EMERGENCY PROCEDURES DURING THE SAE 2015 ACTIVE SAFETY SYSTEMS SYMPOSIUM

During the SAE 2015 Active Safety Systems Symposium attendees are to follow the established emergency guidelines of the facility where the emergency occurs. Based on the location of the incident, report emergencies to the nearest venue representative and/or security personnel if available, or report to the SAE registration area located in the Grande Ballroom Lobby.

Should a catastrophic event occur, attendees should follow the safety and security instructions issued by the facility at the time of the event. This includes listening for instructions provided through the public address system and following posted evacuation routes if required.

In the event of an emergency or a major disruption to the schedule of events at the SAE 2015 Active Safety Systems Symposium, attendees and exhibitors may call this number to receive further information about the resumption of this event. Updates will also be provided via the SAE website at www.sae.org.

SAE EMERGENCY HOTLINE
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Open exchange of ideas
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**General Info**

**Operation Hours**
Wednesday, November 4
7:30 a.m. – 6:00 p.m.

Thursday, November 5
7:00 a.m. – 5:00 p.m.

**Registration**
Grande Ballroom Foyer

Wednesday, November 4
7:30 a.m. - 5:30 p.m.

Thursday, November 5
7:30 a.m. - 2:00 p.m.

**Networking Lunches**
Garden Gallery

Wednesday, November 4
Thursday, November 5
12:00 - 1:30 p.m.

**Networking Reception**
Wednesday, November 4
5:30 - 7:00 p.m.

**Keynote Speaker:**
Wednesday, November 4
6:00 - 7:00 p.m.

**Jake Fisher**, Consumer Reports

As Director of Auto Testing, Jake Fisher oversees Consumer Reports’ extensive automotive testing program at its 327-acre site in East Haddam, Conn., the largest independent consumer automobile testing center in the world. He manages a team of dedicated automotive engineers, statisticians and support staff.

CR’s Auto Test Center is a state-of-the-art facility with specially paved surfaces, straight and winding-road courses, an off-road course, and the latest computerized test equipment. The organization buys and tests about 70 cars and trucks a year, and collects reliability data from subscribers on more than a million vehicles annually. Results are presented in Consumer Reports magazine and online at www.ConsumerReports.org. The test results are also published in a series of special automotive publications and mobile products.

Mr. Fisher has worked for Consumer Reports since 1999. He has been instrumental in all areas of vehicle testing as well as vehicle reliability analysis. His passion for cars and expert driving can be seen in many Consumer Reports’ online videos, a program that he pioneered.

Mr. Fisher holds an M.B.A. with a concentration in Innovation and Entrepreneurship from Rensselaer Polytechnic Institute as well as a B.S. in Mechanical Engineering from the same university. He previously worked at General Motors as a development engineer, working primarily with Saturn and Cadillac brands. There, he gained extensive experience in the design headquarters in Detroit, Arizona proving grounds, and various manufacturing plants.

In his spare time, Mr. Fisher competes in wheel-to-wheel car racing. He has participated in club racing, 24 Hours of LeMons, ChumpCars, autocrosses, rallies, time trials, ice races, and drift-racing competitions. When he’s not racing cars, he trains and competes in marathons and triathlons. He lives in Connecticut with his wife and two sons.
### Agenda

**Wednesday, November 4**

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<th>Time</th>
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<td>8:30 a.m.</td>
<td><strong>Keynote - Active Safety Systems: Consumer Acceptance Issues</strong></td>
<td>Jake Fisher, Consumer Reports</td>
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<tr>
<td>9:00 a.m.</td>
<td><strong>Safety Problems and Trends</strong></td>
<td>Carol A C Flannagan, UMTRI</td>
</tr>
<tr>
<td>9:30 a.m.</td>
<td><strong>Deer Radar Scanning and Naturalistic Driving Data Collection/Analysis</strong></td>
<td>Rini Sherony, Toyota Motor Engineering &amp; Mfg NA Inc.</td>
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<tr>
<td>10:00 a.m.</td>
<td><strong>Break</strong></td>
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<tr>
<td>10:30 a.m.</td>
<td><strong>Expanding the Capabilities of Front Camera</strong></td>
<td>Dennis Kazensky, General Motors</td>
</tr>
<tr>
<td>11:00 a.m.</td>
<td><strong>Safety Pilot Integrated Vehicle Warning Research Overview</strong></td>
<td>Zachary Doerzaph, Virginia Tech</td>
</tr>
<tr>
<td>11:30 a.m.</td>
<td><strong>Assessing Effectiveness of Advanced Driver Assistance Systems</strong></td>
<td>Anika Larsson, Autoliv B.V. &amp; Co. KG</td>
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### Details

**Keynote - Active Safety Systems: Consumer Acceptance Issues**

This presentation will cover consumer perception of advanced safety systems as well as distraction and “factors” that prompt some drivers not to utilize these systems.

**Safety Problems and Trends**

Fatality rates in traffic crashes have been decreasing for decades, and much of the credit goes to improvements in occupant protection in the event of a crash. However, new active safety technologies designed to avoid certain crashes altogether offer the promise of faster declines in fatality and crash rates going forward. For example, Electronic Stability Control (ESC) has already dramatically cut the rate of rollovers in newer vehicles.

Since active safety systems generally target particular crash scenarios, the kinds of crashes that make up the population will change in the future. This presentation covers the current makeup of the crash scenarios and presents results on how we might expect the future of crashes to look as active safety systems enter the fleet. The crashes that remain should become the target of future advances in crash avoidance technology.

**Deer Radar Scanning and Naturalistic Driving Data Collection/Analysis**

This presentation describes deer radar & lidar scanning data collection and analysis and naturalistic driving data collection and analysis for deer vehicle encounters. Deer vehicle crashes are a significant problem in the U.S. According to the National Highway Traffic Safety Administration (NHTSA), there are about 1 million deer vehicle crashes each year that result in 200 fatalities, cause more than 10,000 injuries, and result in $1 billion in vehicle damage. These radar/lidar and naturalistic driving data collected in this project could be used for development for standardized test surrogate and testing procedure for deer vehicle crashes in the U.S. Measurement of many deer of different shape, size, and color; male, female and fawn with a 905nm Lidar and 77GHz mm wave radar in spring and fall was done in daylight and dark conditions in a deer farm in Southeast Michigan. The data was analyzed to determine the radar and lidar characteristics under different conditions for the different deer types. In addition 49 vehicles mostly equipped with camera (1 with radar also) were driven in and around Blacksburg, Virginia to collect naturalistic driving data for deer vehicle encounters. The collected data were analyzed to calculate various parameters not available in crash data like deer location with respect to the vehicle, moving speed, direction of movement, estimated range and estimated time to collision, etc. to develop standardized test conditions and test scenarios.

**Expanding the Capabilities of Front Camera**

Consumer interest in Crash Avoidance and Advanced Driver Assist Safety Systems continues to grow, and vehicle manufactures must find ways to optimize sensor complexities and maximize capabilities of the sensors they choose to use. The forward-looking camera continues to offer increasing capability, and value, to offer these features on large numbers of vehicles. While much talk and focus today is around future trends and automated driving, there are still many opportunities to bring crash avoidance technologies into mainstream vehicles using vision technology.

This presentation will provide an overview on GMs focus of the Front Camera and the capabilities that it can provide to help avoid crashes, meet Global NCAP requirements, provide customer convenience, and also support future automation features.

**Safety Pilot Integrated Vehicle Warning Research Overview**

The Connected Vehicle Safety Pilot program evaluated the readiness of vehicle-to-vehicle imminent safety applications through two key efforts; the Driver Clinics and the Model Deployment. As a key component of the Safety Pilot program, United States Department of Transportation partnered with the Crash Avoidance Metrics Partnership Vehicle Safety Consortium 3 Team to develop and test a fleet of vehicles integrated with connected vehicle technology. This presentation provides an overview of the integrated vehicle warning research across the Safety Pilot program.

**Assessing Effectiveness of Advanced Driver Assistance Systems**

The predictive effectiveness assessment of Advanced Driver Assistance Systems (ADAS) is important for different stakeholders within road traffic safety. For the automotive industry it is essential to specify and design of ADAS functions towards an optimized real-world performance at a very early stage. Further there is a high interest to influence legislation and consumer rating by demonstrating and discussing the real-world ADAS assessment as soon as or even before corresponding functions have penetrated the market.

Virtual simulation is commonly seen as the most comprehensive approach for predictive effectiveness assessment of ADAS systems. Although virtual models for vehicles and environments have reached a high degree of validity, there is still uncertainty about the requirements on driver behavior models. Thus, the follow-up with retrospective evaluations is necessary to confirm or reject the previously formulated effectiveness hypothesis.

This presentation will give an overview of the real-world effectiveness assessment method applied within Autoliv, where virtual simulation is combined with naturalistic driving data analysis and physical testing for the verification and validation of specific ADAS function concepts. As an example, the influence of the driver behavior model on relevant effectiveness figures for a specific ADAS function is demonstrated.
### AGENDA

**Wednesday, November 4 continued**

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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>12:00 p.m.</td>
<td>Networking Lunch with Exhibits</td>
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| 1:30 p.m.  | Europe’s Roadmap on Active Safety                                    | Over the past decade, the European automotive industry has made consistent steps forward in expanding and adopting active-safety technologies. The main drivers for these deployments have been the regulations mandating ABS and ESC in passenger cars and AEBS and LDWS for heavy trucks, together with the constant updating of requirements for NCAP assessments. This presentation will review the different requirements and test procedures which have been put in place to date, along with the roadmap for the upcoming, near- and mid-term Active Safety requirements being addressed.  
René Waare, IDIADA |
| 2:00 p.m.  | Pedestrian Automatic Braking Systems                                 | Pedestrian test targets are very important for the repeatability and accuracy of PCAM system evaluations. Pedestrian size, radar cross section, robustness, static/dynamic animation, and dynamic articulation are a few of the key elements that can affect the results of PCAM performance. This presentation will discuss research about these factors and how they are being evaluated to determine objective criteria on pedestrian test mannequins.  
Heath Albrecht, VRTC |
| 2:30 p.m.  | Three Key Stages of Test Process for the Active Safety System        | Studies reveal that the great majority of all traffic accidents are caused by human drivers. In this context, active safety measures have a great potential to significantly reduce accident rates and injuries. Legislative bodies have adopted road safety as a key issue and associated regulations are under way. In addition, new car assessment programs (NCAPs) assess both passive and active safety measures of vehicles as part of the overall star rating. To reach the given targets, radar and camera based active safety systems have to be integrated in modern vehicles. These forward-looking systems recognize potentially dangerous situations and react quickly and intelligently, for example, by warning the driver and/or autonomously performing emergency braking. The active safety protection of pedestrians and vulnerable road users is particularly challenging. A trade-off between fast system reactions and unnecessary system activations has to be found. This presentation introduces a new process for testing active safety systems. Three essential stages are identified: virtual test drives on a PC using software-in-the-loop simulation, virtual test drives with hardware-in-the-loop systems, and finally, real vehicle test drives. The presentation outlines the kinds of tests that can be performed in the individual stages, and how development time and costs can be saved. In addition, options for integrating camera and radar sensors in closed-loop simulations are proposed.  
Andre Rolfsmeier, dSPACE |
| 3:00 p.m.  | Break                                                                |                                                                                                                                                                                                              |
| 3:30 p.m.  | Adaptive Headlighting Systems                                        | Low beam headlights are the most commonly used type of vehicle forward lighting in the U.S. A growing body of data suggest that low beam headlights have important safety limitations, yet high beam headlamps are still largely under-used by nighttime drivers. Evolving technologies in terms of light sources, sensors and solid state electronics are making adaptive systems possible, which can shape forward beam patterns in response to the driving environment including the presence of other vehicles to maximize useful illumination while minimizing glare to other drivers. Accumulating evidence suggests that adaptive headlighting can have meaningful safety benefits. Also discussed will be methods for characterizing and verifying the performance of these systems.  
John D. Bullough, Rensselaer Polytechnic Institute |
| 4:00 p.m.  | Expert Panel Discussion: CyberSecurity and Active Safety             | As active safety systems become more integrated into the future of vehicle DNA, we are moving from the driver as only decision maker to advanced driver assist systems (ADAS) to help in the driver’s decision making process. As the automotive industry moves towards “no automation” to “full automation” the discussion around security of these systems becomes paramount. This panel will bring together mobility industry experts to discuss CyberSecurity and active safety systems. Use this session time to hear and ask questions of these individuals.  
Moderators - Frank Serna, Draper Laboratory  
Panelists - Brian Daugherty, Visteon Corp.  
Srinivasan Jagannathan, Exponent Inc.  
John Martin, NHTSA  
Chris Poulin, IBM  
Andre Weimerskirch, University of Michigan |

**Wednesday lunch sponsor**
## AGENDA

**Thursday, November 5**

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| 8:00 a.m.| **Testing and Real World Evaluation of Front Crash Prevention Systems**  
IHS has been publicly rating front crash prevention systems since 2013. The rating protocol was based on benchmarking test results against evaluations of effectiveness based on comparing actual insurance crash claim experience for vehicles with an without the technologies. Since that time IHS have evaluated 158 models with FCP systems and HLDI has published new and updated effectiveness evaluations. Also EuroNCAP have published ratings of automatic emergency braking systems and the NHTSA have announced similar plans. This presentation will examine the degree to which rating test results are consistent with the latest evaluations of effectiveness.  
*David S. Zuby, Insurance Institute for Highway Safety*

| 8:30 a.m.| **Growth of Infrared Opto-semiconductor Components in ADAS Sensors - Factors Shaping Automotive Product and Technology Roadmap for the Next Five Years**  
Two of the key sensors for ADAS applications, LIDAR and infrared cameras, are rapidly evolving to serve the active safety market. The LIDAR market is currently driven by NCAP for the near future (AEB / BSD) and the autonomous car (3D Map) in the mid term. The market is developing scanning and flash LIDAR technologies to meet these needs. On the opto-semiconductor side, new more powerful lasers and photodiodes are being developed. The lasers vary in power, pulse width, wavelength and form factor. Similarly, the photodiodes vary from single APD to photodiode arrays. Infrared camera applications like driver monitoring, night vision and enhanced rearview / surround view (with IR illumination) are rapidly growing. In driver monitoring, the cameras are currently illuminated with 850 nm emitters –even though 950 nm would be preferred to avoid the red glow distracting the driver. New NCAP standards, NHTSA, IHS and the autonomous car north star are all playing a role in pushing the pace of automotive development. This presentation will shed some light on how all this shapes product development plans at OSRAM Opto Semiconductors for the automotive market.  
*Rajeev Thakur, Osram Opto Semiconductors Inc.*

| 9:00 a.m. | **Human Factors Implications of Active Safety Systems**  
Exponent has been involved in ongoing research that is focused on the human factors and driver behavior implications of Advanced Driver Assistive Systems (ADAS), including Forward Collision Warning and Mitigation, Lane Departure Warning and Adaptive Cruise Control systems. This presentation will introduce findings that provide insight into the current perceptions and experiences of the general public with these systems as well as their performance during closed-track test conditions. In addition to the discussion of implications for driver who are actively engaged in vehicle control versus monitoring the systems (i.e., out-of-the-loop), this presentation will highlight on-road testing methodologies that can be used to further assess driver performance with ADAS technologies.  
*Caroline M. Crump, Exponent Failure Analysis*

| 9:30 a.m. | **Driver Behavioral Adaptation to Driver Assistance and Advanced Safety Systems**  
Advanced driver assistance systems (ADAS) present new opportunities to improve driver safety by alerting drivers of dangerous conditions or by relieving drivers of tedious control tasks. As drivers become accustomed to these changes in their driving task, it is often difficult to anticipate how drivers will adapt in response. Some behavioral adaptation may result in behavior that could undermine safety and reduce the resulting safety benefit of the assistance system. This presentation will discuss adaptations that are uniquely related to ADAS technologies and how these adaptations are driven by exposure, mental model, and driver attributes.  
*John Michael Sullivan, Univ. of Michigan-Ann Arbor*

| 10:00 a.m. - Break |

| 10:30 a.m. | **Analysis of Decreasing Traffic Accidents With A Driving Support System**  
SUBARU has developed a driving support system called EyeSight®, that provides functionality that help reduce traffic accidents and driving workload, including Pre-collision Braking and Throttle Management, Forward Collision Warning, Adaptive Cruise Control and Lane Departure Warning. Pre-collision Braking functions when there is a risk of a rear-end collision with an obstacle in front, the system helps to minimize or prevent a collision by warning the driver. If the driver still does not take evasive action to avoid collision, brakes can be automatically applied just before the collision in order to reduce damage impact, or if possible, prevent the collision. Adaptive Cruise Control functions as the vehicle in front in the same traffic lane is detected by stereo cameras, and own vehicle tracks the vehicle in front while automatically maintaining a following distance that corresponds to the speed of the vehicle in front. Lane Departure Warning warns the driver if the system detects that the vehicle is likely to depart the traffic lane. In order to evaluate this systems effectiveness in the real world, numbers of traffic accidents involving Subaru vehicles with and without this system equipped were investigated. After comparing accident rates across various accident scenarios, e.g. Car-to-Car (rear-end collision, passing, turning left and right), Car-to-Pedestrian (crossing, against traffic, same direction), it was found that vehicles equipped with system were involved in significantly fewer (30%) rear-end collisions. This presentation describes effectiveness of this system by analysis of traffic accidents involving Subaru vehicles.  
*Hikaru Kumasagi, Subaru Engineering Div.*

| 11:00 a.m. | **NHTSA's Lateral Deviation Support (LDS) Test Method Research**  
Lateral deviation support (LDS) is a category of crash avoidance technologies designed to address the lane and road departure safety problem. LDS systems presently range from those that only provide passive warnings (e.g., lane departure warning) to those with active control (e.g., lane centering). This presentation will briefly explain NHTSA’s test track research in the area of active LDS, and what work is being performed to develop the methods needed to objectively assess their performance.  
*Garrick J. Forkenbrock, US Dept. of Transportation*
### AGENDA

**Thursday, November 5 continued**

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| **11:30 a.m.** | **Collaborative Work Toward Industry Standards for Active Safety Systems**  
Over the past few years, the SAE Active Safety Systems Standard Committee has steadily increased activities to develop industry standards for automotive active safety systems. At the same time, additional consumer metrics and regulatory requirements are being introduced which impact active safety system design. This presentation provides an overview of current committee activities, the status of standards under development, near & longer term project plans and the support/resources that will be needed to complete these tasks.  
*Michael G. Carpenter, General Motors Co.* |
| **12:00 p.m. - Networking Lunch with Exhibits** | |
| **1:30 p.m.** | **Circle of Vehicle Safety - Progression of Safety in Today’s Cars and its Potential Benefits**  
*Rodolfo Schoeneburg, Daimler AG* |
| **2:00 p.m.** | **The Role of Radar in Active Safety**  
*Thomas LeMense, Infineon Technologies North America Corp.* |
| **2:30 p.m.** | **Integrated Safety Systems - Status and Outlook**  
On the way to automated driving we will experience a significant market penetration of surround sensing systems in all vehicle classes. This development will boost the availability of pre-crash information within the vehicle infrastructure. This enables vehicle manufacturers and suppliers to implement a holistic approach, namely to further reduce and minimize the injury risk in vehicle crashes. This is realized by using all available sensor information to enable improved and new occupant protection functions.  
*Robert Jones, Robert Bosch LLC* |
| **3:00 p.m. - Break** | |
| **3:30 p.m.** | **Expert Panel Discussion: Emerging Trends on Sensor Technologies**  
As active safety systems continue to advance with automated functions and penetrate more vehicles on the road, the need for reliable and effective (cost and performance) sensing technologies becomes more critical to ensure effective performance of these systems under real world conditions. This expert panel will discuss the roadmap of various sensing technologies as they are applied to in-vehicle systems, their challenges and focus on the future direction with respect to effective integration of existing sensors and evolution of new sensing technologies.  
*Panelists - Erez Dagan, Mobileye Vision Technologies  
Walter Kosiak, Delphi Corp.  
Lutz Kuehnke, Continental  
Michael Reichel, Elektrobit  
Kay Stepper, Robert Bosch LLC  
Ryan H. Yee, Exponent Failure Analysis* |
**EXHIBITOR PROFILE**

Exhibitor Directory text is published as submitted by exhibiting companies.

**Bowles Fluidics Corporation**
6625 Dobin Rd
Columbia, MD  21045
United States
www.bowlesfluidics.com

**Booth: 6**
dlhBOWLES is a vertically integrated, full service supplier to the worldwide automotive market specializing in the area of engineered plastics and fluid management solutions. We are a market leader in highly engineered nozzles and tube assemblies for washer systems, powertrain and chassis applications.

**dSPACE Inc**
50131 Pontiac Trl
Wixom, MI  48393
United States

**Booth: 7**
dSPACE develops and distributes integrated hardware and software tools for developing and testing electronic control units and mechatronic controls. With 1,200+ employees worldwide, dSPACE, headquartered in Paderborn, Germany, has three project centers in Germany, and serves customers through local dSPACE companies in the USA, France, the UK, Japan, and China.

**Elektrobit (EB)**
37000 W 12 Mile Rd Ste 112
Farmington Hills, MI  48331
United States
www.ftt-a.com

**Booth: 5**
EB’s Automotive Software Business has established itself internationally as one of the most important suppliers of embedded software solutions for the automotive industry. In addition to the development of innovative products, it also specializes in services and consulting for the automotive industry, supplying implementations of serial software solutions for a broad range of AUTOSAR, Infotainment, Navigation, HMI, Connected Car, and Driver Assistance systems.

**ETAS Inc**
3021 Miller Rd
Ann Arbor, MI  48103
United States
www.etas.com

**Booth: 8**
ETAS provides a comprehensive product portfolio of integrated tools designed to increase quality and efficiency in the development and maintenance of embedded systems, with solutions for software modeling/integration, hardware-in-the-loop simulation, virtual and rapid-prototyping, measurement/calibration and functional safety and security. Our tools are widely deployed in automotive, off-highway, and adjacent segments of the embedded industry.

**FT Techno of America LLC**
1750 Smith Rd
Fowlerville, MI  48836
United States
www.ftt-a.com

**Booth: 3**
Located in Fowlerville, MI, FTTA offers test track rental and testing services. Test tracks include: 20 acre VDA; 3 mile oval; Low/Middle Mu Surfaces; 4,500 ft. 4-lane straightaway; Special Surfaces; Garage and Office space. Active Safety Testing Services: Vehicle/Pedestrian Collision Avoidance, NHTSA NCAP – FCW/LDW/LKA/DBS/CIB; EURO NCAP-AEB; benchmark performance; off-site field testing.

**Osram Opto Semiconductors**
21800 Haggerty Rd Ste 115
Northville, MI  48167
United States
www.osram-os.com

**Booth: 4**
OSRAM, Munich, Germany is one of the two leading light manufacturers in the world. Its subsidiary, OSRAM Opto Semiconductors GmbH in Regensburg (Germany), offers its customers solutions based on semiconductor technology for lighting, sensor and visualization applications within automotive, consumer, industry and general lighting segments.

**Tass International Inc**
17199 N Laurel Park Dr Ste 205
Livonia, MI  48152
United States
www.tassinternational.com

**Booth: 2**
Safe Mobility - Groundbreaking solutions and services for passive, active and integrated safety. With the increasing possibilities of technology, the demands on safety grow simultaneously: on-board and around vehicles. For over 30 years TASS International provides cutting-edge simulation software (including the industry-standard MADYMO), testing services, and engineering safety solutions. Fast, accurate and reliable. Green Mobility - In the next decade more stringent emission legislation creates the need for new innovative technologies to achieve the standards for low CO2 (CAFE) and NOx emissions. In addition, the complexity of systems requires innovation on control systems.

**Transportation Research Center Inc**
10820 State Route 347
East Liberty, OH  43319
United States
www.trcpg.com

**Booth: 1**
TRC Inc. specializes in research and development testing services. Brake, crashworthiness, durability, fuel economy, emissions, handling, and performance testing is conducted at the independent automotive proving ground. TRC Inc. is currently developing a comprehensive master plan with The Ohio State University to expand road-test facilities that complement the progression of autonomous and active safety technologies in passenger and commercial vehicles.
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<tr>
<td>DENSO</td>
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</table>
Actively Improving Safety

DENSO is working to develop the next generation of safety technologies that will give you everyday confidence and extraordinary safety.

“Protecting lives, preserving the planet, and preparing a bright future for generations to come.”

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wwwdensocorp-na.com
### SAE International and Partner Events

#### 2015

**SAE/JSAE 2015 Small Engine Technologies Conference - JSAE**  
November 17-19, 2015  
Osaka, Japan  

**SAE 2015 Vehicle Electrification and Connected Vehicle Technology Forum**  
December 3-4, 2015  
Shanghai, China  

**2015 Defense Maintenance and Logistics Exhibition**  
December 7-9, 2015  
Phoenix, Arizona, USA  

**2015 DOD Maintenance Symposium**  
December 7-10, 2015  
Phoenix, Arizona, USA  

#### 2016

**SAE 2016 Connect2Car**  
January 6, 2016  
Las Vegas, Nevada, USA  

**SAE 2016 Government/Industry Meeting**  
January 20-22, 2016  
Washington, District of Columbia, USA  

**SAE 2016 Hybrid and Electric Vehicle Technologies Symposium**  
February 9-11, 2016  
Anaheim, California, USA  

**SAE 2016 On-Board Diagnostics Symposium - Europe**  
February 29-March 2, 2016  
Stuttgart, Germany  

**SAE 2016 High Efficiency IC Engine Symposium**  
April 10-11, 2016  
Detroit, Michigan, USA  

**SAE 2016 World Congress & Exhibition**  
April 12-14, 2016  
Detroit, Michigan, USA  

**SAE Battelle 2016 CyberAuto Challenge**  
July 25-29, 2016  
Warren, Michigan, USA  

**SAE 2016 On-Board Diagnostics Symposium**  
September 13-15, 2016  
Indianapolis, Indiana, USA  

**SAE 2016 Heavy-Duty Diesel Emissions Control Symposium**  
September 20-21, 2016  
Gothenburg, Sweden  

**SAE 2016 Brake Colloquium & Exhibition - 34th Annual**  
September 25-28, 2016  
Scottsdale, Arizona, USA  

**SAE 2016 Commercial Vehicle Engineering Congress**  
October 4-6, 2016  
Rosemont, Illinois, USA  

**SAE 2016 Aerospace Manufacturing and Automated Fastening Conference & Exhibition**  
October 4-6, 2016  
Bremen, Germany  

**SAE 2016 Thermal Management Systems Symposium**  
October 18-20, 2016  
Mesa, Arizona, USA  

**SAE 2016 International Powertrain Fuels & Lubricants Meeting**  
October 24-26, 2016  
Baltimore, Maryland, USA  

**SAE/JSAE 2016 Small Engine Technology Conference & Exposition**  
November 15-17, 2016  
Charleston, South Carolina, USA  

#### 2017

**SAE 2017 World Congress & Exhibition**  
April 4-6, 2017  
Detroit, Michigan, USA  

**SAE 2017 Noise and Vibration Conference and Exhibition**  
June 12-15, 2017  
Grand Rapids, Michigan, USA  

**SAE 2017 International Powertrains, Fuels & Lubricants Meeting**  
June 26-28, 2017  
Brazil, Brazil  

**SAE 2017 Brake Colloquium & Exhibition - 35th Annual**  
September 24-27, 2017  
Orlando, Florida, USA