

An SAE Convergence Series Event

SAE 2011 Intelligent Vehicle Systems Symposium

November 8-9, 2011
Troy Marriott, Troy, Michigan, USA

Advancing the Connected Mobility Experience

Attendee Bonus!

Receive FREE access to the co-located SAE Electronic Systems for Vehicle Propulsion Symposium with your registration!

Maximum Savings!

**Join SAE and Pre-register
by October 21, 2011!**

This unique symposium will focus on vehicle electronics infrastructure connecting HEV, EV, ICE vehicles to their environment, including application to:

- Safety
- ITS
- Mobility Internet
- Power System Architectures
- Security for Vehicle Electronic Systems
- System and Component Level Architectures

www.sae.org/ivs



Co-located with
**SAE Electronic Systems for
Vehicle Propulsion Symposium**
See page 4 for details.



Overview

Economic circumstances are creating the need for OEMs to find market differentiating technology that is low cost with a high return. Vehicle safety regulations require significant increases in passenger safety and driver distraction reductions. Substantial research efforts, non-traditional collaborations and innovations are advancing the “connected experience” to provide drivers with tools beyond imagination only a few years ago. All of these reinforce the fact that today’s automakers are increasingly relying more heavily on electronics technology to make vehicles more efficient, safe and intelligent.

Electronic components currently comprise nearly 25% of the total cost of an ICE vehicle. By 2015, it is estimated that this cost will reach 40%. If you include the growing HEV and EV market – that figure is anticipated to nearly double, with electronic component costs comprising the majority of material/component cost of the vehicle.

This new SAE Convergence Series Event will address the entire electronic infrastructure that connects the HEV, EV and ICE vehicle to its environment. The focus will be on the application of vehicle electronics technology as applied to safety, ITS applications, the mobility internet, power system architectures as well as security issues related to vehicle electronic systems. Lastly, the symposium will address both system and component level architecture.

Attendees will hear experts address issues critical to connectivity and discuss future trends. *If you are involved with intelligent vehicle technology - this is the one event you need to attend!*

Who Should Attend?

Managers, engineers, designers, government, researchers and academia involved in:

- Electrical, Electronics, Infotainment
- Signal Processing, Control, Diagnosis
- Mechanics, Thermodynamics, Emissions
- Powertrain, Vehicle Dynamics, Restrain, Body & Comfort
- Safety, Quality, Reliability
- Testing, Validation, Tools & Equipment

Registration Bonus!

Attendees have **FREE** access to the co-located **SAE Electronic Systems for Vehicle Propulsion Symposium (ESVP)**! See a session or keynote that interests you at ESVP? Feel free to attend – it’s all part of your paid registration to the Intelligent Vehicle Systems Symposium. See page 4 for event highlights or visit www.sae.org/esvp for event details.

Event Highlights

Plenary Keynotes



*Safe, Green, Connected:
The Future of Vehicles
and the Mobile Internet*

Dr. Andrew Brown, Jr.,
PE, FESD, PhD, NAE

Chief Technologist, Delphi
Corp.

Panel Discussions

Photo
Not
Available

*Concerns of
Privacy Issue
and Ownership
and Acquiring
Data from
Vehicle Electronic
Systems*

Organizer/
Moderator:

Don Crawford,
Harman Becker



*Hardware/
Software
Applications
for Vehicle
Connectivity*

Organizer/
Moderator:

**Scott
McCormick**,
CVTA



*Ecosystem
Evolution*

Organizer/
Moderator:

Heri Rakouth,
Delphi Corp

Exhibition & Networking Reception

See the innovative organizations leading the industry while enjoying peer-to-peer networking during the joint Intelligent Vehicle Symposium/Electronics Systems for Vehicle Propulsion Symposium exhibit and reception.

Organizers



Mark Zachos

Dearborn Group
Technology, Inc.



Scott McCormick

Connected Vehicle
Trade Association



**Massimo (Max)
Osella**

General Motors
Company



Heri Rakouth

Delphi Corp.



Dr. Jean Botti

EADS



Sukhbir S. Bilkhu

Chrysler Group LLC



Alex Kade

TARDEC

Tuesday, November 8

8:00 – 9:00 a.m. Plenary Keynote: Safer, Greener, and More Connected: The Future of Vehicles and Intelligent Mobility
Dr. Andrew Brown, Jr., PE, FESD, PhD, NAE, Chief Technologist, Delphi Corp.

9:00 - 9:30 a.m. Break – Exhibition Open

Session: Convergence of Active and Passive Safety Systems to Create Intelligent Vehicles

Vehicle safety can be divided into three broad areas: “Active”, “Passive” and “Tertiary” Safety.

Until now the primary focus for the safety specialist in the Automobile Industry has been on passive safety. With the increasing miniaturization of high speed computing components, the increased use of computing in vehicle systems and communication “Active” and “Tertiary” systems are being introduced into the vehicle fleet at an increasing rate. ABS, ESC and post-crash notification are becoming common features in the next generation of vehicles. The speakers in this session will discuss the many current development paths that are being considered/ followed to introduce the connectivity to enhance vehicle safety and the potential pitfalls.

Organizer: **Sukhi Bilkhu**, Chrysler Group LLC

9:30 - 9:55 a.m. Vehicle Safety Systems: Past Present and Future
Dr. Priya Prasad, Ford Motor Co., Retired

9:55 - 10:20 a.m. Advanced Technologies: Its Promises and Possibilities in Total Safety
Dr. Joseph Kanianthra, NHTSA, Retired

10:20 - 10:45 a.m. Virtual Technology and Test Procedures For Connected Vehicles - **Tony Bromwell**, TASS

10:45 - 11:10 a.m. Connected Vehicles Development Directions – **Ray Resendes**, NHTSA

11:10 a.m. – 12:00 p.m. Panel Discussion: Potential Pitfalls of Connectivity
 Panelists:

- **Dr. Priya Prasad**, Ford Retired
- **Dr. Joseph Kanianthra**, NHTSA Retired
- **Tom Schaffnit**, CAMP
- **Jim Vondale**, Ford Motor Company

12:00 – 1:30 p.m. Lunch – Exhibition Open

Session: Autonomous Ground Vehicles Applications and Systems

Autonomous ground vehicles will provide great economic and social benefits in the areas of improved vehicle safety, efficient, less stressful traffic flow, and better fuel efficiency. For the military, connected autonomous vehicles and systems can provide unmatched force effectiveness and efficiency while reducing unnecessary risk to the soldier, and the concept of optionally-manned vehicles is also changing the strategic direction of robotic vehicles in the military. These initiatives will reduce costs and increase innovation for both government and industry, and contribute to the re-invigoration of the U.S. economy.

Organizer: **Alex Kade**, TARDEC

1:30 - 1:55 p.m. Design and Development of Future Ground Robotic Systems: Autonomous Mobility Appliqué System - **Bernard Theisen**, TARDEC

1:55 – 2:20 p.m. Case study: Convoy application/ Autonomous Base operations – Speaker TBD, BAH/TARDEC

2:20 - 2:45 p.m. EN-V update/Autonomous Driving – Speaker TBD, General Motors Co.

2:45 - 3:10 p.m. Transitioning from Driver-in-the-Loop to Autonomy – **Hemant Sardar**, University of Michigan Transportation Research Institute (UMTRI)

3:10 – 3:35 p.m. Future of Autonomous Vehicles – Speaker TBD

3:35 - 4:00 p.m. Break – Exhibition Open

4:00 - 5:30 p.m. Panel Discussion: Concerns of Privacy Issue and Ownership and Acquiring Data from Vehicle Electronic Systems

Vehicle drivers or their owners may not always be aware of their vehicle’s data reporting capabilities. Concerns about the implications of recording and the use or ownership of the vehicle data have not yet been fully resolved. This Session will explore Concerns of Privacy Issues and Ownership of any Acquired Data from Vehicle Electronic Systems.

Organizer/moderator: **Don Crawford**, Harman Becker

Panelists:

- **Paul Laurenza**, Dykema Gossett PLLC
- **Partha Goswami**, General Motors Company
- **Dorothy Ziegelbauer**, Verisk Analytics, Inc.
- **David Dastvar**, InnoVest Group

5:30 – 7:00 p.m. Networking Reception on the Exhibit Floor

Wednesday, November 9

8:00 – 9:30 a.m. Session: Convergences in Connectivity from Other Mobility Electronics – Aerospace, Commercial Vehicle, or Military Mobility

Do you ever wonder what intelligent systems electronics are being developed in aerospace, commercial vehicle or the military? Do you wonder if there are any that may have applicability to the automotive industry? This section of the symposium will showcase specific technology advances in these three industries and where there is opportunity for automotive application.

Organizer: **Jean Botti**, EADS

- Mobility Electronics in the Aerospace Industry, **Denis Chapuis**, EADS
- Commercial Vehicle Application, Speaker TBA
- Military Application, Speaker TBA

9:30 – 10:00 a.m. Break – Exhibition Open

10:00 a.m. – 12:00 p.m. Session: Hardware/Software

Applications for Vehicle Connectivity

Major Tier 1 suppliers will present their views on hardware architectures and software applications for Vehicle Safety and Connectivity Integrity, Data Security, and Remote Vehicle Diagnostics.

Organizer/Moderator: **Scott McCormick**, Connected Vehicle Trade Association (CVTA)

Panelists:

- **Gary Strelman**, Magneti Marelli S.p.A.
- **Kyle Williams**, Robert Bosch LLC
- **Chris Domin**, Ricardo
- **Tim Johnson**, Sprint
- **Ryan Middleton**, Delphi, Corp.

Panel Discussion: Vehicle Connectivity -Where do we go now?

12:00 – 1:30 p.m. Lunch – Exhibition Open

1:30 – 3:35 p.m. Session: Enabling Technologies in Vehicle Electronics for the Connected Vehicles

Wireless vehicular communications has been identified as a key technology for increasing road safety and transport efficiency, and providing Internet access on the move to ensure wireless ubiquitous connectivity. The great potential of this technology has been acknowledged with the establishment of ambitious research programs on vehicular communication systems worldwide, such as the current InteractiVe and eCoMOVE projects within the European eSafety framework, various US programs derived from USDOT projects, and the Japanese Smartway and Advanced Safety Vehicle programs.

This session aims to review technical and research aspects of the *Enabling Technologies* for vehicle connectivity (V2X : Vehicle-to-Vehicle, Vehicle-to-Infrastructure and Vehicle-to-Person)

Organizer: **Massimo (Max) Osella**, General Motors Company

1:30 - 1:55 p.m. Data Security and Privacy in Vehicle-to-Vehicle Communication – **Andre Weimerskirch**, Escrypt GmbH

1:55 - 2:20 p.m. Properties of the vehicle-to-vehicle DSRC channel, and equalization strategies to optimize the performance of 802.11p – **Dr. Daniel Stancil**, North Carolina State University

2:20 - 2:45 p.m. OSGi technology, such as Mobile Devices, Smart Home, Automotive Telematics, M2M and Industrial Applications – **Kai Hackbarth**, ProSyst

2:45 - 3:10 p.m. Advances in Telematics – **Giuseppe Faranda Cordella**, Magneti Marelli S.p.A.

3:10 - 3:35 p.m. New Perspectives for Mass-Market ADAS - **Vincent Abadie**, PSA Peugeot Citroën

3:35 – 4:00 p.m. Break – Exhibition Open

4:00- 5:30 p.m. Panel Discussion : Ecosystem Evolution

A session that explores cross-industries perspectives on the evolution of the Intelligent Vehicle Ecosystem over the next decade in aftermarket, telecommunication, USDOT and service providers.

Organizer/Moderator – **Heri Rakouth**, Delphi Corp

Panelists:

- **John Waraniak**, SEMA
- **Sanjay Khunger** – OnStar LLC
- **Walt Fehr**, USDOT JPO

*Subject to change. Visit www.sae.org/ivs for up-to-date information.

Registration and Hotel Information

To Register:

www.sae.org/ivs

SAE Customer Service

Telephone: 1-877-606-7323 (USA and Canada)

or 1-724-776-4970

Fax: 1-724-776-0790

E-mail: CustomerService@sae.org

Registration Bonus!

Receive **FREE** access to the co-located SAE Electronic Systems for Vehicle Propulsion Symposium with your paid registration to this event!

Maximum Savings!

Become an SAE Elite Member and pre-register by October 21, 2011!

Category	By October 21, 2011	After October 21, 2011
SAE Classic Member	\$795	\$895
SAE Premium Member	\$770	\$870
SAE Elite Member	\$745	\$845
Non-Member	\$1195	\$1295
Participant (includes moderator, organizer, panelist, or presenter, speaker)	FREE	FREE
Exhibitor Booth Personnel (Limit 1 per booth) Exhibitor ID# required	FREE	FREE

Conditions of Sale:

Registrations received after October 21, 2011 will automatically be charged the on-site price. **NO CHILDREN UNDER THE AGE OF 16 PERMITTED.** All cancellations must be received by SAE prior to October 21, 2011. A \$50 processing fee will be assessed for each canceled registration that results in a refund. Refunds for special event/meal tickets will not be processed after October 21, 2011. Refunds will not be issued if cancellation occurs on or after October 21, 2011.

SAE will do what is feasible to make its events reasonably accessible to attendees. If you have special accommodation needs, please let us know in advance by calling 1-877-606-7323 (1-724-776-4970 outside U.S. and Canada). Accommodations requested on site will be provided only if possible for us to do so on short notice.

Registration Includes: access to the co-located Electronic Systems for Vehicle Propulsion Symposium, Exhibit, Lunch, Refreshment Breaks, Networking Reception, Technical Sessions and Breakout sessions, a copy of the Intelligent Vehicle Systems Symposium presentations.

Hotel & Travel Information

SAE International has reserved a block of rooms for this event. All attendees are responsible for making their own lodging and travel arrangements. **Please help SAE keep the costs of this event as low as possible by booking your housing needs at the designated host hotel and through the reservation process created by SAE.**

Troy Marriott

200 West Big Beaver, Troy, Michigan 48084

1-248- 680-9797 or 1-877- 757-7131

SAE's group rate is \$124.00 single or double occupancy, all inclusive, plus local, state and federal applicable taxes. Includes complimentary Wireless Internet. To make your reservations, please visit www.sae.org/esvp and follow the hotel reservation link.

Marketing Solutions

Maximize your exposure through shared exhibit and sponsorship opportunities!

Prime opportunities are available that include both the Intelligent Vehicle Systems and the Electronic Systems for Vehicle Propulsion Symposia! Two events at one location = maximized exposure for your organization!

EXHIBIT. 2 Events – 1 Exhibit!

Table Top Exhibit \$5,000 (USD)

- 1 table top display space: 6' x 30" table, 2 chairs, 1 electrical outlet
- 1 complimentary Full Symposium Registration
- Inclusion in two Pre-Show and two Post-Show SAE International media opportunities:
 - ½ page Supplier Spotlight in AEI Print Magazine, October 4th Issue
 - ½ page Ad or Supplier Spotlight in Vehicle Electrification Digital Magazine, November 30th Issue
 - Featured in a Supplier Spotlight in one (1) Pre-Show AND one (1) Post-Show Email blast
- Company recognition and profile in Event Guide and listing on the IVS and ESVP Online Exhibitor Directories

Exhibitors As of 8/5/11

Allegro MicroSystems
DG Technologies
Hella

JOINT EVENT NETWORKING SPONSORSHIPS

Gold Sponsor \$17,500 USD *Exclusive Opportunity!*

- Exclusive host of the **Tuesday Reception** with company logo on napkins and recognition on Reception signage
- 3 complimentary Full Symposium Registrations
- Recognition in Event Guide, on signage and logo and hyperlink on the IVS and ESVP Sponsor webpages

Silver Sponsor \$15,000 USD *Two Opportunities - Selection is first come, first served*

- Exclusive host of either the **Tuesday** or **Wednesday Lunch** with recognition on Lunch signage
- Opportunity to provide giveaway at Lunch (item at sponsor's expense)
- 2 total complimentary Full Symposium Registrations
- Recognition in Event Guide, on signage and company logo and hyperlink on the IVS and ESVP Sponsor webpages

Bronze Sponsor \$10,000 USD *Four Opportunities - Selections are first come, first served*

- Exclusive host of one Refreshment Break with company logo on napkins and recognition on Refreshment Break signage
- 1 complimentary Full Symposium Registration
- Recognition as Bronze Sponsor in Event Guide, on signage and company logo and hyperlink on the IVS and ESVP Sponsor webpages

INTELLIGENT VEHICLE SYSTEMS SYMPOSIUM (IVS) SPONSORSHIPS

Premier Sponsor \$25,000 USD *Exclusive Opportunity*

- 1 Table Top display space: 6'x 30" table, 2 chairs and inclusion in select Pre-Show and Post-Show media
- Company name and logo showcased at on-site Registration
- Opportunity to provide marketing materials at on-site Registration
- Company logo included on all registration confirmation emails for IVS event
- Company name and logo will appear on the IVS Registration webpage
- Exclusive sponsorship of IVS Symposium Lanyards
- 5 complimentary Full Symposium Registrations
- Recognition as Premier Sponsor in Event Guide, on signage and company logo and hyperlink on the IVS Sponsor webpage

IVS Symposium Event-At-A-Glance **\$5,000 USD** *Exclusive Opportunity*

IVS Symposium Notepads **\$3,000 USD** *Exclusive Opportunity*

IVS Symposium Pens **\$3,000 USD** *Exclusive Opportunity*

Friend of the Industry **\$1,500 USD**

For more information or to discuss a customized solution, contact:

Vanessa Schaber at 1-724-772-7591 or email vschaber@sae.org.

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SAE 2011 Electric Systems for Vehicle Propulsion Symposium

November 8-9, 2011
Troy Marriott, Troy, Michigan, USA

For improving Engine and Powertrain Performance

This unique symposium will focus on vehicle electronics infrastructure connecting HEV, EV, ICE vehicles to their environment, including application to:

- Application of vehicle electronics technology for HEV, EV, ICE vehicles
- Electrification impacts on engine and transmission management

Hear experts from OEM, integrators, tier suppliers and academia address issues critical to vehicle engine, powertrain and electrification. Each session will work from systems level down to the component by addressing all the factors that are critical to a given application.

For event updates, visit www.sae.org/esvp. If you are involved with vehicle propulsion - this is the one event you need to attend!

Bonus!
Electronic Systems for Vehicle Propulsion Symposium paid attendees receive **FREE** access to the co-located SAE Intelligent Vehicle Systems Symposium!

Event-at-a-Glance

Tuesday, November 8	Wednesday, November 9
<p>8:00 – 9:00 a.m. Plenary Keynote: <i>The Future of Propulsion Electronics</i> Mircea Gradu, Chrysler Group LLC</p>	<p>8:00 – 9:00 a.m. Plenary Keynote: <i>ICE and Electrification, Maintaining Personal Mobility – Government Perspective</i></p>
<p>Networking Break 9:00 – 9:30 a.m.</p>	<p>Networking Break 9:00 – 9:30 a.m.</p>
<p>9:30 - 11:30 a.m. Engine Control Session</p>	<p>9:30 – 11:30 a.m. Transmission Control Session</p>
<p>Lunch 11:30 a.m. – 1:00 p.m.</p>	<p>Lunch 11:30 a.m. – 1:00 p.m.</p>
<p>1:00 – 3:00 p.m. Engine Control & Aftertreatment Session</p>	<p>1:00 – 3:00 p.m. Panel Discussion: <i>How to Bridge Conventional Engine & Transmission to Electrified Propulsion System: A Technical and Economical View</i></p>
<p>Networking Break 3:00 – 3:30 p.m.</p>	<p>Networking Break 3:00 – 3:30 p.m.</p>
<p>3:30 – 5:30 p.m. Development Method & Calibration Session</p>	<p>3:30 – 5:30 p.m. Panel Discussion: <i>Energizing the Future Mobility Enterprise</i></p>
<p>5:30 – 7:00 p.m. Networking Reception on the Exhibit Floor</p>	

Related Resources from SAE International

Save the Dates!

SAE 2012 Government/Industry Meeting

January 25-27, 2012, Washington, DC www.sae.org/govind

SAE 2012 Hybrid Vehicle Technologies Symposium

February 21-22, 2012, San Diego, California. www.sae.org/hybrid

SAE 2012 World Congress

April 24-26, 2012, Detroit, Michigan, www.sae.org/congress

SAE Convergence 2012

October 16-17, 2012, Detroit, Michigan, www.sae.org/convergence

Infotainment Systems

By Ronald K. Jurgen

This book contains 87 papers covering the past eight years (2000-2007) of engineering developments related to infotainment systems.

Product Code: PT-135

List \$59.99

Intelligent Transport Systems in Europe: Opportunities for Future Research

By: Vito Mauro, Richard Hall, Mike McDonald, Oliver Fakler, Job Klijnhout, Angela Spence, Christoph Hecht, Hartmut Keller

This book provides valuable insight and critical appraisal of key areas of intelligent transport systems (ITS) for land transport in Europe. ITS is becoming increasingly important as the means to improving the efficiency, safety and comfort of the transport of people and goods, while at the same time, helping to minimize environmental damage and the contribution of transport to global warming.

Product Code: B-WSP-003

List \$202.00



Telematics Communication Technologies and Vehicular Networks: Wireless Architectures and Applications

By: Yuh-Shyan Chen, Chung-Ming Huang

This book examines critical issues involved with telematics such as vehicular network infrastructure, vehicular network communication protocols, and vehicular services and applications.

Product Code: B-IGI-004

List: \$180.00



Intelligent Vehicle Initiative (IVI) Technology Advanced Controls and Navigation Systems, 2011

11 Papers, April 2011

Product Code: COLL-TP-00128

For more information visit collections.sae.org



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A Holistic Introduction to Commercial Telematics Seminar

This seminar provides participants a comprehensive overview of the various technologies that make up a telematics system as a whole and provides the information necessary to help drive intelligent decisions that have long-term benefits.

Instructor: Emad Isaac; Course I.D. #: C0947;

visit www.sae.org/pdevent/C0947

Introduction to Design Review Based on Failure Modes (DRBFM) Webinar

This Webinar will explain all phases of the DRBFM methodology and provides details on how to accomplish the specific steps. A DRBFM Process Guidebook will provide specific information on each step with formats, examples, notes and homework slides.

Instructor: Bill Haughey; Course I.D.#: WB1047;

visit www.sae.org/pdevent/WB1047

Embedded Control Systems Design Workshop

This highly interactive seminar - featuring microcontroller hands-on lab projects - will help you learn fundamental concepts needed to design, implement, and calibrate control functions for an embedded microcontroller system.

Instructor: Dennis Bogden; Course I.D. #: C0922;

visit www.sae.org/pdevent/C0922

Controller Area Network (CAN) for Vehicle Applications Seminar

The Controller Area Network has become the standard of choice for most automotive manufacturers. Approved for use as an ISO and EPA diagnostic network, its usage continues to grow. This seminar covers the theory and use of the CAN protocol, and its applications in the automotive industry.

Instructor: Mark Zachos; Course I.D. #: C0120;

visit www.sae.org/pdevent/C0120

In-Vehicle Networking with LIN and FlexRay Applications Seminar

This two-day seminar covers the theory and practices of in-vehicle multiplex networking. Attendees learn about FlexRay and LIN SubBus, and other network standards. Attendees explore the latest OBD II regulations and implementation requirements, along with device hardware and software interfaces.

Instructor: Mark Zachos; Course I.D. #: C0136;

visit www.sae.org/pdevent/C0136

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SCAN FOR MORE INFO

www.sae.org/ivs