrians) can be accommodated simultaneously. This approach emphasizes the safety advantages provided by implementing a connected vehicle-based solution to simultaneously service several authorized priority requests.

This application presents the ITS community with a market-feasible solution for prioritizing requests for service within an integrated connected vehicle environment.

## Dynamic Driver Safety Information Provided by Digital Map, Vehicle Sensor Data, Connectivity and Location Cloud

**HERE**

Extended Digital Horizon provides upstream vehicle lane-level driver warning or vehicle awareness of road hazards and incidents. Lead vehicles sense road-based hazards or events, the GPS location and context is communicated to the HERE Location Cloud and affected upstream vehicles receive lane-level warning or advisement via point-cast. The HERE Location Cloud supports vehicle sensor probe data ingestion and analytics and the delivery of solutions to targeted vehicles. Each demonstration will last approximately 7 minutes.

## Highly Automated Driving

**IAV Automotive Engineering**

IAV Automotive Engineering, a full service engineering solution provider, offers for road test in urban and highway driving its autonomous-driving vehicle using a production vehicle and off the shelf sensors. Demonstrations of autonomous vehicle will be provided. Demonstrations will run every 20 minutes.

## Interactive Travel-Time and Detection Demonstration

**Kimley-Horn and Associates, Inc.**

Kimley-Horn will be hosting an interactive demonstration of our travel-time application. Participants will use the app to track velocity and travel time while riding a bike on a set course. A leaderboard will display real-time results of the participants. The demonstration will rotate through four people every 15 minutes.

## Applications of Unmanned Aerial Vehicles for Transportation Agencies

**Michigan Tech Research Institute (MTRI), a research center of Michigan Technological University**

Our combined Michigan Tech/Michigan Department of Transportation team will be demonstrating applications of unmanned aerial vehicles (known as a UAV) for transportation agencies. These rapidly advancing imaging platforms can help achieve efficiencies in operations, maintenance, and asset management. We are planning demonstrations of confined space inspection, a tethered blimp for traffic monitoring, and indoor UAV flights at Cobo Hall; UAV flights at Belle Isle are possible. Attendees will have the ability to see different sensors collecting data that can be used for evaluation of bridge elements, other transportation infrastructure, and emergency response scenarios.

## Wireless Automotive Technology Solutions

**Qualcomm, Inc.**

**Location:** NextEnergy

Qualcomm is developing numerous technology solutions that are relevant to the future of mobility and that address societal concerns associated with energy, environment, safety, and congestion. Two such technologies will be demonstrated. First, wireless EV charging technology (Qualcomm Halo) provides fully automated charging, enabling greater convenience that will increase EV adoption. This will be demonstrated using a fully integrated system incorporating parking alignment with the base pad, foreign object detection, power level, and charging status. Second, vehicle to pedestrian communications using an embedded vehicle DSRC system and the smartphone's DSRC system may reduce collisions, especially when integrated with ADAS technologies.

Showcases continues on next page >

## Emergency Responder Day

**SOCCIT: Auburn Hills Police Department, Bloomfield Township Police Department, Troy Police Department, Boulevard & Trumbull Towing, Michigan Tech Research Institute**

This year's ITS World Congress will provide a unique look at what emergency responders do on the scene of an accident and how the developments in transportation technology can help by making things run smoother, faster, and safer. You'll be able to watch a mock version of a traffic incident involving an overturned tanker. Attendees will watch as first responders arrive, assess, respond and clear the scene, utilizing the latest ITS technologies. Representatives from various first responder communities will be available for questions and to provide real-time narration of the events as they unfold. This event will be held Tuesday, in conjunction with several other events targeted at the first responder community.

## Advanced Perception and Localization Technology that Enables Connected-Automation

**SwRI**

SwRI will demonstrate various technology enablers for Connected-Automation. Using multiple highly automated vehicles, SwRI will show how advanced low-cost perception and localization technology has matured to the point where transportation solutions can be augmented with this technology to solve today's transportation problems.

## Advanced Highway Driving Support

**TOYOTA MOTOR CORPORATION**

Participants will experience a new highway driving support system that intelligently perceives the highway environment and appropriately balances driver and support system control.

This in-car experience will be shown on public highways where participants can feel the performance and also monitor the system using in-car displays. This will be a 30 minute in-car experience on public roads.

## Nationwide Tolling Interoperability

**TransCore**

TransCore will demonstrate nationwide tolling interoperability solution on a live test track. The GoAnywhere Pass,™ a multi-protocol tag will be tested in a low-speed loop using an RF reader. An on-site computer will simulate a tolling environment, demonstrating interoperability scenarios across multiple protocols. The GoAnywhere Pass™ can support both commercial trucks and private vehicles, by offering one tag, one account functionality.

## Integrated Mobile Observations (IMO)

**U.S. Department of Transportation (U.S. DOT) ITS Joint Program Office / FHWA Road Weather Program**

Participants will sit in a specially instrumented demo van, which will do a short loop on Belle Isle. As the van moves, participants will observe road weather connected vehicle data being generated by the demo van. After driving a little further, participants will see advisory warnings, based on road weather conditions artificially generated on-site. The van will proceed further and participants will observe the road weather connected vehicle data captured by the Weather Data Environment. A complementary demo inside the exhibit hall will show how road weather connected vehicle data and applications will help improve transportation operations in the future. This demo will run for 10-15 minutes.

## Connected Vehicle Safety Technology Demonstration

**U.S. Department of Transportation (U.S. DOT) and the Crash Avoidance Metrics Partnership (CAMP)**

Connected Vehicle Cooperative Safety Systems use 5.9 GHz Dedicated Short Range Communications (DSRC) to enable vehicle active safety systems that may help drivers avoid crashes. The United States Department of Transportation (U.S. DOT) has partnered with the Crash Avoidance Metrics Partnership (CAMP) to research, develop and test the technologies that form the framework for these systems. Demonstration participants will ride in vehicles from various OEMs and experience the effectiveness of the safety applications in staged potential crash scenarios.

## Valeo Smart and Intuitive Driving Innovations

### Valeo

Valeo will demonstrate three Intuitive Driving innovations, as well as exhibit smart and intuitive driving solutions. These advanced technologies are developed:

- **To simplify parking:** the Automated Valet Parking System allows drivers to leave their vehicle at a parking lot entrance and send it to find a space and park itself using a Smartphone interface.
- **To improve driver safety:** the 360Vue® multi-camera system helps the driver by providing a bird's eye view of the vehicle's surroundings when parking.
- **To provide better interaction between the driver and the vehicle:** the InBlue virtual key allows car sharing using Bluetooth technology enables easier and more secure car sharing and user-to-vehicle connectivity.

## Connected and Automated Heavy Vehicle Demonstration

### Virginia Tech Transportation Institute

In the VTTI demonstration, the rider will experience the evolution from Connected Vehicles to Automation using passenger cars, heavy trucks and motorcycles. The vehicles will "talk" to the roadside to receive V2I Safety and Traveler Information Warnings. The vehicles will share Basic Safety Messages using V2V Communications to warn of crash imminent situations, then the Heavy Vehicle will demonstrate automated longitudinal control with the speed controlled by the infrastructure via DSRC. This demo doubles as both a 'ride and drive' experience, but also as a visual experience as attendees wait their turn to ride in the demo vehicle(s). This demo will run 20-25 minutes.

## V2V Technology Driving Demonstration

### Visteon Corporation

This is a ride-n-drive demonstration where a total of three occupants in one vehicle can experience a fully integrated cockpit HMI demonstrating three vehicle-to-vehicle use cases: obstructed stopped vehicle ahead warning, emergency electronic brake light warning and slippery road condition ahead warning.

## Xerox Vehicle Passenger Detection System

### Xerox Corporation

Xerox will demonstrate a technology that will enable an agency or law enforcement to monitor and/or enforce use of HOV/HOT lanes. Participants will ride as passengers in vehicles. Drivers will be provided. Vehicles will have differing number of occupants. Passengers will have the option as to which vehicle to ride in and which seats they ride in. Vehicles will make a short loop in a parking lot or along a roadway. The system will automatically determine the vehicle occupancy in real time and a display will indicate the occupancy state. The first demonstration will begin 30 minutes after showcase opening and the last demonstration will begin 30 minutes prior to showcase close.

# Social Events

## Opening Reception

**Sunday, September 7, 4:00 – 5:00 p.m.**

**Cobo Center**

Enjoy a networking opportunity prior to the Opening Ceremony. Hors d'oeuvres will be served.

**Price**
Included as part of the World Congress Registration.

## Exhibitors Welcome & Regional Receptions

**Monday, September 8, 4:30 – 6:00 p.m.**

**Cobo Center**

This important networking opportunity takes place in the Cobo Center's Exhibit Hall where international exhibitors, the regional and national ITS associations, and Michigan host community will welcome attendees and offer them an opportunity to visit, network, and engage one another as part of the global ITS stakeholder community.

**Price**
Included as part of the World Congress Registration.

## Macomb County Dinner Cruise

**Monday, September 8, Board Time: 6:30 p.m., Cruise Time: 7:00 – 10:00 p.m.**

The Macomb County Dinner Cruise will pick up guests at the Detroit Port Authority located minutes from the Cobo Center. Guests will experience an unforgettable three-hour cruise up the Detroit River to Lake St. Clair as they learn more about our region and international waterways. Guests will be able to network, enjoy dinner, and experience the fabulous views.

**Hosted by**
Macomb County

**Price**
$125.00

**Meal(s) Provided**
Dinner

**Participant Requirements**
300 maximum

## VIP Dinner

**Monday, September 8, 7:00 p.m.**

Sponsored by Verizon, the VIP Dinner is an invitation only event taking place at the Henry Ford Museum in Dearborn, Michigan. For more information, contact your regional association.

**Hosted by**

verizon

**Invitation Only**

## “Michigan Festival,” “Flavor of Michigan” presented by ITS Michigan

**Tuesday, September 9, 6:00 p.m.**

**Belle Isle Casino**

The Flavor of Michigan Networking event is an opportunity for World Congress attendees to witness firsthand what this great state has to offer. The event is centered around Michigan Wine, Michigan Beer, Michigan Food, and Michigan music located on beautiful Belle Isle at the historic Belle Isle Casino facility. Take the time to network with other attendees and friends while enjoying Michigan’s finest, all in one spot.

**Hosted by**

MDOT, ITS Michigan, and ITS America

**Price**
Included as part of the World Congress Registration.

**Meal(s) Provided**
Food and drink

## Detroit Gala

**Wednesday, September 10, 6:00 p.m.**

**Cobo Center**

A longstanding tradition from prior World Congresses, the Detroit Gala will showcase the recently renovated Cobo Center and its dramatic view of the Detroit River and our Canadian neighbors and the Windsor skyline. The gala will incorporate as its central theme the internationally known music and entertainment of Detroit. Hors d’oeuvres will be served.

**Price**
$100 for students, accompanying persons, and press registrants. Otherwise, included as part of World Congress Registration.

**Meal(s) Provided**
Hors d’oeuvres

# Ancillary Events

## Connected Vehicle Program 101

**Sunday, September 7, 10:00 a.m. – 1:00 p.m.** | **Cobo Center**

First launched in 2013, the U.S. Department of Transportation's Joint Program Office Professional Capacity Building Program is offering an updated workshop on connected vehicles. In this three hour program, instructors will describe the connected vehicle concept, provide the latest on connected vehicle research, report on the model deployment in Ann Arbor, and offer insights on the National Highway Traffic Safety Administration (NHTSA) initiative to begin a V2V rulemaking process and ultimately plans to require the life-saving technology to be installed in all new cars and light trucks. Registration is required. ($40.00).

**Price**
$40.00

## IBEC Workshop: Evaluation of Connected (Vehicles and infrastructure) and Autonomous Vehicles

**Sunday, September 7, 9:30 a.m. – 1:00 p.m.** | **Cobo Center**

The connected world of vehicles and infrastructure promises to revolutionize mobility services. Understanding the potential of these innovations and how they would operate in a real-world environment is critical for policy development, investment strategies, network operations and management, driver education and legal and regulatory aspects. The purpose of this workshop is to explore and understand the essential evaluation aspects of connected and autonomous vehicles. Speakers from around the world will share their insights and ample time will be allowed for discussion.

## State Chapters Strengthening Workshop

**Monday, September 8, 9:30 a.m. – 1:30 p.m.** | **Cobo Center**

The 27 state and regional chapters of ITS America meet every year at ITS America hosted Annual Meetings and World Congresses to conduct their annual business meeting and hold a strengthening workshop that features the latest on federal and state transportation programs and best practices on non-profit management. Participants include a mix of public and private sector ITS professionals actively engaged in chapter activities. Lunch will be provided at the workshop. Registration is required. The first attendee from a chapter is free; additional attendees from a chapter are asked to pay the $25.00 fee.

**Price**
$25.00 after first attendee per chapter


## ITS World Congress Transportation Tweetup

**Monday, September 8, 6:00 p.m.**

The inaugural ITS World Congress Transportation Tweetup and Happy Hour will engage a variety of industry and public sector transportation professionals, but will be of special interest to those who use Twitter to engage, share, and learn from each other on a daily basis. Transportation and high-tech folks of all shades and stripes will show up to network in a fun and relaxed setting. Help us spread the word among fellow transportation professionals at **#ITSWC14**.

*To request a ticket to this event, please contact **www.eventbrite.com/e/its-world-congress-transportation-tweetup-tickets-11767251165**

**Hosted by**

ITS AMERICA

**Meal(s) Provided**

Food and drink

# Guest Tours

## Shopping at Somerset

**Tuesday, September 9, 10:00 a.m. – 4:00 p.m.**

The Somerset Collection is the Detroit area's premier shopping experience. An upscale, luxury shopping mall located in Troy, Michigan, Fodor's travel guide describes the Somerset Collection as one of the top shopping experiences in the United States. The tour will conclude with a 3:00 p.m. departure from the Somerset Collection, returning to the Detroit Marriott at the Renaissance Center by bus around 4:00 p.m.

Please go to **www.thesomersetcollection.com** for more information on the Somerset Collection.

**Price**
$25.00

**Transportation**
Provided

**Participant requirements**
50 minimum

# Technical Tours

## Monroe, Michigan PrePass Operations

**Tuesday, September 9, 10:00 a.m. – 2:00 p.m. and 11:00 a.m. – 3:00 p.m.**

PrePass is a national deployment of ITS technology that allows safe and qualified commercial vehicles to bypass state weigh stations or inspection facilities. These carriers are prescreened and receive bypass or pull in signals via a transponder located in the cab of the truck. The Michigan State Police deployed PrePass at its Monroe, Michigan northbound I-75 truck inspection station in January 2010. The technology, funded by HELP Incorporated, the non-profit public/private partnership, includes both weigh-in motion integration with an IRD WIM system and compliance readers to ensure proper bypass compliance. To date, trucks that have been e-cleared and pre-qualified for PrePass have completed 915,734 safe bypasses at Monroe, saving motor carriers more than $7.9M. Also on display at Monroe will be the 360SmartView electronic screening system. 360SmartView provides officers with additional tools to make informed, data-driven inspection selection decisions. Utilizing license plate and DOT readers, officers can screen all commercial vehicles on over 20 safety and compliance factors. Michigan plans to expand its PrePass operations at Monroe with renovations to the southbound facility expected to begin in summer 2014. HELP Inc.'s PrePass service is North America's largest vehicle-to-infrastructure program, with over 470,000 trucks qualified to bypass 304 operational sites in 31 states.

**Transportation**
Provided

**Participant Requirements**
20 maximum each tour

**Price**
$65.00

**Meal(s) Provided**
Yes

## Safety Pilot Model Deployment (SPMD)

**Wednesday, September 10, 8:00 a.m. – 12:00 p.m.**

Participants will be given an exclusive "back lot" tour of the largest connected vehicle test bed in the world at UMTRI in Ann Arbor. While on the bus, participants will learn about SPMD — everything from the vehicle and infrastructure technology utilized in the pilot, to discussion about participants' experience. Upon arrival, participants will be given a deep dive into the nearly 30 billion basic safety messages gathered to date, get a sneak-peek of the test facility, and learn about exciting "next steps," including the Ann Arbor Connected and Automated Vehicle Network, a custom-designed integrated network of 2,000 connected, coordinated, automated, and shared vehicles.

**Hosted by**
University of Michigan

UMTRI
University of Michigan
Transportation Research Institute

Transportation Research Institute (UMTRI)

**Price**
$50.00

**Transportation**
Provided

**Participant Requirements**
50 maximum

Technical Tours continues on next page >

## Southeast Michigan Transportation Operations Center (SEMTOC) Tour

**Wednesday, September 10, 9:00 – 11:30 a.m.**

SEMTOC is the hub of ITS technology applications at the Michigan Department of Transportation. It is a world-class traffic management center where staff oversees a traffic monitoring system composed of 400 freeway miles instrumented with more than:

- 270 Closed Circuit TV Cameras
- 95 Dynamic Message Signs
- 200 Microwave Vehicle Detection Sensors in conjunction with Probe Traffic Detectors.

SEMTOC uses an integrated software system that includes device control, incident management functions, ATIS capabilities, and a complex hybrid communications system comprised. SEMTOC facilitates area-wide management of traffic through shared connections with The Road Commission for Oakland County Traffic Operations Center and local media partners.

**Hosted by**
SEMTOC

**Price**
$50.00

**Transportation**
Provided

**Participant Requirements**
25 maximum

## City of Windsor Traffic Operations Centre

**Wednesday, September 10, 9:00 a.m. – 12:00 p.m.**

The Traffic Operations Centre houses the Advanced Traffic Management System (ATMS) and the Signals Division. The City is currently converting the entire communications system to high-speed IP communications and deploying hundreds of new VIVDS to facilitate next-generation traffic control and management applications including adaptive control, incident management, and arterial performance reporting. The new ITS technologies will facilitate smooth traffic flows between the U.S. and Canada, ensuring economic prosperity at the most utilized border crossing. Functionalities of the Centre and the ATMS also include Congestion Management at the tunnel border crossing caused by border delays.

**Hosted by**
City of Windsor

**Price**
$50.00

**Transportation**
Not provided

**Participant Requirements**
25 maximum

## Macomb County Communications and Technology Center (COMTEC)

**Wednesday, September 10, 1:00 – 2:30 p.m.**

The Macomb County Communications and Technology Center is a brand new, $11 million, state-of-the-art operations and communications center that is the first of its kind in Michigan. The 25,000 square-foot center combines communication between several Macomb County departments such as the Sheriff's Office dispatch, the Roads Department Traffic Operations Center, the Information Technology Data Center and the Emergency Management & Communications Department.

**Hosted by**
Macomb County

**Price**
$65.00

**Meal(s) Provided**
Yes

**Transportation**
Provided

**Participant Requirements**
40 maximum

## OnStar Command Center

**Monday, September 8, 10:00 – 11:30 a.m. and 2:30 – 4:00 p.m.**

**Tuesday, September 9, 10:00 – 11:30 a.m.**

**Wednesday September 10, 9:30 – 11:00 a.m. and 2:30 – 4:00 p.m.**

**Thursday, September 11, 9:30 – 11:00 a.m.**

The OnStar Command Center, located inside the General Motors World Headquarters at the Renaissance Center, is a 24/7, state-of-the-art operations hub where staff members coordinate the delivery of OnStar services to our nearly 7 million subscribers. The Command Center team uses crucial business planning tools to ensure OnStar call centers are properly staffed and maintained, calls are routed properly, and business metrics are met. Staffers also monitor real-time weather conditions, current events and crisis situations that could impact subscribers across the United States, Canada and Mexico.

**Hosted by**

General Motors

**Price**
$20.00

**Transportation**
With walking distance

**Participant Requirements**
50 maximum each tour

# Awards

For detailed information on all of the 2014 ITS World Congress and ITS America awards, please visit **www.itsworldcongress.org/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.

Nominees for the ITS World Congress Hall of Fame Industry and Local Government Awards from the Americas will be selected from the 2014 Best of ITS Award nominations. Personal Lifetime Achievement awardees from the Americas are chosen by the World Congress Board of Directors for each region.

## Best of ITS Awards

ITS America's "Best of Intelligent Transportation Systems (ITS) Awards," annually recognizes the best and brightest of the high-tech transportation community. This is a unique opportunity to be recognized at the premier ITS event of the year in the Americas amongst thousands of public sector and transportation industry professionals, policymakers, and press.

This highly competitive program aims to distinguish organizations whose projects have demonstrated specific and measurable outcomes and exemplified innovation by establishing a "new dimension" of performance. Only members of ITS America are eligible for consideration. Entries must be implemented in the America's an may include multiple project partners, but only ITS America Members will receive formal recognition.

Award categories for 2014 include:

- Best New Innovative Product, Service or Application
- Best New Innovative Practice, and
- Best New Innovative Startup Company.

**Nominations closed April 9, 2014.**

## Best of ITS, ITS America Hall of Fame Awards

The Best of ITS, ITS America Hall of Fame Awards recognize one or more leaders in the United States transportation technology community for outstanding, lifelong careers dedicated to organizational and thought leadership contributing to the vision of intelligent transportation systems. Awardees are chosen by a blue ribbon panel of ITS thought leaders from around the United States.

## Student Essay Competition

Sponsored by the Southwest Research Institute and ITS America, the Student Essay Competition is designed to encourage student interest and future participation in the development of ITS solutions. The objective of the essay competition is to provide an opportunity for today's transportation and engineering students to apply their knowledge in a thought-provoking and enjoyable competition and to build awareness of ITS as a career path with unlimited potential.

Three students will be chosen as the official winners of the 2014 World Congress Student Essay Competition. Please see the ITS World Congress website for more details and eligibility requirements.

**Deadline for submissions is May 30.**

## 2014 ITS America State Chapter Awards

The ITS America State Chapter Awards are given annually to the State Chapters that have demonstrated a superb level of programming, fostered the highest qualities of leadership amongst its members, advocated for ITS solutions at the state and regional levels, and provided outstanding value overall to its membership. ITS America's Board of Directors and State Chapters Council recognizes the Best Outstanding Chapter and the chapter with the greatest growth in its membership each year during a special ceremony at the ITS America Annual Meeting & Exhibition.

To apply, please download the application form at **www.itsworldcongress.org/awards**.

**Applications are due by July 15.**

## MobiPrize

SMART at the University of Michigan seeks to "crowd source" and recognize notable New Mobility enterprises worldwide that are improving quality of life, environment, and economy through entrepreneurial solutions advancing sustainable transportation systems. All entrepreneurs addressing sustainable transportation challenges with innovative and sustainable solutions and business models are encouraged to apply.

This year, the Grand MobiPrize is now 3 times bigger (thanks to Takata and Ford Motor Company). And there are also two new prizes! One is for Michigan-based entrepreneurs (sponsored by NEXT Energy) and one for cities or states that are encouraging New Mobility innovation and enterprise

Winners receive:

- Cash prizes
- Travel to Detroit, USA to be awarded at the ITS World Congress (thanks to our generous partners) being held from Sept 7-11, 2014, and to present on a world stage (great opportunity to get profiled and to network)
- A personalized mentorship session

**Applications are open until June 27.**

Visit **www.mobiprize.com** to learn more.

# Sponsors

Each and every year, our sponsors gratify the work of ITS America and our affiliates by choosing again to lend us their support. We would like to thank all of them for their continued contribution and dedication to the transportation and mobility sector, and for this year helping us Reinvent Transportation in our Connected World.

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# Exhibitions

## Exhibit at the 2014 World Congress on ITS

Exhibiting at the 2014 ITS World Congress provides unparalleled opportunities for B2B and B2G networking and business growth amongst the 10,000 professional attendees across the transportation and ITS markets. Exhibiting allows your company to gain exposure to buyers and partners that represent the entire spectrum of ITS technologies and services, including domestic and worldwide public agencies, the automotive sector, consulting, infrastructure equipment, telematics and telecommunications, smartphone transportation applications and more.

### Exhibitor Benefits

- Access to the registration list,
- Four exhibitor staff badges per 10' x 10' space,
- 40 exhibitor hall passes,
- Recognition in the Preliminary Program,
- Promotional profile in the Virtual Trade Show,
- Media exposure opportunities, and
- Inclusion in the Final Program and Exhibitor Directory

Exhibition booths for the 2014 ITS World Congress are filling up fast. Visit **www.itsworldcongress.org/exhibit** to learn more, or contact **Carly DiVito**, Exhibit Manager, Corcoran Expositions, at **carly@corcexpo.com** or +1 (312) 541-0567 to reserve your booth today.

### Exhibition Opening Dates and Times

| | |
|---|---|
| **Exhibit Hall Ribbon Cutting**<br>Monday, September 8 | 10:15 a.m. - 10:30 a.m. |

### Exhibition Hall Hours of Operation

| | |
|---|---|
| Monday, September 8 | 10:30 a.m. – 6:30 p.m. |
| Tuesday, September 9 | 9:00 a.m. – 4:30 p.m. |
| Wednesday, September 10 | 9:00 a.m. – 4:30 p.m. |
| Thursday, September 11 | 9:00 a.m. – 12:00 p.m. |

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*As of May 7, 2014. For an up-to-date list of exhibitors please visit www.itsworldcongress.org/exhibit.

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Thanks to the dedication and hard work of the 2014 International Program Committee, those attending the 21st World Congress on ITS will experience a robust and exiting program that spans a variety of topics and timely issues affecting the ITS industry worldwide.

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We greatly appreciate the many hours each member of our Organizing Committee puts into making the 2014 ITS World Congress a success.

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# Reinventing Transportation in our Connected World

September 7-11, 2014 | Detroit, Michigan

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21ST WORLD CONGRESS
DETROIT 2014
INTELLIGENT TRANSPORT SYSTEMS

## Contact Information

### Registration & Logistics
Sandra Collier
**scollier@itsa.org**
+1 (202) 721-4214

### Sponsorship
Valerie Forbai
**vforbai@itsa.org**
+1 (202) 721-4205

### Exhibit Sales
Carly DiVito
**carly@corcexpo.com**
+1 (312) 541-0567

### Program
Morgan Ouellette
**mouellette@itsa.org**
+1 (202) 721-4215

### Tech Showcase
Patty Fusaro
**pfusaro@itsa.org**
+1 (202) 721-4238

### Marketing
Meghan Fletcher
**mfletcher@itsa.org**
+1 (202) 721-4204

### Press
Ashley Simmons
**asimmons@itsa.org**
+1 (202) 721-4218

### Government Affairs
Paul Feenstra
**pfeenstra@itsa.org**
+1 (202) 721-4237

### Strategic Partnerships
Sabrina Sussman
**ssussman@itsa.org**
+1 (202) 721-4226